

Spatial Variation in the Level of Educational Development of Cooch Behar District of West Bengal, India: An Inter-Sub-Divisional Scenario

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Abstract: Educational development is an important factor for the overall progression of a society or region. It reduces spatial variation in terms of socio-cultural and economic aspects of a region. An analysis on inter-sub-divisional distribution pattern of educational development of Cooch Behar(Koch Bihar) district has been presented in this work. Secondary sources of data mainly from District Census Handbook of Koch Bihar and District Statistical Handbook of Cooch Behar have been used to examine the study area. The status of literacy rate of Cooch Behar(74.78%) is quite good and performed moderate(11th rank) in West Bengal as per census of India, 2011. Notwithstanding inferior facilities and services related to education in some backward and least developed blocks are created disparity in educational development among the sub-divisions of the district which is the main aim of the study. Educational development cannot be express by a single indicator rather than an aggregate of indicators. 24 variables under 4 categories viz. literacy rate, pupil institution enrolment status, pupil teacher enrolment status and other facilities related to educational development have been considered to measure level of development. The methodology has been adopted is mainly statistical purpose with the help of Standard Score and Composite Score method. Finally the study has resulted three levels of development among the sub-divisions in the district namely low(Mekhliganj & Mathabhanga), moderate(Dinhata) and High(Cooch Behar & Tufanganj).

Key Words: Educational Development, Effective Literacy Rate, Pupil Institution Enrolment Status(PIES), Pupil Teacher Enrolment Status(PTES), Pupil Teacher Ratio(PTR)

1. INTRODUCTION:

Education is considered as the backbone of progression of society. It also helps to raise quality people and attain higher social status which farther advances to move forward a nation for development. Educational development is not only concern with a single factor rather than an assemblage of factors, which is an important qualitative indicator for the overall progression of a society or region. It diminishes the regional imbalances in terms of economic and socio-cultural aspects of a region. Overall literacy rate and the educational development scenario of Cooch Behar district are moderate in the state but, undoubtedly there is a great extent of inequalities in terms of level of educational development among the administrative sub-divisions of it. As the base of economy of the study area is primary (especially agriculture) and rural family size is quite large compare to urban area, there is gender gap and rural urban differentiation on literacy as well as educational development. The continuation of increasing rate of literacy has been observed from the previous decades and as per 2011 census the overall literacy rate of Cooch Behar(74.78%) is slight higher than national average of 74.04% but lower than the state average of 77.08%. Nevertheless insufficiency of educational institutions and teachers compare to number of students and other public services and facilities regarding educational development are prominent among the backward and least developed blocks which create developmental gaps among the sub-divisions of the study area. In India the standard of educational facilities, and the quality of education, are generally higher in primary and secondary schools in richer states than poorer ones (Lall, 2005). Development is a multi-dimensional process and it cannot be fully estimated by a single indicator (Narain, Bhatia & Rai, 2011). The long term social and economic return from education is enormous of the various elements of population characteristics, the level of literacy and education gives the best exposition of regional development because of its dual functions as cause and effect of modernization (Som & Mishra, 2014).

2. LITERATURE REVIEW:

Kaushik(2010) attempted to examine spatial problems and of primary education and prospects of them among the blocks of Mathura district by applying Z-Score, Composite Score and Correlation method. The study depicted that at block level there was an unequal distribution of attainment in primary education in Mathura district of Uttar Pradesh. It revealed regional variation of educational development is found because of socio-economic conditions of people

rather than the educational facilities available in the blocks. **Abdulraheem (2011)** analysed that in an economy for any kind of inclusive growth education plays a very important role. Low level of educational developmental scenario is found among the regions in India which are economically and socially least developed. **Ashraf and Rawal (2011)** described regional imbalances in level of educational development in Ganga-Yamuna Doab. It showed a large disparity mainly due to nearness of Delhi and dynamics of economic activities. **Sivakumar & Vijay(2012)** explained disparity in terms of poverty and education in India. They have examined the figure of disparity is very much prominent among BIMARU states and showed a linear and quite straight relationship between poverty reduction and education development. Educational development and poverty reduction bring socio-economic benefits which have found in highly developed states. **Banu & Rawal (2015)** analysed that despite the reasonable governmental endeavour towards ensuring equal access to education and educational facilities, disparity still prevails. There is exist wide regional variation in the level of educational development in West Bengal. Several factors like socio-cultural, economical, historical, inadequate government schemes and policies etc. are responsible for such kind of inequality in educational development.

3. OBJECTIVES OF STUDY:

The objectives of thus research work are-

- To examine the spatial distribution of facilities and services related to educational development including literacy rate among the administrative sub-divisions of Cooch Behar district.
- To find out and analyse the regional dissimilarity in level of educational development among the sub-divisions.

4. DATA SOURCES:

The entire paper is secondary data based. The data for analytical purpose have been collected from several secondary sources mainly from District Census Handbook of Koch Bihar (**Directorate of Census Operations, West Bengal, 2011**), report of census of India(**Office of the Registrar General & Census Commissioner, India, 2011**) and District Statistical Handbook of Cooch Behar (**Bureau of Applied Economics & Statistics, Department of Statistics & Programme Implementation, Government of West Bengal, 2013**) in this study.

