



Infrastructure Facilities in the Primary Schools of Assam: An Analytical study

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Abstract

Schools are the prime places or institutions of formal education and the primary schools are the base of any education system where young minds are shaped. The teaching-learning environment is mainly depended on the infrastructure facilities available in the in the schools. The quality of education can be assessed through the evaluation of infrastructure facilities available in the schools. In the present work, an attempt has been made to assess the development of infrastructure facilities and spatial variation in the level of infrastructure development in the government primary schools of Assam. Here the correlation between the level of infrastructure development and the student dropout rate and the rate progression to the upper level of education has also been examined. The database of the study is secondary and different statistical and quantitative techniques are used for interpretation and analysis of the data.

Keywords: Infrastructure, primary schools, Assam, education, development

Introduction

Elementary education is the foundation of the education system in any area on which the development of the nation and society depends and in case of India too, the role of elementary education is very important in assessing the overall development of the country. Therefore, the infrastructure facilities in the primary schools are very important keys to assess the learning environment of the young students and it directly impacts their academic and overall development. Facilities and infrastructure in the schools become one of the most important indicators of the quality of education because facilities and Infrastructure in education is one of the determining factors in the success of education. (Santika, Sowiyah, Pangestu & Nurahlaini, 2021). The level of infrastructure development often influences the learning environment and outcome. The facilities and infrastructure are an inseparable component of the educational process because they provide the necessary support and environment for teaching-learning process. Modern facilities foster a positive learning atmosphere and positively influence student learning and performance (Yangambi, 2023) [5]. It may be said that the infrastructure facilities of the schools have a relationship with the learning outcome of students. The level of development in the education sector can thus be assessed through the analysis of the infrastructure facilities available in the primary schools of any region and in the present work an attempt has been made to discuss the infrastructure facilities available in the government primary schools of Assam, India and analysis the spatial variation in such facilities at district level.

The objectives of the present study are

1. to present an overview of the infrastructure facilities in the government primary schools of Assam
2. to analyze the spatial variations in the infrastructure facilities of government primary schools of Assam
3. to find out the spatial variations in the dropout rate and progression to upper level of education

Database and methodology

The present study is based on secondary data collected from various published documents and it follows a quantitative approach in analyzing the data. Kendall's Ranking Method is used to find out the spatial variations of the infrastructure facilities and the result is presented in a map using QGIS software.

For examine the relationship between the level of development of infrastructure in the government primary schools and the dropout rate of the students in primary level, Spearman rank correlation method is used. Here, in this purpose, level of infrastructure development is considered as independent variable (Rx) and dropout rates are considered as dependant variables (Ry). The districts having more dropout rates are ranked higher. For t-test the degree of freedom is 30.

Result and discussion

1. Status of elementary education in Assam

According to 2011 census, literacy rate in Assam is 72.19 percent and the state occupies 25th position among the total 35 states of India. When the status of education in a particular area is considered, the elementary education is the most important sector of education to be dealt with. As per the record there are 33875 government primary schools in Assam in 2023-24 of which 96.94 percent schools are in rural areas. Highest numbers of Schools are in Cachar district where the total number of government school is 1744. South Salmara- Mancachar district with only 315 government primary schools stands in the bottom position in this regard.

In the year 2023-24, total enrollment of students in the primary schools was 2038432 of which 1027219 was girl students constituting 50.39 percent of the total enrolment. The average student-teacher ratio in the primary schools of Assam is 21. On the other hand, when the progression of students from primary to its upper level is considered, it has been found that the average rate of progression is 84.10 percent. The overall status of primary education in the government sector schools is to some extent satisfactory, but the progression to the upper level of education is not 100

percent and it is one of the matters of concern because the education in upper primary level in government sector schools are also free. Another dissatisfactory fact about the primary education in Assam is that the dropout rate of the students of the primary schools in Assam was 6.90 percent in 2023-24.

2. Infrastructure facilities in the govt. primary schools of Assam

Enrollment of students and quality of education is highly determined by the infrastructure facilities provided in the schools. Therefore, it is necessary to estimate the

infrastructure facilities provided in the primary schools of Assam to know the development of education sector. In case of infrastructure of the school, first comes the number of classrooms and in the government primary schools of Assam, the average number of classrooms per school is only 2.8. But, in the lower primary schools five classes (from class I to V) have to be accommodated simultaneously. When the average student-classroom ratio in the primary schools of Assam has been taken into account, it is found that each classroom accommodates 23 students on an average.

