



Spatial Variation in the Level of Primary Education in the Selected Blocks of Murshidabad District in West Bengal, India

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Abstract

The research paper deals with the spatial variation in the level of primary education with respect to different educational institutions in the selected blocks of Murshidabad district in West Bengal, India. To measure the level of primary school development, a composite Z-scores index was developed based on ten indicators from the DISE report 2018. Various indicators such as gender gap in literacy, percentage of literate, pupil-teacher ratio, enrolment of girls, density of schools and infrastructure facilities in primary schools were used to measure inequality at block level and blocks were categorized based on composite Z-score value. The result shows that there are disparities in different blocks of Murshidabad district with some of the blocks performing much better than the others. In this study, an attempt is made to examine the spatial variations in the level of educational development in the selected blocks of Murshidabad district in West Bengal and to assess the relative position of the blocks with respect to the level of educational development at the primary level.

Key words: Composite Z-score; Murshidabad District; Primary education; Spatial Variation

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1. Introduction

Education is one of the most important variables of human capital (Chatterjee & Mishra, 2019), which plays a key role in the incomplete development of an individual. It is a catalyst for changes in the economic, social, cultural and demographic profile of the population (Dickson & Smith, 2011; Fields, 1980; Gregorio & Lee, 2002; Harmon et al., 2003; Schnittker, 2004). Primary education forms the foundation of a nation's education. The Millennium Development Goals (MDGs) aim to achieve universal primary school attendance for boys and girls and to completely eliminate the existing gender gap in literacy under Goal 2 (Achieve universal primary education). With this goal in mind, Atal Bihari Bajpayee, the then Prime Minister of India, launched the Sarva Shiksha Mission in India in 2000 (Department of School Education and Literacy, 2013). It aimed at providing free and compulsory education to children between the ages of 6 to 14 years, which was already enshrined as a fundamental right (Article 21A). Universalization of primary education provides education to most of the country (Mehendale & Mukhopadhyay, 2019).

Social science researchers are concerned about improving the quality of primary education in backward blocks (Dey & Bandhopadhy, 2018). In Indian context, assessment of primary education is necessary due to uneven socio-economic development. Within districts, there are inequalities in terms of educational facilities (Agrawal, 2014; Alcott & Rose, 2017; Asadullah & Yalonetzky, 2012; Borooah, 2012; Flores, 2017). This inequality can be seen in various factors such as literacy rate, male and female literacy, gender gap in literacy, dropout rate, enrolment rate of girls and another development potential (Connelly et al., 2016; Desai & Kulkarni, 2008; Kingdon, 2002). When developed regions have better capacity, they tend to develop faster, while lagging regions lag further behind (Akila, 2004; Madan, 2002). Primary education is the first stage of formal education that begins after pre-school and before secondary school (Powell & Jennifer 2019). Primary education usually begins at the age of 5-8 years and is designed to provide a solid basic education in reading, writing and mathematics, as well as a basic understanding of other subjects (ISCED, 2011). The United Nations Children's Fund (UNICEF) believes that primary education has many positive effects for children. It reduces poverty and child mortality rates, promotes gender equality and improves understanding of the environment. Therefore, the evaluation of primary education is necessary to improve the quality of life through various social and educational programs (Kumar & Rastagi, 2010).

The current study aims to illustrate the level of development in primary education in selected blocks of Murshidabad district, West Bengal concerning ten educational indicators. The objective is to appraise and assist the policymakers and planners to implement effective policy and strategies. This would help in the development of primary education and enhancing the standard of living in this backward district in India. The present study aims to present the level of development of primary education in selected blocks of Murshidabad district, West Bengal on the basis of ten educational indicators. The objective is to help the policy makers and planners in implementing effective policies and strategies. This would help in the development of primary education and improvement of living standards in this backward district in India. The main objectives of the present study are: a) to study the spatial variations in educational attainment in the selected blocks of Murshidabad district of West Bengal, and b) to assess the relative position of the blocks with respect to the level of educational development at the primary level.

2. Methodology

Murshidabad district is located in the central part of West Bengal in eastern India, bordering the India-Bangladesh border. Geographically, this region lies between 24°00' and 24°40' north latitude and 88°00' and 88°40' east longitude. This district boundary area consists of ten

community development blocks (C.D Block). These are Farakka, Samserganj, Suti-I, Suti- II, Raghunathganj, Lalgola, Bhagawangola-I, Bhagawangola- II, Raninagar- II and Jalangi which form my study area. These blocks are located on the Padma River, are mainly agricultural and relatively backward (Figure 1).