5. METHODOLOGY:

After choosing the topic and study area 24 variables have been taken into consideration to examine the sub-divisional scenario on educational development. Later on these have been mentioned by symbolic nomenclature(viz. X1, X2,.....X24) and categorised into four groups namely- (i) Status of Literacy Rate, (ii) Pupil Institution Enrolment Status, (iii) Pupil Teacher Enrolment Status and (iv) Others Facilities related to educational development. Here for literacy rate effective literacy rate has been taken into account rather than crude literacy rate. Thereat it has been considered as total percentage of population of an area at a particular time aged 7 years or more who can both write and read with understanding meaning. Standard Score(Z-Score) and Composite Score(CS) method have been adopted for statistical analysis. The inferences and results have been carried out through tabular format and presentation of map followed by narration of the study outputs. The essential cartographic expressions like column, bar diagram are used with the help of MS Excel and for map making QGIS(version 3.6.2) software has been used. Following parametric measures have been followed to analyze regional variation and complete the study:

5.1. Standard Score (Z-Score):

To analyze the spatial distribution of selected variables of educational development Standard Score or Z-Score method has been applied. It is a dimensionless quantity that involves the varying means and varying standard deviations and therefore it can be suitably utilized to find out the pattern of spatial distribution of a variable (**Sarkar, 2013**). Z-Score has been calculated by using the following formula-

$$Z = (X-\bar{x})/\sigma$$

Where,

- Z = standard score or Z-score,
- X = the variables to be examined,
- \bar{x} = the mean value, and
- σ = the standard deviation (**Kaushik, 2010**).

5.2. Composite Score (CS):

Composite mean z-score has been envisaged as Composite Score(CS). It denotes the average value of z-scores of the variables in a particular category. It has been calculated with the help of following formula-

$$CS = \sum Z_{ij} / N$$

Where,

- CS = composite score,
- Z_{ij} = z-score of an indicator j in block i, and
- N = number of variables(Kaushik, 2010).

In both the cases of Z-Score and Composite Score analysis a positive value states the high degree of distribution pattern of the variables and vice versa.

Table 1. Symbolic Nomenclature of Selected Variables of Educational Development

Category	Symbol	Description of Variable
Literacy Rate(%)	X ₁	Total Literacy Rate
	X ₂	Male Literacy Rate
	X ₃	Female Literacy Rate
	X ₄	Rural Literacy Rate
	X ₅	Urban Literacy Rate
	X ₆	SC Literacy Rate
	X ₇	ST Literacy Rate
Pupil Institution Enrolment Status	X ₈	Number of Primary School per 1000 Students
	X ₉	Number of Middle School per 1000 Students
	X ₁₀	Number of High School per 1000 Students
	X ₁₁	Number of Higher Secondary School per 1000 Students
	X ₁₂	Number of General College & University per 1000 Students
	X ₁₃	Number of Professional & Technical Institute per 1000 Students
	X ₁₄	Number of Special & Non Formal Institute per 1000 Students
Pupil Teacher Enrolment Status	X ₁₅	Number of Teacher per 1000 Students at Primary School
	X ₁₆	Number of Teacher per 1000 Students at Middle School
	X ₁₇	Number of Teacher per 1000 Students at High School
	X ₁₈	Number of Teacher per 1000 Students at Higher Secondary School
	X ₁₉	Number of Teacher per 1000 Students at General College & University
	X ₂₀	Number of Teacher per 1000 Students at Professional & Technical Institute
	X ₂₁	Number of Teacher per 1000 Students at Special & Non Formal Institute
Others Facility	X ₂₂	Number of Public Library per 20000 literate population
	X ₂₃	Number of Free Reading Room per 20000 literate population
	X ₂₄	Number of Mass Literacy Centre(Continuing Education Programme) per 50000 population aged 7 years and above

Source: Considered & Composed by Authors, 2020

6. STUDY AREA:

Geographically the district located in the north-eastern part of the state and lies between 25°57'45" N to 26°32'20" N and 88°47'40" E to 89°54'35" E. It is surrounded by district boundary with Jalpaiguri in the West and North-Western part and Alipurduar in the North; state boundary with Assam in the East and international boundary with Bangladesh towards South and South-Eastern part of the district. Total area of the study area is 3387 sq.km having 2819086 populations with a population density of 832 persons/sq.km which make its rank 11th in the state as per Census of India, 2011. The district occupies 17th position in terms of population in the state and the sex ratio is 942 which is relatively lower than the state's average sex ratio(950). The district comprises of 5 sub-divisions having 12 community development t blocks, 5 municipalities, 1194 villages, 6 statutory towns and 12 census towns in the district.

