CHAPTER 4
GROWTH PATTERN OF PRIVATE AND PUBLIC SCHOOLS, PERFORMANCE AND ITS DETERMINANTS

4.1: Introduction

The government of India has provided the education facilities since the independence. There were no or very few private schools in the days of early independent India. The number of government run schools or the public schools has been increasing slowly and steadily till the late 19th century. The education system of India has improved through the formulation and implementation of series of education policies. It has provided free and compulsory education up to the age of 14 years to the children according to the RTE Act, 2009. But, despite being, several efforts and facilities given to the people, there has been enormous increase in enrolment in private schools and tremendous growth of private schools in the 21st century. Therefore, it is the need of the hour to assess the growth, performance and its determinants of private and public schools.

This chapter is divided into four sections. The first section is a comparative view of the growth of private and public schools, the second section is of the growth of number of students in private and public schools, the third section evaluates the performance of the private and public schools and fourth section examine the determinants of the performance in private and public schools.

4.2.: Growth in the establishment of private and public schools

Education in India as well as in the state of Assam has been under the control of a number of agencies. Though, it is generally under the control of state government or the central government but a good number of schools and colleges which are managed by different agencies such as private individuals, sole proprietorships, religious bodies, etc. are coming up at a very fast rate. Therefore, it is necessary to examine and compare the pattern of growth in the establishment of private and public schools.

For the convenient of the study, it has been divided into five sections. The first section highlights the comparative view of the pattern of growth in the establishment of private and public schools in the district of Chirang, the second section is of the comparative view of the pattern of growth of private and public schools in Kokrajhar district, the third section is in the Baksa district, the fourth section is in the Udalguri district and the fifth section is for the entire BTAD.

4.2.1: Decadal growth of PRS and PUS in Chirang district

It seems that in Chirang district, public schools had its emergence since 1931-41 while private schools had its emergence during 1981-91. But since their emergence, the decadal growth of public school is very low while the decadal growth of private school is very fast. The cumulative decadal growth of private and public schools in Chirang district is highlighted in table-4.1.

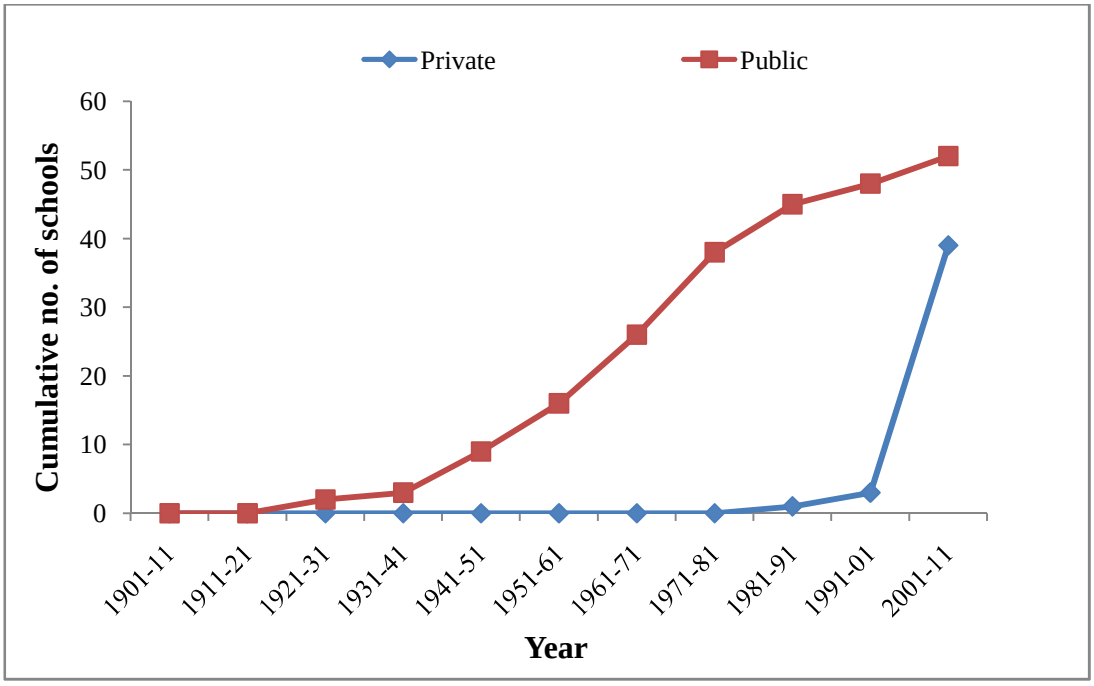
Table-4.1: Cumulative decadal growth of PRS and PUS in Chirang district

Year	No. of Private School (PRS)	No. of Public School (PUS)	Cumulative Growth of PRS	Cumulative Growth of PUS
1901-11	0	0	0	0
1911-21	0	0	0	0
1921-31	0	2	0	2
1931-41	0	1	0	3
1941-51	0	6	0	9
1951-61	0	7	0	16
1961-71	0	10	0	26
1971-81	0	12	0	38
1981-91	1	7	1	45
1991-01	2	3	3	48
2001-11	16	4	19	52

Source: Field Survey (Primary data), 2015-16.

The above table-4.1 for the cumulative decadal growth of private and public schools in the Chirang district is shown with cumulative growth curve and analysed through figure-4.1:

Fig. 4.1: Cumulative decadal growth of PRS and PUS in Chirang district



From the above figure, 4.1, it is seen that ever since the emergence of public schools the cumulative growth is very low while the cumulative growth of private school is very steep since their emergence. Thus, the growth of private schools is much faster than the growth of public schools in Chirang district in the recent decade.

4.2.2: Decadal growth of PRS and PUS in Kokrajhar district

In the Kokrajhar district it seems that private schools had its emergence during 1981-91. On the contrary, public schools had its emergence since 1911-1921. Ever since their emergence, the growth of the two is not well matched, so, their comparative view of cumulative decadal growth is given in table-4.2.

Table-4.2: Cumulative decadal growth of PRS and PUS in Kokrajhar district

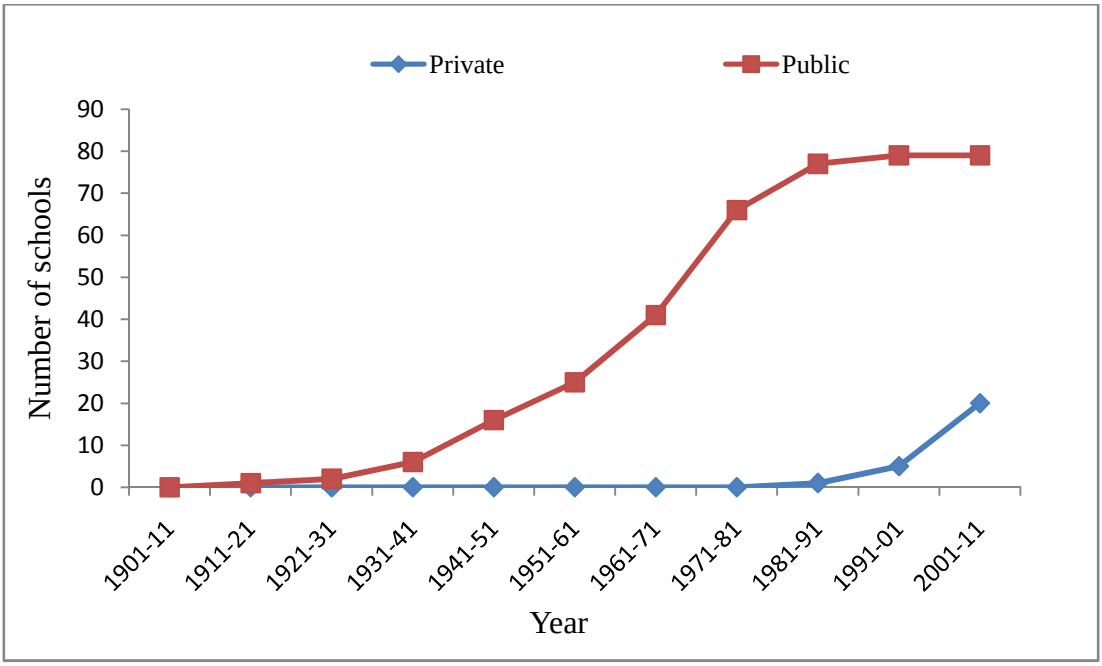
Year	No. of Private School (PRS)	No. of Public School (PUS)	Cumulative growth of PRS	Cumulative growth of PUS
1901-11	0	0	0	0
1911-21	0	1	0	1
1921-31	0	1	0	2

1931-41	0	4	0	6
1941-51	0	10	0	16
1951-61	0	9	0	25
1961-71	0	16	0	41
1971-81	0	25	0	66
1981-91	1	11	1	77
1991-01	4	2	5	79
2001-11	15	0	20	79

Source: Field Survey (Primary data), 2015-16.