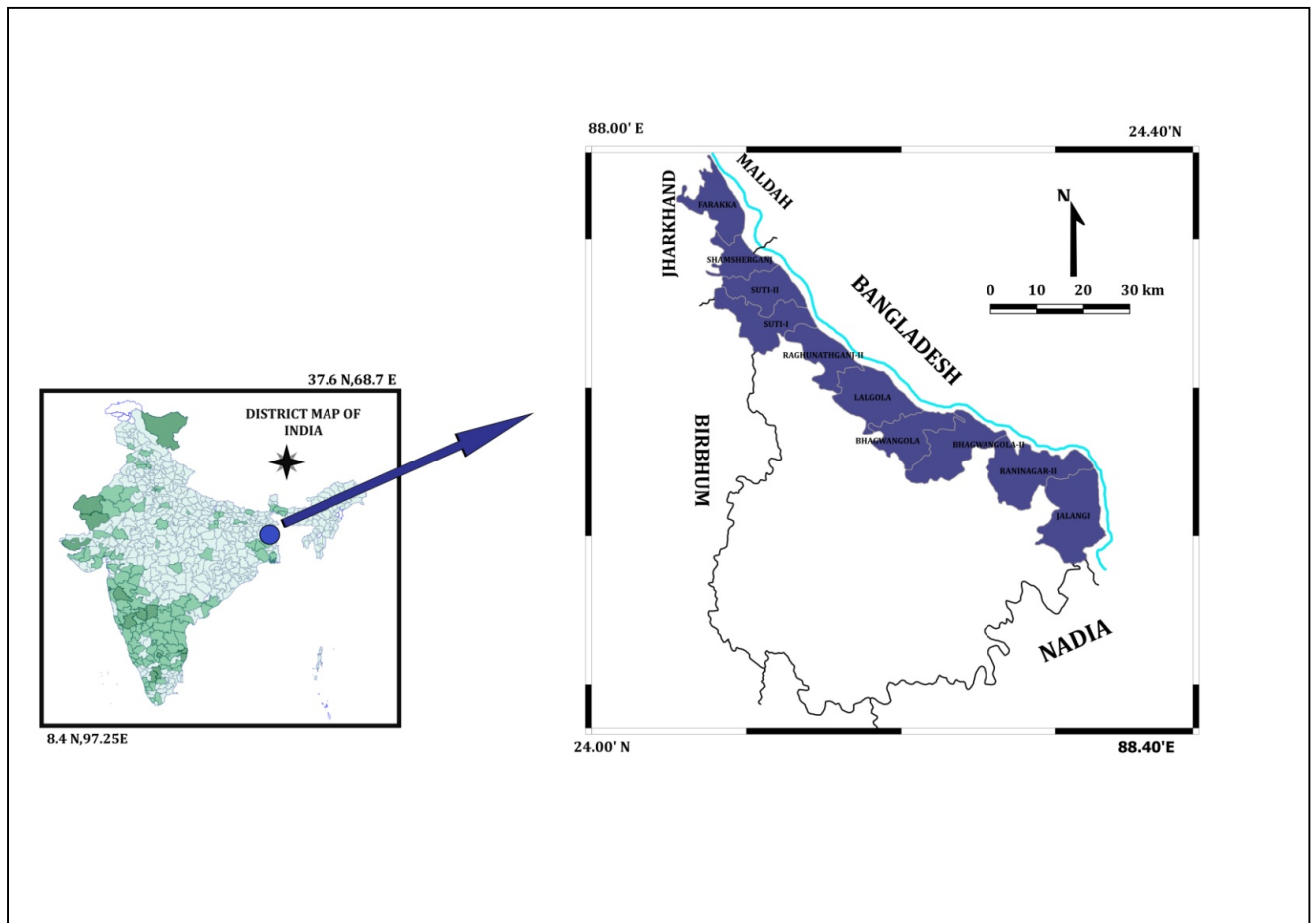


Figure.1 Location map of the study area (Murshidabad District)

The study is based on secondary data from various sources like District Statistical Handbook of Murshidabad district (2017) and DISE report (2018) of Sarva Siksha Mission (SSM) office. To assess the spatial variation in the level of primary education in the selected blocks of Murshidabad district, ten indicators were selected for consideration under the education development index. These are percentage of overall literacy (X_1), gender gap in literacy (X_2), pupil-teacher ratio (X_3), government school (X_4), infrastructure facilities of primary schools (X_5), Girls' enrolment (X_6), Boys' enrolment (X_7), School density (X_8), Private school (X_9), Electricity supply (X_{10}), Library (X_{11}), Staff room (X_{12}) and Playground facilities (X_{13}). To show the concentration of literacy rate in ten blocks concerning the selected blocks, Location Quotient (L.Q) (Maji and Sarkar 2017) has been used.

$$L.Q = (l/t) / (L/T)$$

Where,

L.Q- Location Quotient of literacy rate in a particular block.

l- Literate persons in a block

t- Total population in a block (excluding 0-6 year's age group)

L- Literate persons in the district.

T- Total population in the district (excluding 0-6 year's age group)

L.Q represents the relative concentration of activity or work in the block compared to the district. The value ranges from < 1 to > 1 . $L.Q > 1$ = indicates that the literacy rate in the block is higher than in the district. $L.Q = 1$ indicates that the literacy rate of the block follows that of the district as a whole. $L.Q < 1$ = indicates that the literacy rate of the block is lower than that of the district.

Z-score method: the raw values of each of these variables were standardized using Z-score method (Maji and Sarkar 2017). This is a linear transformation of the original data in such a way that its mean becomes zero and its standard deviation becomes one. For observation 'i' of any variable, the standard score (Z_i) is given by:

$$Z_i = (X_i - \bar{X}) / \sigma$$

Where X_i is the original value for observation (i)

\bar{X} is the mean for the variable and

σ is the Standard Deviation.

Z-Scores of each attribute was summated and mapped to examine the level of development in selected blocks

Raw values of all the selected variables have been standardized following the Z-Score method. The composite value was found by adding the z-score value of the variable of the ten in each block.

Pearson's Coefficient of Correlation(r) was used to examine the interrelationships between the selected variables. In this, other variables are considered to be dependent on one independent variable each to understand how a particular variable controls other variable. It is a measure of the degree of association between different variables. The value of 'r' ranges from -1 to +1 and numerically cannot exceed 1. A positive value of 'r' indicates that high values of one variable are generally associated with high values of the other variables and low values are associated with corresponding low values of other variables. When 'r' is negative, high values of one variable are generally associated with low values of other variables.

All statistical analyses were performed using SPSS software (version 22) and spatial mapping was performed using Q- GIS software.

3. Results

3.1. The spatial pattern of literacy rate

Literacy rate is an important indicator of education. It indicates the percentage of illiterate people in the group aged six years and above (Figure 1). The location quotient of literacy rate of a block shows the concentration of literate persons of a particular block as compared to the district above six years population. Among the ten blocks, Jalangi ranks at the top of the selected blocks with a literacy rate of 67.35%, while Samserganj block ranks at the bottom with a literacy rate of only 54.98%. From the spatial data analysis, it is found that Jalangi, Lalgola and Bhagawangola-I blocks have high literacy rate and location quotient (L.Q. 1.01-0.96) is also high while Raningar II, Bhagawangola- II, Raghunathganj II blocks have moderately high literacy rate (L.Q. 0.955-0.918). In Farakka, Samserganj, Suti I and Suti II blocks the literacy rate is very low (L.Q. 0.897-0.825).