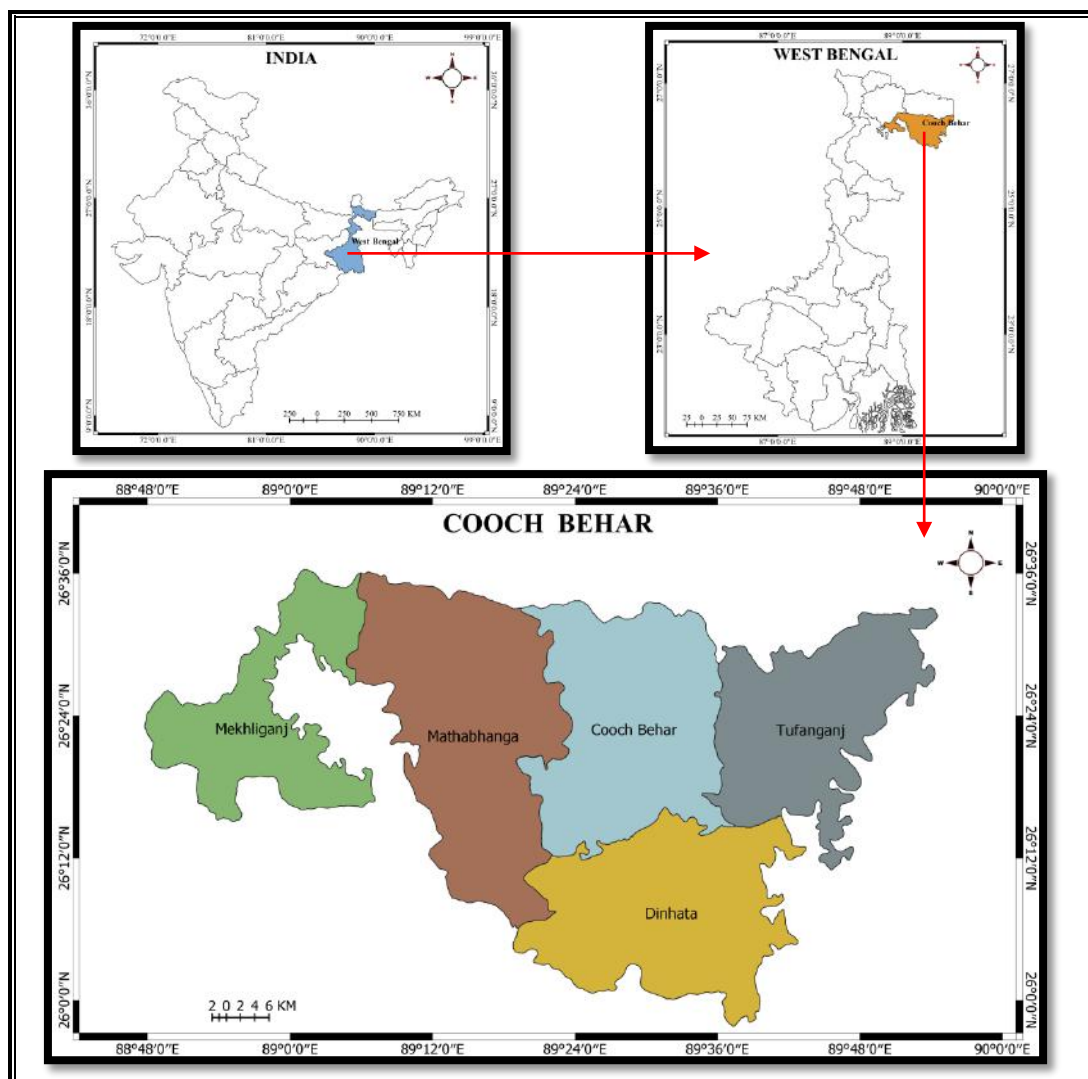


Figure 1. Location and Administrative Sub-divisions of Cooch Behar District

7. RESULT AND DISCUSSION:

The status of literacy rate of Cooch Behar(74.78%) is quite good and performed moderate(11th rank) in West Bengal as per report of census of India, 2011. Notwithstanding inferior facilities and services related to education in some backward and least developed blocks are created disparity in educational development among the sub-divisions. Besides the base of economy of the district is mainly primary(especially agriculture) and rural family size is quite large compare to urban area, there is gender gap and rural urban differentiation on literacy as well as educational development among sub-divisions of Cooch Behar.

7.1. Comparative Analysis of Literacy of Cooch Behar District with the State and National Average:

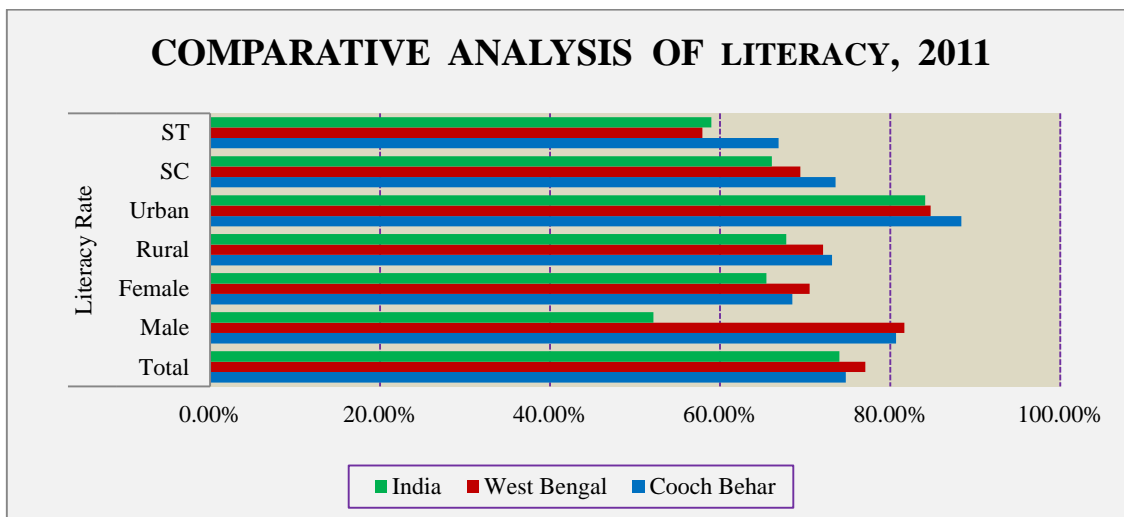
Literacy rate of Cooch Behar district is 74.78% which is lower than the state average of 77.08%, thereby making its rank 11th in the state. 65.64% population of the study area is literate among them 63.93% and 80.60% of rural and urban population respectively. Following table(Table 2.) exposes the comparative analysis of literacy of Cooch Behar district with the state and national average.