Table1: Infrastructure facilities in the government primary schools of Assam (2023-24)

Sl. No.	District	Pupil-teacher ratio	Average number of classrooms	Average student-classroom Ratio	Schools having drinking water facilities (%)	Schools having Boys Toilet (%)	Schools having Girls toilet (%)
1	Kokrajhar	21	2.5	17	97.73	89.71	90.7
2	Dhubri	27	3.4	29	99.93	95.64	96.73
3	Goalpara	25	2.9	23	100	97.53	99.66
4	Barpeta	23	3.05	21	99.82	96.04	95.68
5	Morigaon	23	2.9	27	99.9	91.01	92.55
6	Nagaon	26	3.5	26	99.63	97.93	97.32
7	Sonitpur	28	3.5	23	97.48	93.35	93.35
8	Lakhimpur	17	2.8	18	100	98.83	98.39
9	Dhemaji	15	2.4	18	100	98.95	97.81
10	Tinsukia	24	3.5	20	99.64	98.12	99.02
11	Dibrugarh	19	2.9	18	99.92	97.51	98.6
12	Sivsagar	9	3.1	12	99.68	97.98	99.26
13	Jorhat	14	2.9	15	99.89	99.89	99.77
14	Golaghat	20	2.7	20	99.64	96.72	98.81
15	Karbi Anglong	18	3.4	12	88.54	91.11	93.97
16	Dima Hasao	6	2.3	7	72.37	95.91	90.79
17	Cachar	19	2.4	29	96.85	97.71	98.85
18	Karimganj	23	2.2	36	98.99	97.97	98.92
19	Hailakandi	19	1.9	31	99.89	99.24	99.89
20	Bongaigaon	23	3.1	24	100	95.95	96.7
21	Chirang	18	2.5	17	99.1	91.86	96.25
22	Kamrup	21	3.1	18	100	95.38	99.81
23	Kamrup Metro	21	3.7	21	93.07	97.46	99.54
24	Nalbari	15	2.9	19	100	96.18	97.32
25	Baksa	16	2.5	16	99.48	96.98	95.93
26	Darrang	25	3.6	24	99.9	98.33	98.12
27	Udalguri	20	2.7	16	98.81	69.45	98.44
28	Biswanath	27	3.1	19	100	97.78	97.11
29	Charaideo	13	3.2	15	99.83	98.65	100
30	Hojai	36	3.2	30	100	98.03	99.21
31	Majuli	10	2.2	13	100	97.52	99.26
32	South Salmara	30	3.2	32	98.1	90.79	88.89
33	West K Anglong	20	2.8	14	77.01	95.26	96.53
	Assam	20.33333	2.910606	20.60606	97.430303	95.477879	97.06606061

Source: Statistical Handbook Assam, 2024 ^[9]

Availability of drinking water is necessary for staying a long period in the school. But in the govt. schools of Assam, still all the schools don't have the facility of safe drinking water. 3.21 percent of the total govt. primary schools in Assam lack the facility of drinking water in 2020-21. The same situation is observed in case of toilet facilities in the primary schools of Assam. 5.71 percent of the total government primary schools of Assam don't have boys' toilet and in case of girls' toilet 2.91 percent of the schools don't have this facility.

3. Spatial variations in the infrastructure facilities

The infrastructure facilities available in the primary schools of Assam varies spatially and it has been found that some districts have government primary schools with very good facilities and some other have such schools with very low infrastructure. While the infrastructure facilities like student-teacher ratio, average number of classrooms, student- classroom ratio, drinking water, boys' and girls' toilets are considered as indicators of infrastructure development in the primary schools, it has been found that

Charaideo, Jorhat, Sivasagar Majuli and Lakhimpur districts occupy top ranks in infrastructure development and Kokrajhar and South Salmara districts have very low infrastructure facilities in the primary schools of government sector. The district wise variation of

infrastructure facilities in the primary schools is presented in the map of Assam and it shows that most of the districts have high to moderate level of infrastructure facilities while 8 districts have low infrastructure facilities in the primary schools.