The literacy rate of Jalangi block is comparatively higher than the other blocks because of awareness about education. This block is culturally related to Nadia district. Therefore, this block is culturally richer than other blocks. In Samserganj block, on the other hand, the literacy rate is comparatively low because people are not aware about education. More than two lakh people

belong to backward community in this block. They also do not have proper family planning. Therefore, the literacy rate in this block is comparatively low.

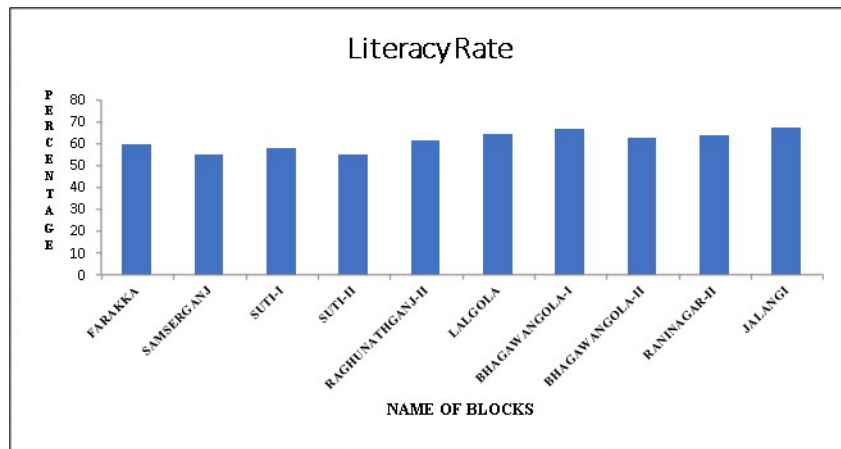


Figure 2. Literacy rate of different blocks

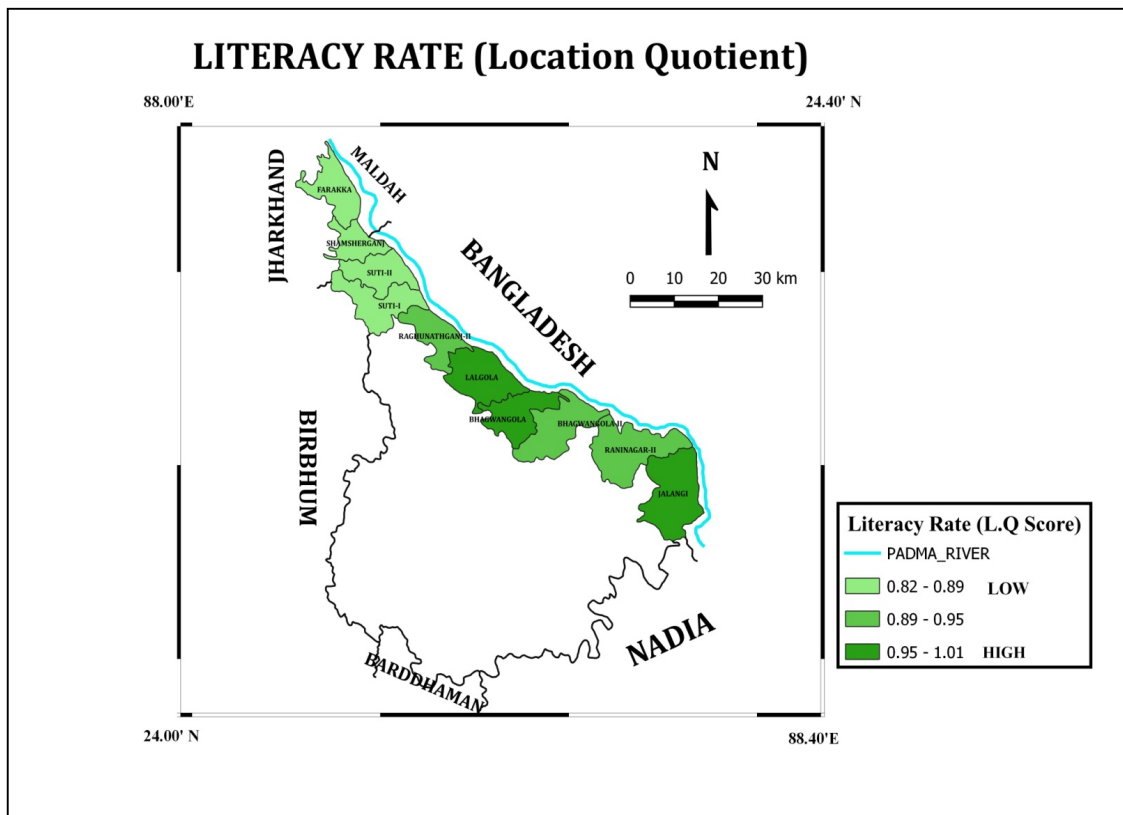


Figure 3. Literacy rate (Location Quotient)

Spatial Pattern of Availability of Educational Institution

School density refers to the number of schools in a square kilometer area. The highest density of schools is in Samserganj (2.13), Raghunathganj-II (1.78) and Suti- II (1.63) blocks. But the literacy rate in Samserganj and Suti-II is low. The area of these blocks is small compared to the other blocks and the number of schools is average. So, if we calculate the school density, the school density in this block is higher. On the other hand, Bhagawangola-II (0.75) and Suti-I (0.77) blocks have comparatively low school density than other blocks. In case of Suti-I block, the number of schools is low and the area is average. So, the school density is low and the literacy rate in this block is also very low. In contrast, in Bhagawangola-II there are few schools and the area is large. So, the school density is low. Not only that this block has a large area under the marshland created by the river Padma.