Table 2. Comparative Analysis of Literacy, 2011

Region	Literacy Rate (%)						
	Total	Male	Female	Rural	Urban	SC	ST
Cooch Behar	74.78	80.71	68.49	73.16	88.36	73.57	66.89
West Bengal	77.08	81.69	70.54	72.13	84.78	69.43	57.92
India	74.04	82.14	65.46	67.77	84.11	66.07	58.96

Source: Compiled by Authors; Data from Census of India, 2011

The male and female literacy rate of Cooch Behar district is lower than the state average(81.69% and 70.54% respectively). But the rural(73.16%) and urban literacy(88.36%) are higher than the state average of 72.13% and 84.78% respectively. The proportion of population under SC category with respect of total population of the district, Cooch Behar has recorded the maximum proportion in the state at 50.1% and it occupies 17th position in terms of absolute number of ST population in the state. The SC and ST literacy are also higher than the state average.



Graph 1. Comparative Analysis of Literacy Rate(%) of Cooch Behar District, 2011

The literacy rate of Cooch Behar district increased to 8.28% in 2011 from 2001 census report of India, 2011. The literacy rate of the district (74.78%) is more or less similar to the national average of 74.04% but lower than the state average of 77.08%. There is a wide range of inter sub-division variation of literacy rate and level of educational development. To find out the level of educational development, the sub-divisions have been categorised into three groups i.e. low, moderate and high based on the results from the selective variables.

7.2. Status of Literacy Rate(%):

The literacy rate of Cooch Behar is moderate and making its rank 11th in the state. There is a vast range of inter sub-divisional disparities in terms of literacy in the district.

Table 3. Inter-Sub-Divisional Literacy Rate(%), 2011

Sub-Division	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇
Mekhliganj	70.25	77.07	63.11	69.11	80.32	70.49	52.82
Mathabhanga	72.3	79.08	65.16	71.59	90.09	71.47	60.09
Cooch Behar	80.48	85.51	75.1	77.96	89.12	78.15	75.18
Dinhata	72.27	77.72	66.16	71.02	90.85	72.11	68.63
Tufanganj	75.38	81.69	69.13	74.46	89.28	75.77	68.91

Source: Compiled by Authors; Data from District Census Handbook, Koch Bihar, 2011

Table 4. Z-Score of Total Literacy Rate(%), 2011

Sub-Division	Total Literacy(x)	(x- \bar{x})	(x- \bar{x}) ²	Z-Score	Parameter
Mekhliganj	70.25	-3.89	15.10	-1.09	$\bar{x} = (370.68/5) = 74.14$ $\sigma = \sqrt{(63.75/5)^2} = 3.57$ $Z = (x-\bar{x})/\sigma$
Mathabhanga	72.30	-1.84	3.37	-0.51	
Cooch Behar	80.48	6.34	40.25	1.78	
Dinhata	72.27	-1.87	3.48	-0.52	
Tufanganj	75.38	1.24	1.55	0.35	
Σ	370.68		63.75	0.00	

Source: Compiled by Authors; Data from District Census Handbook, Koch Bihar, 2011

By this above process(Table 4.) all the Z-Scores of selected variables have been calculated for analytical purpose in this study.

Table 5. Z-score & Composite Score of Literacy Rate(%), 2011

Sub-Division	Z-Score							Composite Score
	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	
Mekhliganj	-1.09	-1.02	-1.11	-1.20	-1.97	-1.07	-1.58	-1.292
Mathabhanga	-0.51	-0.37	-0.62	-0.40	0.56	-0.74	-0.65	-0.389
Cooch Behar	1.78	1.72	1.77	1.66	0.31	1.57	1.29	1.442
Dinhata	-0.52	-0.81	-0.38	-0.59	0.76	-0.51	0.45	-0.229
Tufanganj	0.35	0.48	0.34	0.53	0.35	0.75	0.48	0.468

Source: Compiled by Authors; Data from District Census Handbook, Koch Bihar, 2011

The result depicts(**Table 5.**) that the CS value above the sample mean or datum is recorded in Cooch Behar(1.442) followed by Tufanganj sub-division(0.468), which states that the status of literacy rate of all the indicators jointly high in these sub-divisions. A negative value or below the sample mean value of CS is recorded in Mekhliganj(-1.292) followed by Mathabhanga(-0.389) and Dinhata(-0.229), which denotes comparatively low level of literacy. Except urban literacy(0.31), Z-score above the datum value of all the variables of literacy have been scored highest in Cooch Behar. Thereby the scenario of level of literacy rate is in better position in Cooch Behar sub-division which includes two blocks i.e. Cooch Behar-1 and Cooch Behar-2. En passant the Z-Score of urban literacy is found highest in Dinhata(0.76). As opposed to Z-score below the datum value of all the variables has been scored lowest in Mekhliganj sub-division which consists of two blocks namely Mekhliganj and Haldibari. So literacy status is significantly low in Mekhliganj.

7.3. Pupil Institution Enrolment Status(PIES):

Pupil Institution Enrolment Status(PIES) has been considered in this study as the presence of institutes per 1000 students at different level of educations among the sub-divisions of the district. Availability of educational institutes considers as an important key indicator of educational development. Lack of institutes in terms of total number of students of a region is undesirable for educational development of that region. Far distance of institutes is also related to lack of institutes which encourages high dropout rate in rural areas. Consequently it impairs literacy as well as educational development.