The above table-4.2 for the establishment of private and public schools in Kokrajhar district is shown with cumulative growth curve and analysed through figure-4.2.

Fig.4.2: Cumulative decadal growth of PRS and PUS in Kokrajhar district



The cumulative decadal growth curve depicted in figure-4.2 reveals that public schools had an increasing growth till the decade of 1981-91 which is the decade of emergence for the private schools. Since, the decade of 1981-91, public schools had no any growth while private schools had an increasing growth since its emergence till the present decade.

4.2.3: Decadal growth of PRS and PUS in Baksa district

In the Baksa district, it seems that public schools are much older than the private schools as the former has began to be established during 1911-21 while the

latter has began to be established during 1991-01. The end for the increase in the number of public schools in this district marks the beginning for the increase in the growth of private schools. The comparative view of the growth of private and public schools are given in table-4.3.

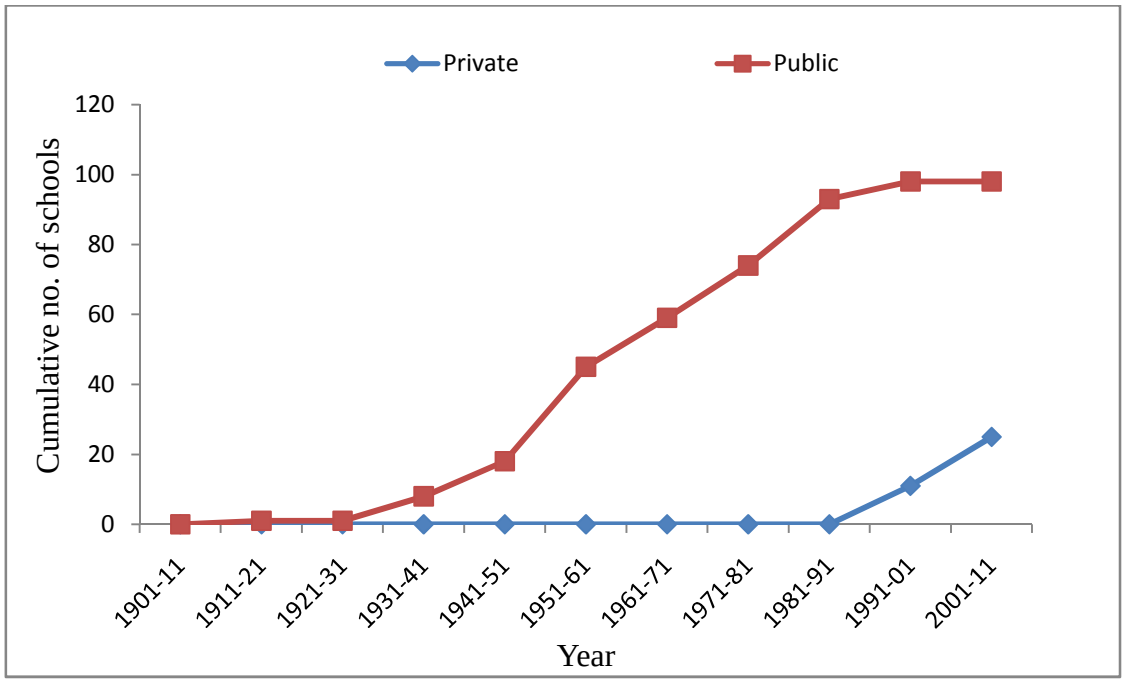
Table-4.3: Cumulative decadal growth of PRS and PUS in Baksa district

Year	No. of Private School (PRS)	No. of Public School (PUS)	Cumulative growth of PRS	Cumulative growth of PUS
1901-11	0	0	0	0
1911-21	0	1	0	1
1921-31	0	0	0	1
1931-41	0	7	0	8
1941-51	0	10	0	18
1951-61	0	27	0	45
1961-71	0	14	0	59
1971-81	0	15	0	74
1981-91	0	19	0	93
1991-01	11	5	11	98
2001-11	14	0	25	98

Source: Field Survey (Primary data), 2015-16.

The above table-4.3 for the cumulative decadal growth of private and public schools in Baksa district is depicted with cumulative growth curve and analysed through figure-4.3.

Fig.4.3: Cumulative decadal growth of PRS and PUS in Baksa district



The cumulative decadal growth curve for the private and public schools in the Baksa district depicted in figure-4.3 reveals that public schools had an increasing growth during the decades of 1821-31 to 1981-91 during which there was no any emergence of private school, thereafter growth of public schools stagnated in the Baksa district. The stagnated growth period of public schools experienced the increasing growth of the private schools during the decades of 1981-91 to 2001-11.

Thus, in the Baksa district there was no emergence of private schools before 1990s, it has emerged only in the 1990s and it has an increasing growth during the two decades, i.e. 1991-2011. However, its counterpart had its emergence in the early 1930s and had an increasing growth till 1981-91. In nutshell, private schools emerged and developed in the post 1990s while the public schools emerged and developed in the pre 1990s.

4.2.4: Decadal growth of PRS and PUS in Udalguri district

In the Udalguri district, public schools began to be established during 1921-31 while its counterpart began to be established during 1971-81. So, public schools are much older than the private schools, but their growth doesn't go in line with what ought to be. The cumulative decadal growth of private and public schools is given in table-4.4.

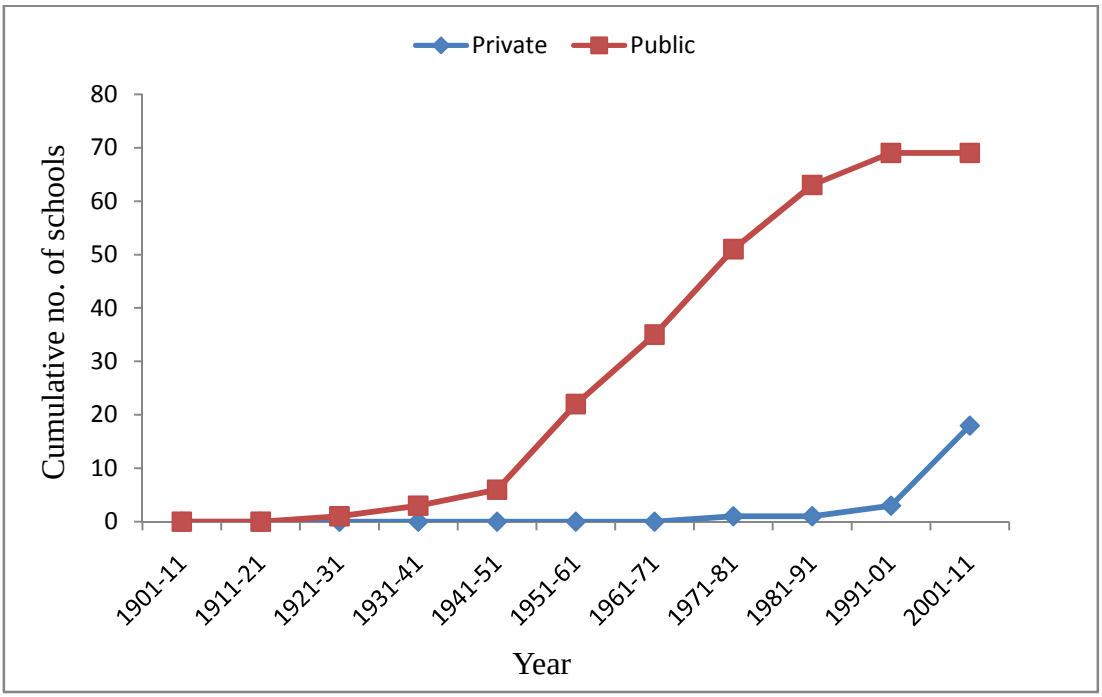
Table-4.4: Cumulative decadal growth of PRS and PUS in Udalguri district.