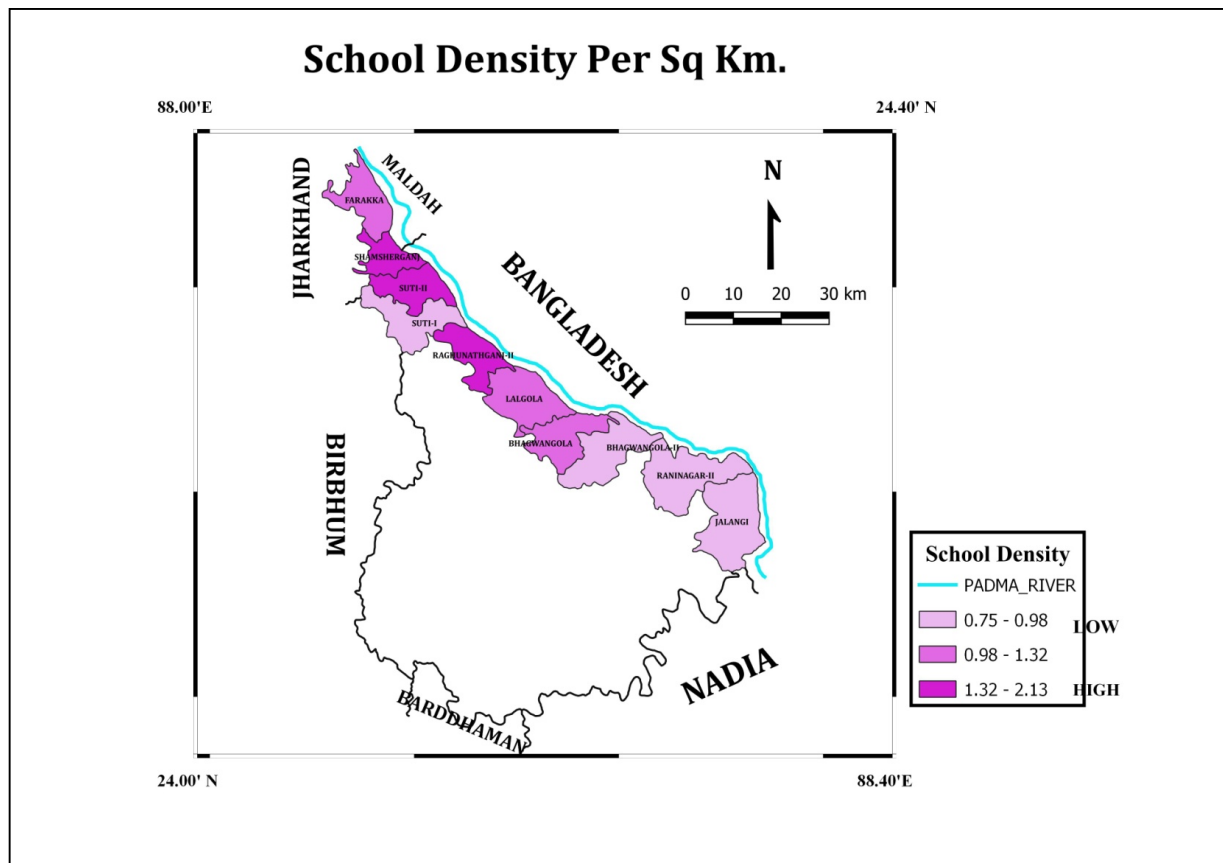


Figure 4. Density of School

3.2. Student's enrollment in primary education

Most of the students in primary school (Grades I to IV) are enrolled in Farakka (36046) and Samserganj (29332) blocks, while the least are enrolled in Bhagawangola-I (12191) and Bhagawangola- II (12774) blocks. Farakka block has a high enrolment rate because a large proportion of the population lives in an urban area and these people have a good awareness about the education of their children. Bhagawangola-I, on the other hand, has the comparatively lowest number of students because this area is affected by floods every year. Most of the students have migrated to other surrounding blocks. Only the local poor students are enrolled in a local school.

3.3. Pupil-Teacher Ratio in Primary education

Pupil-teacher ratio refers to the average number of pupils (students) per teacher at a particular level of education in a particular school (Education Indicators Technical Guidelines, UNESCO). It is a very important factor in the quality of education. In the selected study area, the overall ratio of students to teachers at the primary level is 1:44. From the information, it is clear that the ratio is much worse in many blocks. To improve the quality of education, the distribution of pupil-teacher ratio should be balanced. From the data, it is found that Jalangi (1:33) and Bhagawangola-I (1:32) blocks have better student-teacher ratio. These blocks have improved balanced pupil-teacher ratio through local administration. On the other hand, the student-teacher ratio is much higher in Farakka (1:90) and Suti-I (1:72) blocks. These blocks have not achieved a balanced student-teacher ratio. This is a failure of the local administration.