Table 6. Pupil Institution Enrolment Status of Cooch Behar District, 2012-13

Sub-Division	PIES by Types of Institution						
	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃	X ₁₄
Mekhliganj	8.92	1.87	1.00	0.76	0.70	18.18	17.96
Mathabhanga	8.27	1.53	1.04	0.68	1.02	13.84	16.67
Cooch Behar	7.19	3.07	0.94	0.94	0.67	7.74	19.36
Dinhata	10.21	3.22	0.85	0.65	0.29	10.50	41.30
Tufanganj	9.93	1.59	0.91	0.78	0.70	10.91	26.18
District Average	8.66	1.92	0.92	0.77	0.68	8.93	22.39

Source: Compiled by Authors; Data from District Statistical Handbook, Cooch Behar, 2013

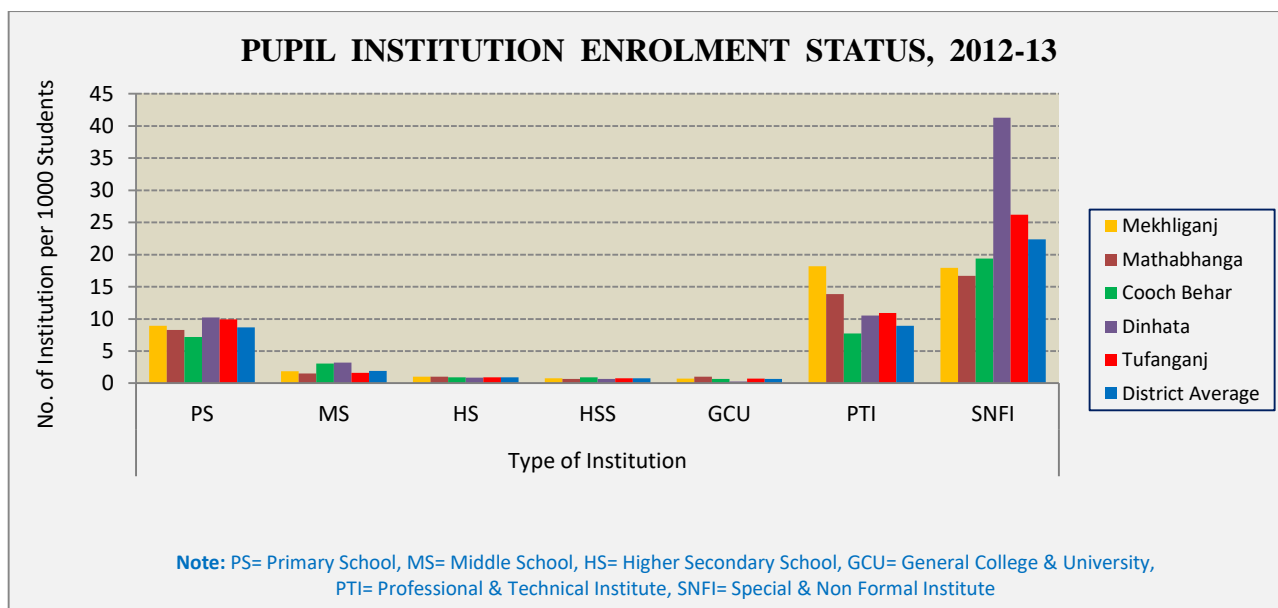
Table 7. Z-Score & Composite Score of Pupil Institution Enrolment Status

Sub-Division	Z-Scores							Composite Score
	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃	X ₁₄	
Mekhliganj	0.014	-0.524	0.779	-0.020	0.104	1.677	-0.695	0.191
Mathabhanga	-0.574	-0.986	1.378	-0.810	1.484	0.453	-0.836	0.016
Cooch Behar	-1.552	1.105	-0.120	1.758	-0.026	-1.267	-0.541	-0.092
Dinhata	1.183	1.309	-1.468	-1.106	-1.666	-0.489	1.866	-0.053
Tufanganj	0.929	-0.904	-0.569	0.178	0.104	-0.373	0.207	-0.008

Source: Compiled by Authors; Data from District Statistical Handbook, Cooch Behar, 2013

The Z-Score analysis of PIES in Cooch Behar district(**Table 7.**) delineates that CS value of Mekhliganj(0.191) and Mathabhanga(0.016) is above the district mean as the presence of educational institutes in terms of students of them is relatively high in these administrative units. Cooch Behar(-0.092), Dinhata(-0.053) and Tufanganj(-0.008) are below the sample mean which states less the availability of institutions in these sub-divisions. So high level of PIES is found in Mekhliganj sub-division which includes two blocks namely Mekhliganj & Haldibari and low level in Cooch Behar which also includes two blocks namely Cooch Behar-I & Cooch Behar-II. It is quite interesting that although availability

of institutes in Cooch Behar is lowest but PIES at higher secondary school level(1.758) is comparatively higher than the other sub-divisions of the district. Positive value of Z-Scores of PIES is recorded highest at professional & technical institute level in Mekhliganj(1.677); at high school and college & university level in Mathabhanga(1.378 & 1.484); and at primary school, middle school and special & non formal institute level in Dinhata with Z-Score of 1,183, 1.309 and 1.866 respectively. Least number of middle schools and special & non formal institutes are found in Mathabhanga(-0.986 & -0.836); primary schools and professional & technical institutes are in Cooch Behar(-1.552 & -1.267); and high schools, higher secondary schools and colleges & universities are in Dinhata(-1.468, -1.106 & -1.666) as of their total students size. Henceforth the scenario of PIES in Cooch Behar and Dinhata is not desirable. Tufanganj is played an intermediate role for educational development whereas in both highest and lowest presence of institutes at all the levels of educational institutes have not been recorded in it. Thence the CS value of PIES is more or less same to district mean in Tufanganj(-0.008) sub-division which consists of two blocks namely Tufanganj-I & Tufanganj-II.