Year	No. of Private School (PRS)	No. of Public School (PUS)	Cumulative growth of PRS	Cumulative growth of PUS
1901-11	0	0	0	0
1911-21	0	0	0	0
1921-31	0	1	0	1
1931-41	0	2	0	3
1941-51	0	3	0	6
1951-61	0	16	0	22
1961-71	0	13	0	35
1971-81	1	16	1	51
1981-91	0	12	1	63
1991-01	2	6	3	69
2001-11	15	0	18	69

Source: Field Survey (Primary data), 2015-16.

The above table-4.4 for the cumulative decadal growth of private and public schools in Udalguri district is depicted with cumulative growth curve and analysed through figure-4.4.

Fig.4.4: Cumulative decadal growth of PRS and PUS in Udalguri district



The cumulative decadal growth curve for the private and public schools in the Udalguri district depicted in figure-4.4 reveals that public schools had an increasing growth during the decades of 1821-31 to 1981-91 during which there was no any emergence of private school, thereafter growth of public schools stagnated in the Baksa district. The stagnated growth period of public schools experienced the increasing growth of the private schools during the decades of 1981-91 to 2001-11.

Thus, in the Udalguri district there was no emergence of private schools before 1980s, it has emerged only in the 1980s and had an increasing growth during the decades of 1991-11. However, its counterpart had its emergence in the early 1930s and recorded an increasing growth till 1990s. In nutshell, private schools emerged and developed in the post 1990s while the public schools emerged and developed in the pre 1990s.

4.2.5: Decadal growth of PRS and PUS in BTAD

In the entire BTAD, public schools are much older than the private schools as the former had its emergence during 1911-21 while the latter had its emergence during 1971-81. But, in the recent years, there is mushrooming growth of private schools while the growth of old aged public schools stagnated or even declined. The comparative view of the pattern of growth of private and public schools in the BTAD is shown in table-4.5.

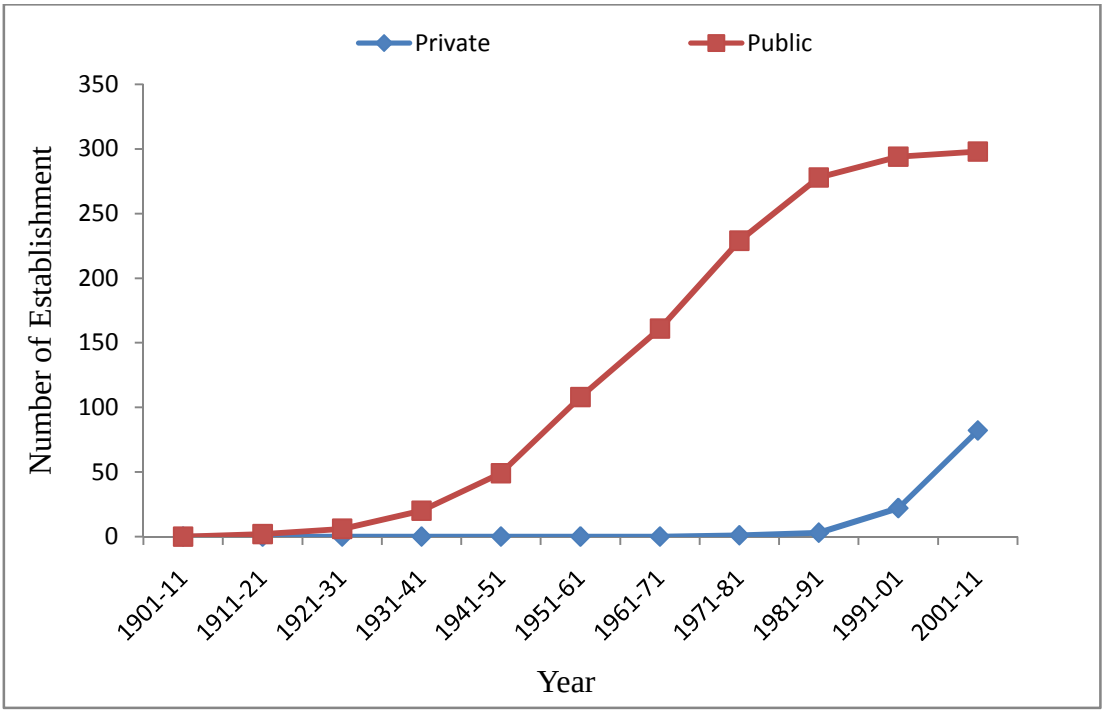
Table-4.5: Cumulative decadal growth of PRS and PUS in BTAD.

Year	No. of Private School (PRS)	No. of Public School (PUS)	Cumulative No. of PRS	Cumulative No. PUS
1901-11	0	0	0	0
1911-21	0	2	0	2
1921-31	0	4	0	6
1931-41	0	14	0	20
1941-51	0	29	0	49
1951-61	0	59	0	108
1961-71	0	53	0	161
1971-81	1	68	1	229
1981-91	2	49	3	278
1991-01	19	16	22	294
2001-11	60	4	82	298

Source: Field Survey (Primary data), 2015-16.

The above table-4.5 for the cumulative decadal growth of private and public schools in the BTAD is depicted with cumulative growth curve and analysed through figure-4.5.

Fig.4.5: Cumulative decadal growth of PRS and PUS in BTAD



The cumulative decadal growth curve for the private and public schools in the Udalguri district depicted in figure-4.5 reveals that public schools had an increasing growth during the decades of 1911-21 to 1981-91. During these decades, there was no any emergence of private schools, however, in the post 1981-91 growth of public schools stagnated in the Baksa district, which mark the emergence and rapid growth of the private schools during the decades of 1981-91 to 2001-11.

Thus, there were sharp differences in the decadal growth of private and public schools in the BTAD. There were steady and continuous growths of private schools in the post 1981-91 while there were steady and continuous growths of public schools in the pre 1981-91, in the post 1981-91, the growth of public schools has stagnated. The private sector has been expanding in India quite rapidly during the post reform period with 29 percent of aggregate student enrollment in the age group of 6-14 years (The Hindu, 2014)[1]

4.3: Compound Annual Growth Rate (CAGR) of student enrolment in PRS and PUS

There has been widespread withdrawal of students from the government schools and increasing enrolment in private schools. The report of SSA (2016)[2] revealed that between 2010-11 to 2014-15 enrolment in government primary schools across India has come down by 15 percent and went up by 33 percent in private schools. NITI Aayog (2017)[3] also reported that in the state of Karnataka, the enrolment of students in government rural schools has dropped from 85 percent in the year 2006-07 to 70 percent in the year 2015-16. Similar trends can be observed in the study area and in many other states across the country.

4.3.1: CAGR of student enrolment in PRS and PUS in Chirang district

A gist of comparative view in the CAGR of student enrolment in the private and public schools in Chirang district are given in table-4.6.

Table-4.6: CAGR of student enrolment in PRS and PUS in Chirang District during 2009-14.

Year	No. of ST in PR school	No. of ST in PU School
2009-10	1408	4076
2010-11	1681	4258
2011-12	1914	4360
2012-13	2094	4464
2013-14	2214	4413
CAGR	9.47 %	1.60 %

Source: Field Survey (Primary data), 2015-16.

During the period, 2009-10 to 2013-14, the CAGR of student enrolment in the private school of Chirang district is 9.47 percent while in the same district and over the same period; the CAGR of student enrolment in the public school is only 1.60 percent.

4.3.2: CAGR of student enrolment in PRS and PUS in Kokrajhar district

The CAGR of student enrolment in Kokrajhar district is given in table-4.7.

Table-4.7: CAGR of student in PRS and PUS in Kokrajhar district during 2009-14.

Year	No. of ST in PR school	No. of ST in PU School
2009-10	1901	6430
2010-11	2149	6396

2011-12	2350	6429
2012-13	2393	6400
2013-14	2757	6417
CAGR	7.72%	-0.04 %

Source: Field Survey (Primary data), 2015-16.