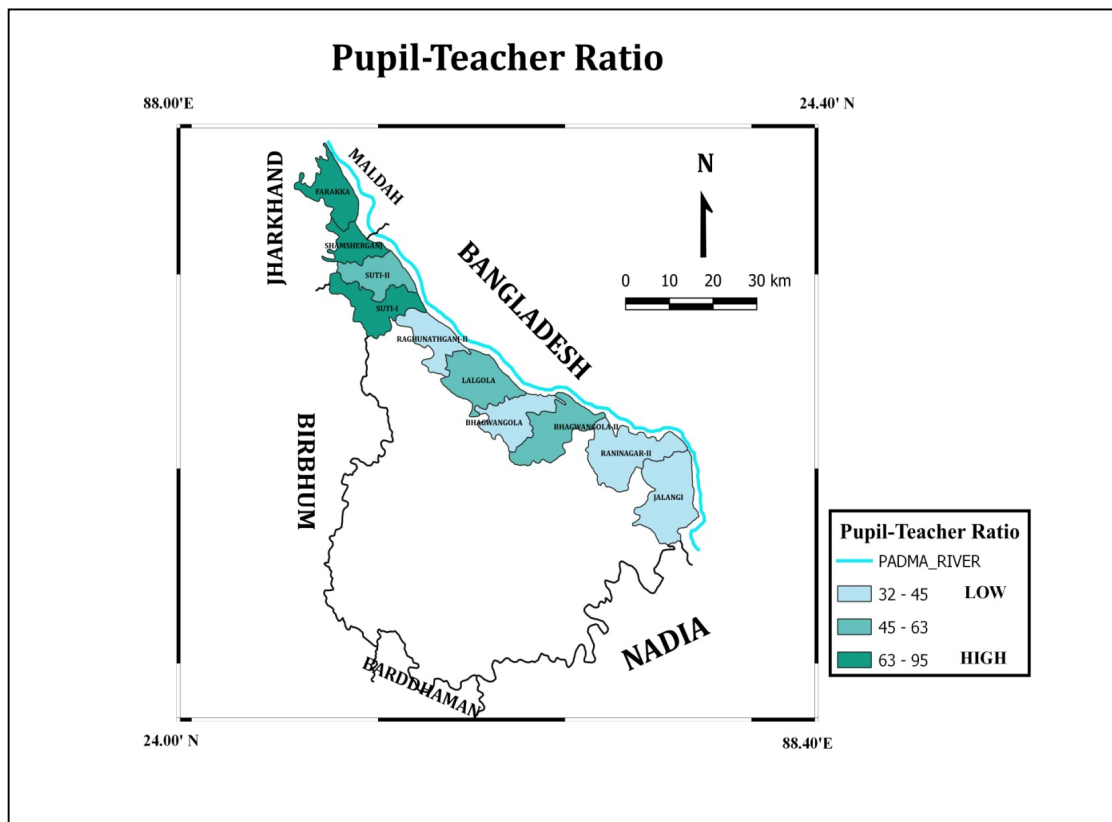


Figure 5. Pupil-Teacher ratio

3.4. Infrastructure in Primary Education

To analyze the overall spatial variation in the level of primary education in the selected blocks of Murshidabad district, the basic infrastructural facilities of primary schools are chosen as parameters. In this study, condition of building, electricity, playground, toilet facility, drinking water supply, headmaster's room and library etc. are selected as basic infrastructural parameters. Among the ten selected blocks, most of the government schools are located in Suti-I (93.75%), Bhagawangola- II (89.39%) and Jalangi (88%) blocks. The government has recognized these schools based on population structure and other demographic factors. On the other hand, the highest number of private schools are in Suti- II (20.87%), Raghunathganj- II (22.58%), Bhagawangola-I (21.54%). The private schools are recognized by the public institutions and Christian missionaries. Most of the government buildings are 'Pucca'. These are possible under the Sarva Sikha Mission Abhijan scheme.

More than 90 per cent of the schools have electrical facilities. Two blocks like Bhagawangola-I (87%) and Bhagawangola-II (88%) have comparatively low availability of electricity. These blocks are located on the bank of Padma River and are affected by flood every year. Thus, the electricity poles and other electrical connections get damaged every year. So the availability of electricity is comparatively low. Most of the playgrounds are in Bhagawangola-II (59%) and Jalangi (46%) blocks. These blocks have the largest area.

Toilets (more than 99%) and drinking water are available in every school in the blocks. Sarva Shiksha Mission project is playing a key role in this regard. These blocks are located in the Gangetic plain. So there is ground water. There are also various facilities like individual headmaster's rooms and library facilities. Most of the library facilities are in Jalangi (96%). In this block, the school management has gradually improved its infrastructure.

3.5. Inter-relationships between selected variables of primary education

The inter-relationships between the selected variables are analyzed. Other variables are considered as dependent on one independent variable each to understand how a particular variable controls other variables. Table-1 shows the 'r' values representing relationship between the selected variables.

Table 1. Inter-relationship between selected Variables of Primary Education



		Correlations Coefficient(r) among variables of Education													
		Literacy rate	Gender Gap in literacy	Pupil-Teacher Ratio	Girls Enrollment	Boys Enrollment	Government School	Private school	Rented School	Electricity	PlayGround	Toilet facility	Drinking water facility	Headmaster room	Library
Literacy rate	Pearson Correlation	1	-.803**	-.643*	-.505	.505	.335	-.075	-.585	-.710*	.604	-.486	. ^c	-.471	.315
	Sig. (2-tailed)		.005	.045	.136	.136	.344	.836	.076	.021	.064	.155		.169	.376
Gender Gap in literacy	Pearson Correlation		1	.663*	.305	-.305	-.427	.130	.771**	.789**	-.696*	.376	. ^c	.231	-.450
	Sig. (2-tailed)			.037	.391	.391	.218	.720	.009	.007	.026	.284		.520	.191
Pupil Teacher Ratio	Pearson Correlation			1	.221	-.221	-.143	-.246	.766**	.692*	-.314	.514	. ^c	-.181	-.508
	Sig. (2-tailed)				.540	.540	.694	.492	.010	.027	.377	.128		.617	.134
Girls Enrollment	Pearson Correlation				1	-1.000*	-.596	.510	.363	.160	-.354	.119	. ^c	.610	-.571
	Sig. (2-tailed)					0.000	.069	.132	.303	.659	.316	.744		.061	.085
Boys Enrollment	Pearson Correlation					1	.596	-.510	-.363	-.160	.354	-.119	. ^c	-.610	.571
	Sig. (2-tailed)						.069	.132	.303	.659	.316	.744		.061	.085
Government School	Pearson Correlation						1	-.877**	-.543	-.077	.558	.301	. ^c	-.405	.743*
	Sig. (2-tailed)							.001	.105	.833	.094	.398		.246	.014
Private school	Pearson Correlation							1	.088	-.123	-.487	-.599	. ^c	.583	-.490
	Sig. (2-tailed)								.809	.735	.154	.067		.077	.151
Rented School	Pearson Correlation								1	.496	-.417	.392	. ^c	-.144	-.736*
	Sig. (2-tailed)									.145	.231	.263		.692	.015