Graph 2. Pupil Institution Enrolment Status of Cooch Behar District, 2012-13

7.4. Pupil Teacher Enrolment Status(PTES):

Teachers specially the quality teachers play a vital role for progression of education of students as well as behavioural and mental improvement. Pupil Teacher Enrolment Status(PTES) has been considered as at different levels of educational institutions, the number of teachers per 1000 students among the sub-divisions. In India the Pupil Teacher Ratio(number of students per teacher) is comparatively lower than the developed and some developing countries across the world and it adversely affects the education quality as well as educational development. In India Pupil Teacher Ratio(PTR) in universities and colleges is 29 in regular mode(MHRD, 2019). Following table(Table 8.) shows PTR at different levels of education in India.

Table 8. Pupil Teacher Ratio by Type of Institution in India, 2014-15

Type of Institution	Primary	Upper Primary	Secondary	Senior Secondary	Higher Education*
PTR	24	17	27	38	24

*Does not include Stand Alone Institutions.

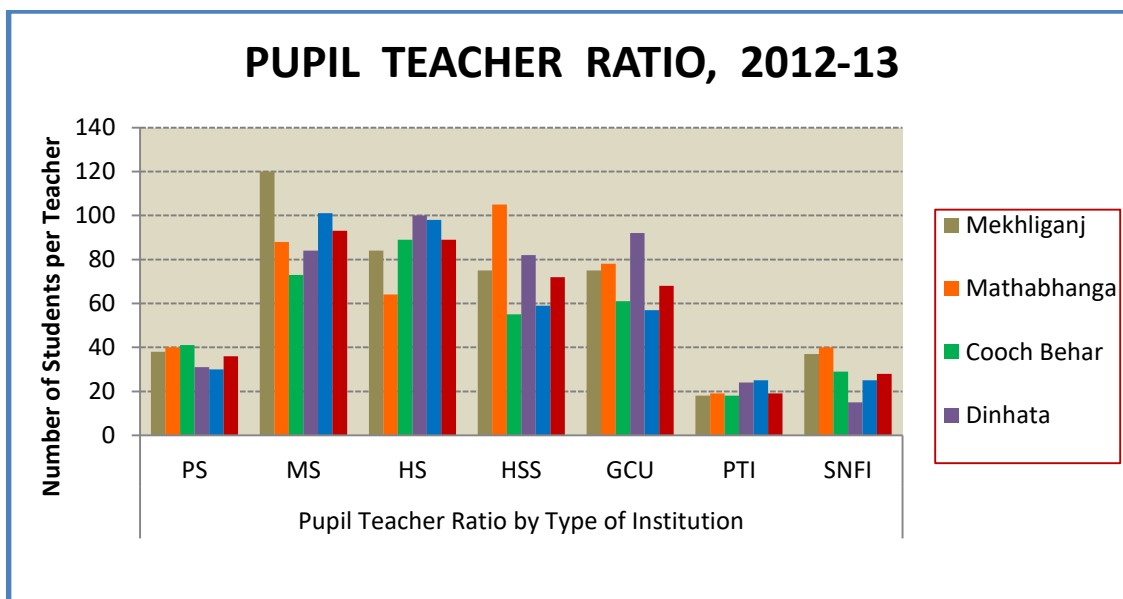
Source: Department of School Education & Literacy, MHRD, India, 2016

Table 9. PTR by Type of Educational Institution of Cooch Behar, 2012-13

Sub-Division	Pupil Teacher Ratio by Types of Institution						
	PS	MS	HS	HSS	GCU**	PTI	SNFI
Mekhliganj	38	120	84	75	75	18	37
Mathabhanga	40	88	64	105	78	19	40
Cooch Behar	41	73	89	55	61	18	29
Dinhata	31	84	100	82	92	24	15
Tufanganj	30	101	98	59	57	25	25
District Total	36	93	89	72	68	19	28

Note: PS= Primary School, MS= Middle School, HS= High School, HSS= Higher Secondary School, GCU= General College & University, PTI= Professional & Technical Institute, SNFI= Special & Non Formal Institute.
 **Excluding Open University.

Source: Compiled by Authors; Data from District Statistical Handbook, Cooch Behar, 2013



Graph 3. Pupil Teacher Ratio of Cooch Behar District, 2012-13

Table 10. PTES by Type of Educational Institution of Cooch Behar, 2012-13

Sub-Division	PTES by Type of Institution						
	X ₁₅	X ₁₆	X ₁₇	X ₁₈	X ₁₉	X ₂₀	X ₂₁
Mekhliganj	26.38	8.31	11.96	13.33	13.30	54.55	27.22
Mathabhanga	24.94	11.43	15.61	9.54	12.79	53.63	24.96
Cooch Behar	24.34	13.64	11.19	18.08	16.45	55.48	33.94
Dinhata	32.41	11.91	10.02	12.19	10.88	41.99	65.59
Tufanganj	33.49	9.95	10.17	16.90	17.42	40.00	39.95
District Total	27.69	10.70	11.26	13.92	14.64	53.39	35.54

Source: Compiled by Authors; Data from District Statistical Handbook, Cooch Behar, 2013