The CAGR of student enrolment in the private schools of Kokrajhar district during the period of 2009-10 to 2013-14 is 7.72 percent while in the same district and over the same period; the student enrolment in the public school is negative i.e. -0.04 percent.

4.3.3: CAGR of student enrolment in PRS and PUS in Baksa district

The CAGR of student enrolment in private and public schools in Baksa district is shown in table-4.8.

Table-4.8: CAGR of student in PRS and PUS in Baksa during 2009-14.

Year	No. of ST in PR school	No. of ST in PU School
2009-10	1829	7961
2010-11	2128	8093
2011-12	2465	8139
2012-13	2904	7946
2013-14	3310	7718
CAGR	12.60 %	-00.61 %

Source: Field Survey (Primary data), 2015-16.

During the period 2009-10 to 2013-14, the CAGR of student enrolment in the private schools of Baksa district is 12.60 percent while in the same district and over the same period, the CAGR of student enrolment in the public school is negative i.e. -0.61 percent.

4.3.4: CAGR of student enrolment in PRS and PUS in Udalguri district

The CAGR of student enrolment in private and public schools in Udalguri district is given in table-4.9.

Table-4.9: CAGR of student enrolment in PRS and PUS in Udalguri district during 2009-14.

Year	No. of ST in PR school	No. of ST in PU School
2009-10	1051	5267
2010-11	1209	5244

2011-12	1423	5308
2012-13	1621	5482
2013-14	2056	5426
CAGR	14.36 %	00.59%

Source: Field Survey (Primary data), 2015-16.

The CAGR of student enrolment in the private schools of Udalguri district during the period 2009-10 to 2013-14 is 14.36 percent while in the same district and over the same period, it is only 0.59 percent in the public schools.

4.3.5: CAGR of student enrolment in PRS and PUS in BTAD

The CAGR of student enrolment in private and public schools in BTAD is given in table-4.10.

Table-4.10: CAGR of student enrolment in PRS and PUS in BTAD during 2009-14.

Year	No. of ST in PR school	No. of ST in PU School
2009-10	6189	23734
2010-11	7167	23991
2011-12	8152	24236
2012-13	9012	24292
2013-14	10337	23974
CAGR	10.8%	00.20 %

Source: Field Survey (Primary data), 2015-16.

The CAGR of student enrolment in the private schools of BTAD during the period 2009-10 to 2013-14 is 10.8 percent while the CAGR of student enrolment in the public schools of BTAD is 0.20 percent.

Thus, among the four districts of BTAD, the CAGR of student enrolment in the private school is highest in Udalguri district which is 14.36 percent and lowest in Kokrajhar district which is 7.72 percent while the CAGR in the public school among the four districts is positive in Chirang and Udalguri districts but it is negative in the Kokrajhar and Baksa districts. However, the CAGR of student enrolment in the Private schools of BTAD is much higher than the CAGR of student enrolment in public school. It is 10.8 percent in private schools and only 0.20 percent in public schools. This findings is consistent with the study of Kingdon, G. G. (2017a)[4] on 'Budget Private Schools in India' revealing that the average enrolment per school

during 2010-11 to 2014-15 in the state of Assam in government schools is – (minus) 2 on the contrary, it is 13 in private schools while at all India (20 States) level, it is – (minus) 12 in government schools and 5 in private schools. Kingdon, G. G. (2017b)[5] in her review on the private schooling phenomenon in India revealed that over the period 2010-2015, the total enrolment in government schools fell by 11.1 million in government schools where as, total enrolment in private schools rose by 16 million over the same period.

The alternative hypothesis: H_a: $\mu_1 \neq \mu_2$; There is a difference between the growth of private and public schools in the study area is accepted and found to be true in terms of the growth in the number of establishment of schools and growth of student enrollment in the private and public schools in the BTAD.

4.4: Performance of private and public schools

The performance of private and public educational institutions is measured and compared in two ways, first in terms of overall passed percentage of students in the board exams or in the exams of highest class and second in terms of percentage of students passed in first division in the board exams or in the exams of highest class in each category of two school types.

4.4.1: Performance of PRS and PUS in terms of overall passed percentage

In this section, the comparison of the performance of private and public schools is compared on the basis of the overall pass percentage in the board exams or in the exams of the highest class in the four categories of the schools in the two school types.

4.4.1.1: Performance of PRS and PUS in terms of overall pass percentage in Chirang district

The performance of private and public schools in terms of overall pass percentage in Chirang district in four categories of schools are given below (table-4.11).

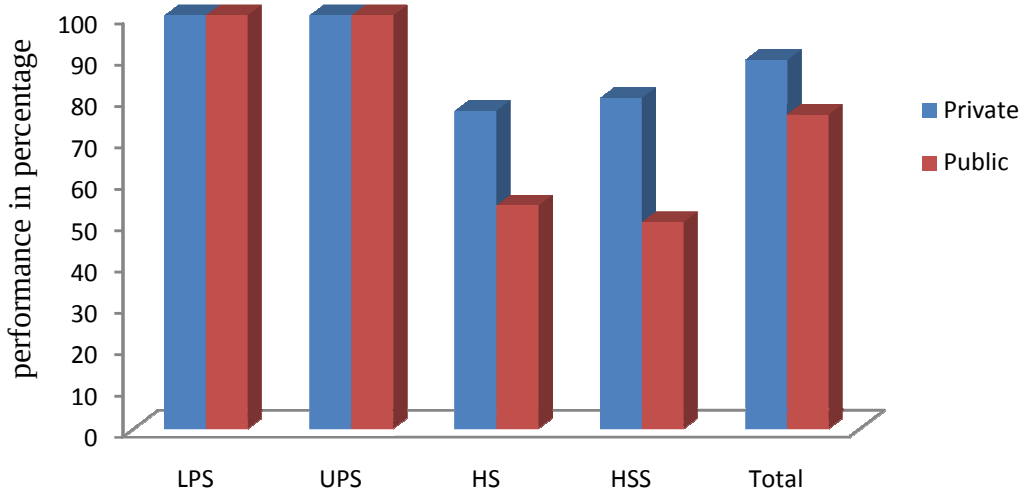
Table-4.11: Performance of PRS and PUS in Chirang district during 2014-15

Category of schools	Performance in PRS (% tage)	Performance in PUS (% tage)
LPS	100	100
UPS	100	100
HS	76.92	54.00
HSS	80.00	50.00
Total	89.23	76.00

Source: Field Survey (Primary data), 2015-16.

The above table-4.11 for the performance of private and public schools in Chirang district is shown with the help of simple bar diagram for having a bird's eye view of data for comparison.

Fig.4.6: Performance of PRS and PUS in Chirang



In the Chirang district, it is observed that there is no difference in the performance of private and public schools up to upper primary level, this is because of the 'no detention' policy of SSA, that no any students were allowed to make fail in the examinations up to standard VIII. In the HS and HSS level private schools outperformed public school. In the HS level performance of private school is 76.92 percent while in the public schools it is only 54 percent. Again, in the HSS level, the difference is greater, performance of private school is 80 percent but in the public school it is only 50 percent. Thus, the mean percentage of private school performance is 89.23 percent while in the public schools it is only 76.00 percent. So,

the performance of private schools in Chirang district is 13.23 percentages ahead than that of the public schools.

4.4.1.2: Performance of PRS and PUS in terms of overall pass percentage in Kokrajhar district

The performance of private and public schools in terms of overall pass percentage in Kokrajhar district in four categories of schools are enshrined below (table-4.12).