Electricity	tailed)						
	Pearson Correlation	1	-.704*	.307	. ^c	.310	-.315
	Sig. (2-tailed)		.023	.388		.383	.376
Play Ground	Pearson Correlation		1	.151	. ^c	-.598	.516
	Sig. (2-tailed)			.676		.068	.127
Toilet facility	Pearson Correlation			1	. ^c	-.172	.213
	Sig. (2-tailed)					.635	.555
Drinking water facility	Pearson Correlation				. ^c	. ^c	. ^c
	Sig. (2-tailed)						
Headmaster room	Pearson Correlation					1	-.091
	Sig. (2-tailed)						.802
Library	Pearson Correlation						1
	Sig. (2-tailed)						

****.** Correlation is significant at the 0.01 level (2-tailed).

***.** Correlation is significant at the 0.05 level (2-tailed).

c. Cannot be computed because at least one of the variables is constant.

3.6. Spatial Patterns of Integrated Educational Development

From the above analysis of the various features of primary education, it is evident that the spatial patterns of development (Figure 6) are not uniform in the selected blocks of the study area. On the basis of selected indicators, a composite Z-score value has been constructed to assess the relative position of the selected blocks with respect to the level of educational development. The composite Z-score value represents the level of educational development, where the Z-score value is -5.4 to 3.14. This score is categorised as high (.88 to 3.14), moderate (-0.05 to 0.88) and low (0.88 to 3.14). From the analysis, Raghunathganj-II, Lalgola, Bhagawangola-I blocks are on the negative side (range -5.53 to -0.5) in the selected study area. These blocks are located on the Padma River along the India-Bangladesh border. Bank erosion and flooding are the major problems in these blocks. The Padma River encroaches on agricultural land and settlements every year. Therefore, there are problems in creating infrastructure for primary education. Farakka, Suti-I and Suti-II have a score of 0.88 and 3.415 respectively for the level of integrated educational development. These blocks are influenced by urban areas. More than one lakh population lives in urban areas. These blocks are influenced by Maladh city. Farakka bridge plays a key role in connecting North Bengal with South Bengal. So, the northern blocks are better developed than the southern blocks in terms of infrastructure.

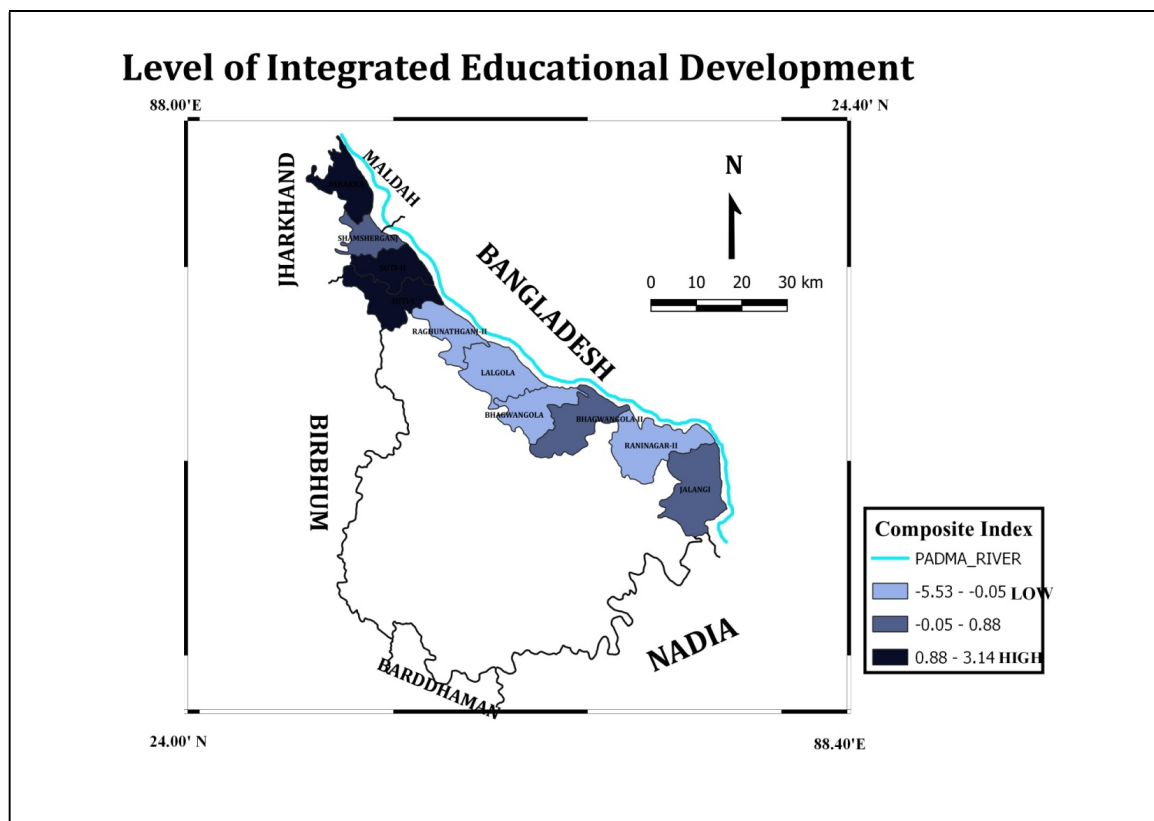


Figure 6. Level of Integrated Educational Development

Table2: Level of Integrated Educational Development			
Category	Range	No of Blocks	Name of Blocks
High	0.88 to 3.14	3	Faraka, Suti-I, Suti-II
Moderate	-0.05 to 0.88	3	Jalangi, Bhagawangola-II, Samserganj
Low	.88 to 3.14	4	Raghunathganj-II, Raninagar-II, Bhagawangola-I, Lalgola