Table 11. Z-Score & Composite Score of Pupil Teacher Enrolment Status

Sub-Division	Z-Scores							Composite Score
	X ₁₅	X ₁₆	X ₁₇	X ₁₈	X ₁₉	X ₂₀	X ₂₁	
Mekhliganj	-0.501	-1.516	0.083	-0.217	-0.359	0.809	-0.761	-0.352
Mathabhanga	-0.874	0.212	1.876	-1.432	-0.570	0.672	-0.915	-0.147
Cooch Behar	-1.029	1.435	-0.295	1.305	0.944	0.948	-0.301	0.430
Dinhata	1.062	0.477	-0.869	-0.583	-1.360	-1.066	1.866	-0.068
Tufanganj	1.342	-0.608	-0.795	0.927	1.345	-1.363	0.111	0.137

Source: Compiled by Authors; Data from District Statistical Handbook, Cooch Behar, 2013

Here the analysis (Table 11.) reveals that the overall PTES in Cooch Behar and Tufanganj is in a good position in the district. A relatively positive values of CS have been recorded in Cooch Behar(0.430) and Tufanganj(0.137) which denotes the spatial distribution of enrolment status of teachers in terms of total students is high. On the other hand the opposite condition has been found in rest of the sub-divisions of the district. Among them in Mekhliganj(-0.352), CS value below the sample mean has been scored highest. Thereby the maximal number of students per teacher is observed in Mekhliganj which indicates that there is a lack of teachers. Generally it has also been hampered education and resulted low level of educational development. More or less same situation is found in Mekhliganj(-0.352) and Dinhata(-0.068) too and which is not engrossing for educational development. Z-Score analysis of PTES at different levels of education, it is clear that distribution of highest number of teacher in terms of total students is examined at high school level in Mathabhanga(1.876); at middle school, higher secondary schools and professional & technical institute level in Cooch

Behar(1.435, 1.305 & 0.948 respectively); at special & non formal institute level in Dinhata(1.866) and at primary school and general college & university level in Tufanganj(1.342 & 1.345 respectively). Mekhliganj has not scored highest at any level of education in this regard.

7.5. Others Facility Related to Educational Development:

Apart from those above indicators of educational development, several public services also have importance behind such development. Here other facility includes public services like public library, free reading room and mass literacy centre(Continuing Education Programme). Though the interest on public libraries and free reading rooms have been decreasing since the enormous development and spread of social media and synchronous media, nevertheless presence of them helps to develop a society in the context of education and culture. Following table(**Table 12.**) discloses selected others facilities associated with educational development in Cooch Behar district.

Table 12. Others Educational Facility of Cooch Behar, 2012-13

Sub-Division	Public Library	Free Reading Room	Mass Literacy Centre (Continuing Education Programme)
Mekhliganj	15	15	14
Mathabhanga	29	29	28
Cooch Behar	27	27	29
Dinhata	28	28	33
Tufanganj	23	23	25
District Total	122	122	129***

***Figure of 'Saakshar Bharat'.

Source: Compiled by Authors; Data from District Statistical Handbook, Cooch Behar, 2013

Table 13. Others Facility by Type of Educational Institution of Cooch Behar, 2012-13

Sub-Division	Other Facility by Type of Institution		
	X ₂₂	X ₂₃	X ₂₄
Mekhliganj	1.74	1.74	2.85
Mathabhanga	1.41	1.41	2.46
Cooch Behar	1.01	1.01	2.19
Dinhata	1.31	1.31	2.77
Tufanganj	1.51	1.51	3.10

Source: Compiled by Authors; Data from District Statistical Handbook, Cooch Behar, 2013

Table 14. Z-Score & Composite Score of Others Facility

Sub-Divisions	Z-Scores			Composite Score
	X ₂₂	X ₂₃	X ₂₄	
Mekhliganj	1.434	1.434	0.556	1.141
Mathabhanga	0.058	0.058	-0.676	-0.186
Cooch Behar	-1.609	-1.609	-1.528	-1.582
Dinhata	-0.358	-0.358	0.303	-0.138
Tufanganj	0.475	0.475	1.345	0.765

Source: Compiled by Authors; Data from District Statistical Handbook, Cooch Behar, 2013

From the analysis of other facility regarding educational development(**Table 14.**) it is clear that facilities like public library, continuing education programme or mass education centre and free reading room have been observed optimally in Mekhliganj and Tufanganj. Among the sub-divisions, the distribution of such facility is recorded maximal with CS value of 1.141 in Mekhliganj. The position of Cooch Behar(-1.582) is farthest from the availability of this facility. A comparatively negative value of CS has also been recorded in Mathabhanga(-0.186) and Dinhata(-0.138) which patently indicates low level of concentration of above facilities. Z-Score analysis depicts the spatial distribution of public libraries and free reading rooms is found highest in Mekhliganj(1.434). In case of mass education centres the presence of these is examined highest in Tufanganj sub-division(1.345). But in Cooch Behar all the individual indicator of other facility plays negative role for its educational development.

8. LEVEL OF EDUCATIONAL DEVELOPMENT:

Literacy rate, pupil teacher ratio, quality teacher, institutional facilities(like proper class room, safe drinking water facility, hygienic sanitation etc.), availability of institution, proper educational environment etc aggregatedly identify oneself with the educational development of a region. Here four major indicators have been taken into consideration for such development namely literacy rate, pupil institution enrolment status, pupil teacher enrolment status and other public facilities. There is a great extent of inter sub-divisional disparity in the level of educational development in the study area.