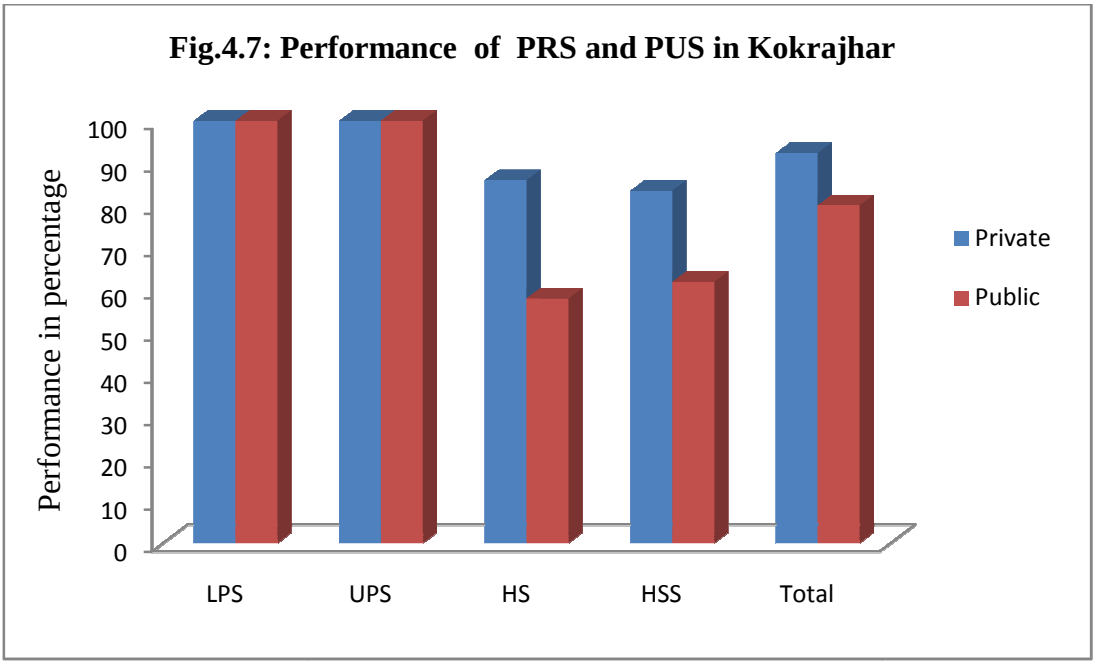
Table-4.12: Performance of PRS and PUS in Kokrajhar district during 2014-15

Category of schools	Performance in PRS (% tage)	Performance in PUS (% tage)
LPS	100	100
UPS	100	100
HS	85.93	57.92
HSS	83.42	61.85
Total	92.34	79.94

Source: Field Survey (Primary data), 2015-16.

The above table-4.12 for the performance of private and public schools in Kokrajhar district is depicted with multiple bar diagram and analysed through figure-4.7.

Fig.4.7: Performance of PRS and PUS in Kokrajhar



In the Kokrajhar district also, there is no difference in the performance of private and public schools up to upper primary level, this is also because of the 'no detention' policy of SSA, i.e. 'no fail system' up to standard VIII. But, in the HS and HSS category, private schools perform better than the public schools. HS level performance of private schools is 85.93 percent while public school performance in the same level is only 57.92 percent. Further, in the HSS category, private school performance is 83.42 percent but public school performance in the same level is 61.85 percent. Thus, the mean percentage of private school performance is 92.34 percent while in the public schools it is only 79.94 percent. So, private schools performance in the Kokrajhar district outshined the public schools by 12.4 percentages.

4.4.1.3: Performance of PRS and PUS in terms of overall pass percentage in Baksa district

The performance of private and public schools in terms of overall pass percentage in Kokrajhar district in four categories of schools are enshrined below (table-4.13).

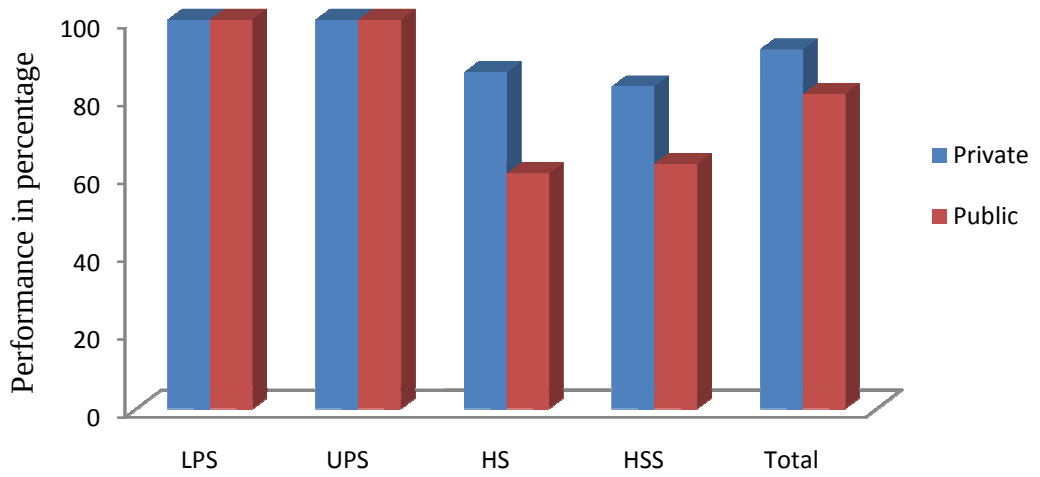
Table-4.13: Performance of PRS and PUS in Baksa district during 2014-15

Category of schools	Performance in private schools (% tage)	Performance in public schools (% tage)
LPS	100	100
UPS	100	100
HS	86.44	60.50
HSS	82.85	62.96
Total	92.32	80.87

Source: Field Survey (Primary data), 2015-16.

The above table-4.13 for the performance of private and public schools in Baksa district is represented with multiple bar diagram and analysed through fig.-4.8.

Fig.4.8: Performance of PRS and PUS in Baksa



In Baksa district also, due to 'no detention' policy of SSA, there is no difference between the performance of private and public schools both in the LP and UP level. But, in the HS and HSS level, performance of private school is far ahead of public school. In the HS level, performance of private school is 86.44 percent while it is only 60.50 percent in public school. Again, in the HSS level, it is 82.85 percent in private school on the other hand; it is only 62.96 percent in public school. Thus, the mean percentage of private school performance is 92.32 percent while in the public schools it is only 80.87 percent. So, Private schools in Baksa district perform better by 11.45 percentages than that of the public school.

4.4.1.4: Performance of PRS and PUS in terms of overall pass percentage in Udalguri district

The performance of private and public schools in terms of overall pass percentage in Udalguri district in four categories of schools are enshrined below (table-4.14).

Table-4.14: Performance of PRS and PUS in Udalguri district during 2014-15

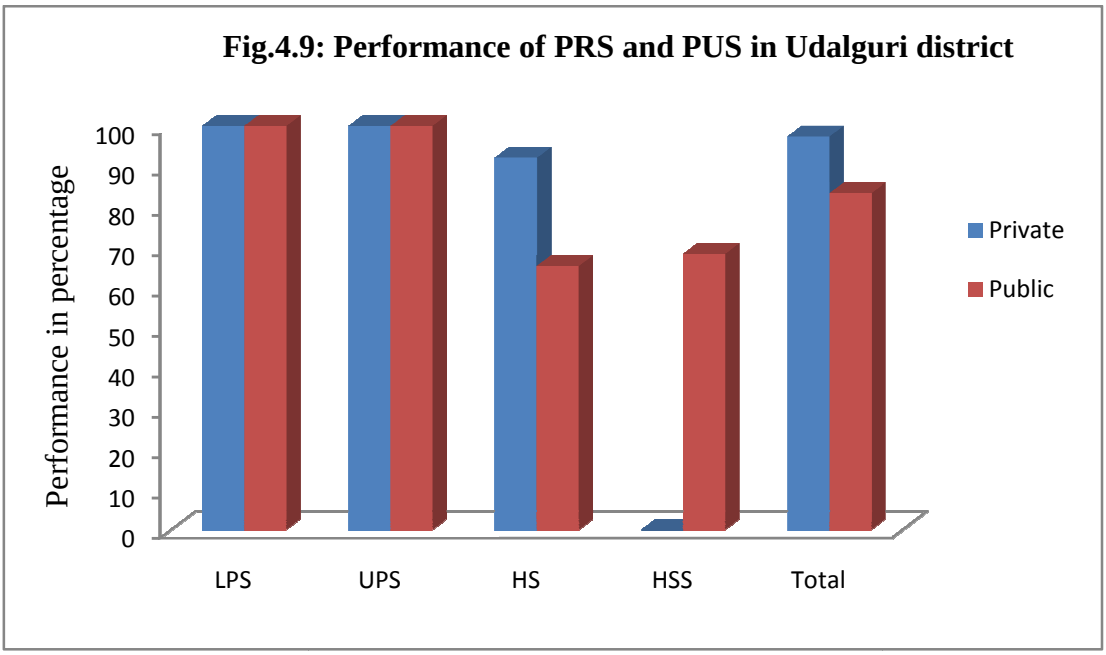
Category of schools	Performance in private schools (% tage)	Performance in public schools (% tage)
LPS	100	100

UPS	100	100
HS	92.15	65.26
HSS	NA	68.30
Total	97.38	83.39

Source: Field Survey (Primary data), 2015-16.