4. Discussion

Murshidabad district is a backward district (Ministry of Panchayati Raj, 2017). It was found that the rate of primary education in the selected study area is far behind. The computation of composite Z-score index based on selected indicators shows that Raghunathganj-II, Raninagar-II, Bhagawangola-I, Lalgola have low level of development. There are several reasons for the low level of development such as family, school and personal reasons. The family problems depend on their socio-economic status, community deprivation, parents' education, single parenthood etc. Students' strict attendance, poor marks in examinations, poor performance in other academic activities, lack of interest in attending school and fear of homework and other work in school sometimes discourage few students from going to school.

There is a gender gap in education in these blocks. Male participation in education is higher than female participation. The economy in this backward region is much below the national average (Human Development Report, 2011). This region depends mainly on agricultural activities (about 90% of the population depends on agricultural activities) [District Statistical Handbook, 2017]. According to the Human Development Report (2012), over 65% of the population has income below the per capita income of the district. In Farakka, Suti-I and Suti-II blocks, the current primary education system is better with the blessings of Sarva Siksha Mission (2001). In these blocks the policy of primary education is successfully implemented.

Conclusions

In this study, an attempt is made to measure the spatial variation in the level of primary education in selected blocks of Murshidabad district in West Bengal by using composite z-score based on selected indicators. The selected blocks were ranked on the basis of level of primary education. To measure the level of primary education in the selected blocks of Murshidabad district, they were classified into three classes on the basis of composite z-score value. The result shows that the northern part of the selected blocks is more developed as compared to the other parts of the region. The level of primary education is unevenly distributed in the selected study. Literacy rate, gender literacy rate, pupil teacher ratio and infrastructure etc. are the main reasons for uneven distribution. In order to create a uniform education system, backward blocks should be identified to achieve potential targets and improve education.



Table3: Worksheet for the composite index of primary Educational Development on the basis of Z-Score

NAME OF BLOCKS	Literacy rate (Z-Score)	Gender Gap in Literacy (Z-Score)	Pupil-teacher ratio (Z-Score)	Girls enrollment (Z-Score)	Boys enrollment (Z-Score)	Government school (Z-Score)	Private School (Z-Score)	Rented School (Z-Score)	Electricity (Z-score)	Playground (Z-Score)	Toilet Facility (Z-Score)	Headmaster Room (Z-Score)	Library (Z-Score)	Composite Z-Score Index (Z-Score)
FARAKKA	-0.37686	1.28108	2.00402	-0.21481	0.21481	-0.87793	-0.15288	2.14147	0.71506	-0.02811	0.54113	-1.60121	-1.5279	2.11783
SAMSERGANJ	-1.46503	1.06951	0.48198	2.03465	-2.03465	-1.04228	0.4802	1.35407	0.78737	-1.00147	0.54113	1.17567	-1.4924	0.88874
SUTI-I	-0.7624	0.82419	0.83712	-1.16729	1.16729	1.70857	-1.6756	-0.30348	1.89686	-0.70703	0.54113	-0.02954	0.8134	3.1432
SUTI-II	-1.41028	0.98174	0.38051	0.94032	-0.94032	-0.85503	0.95083	0.15561	0.11419	-0.84087	0.54113	1.02246	0.1929	1.23315
RAGHUNATHGA NJ-II	-0.05293	0.26153	-0.93859	-0.31614	0.31614	-0.86446	1.21044	-0.40224	0.28622	-0.59509	-0.73053	1.29414	0.4744	-0.05709
LALGOLA	0.66339	-0.686	0.12684	0.67687	-0.67687	-0.28923	0.60469	-0.35687	0.24633	-0.72163	-0.59525	0.58176	-0.7133	-1.1393
BHAGAWANGO LA-I	1.22686	-0.97859	-1.19226	-0.47826	0.47826	-0.42664	1.05255	-0.86935	-1.13493	0.07106	-2.46216	-0.25384	-0.5685	-5.53575
BHAGAWANGO LA-II	0.3212	-1.48048	-0.02537	0.17023	-0.17023	1.12122	-0.95295	-1.01615	-0.93796	2.019	0.54113	-0.29964	0.9241	0.21409
RANINAGAR-II	0.49914	-0.82779	-0.53271	-1.26862	1.26862	0.5918	-0.89375	-0.08728	-1.00278	0.58146	0.54113	-1.10996	0.8298	-1.41096
JALANGI	1.35689	-0.44518	-1.14153	-0.37694	0.37694	0.93397	-0.62351	-0.61578	-0.97037	1.22267	0.54113	-0.77983	1.0676	0.54607



Various policies, programs and interventions need to be introduced from time to time, sometimes with a general development approach which is time bound and target oriented and sometimes with a short term approach. Moreover, some programs have been implemented directly by the community or fully by the government. But due to various reasons, the policies and programs are not achieving their objective because of lack of information and corruption among the people of this region. In order to improve the standard of education in these backward blocks, Murshidabad district administration has implemented several schemes namely Sarva Shiksha Abhiyan (SSA), National Program for Education of Primary Age Girls (NPEGEL), Midday Meal, Right to Education (RTE) Act, Beti Bachao, Beti Padhao, Kasturba Gandhi Balika Vidyalaya, Scheme for Infrastructure Development in Minority Institutes (IDMI), School Sanitation and Hygiene Education (SSHE), Backward Region Grant Fund (BRGF), Border Area Development Programmed (BADP) to improve the quality of education in these blocks. The study suggests that emphasis should be laid on effective implementation of these programs to improve the standard of education in this region.