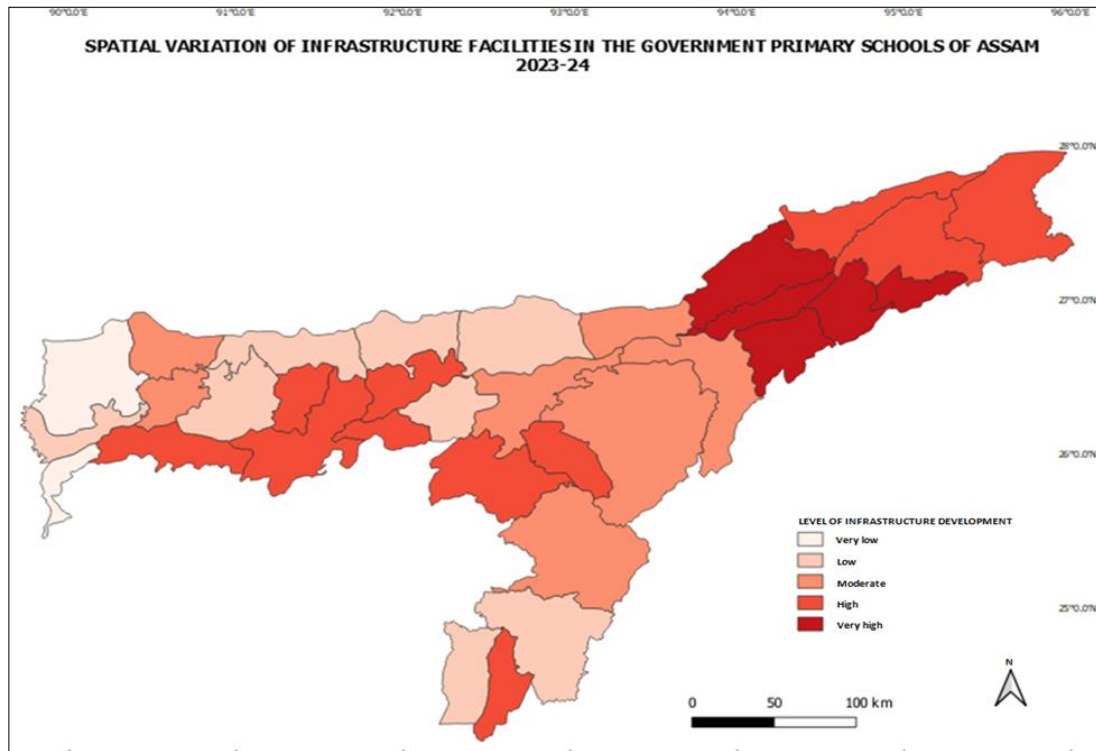


Fig 1

4. Spatial variations in the dropout rate

The dropout rate in the government primary schools of Assam is not very less and it 6.90 percent for the state in the year 2023-24. In case of the districts of the state, it has been observed that 13 districts out of 33 have student dropout rate in the primary school during this period is more than the state’s average dropout rate (Table 2). Wst Karbi Anglong, South Salmara and Dhubri districts have dropout rate of above 10 percent which is much higher than the state’s rate.

On the other hand, Jorhat, Dhemaji and Kamrup Metro districts have less than 4 percent of dropout rate in the primary schools. It has been evident that socio-economically developed districts have low dropout rate and the districts having high dropout rate are the districts of inferior transportation systems as West Karbi Anglong is a hill district and the other two districts namely South Salmara and Dhubri is worst affected by the floods of Brahmaputra river and major geographical area of these districts are in the river known as char area.

Table 2: District-wise dropout rate in Assam, 2023-24

Sl. No.	District	Dropout rate	Sl. No.	District	Dropout rate
1	Kokrajhar	6.81	18	Karimganj	4.99
2	Dhubri	10.8	19	Hailakandi	5.98
3	Goalpara	9.23	20	Bongaigaon	6.79
4	Barpeta	7.84	21	Chirang	5.52
5	Morigaon	7.01	22	Kamrup	5.09
6	Nagaon	8.63	23	Kamrup Metro	3.21
7	Sonitpur	8.6	24	Nalbari	7.12
8	Lakhimpur	8.09	25	Baksa	5.38
9	Dhemaji	3.11	26	Darrang	9.07
10	Tinsukia	5.41	27	Udalguri	5.57
11	Dibrugarh	6.01	28	Biswanath	5.82
12	Sivsagar	4.04	29	Charaideo	4.15
13	Jorhat	2.78	30	Hojai	8.67
14	Golaghat	4.21	31	Majuli	7.52
15	Karbi Anglong	6.52	32	South Salmara	11.2
16	Dima Hasao	6.9	33	West K Anglong	11.55
17	Cachar	5.86	18	Karimganj	4.99

5. Relation of infrastructure facilities and school dropout rate

Education is the key indicator of socio-economic development of any society or country and the quality of education can be assessed by evaluating the dropout rate of different levels of education. Primary schools are the foundations of institutional learning process and the number of students leaving the school at the beginning of their education life is a very important matter to be considered. The impact of school infrastructure is one of the significant factors of dropout of the students. The well equipped physical environment of the school has high impact on the students’ motivation towards attending the school and absence of the same distracts the students’ mind from attending school.

An attempt has been made to examine the relationship of school dropout with the level of infrastructure facilities in the schools. The result of Spearman rank correlation shows that there exists a negative rank correlation between the level of infrastructure development and the rate of dropout, i.e. districts having higher level of infrastructure facilities have low dropout rates and vice versa.

The t-test value at 30 degree of freedom is 2.494 which indicate a strong negative relationship between the two variables at 5% and 10% level of significance (Table 3).

Table 3: Spearman rank correlation

Rx	Ry	n	Rank correlation (ρ)	t-test value
Rank of districts in infrastructure development	Rank of districts in dropout rate	33	-0.049	2.494

Conclusions

Infrastructure facility is vital for quality education in the schools and here in this work the physical facilities, e.g. pupil-teacher ratio, average number of classrooms, average student-classroom ratio, and percentage

Of schools having drinking water facilities, boys’ toilets and girls’ toilets in the government primary schools of Assam has been considered as the indicators. It is clear that the infrastructure facility in the government primary schools of Assam is not satisfactory as most of schools lack adequate facilities like number of teachers and classrooms. The dropout rate of the state is also high and some of the districts have above 10 percent of dropout which is much higher than the state’s average rate 6.90 percent. There exists a negative correlation between the level of infrastructure development of the districts and the students’ dropout rate which implies that higher the status of infrastructure development, lower the dropout rate and vice versa. Thus, it can be said that the status of primary education at the government schools are not very good and the spatial variations among the districts are very prominent in the level of infrastructure development.

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