Table 15. Inter-Sub-Divisional Scenario of Educational Development in Cooch Behar

Sub-Division	Sum of Z-Score				CS(Educational Development)	Remark
	Literacy Rate	PIES	PTES	Other Facility		
Mekhliganj	-9.047	1.335	-2.461	3.423	-0.281	CS = $\sum Z_{ij}/N$ where, N= 24= total number of variables
Mathabhanga	-2.722	0.109	-1.032	-0.559	-0.175	
Cooch Behar	10.095	-0.643	3.008	-4.745	0.321	
Dinhata	-1.603	-0.371	-0.473	-0.414	-0.119	
Tufanganj	3.277	-0.430	0.957	2.295	0.254	

Source: Compiled by Authors; Data from (1) District Census Handbook, Koch Bihar, 2011 & (2) District Statistical Handbook, Cooch Behar, 2013

Regional distribution of facilities related to educational development and literacy rate are not evenly distributed among the sub-divisions of the study area. The whole study area has been classified into three levels of development i.e. low(CS value <-0.150), moderate(CS value -0.150 to 0.150) and high(CS value >0.150) with the help of composite score analysis(**Table 15.**). Only in Cooch Behar and Tufanganj among the sub-dvisions of the district, positive CS value of educational development has scored, which indicates high level of development. Under low level of development, Mekhliganj and Mathabhanga have enlisted their name with CS value of -0.281 and -0.175 respectively. But It is interesting that lowest level of educational development has observed in Mekhliganj notwithstanding the presence of educational institutes and other facility is exceptionally high in this unit. On this point of view it can be mention that high pupil teacher ratio and low level of literacy rate are responsible for low level of educational development in Mekhliganj. Though CS value below sample mean of the study has recorded in Dinhata(-0.119), a moderate level of development is found. Educational development of Cooch Behar(0.321) and Tufanganj(0.254) are considered as high level. In Tufanganj performance of all the indicators ranges from moderate to high. Generally this helps to enhance its educational status. On the other hand high literacy rate and low pupil teacher ratio is examined in Cooch Behar, which are the prime verities behind tremendous educational development in this sub-division. Besides Cooch Behar, the district headquarter of the study area, a place of fully unique tradition and heritage is situated in this sub-division is a factor for its significant development.

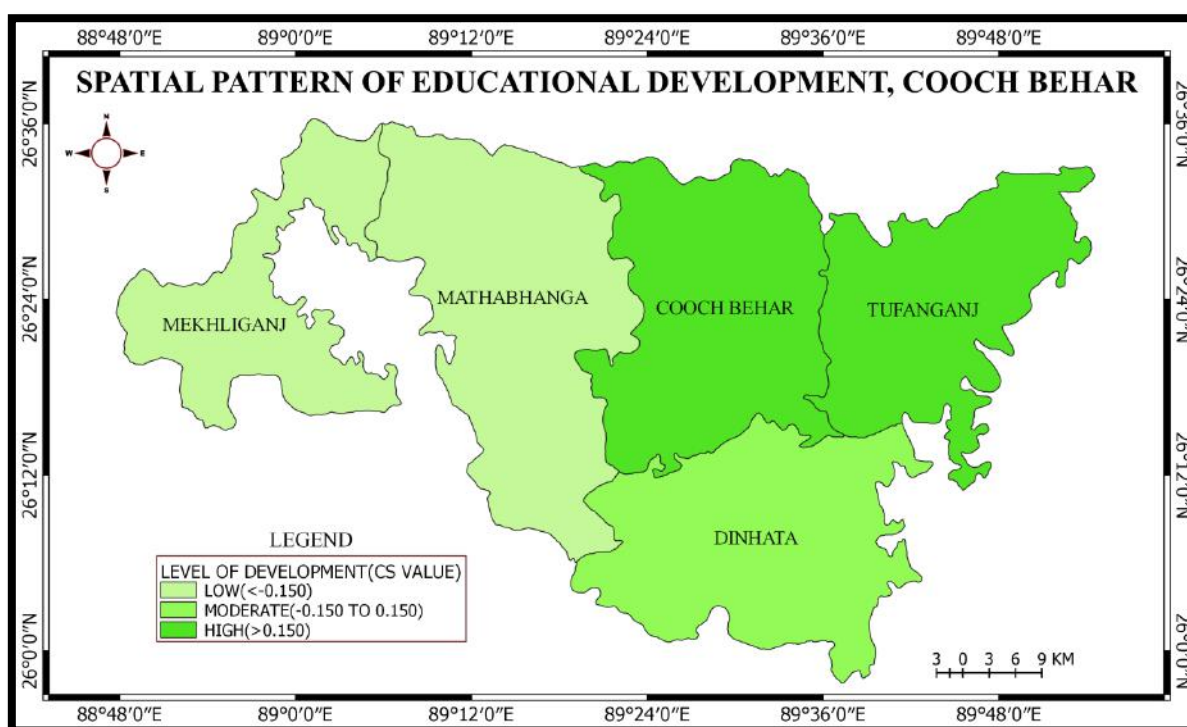


Figure 2. Spatial Pattern of Educational Development of Cooch Behar District

9. CONCLUSION:

Above this discussion the developmental scenario of education among the administrative sub-divisions of Cooch Behar district is delimited clearly. Due to high literacy and sufficient requirements and facilities of education, Cooch Behar has recorded as highly developed sub-division, while the opposite position is found in Mekhliganj. Less number of urban populations to total population and urban point is observed among some blocks and some of them do not have municipality. Consequently level of educational development of these blocks as well as sub-divisions is comparatively low as literacy rate of rural population is lower than urban population. Inadequate facilities like less number of institutes, teachers as per total number of students and lack of other public services regarding education etc. create adverse effects on such development. To minimize the interruption and improve the educational status the work suggests that there is a necessity of vast monitoring and surveying with special attention, investment, compatible policies and plans by responsible authorities.

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