Several policies and programs have been adopted to promote the development of primary education. However, the major problems remain in terms of awareness, accessibility and affordability. Most of the time, the policies and programs cannot achieve their goal because people lack awareness. They have a large family where girls' education is more or less neglected. It is a backward area where most of the people are from the backward section of the society. Awareness is a big problem. The dropout rate is high. Girls and boys are not able to complete their education. There is also a problem of accessibility. This is because many people who leave this area do not reach school, so education remains incomplete. This leads to an increase in child labor, which is very common here. As far as affordability is concerned, although the government is trying its best to reach out to the people in this remote area. However, the success rate is not very high. The current pandemic and the lockdown that has come with it have wreaked havoc on the education system all over the world, and this study area is no exception.

References

- Agrawal, T. (2014). Educational inequality in rural and urban India. *International Journal of Educational Development*, 34, 11-19.
- Alcott, B., & Rose, P. (2017). Learning in India's primary schools: How do disparities widen across the grades? *International Journal of Educational Development*, 56, 42-51.
- Asadullah, M. N, & Yalonetzky, G. (2012). Inequality of educational opportunity in India: Changes over time and across states. *World Development*, 40(6), 1151-1163.
- Akila, R. (2004). Reaching Global Goals in Primary Education: Some Gender Concerns for Tamil Nadu, *Economic and Political Weekly*, 32(25), 2617-2622.
- Borooah, V. K. (2012). Social identity and educational attainment: The role of caste and religion in explaining the differences between children in India. *Journal of Development Studies*. 48(7), 887- 903.
- Chatterjee, S. and Mishra, U. S. (2019). Educational Development and Disparities in India: District-Level Analyses. In Mohanty, S.K., Mishra, U.S., Chauhan, R.K. (Eds.), *The Demographic and Development Divide in India: A District-Level Analyses*. Springer: Springer Nature Singapore Pte Ltd.

- Connelly, R., Gayle, V., & Lambert, P. S. (2016). A review of educational attainment measures for social survey research. *Methodological Innovations*, 9, 1–11.
- Dickson, M., & Smith, S. (2011). What determines the return to education: An extra year or a hurdle cleared? *Economics of Education Review*, 30(6), 1167–1176.
- Desai, S., & Kulkarni, V. (2008). Changing educational inequalities in India in the context of affirmative action. *Demography*, 45(2), 245–270.
- Dey, P., & Bandyopadhyay, S. (2018). Blended learning to improve the quality of primary education among underprivileged school children in India. *Education and Information Technologies*, 24, 1995–2016 (2019). <https://doi.org/10.1007/s10639-018-9832-1>.
- Flores, R. L. (2017). The rising gap between rich and poor: A look at the persistence of educational disparities in the United States and why we should worry. *Cogent Social Sciences*, 3(1), 1323698.
- Fields, G. S. (1980). Education and income distribution in developing countries: A review of the literature. In King (Ed.), *Education and income: A background study for world development* (pp. 231–315). Washington, DC: *The World Bank*.
- Gregorio, J.D., & Lee, J.W. (2002). Education and income inequality: New evidence from cross-country data. *Review of Income and Wealth*, 48(3), 395–416.
- Government of India. (2013). Sarva Shiksha Abhiyan. *Department of School Education and Literacy, MHRD, Government of India*. Retrieved 26 October 2013.
- Government of India (2010). Provisions of the Constitution of India having a bearing on Education. *Department of Higher Education*. Archived from the original on 1 February 2010. Retrieved 1 April 2010. https://en.wikipedia.org/wiki/Right_of_Children_to_Free_and_Compulsory_Education_Act,_2009.
- Harmon, C., Oosterbeek, H., & Walker, I. (2003). The returns to education: Microeconomics. *Journal of Economic Surveys*, 17(2), 115–156.
- Jha, M. (2009). Child Workers in India: Context and Complexities. *Springer Nature Switzerland AG*. <https://link.springer.com/article/10.1007/s12142-008-0081-3>.
- Kingdon, G. G. (2002). The gender gap in educational attainment in India: How much can be explained? *Journal of Development Studies*, 39(2), 25–53.
- Kumar, A. K. S. and Rustagi, P. (2010). Elementary Education in India: Progress, Setbacks, and Challenges. *Oxfam India Working Papers Series OIWPS – III*. <https://oxfamlibrary.openrepository.com/handle/10546/346628>
- Mehendale, A. and Mukhopadhyay, R. (2019). School System and Education Policy in India. *Handbook of Education Systems in South Asia* pp 1-35.
- Madan, A. (2002). Education for Creative Literacy, Issues in Primary Education, *A dispatch on Primary Education*, Vol. IV, No.2 and 3, June – December, 26 – 33pp. <https://www.tandfonline.com/doi/abs/10.1080/1757823.2013.828474>
- Maji, K. and Sarkar, S. (2017). Intra-District Disparities in Primary Education: A Case Study of Bankura District, West Bengal. *Space and Culture, India*, 4(3), 77-92.
- Powell, J. and Jennifer, M. J. (2019). "What Is Primary Education?". learn.org. Retrieved 18 September 2019. https://en.wikipedia.org/wiki/Primary_education.
- Schnittker, J. (2004). Education and the changing shape of the income gradient in health. *Journal of Health and Social Behavior*, 45(3), 286–305.
- United Nations, (2017). "United Nations Millennium Development Goals". UN. <https://www.un.org/millenniumgoals/education.shtml>.
- UNESCO (2011). *International Standard Classification of Education (ISCED)*. Canada. Retrieved from <http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>.