The above table-4.14 for the performance of private and public schools in Udalguri district is depicted through multiple bar diagram and analysed through figure-4.9.

Fig.4.9: Performance of PRS and PUS in Udalguri district



In the Udalguri district also, there is no difference in the performance of private and public schools up to upper primary level. The reason is because of the 'no detention' policy of SSA in which no any students were allowed to be failed in the examinations upto standard VIII. In the HS level, performance of private school is 92.15 percent while it is only 65.26 percent in public school. There was no recognised private HSS in Udalguri district till 2014-15. The performance of public HSS is 68.30 percent. Thus, the mean percentage of private school performance is 97.38 percent while in the public schools it is only 83.39 percent. So, Private schools in Udalguri district perform better by 13.99 percentages than that of the public school.

4.4.1.5: Performance of PRS and PUS in terms of overall pass percentage in BTAD

The performance of private and public schools in terms of overall pass percentage in BTAD district in four categories of schools are enshrined below (table-4.15).

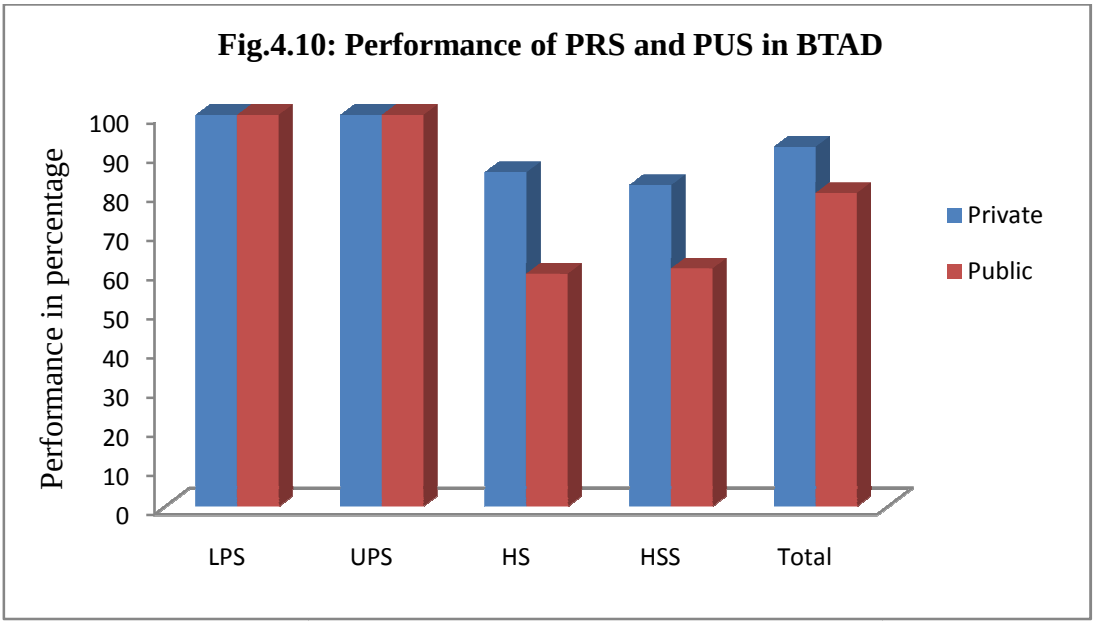
Table-4.15: Performance of PRS and PUS in BTAD during 2014-15

Category of schools	Performance in private schools (% tage)	Performance in public schools (% tage)
LPS	100	100
UPS	100	100
HS	85.36	59.42
HSS	82.09	60.77
Total	91.86	80.04

Source: Field Survey (Primary data), 2015-16.

The above table-4.15 for the performance of private and public schools in the BTAD is highlighted with multiple bar diagram for having a gist at a glance and analysed through figure-4.10.

Fig.4.10: Performance of PRS and PUS in BTAD



In the entire BTAD, private and public schools up to upper primary level doesn't have any difference in their performance. This holds good due to 'no detention' policy of SSA. In the HS and HSS level the performance difference

between the two school types is very sharp. As in the HS level, performance of private school is 85.36 percent but it is only 59.42 percent in public schools. Again, in the HSS level, performance of private schools is 82.09 on the other hand it is only 60.77 percent in public schools. Thus, the mean percentage of private school performance is 91.86 percent while in the public schools it is only 80.04 percent. So, Private schools in BTAD perform much better than the public schools by 11.82 percentages. Tooley, J. et al. (2005)[6] also revealed that students in the private schools perform much better than students in the public schools academically.

4.4.2: Performance of the PRS and PUS in terms of first division passed percentage

Since the 'no detention policy' of SSA couldn't distinguish the performance of private and public schools in the lower primary and upper primary, therefore, for the better comparison of the performance of private and public schools in LP and UP category, percentage of students passed in the first division in the highest class examination (or board examination) were considered and compared between the two school along with the other two higher categories of two school types.

4.4.2.1: Performance of PRS and PUS in terms of first division pass percentage in Chirang district

The performance of private and public schools in terms of first division pass percentage in Chirang district in four categories of schools are given in table-4.16.

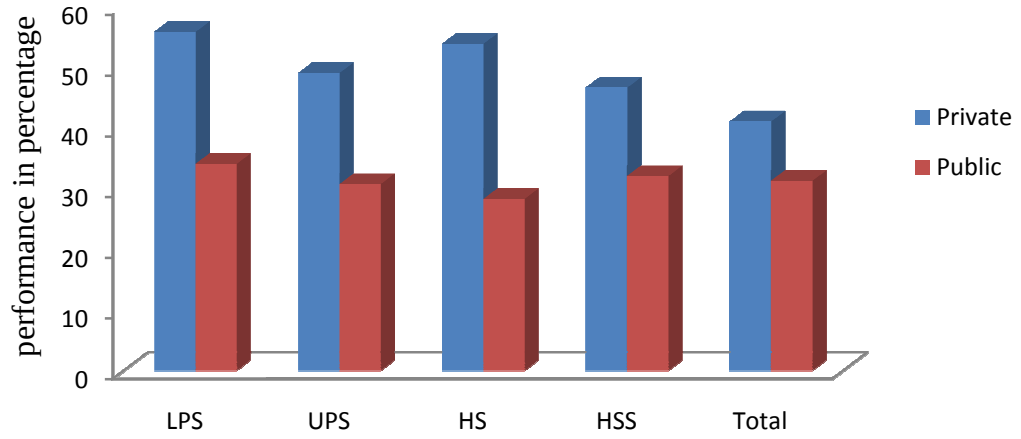
Table-4.16: Performance of PRS and PUS in terms of first division in Chirang district during 2014-15

Category of schools	Performance in private schools (% tage)	Performance in public schools (% tage)
LPS	55.83	34.07
UPS	49.04	30.75
HS	53.85	28.31
HSS	46.67	32.07
Total	41.08	31.3

Source: Field Survey (Primary data), 2015-16.

The above table-4.16 for the performance of private and public schools in terms of first division pass percentage in Chirang district is highlighted with the help of multiple bar diagram for having a bird's eye view of data for comparison.

Fig.4.11: Percentage of first division of PRS and PUS in Chirang



In the Chirang district, performance in terms of first division passed percentage in the LPS category of private school is 55.83 percent while in public school it is 34.07 percent. In the UPS category, performance of private school is 49.04 percent but public school performance is only 30.75 percent. In the HS level performance of private school is 53.85 percent while in the public schools it is only 28.31 percent. Again, in the HSS level, performance of private school is 46.67 percent but in the public school it is only 32.07 percent. Thus, the mean percentage of private school performance is 41.08 percent while in the public schools it is only 31.3 percent. So, the performance of private schools in terms of first division passed percentage in Chirang district is 9.78 percentages ahead than that of the public schools.

4.4.2.2: Performance of PRS and PUS in terms of first division pass percentage in Kokrajhar district

The performance of private and public schools in terms of first division pass percentage in Kokrajhar district in four categories of schools are given in table-4.17.

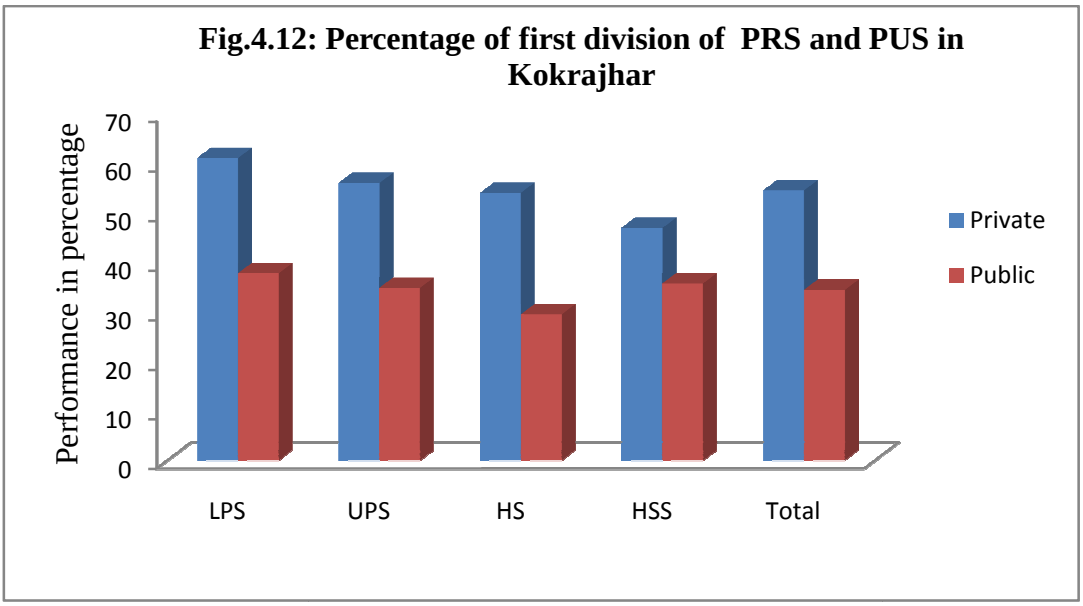
Table-4.17: Performance of PRS and PUS in terms of first division in Kokrajhar district during 2014-15

Category of schools	Performance in private schools (% tage)	Performance in public schools (% tage)
LPS	61	37.79
UPS	56	34.81
HS	54	29.51
HSS	46.96	35.69
Total	54.49	34.45

Source: Field Survey (Primary data), 2015-16.

The above table-4.17 for the performance of private and public schools in terms of first division pass percentage in four categories of schools is depicted with the help of multiple bar diagram for ready comparison between the two school types (Fig.4.12).

Fig.4.12: Percentage of first division of PRS and PUS in Kokrajhar



In the Kokrajhar district, performance in terms of first division passed percentage in the LPS category of private school is 61 percent while in public school it is 37.79 percent. In the UPS category, performance of private school is 56 percent but public school performance is only 34.81 percent. In the HS level performance of private school is 54 percent while in the public schools it is only 29.51 percent. Again, in the HSS level, performance of private school is 46.96 percent but in the public school it is only 35.69 percent. Thus, the mean percentage of private school performance is 54.49 percent while in the public schools it is only 34.45 percent. So,

the performance of private schools in terms of first division passed percentage in Kokrajhar district is 20.04 percentages ahead than that of the public schools.

4.4.2.3: Performance of PRS and PUS in terms of first division pass percentage in Baksa district

The performance of private and public schools in terms of first division pass percentage in Baksa district in four categories of schools are given in table-4.18.

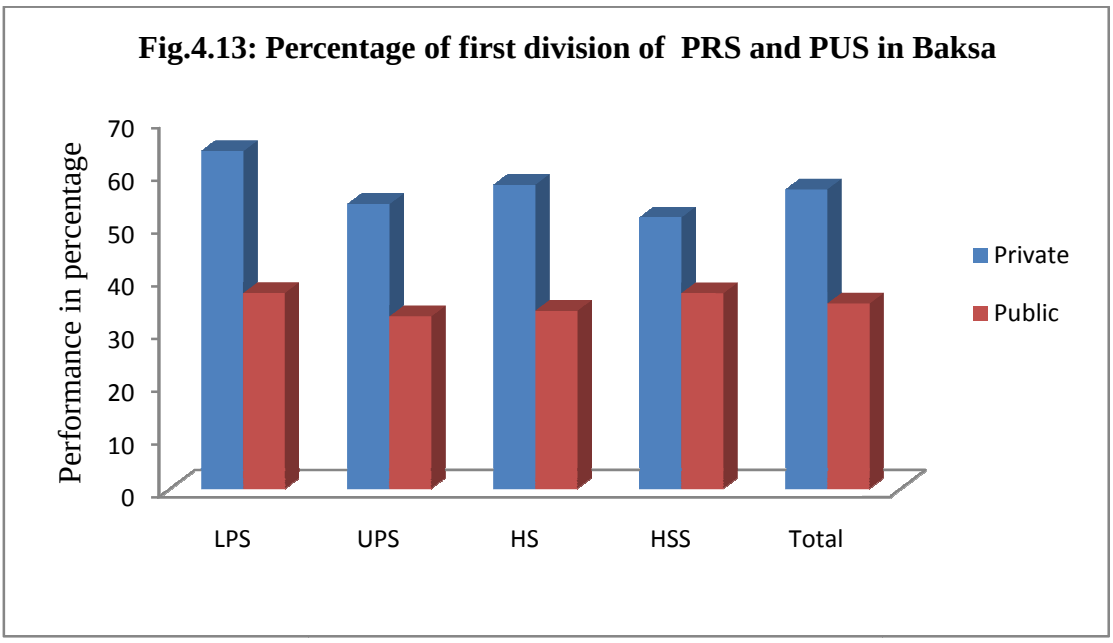
Table-4.18: Performance of PRS and PUS in terms of first division in Baksa district during 2014-15

Category of schools	Performance in private schools (% tage)	Performance in public schools (% tage)
LPS	64	37.05
UPS	53.94	32.66
HS	57.63	33.76
HSS	51.43	37.04
Total	56.75	35.13

Source: Field Survey (Primary data), 2015-16.

The above table-4.18 for the performance of private and public schools in terms of first division pass percentage in Baksa district in four categories of schools is depicted with the help of multiple bar diagram for ready comparison between the two school types.

Fig.4.13: Percentage of first division of PRS and PUS in Baksa



In the Baksa district, performance in terms of first division passed percentage in the LPS category of private school is 64 percent while in public school it is 37.05 percent. In the UPS category, performance of private school is 53.94 percent but public school performance is only 32.66 percent. In the HS level performance of private school is 57.63 percent while in the public schools it is only 33.76 percent. Again, in the HSS level, performance of private school is 51.43 percent but in the public school it is only 37.04 percent. Thus, the mean percentage of private school performance is 56.75 percent while in the public schools it is only 35.13 percent. So, Private schools in Baksa district perform better by 21.62 percentages than that of the public school. Bhatty, K. *et al*. (2015a)[7] argued that learning outcomes of children in government schools are very low-much lower than those in private schools.

4.4.2.4: Performance of PRS and PUS in terms of first division pass percentage in Udalguri district

The performance of private and public schools in terms of first division pass percentage in Udalguri district in four categories of schools are given in table-4.19.

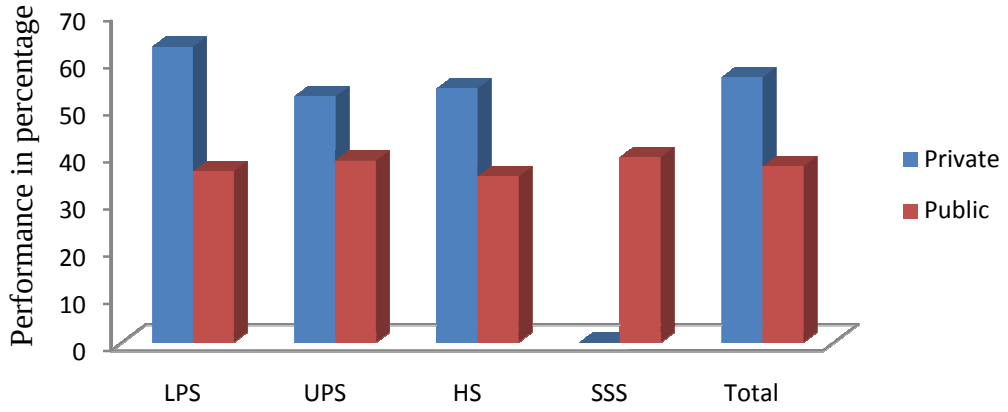
Table-4.19: Performance of PRS and PUS in terms of first division in Udalguri district during 2014-15

Category of schools	Performance in private schools (% tage)	Performance in public schools (% tage)
LPS	62.72	36.35
UPS	52.23	38.60
HS	53.93	35.26
HSS	NA	39.34
Total	56.29	37.39

Source: Field Survey (Primary data), 2015-16.

The above table-4.19 for the performance of private and public schools in terms of first division pass percentage in Udalguri district in four categories of schools are depicted in figure-4.14.

Fig.4.14: Percentage of first divisionof PRS and PUS in Udalguri



In the Udalguri district, performance in terms of first division passed percentage in the LPS category of private school is 62.72 percent while in public school it is 36.35 percent. In the UPS category, performance of private school is 52.23 percent but public school performance is only 38.60 percent. In the HS level performance of private school is 53.93 percent while in the public schools it is only 35.26 percent. There was no recognised private HSS in Udalguri district till 2014-15 but in the public school it is 39.34 percent. Thus, the mean percentage of private school performance is 56.29 percent while in the public schools it is only 37.39 percent. So, Private schools in Udalguri district perform better by 18.90 percentages than that of the public school.

4.4.2.5: Performance of PRS and PUS in terms of first division pass percentage in BTAD

The performance of private and public schools in terms of first division pass percentage in BTAD in four categories of schools are given in table-4.20.

Table-4.20: Performance of PRS and PUS in terms of first division in BTAD during 2014-15

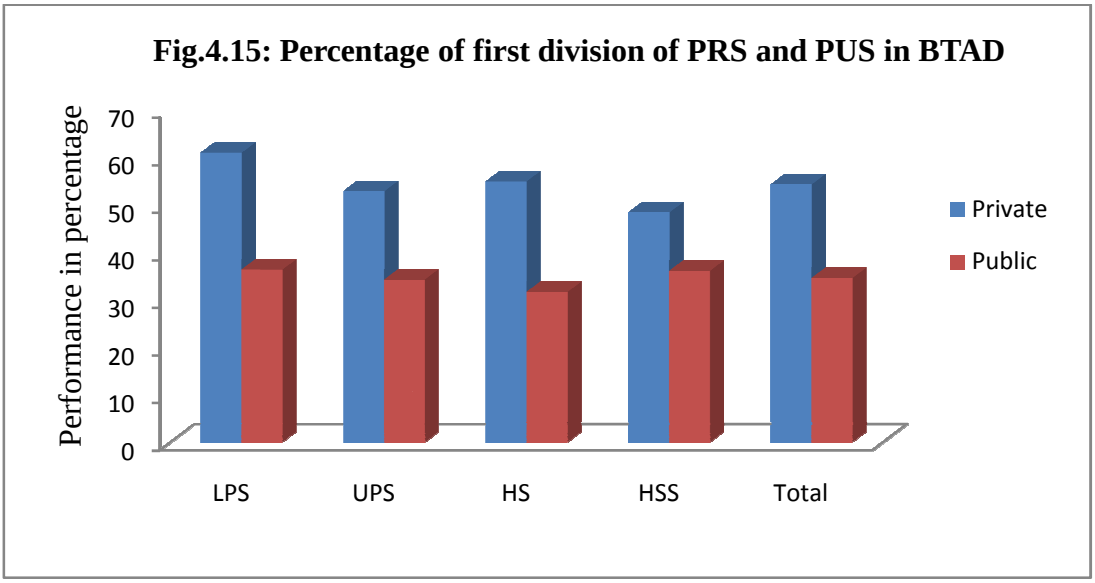
Category of schools	Performance in private schools (% tage)	Performance in public schools (% tage)
LPS	60.89	36.32
UPS	52.80	34.21
HS	54.85	31.64

HSS	48.35	36.04
Total	54.22	34.55

Source: Field Survey (Primary data), 2015-16.

The above table-4.20 for the performance of private and public schools in terms of first division pass percentage in BTAD in four categories of schools are highlighted with multiple bar diagram in figure-4.15.

Fig.4.15: Percentage of first division of PRS and PUS in BTAD



In the entire BTAD, performance in terms of first division passed percentage in the LPS category of private school is 60.89 percent while in public school it is 36.32 percent. In the UPS category, performance of private school is 52.80 percent but public school performance is only 34.21 percent. In the HS level performance of private school is 54.85 percent while in the public schools it is only 31.64 percent. In the HSS level performance of private school is 48.35 but in the public school it is 36.04 percent. Thus, the mean percentage of private school performance is 54.22 percent while in the public schools it is only 34.55 percent. So, Private schools in BTAD perform much better than the public schools by 19.67 percentages (Basumatary, R. and Debnath, R., 2018)[8]. OECD (2012)[9] reported that privately managed schools tend to have better performance level than publicly managed schools. Gbadegesian et al. (2015)[10] also pointed out that students in private schools did better than their counterparts in public schools academically. Further, Mehrotra,

S. et al. (2007)[11] finds that the facilities and attendance are significantly better in private schools and performance is also.

For testing the null hypothesis, H_0: $\mu_1 = \mu_2$; There is no difference between the performance of private and public schools; Z test: Two Sample for means is applied and found that the calculated value of test statistic, Z=2.4476 is greater than the critical value of Z=1.96 (or $\alpha=0.05<p=0.0385$) for two tail and therefore, the null hypothesis is rejected at 5 percent level of significance on the basis of it can be said that there is a difference between the performance of private and public schools.

4.5: Determinants of the performance of private and public schools

The following multiple linear regression model is used for both the private and public schools for each and every category of schools to assess the determinants of the performance in the BTAD:

$$\mathbf{Y_D = \beta_O + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \mu_i} \quad \textbf{(i)}$$

Where, Y_D measures the determinants of performance in private school, X_i is a vector of variables assumed to determine performance, βs are the corresponding vector of coefficients to be estimated and μ_i is an error term.

X_1= Number of students enrolled

X_2= Student teacher ratio

X_3= Student classroom ratio

X_4= Number of periods offered per day

X_5= Frequency of unit test

X_6 = Frequency of bandhs and holidays

Before running the regression for both the private and public schools in each category and for all categories, all the assumptions of regression were tested and met. To test autocorrelation, Durbin-Watson Test was used and for heteroscedasticity, Breusch-Pagan test was applied.

4.5.1: Results for private lower primary schools

$Y_{PRLPS} = –0.398 + 0.504X_1 + 0.032X_2 + 0.169X_3 + 0.219X_4 – 0.615X_5 – 0.360X_6$

SE (B)	(2.240)	(0.167)	(0.200)	(0.132)	(1.021)	(0.383)	(1.177)
T Val.	(–0.178)	(3.021)	(0.163)	(1.278)	(1.683)	(–1.605)	(–0.306)

$R^2 = 0.808$, Adjusted $R^2 = 0.748$

The 0.81 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 81 percent change in dependent variable. However, the model is unable to explain 19% variations in dependent variables as R^2 takes the value 0.81 in lower primary level private school setup of educational institutions in BTAD. The value changes to 0.75 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value –0.398 significantly. The variable X_1 which is number of student enrolled in private school has highly significant positive effect on the target variable i.e. 0.504 while fourth variable which is number of periods offered per day (NPD) X_4 has a low significant positive effect on the student's performance i.e. 0.219. Second and third variables of the model which is student teacher ratio (STR) X_2 and student classroom ratio (SCR) X_3 pose insignificant positive effect on the performance. The fifth (X_5) and sixth (X_6) variables has insignificant negative effect on the student's performance. Thus, in the private lower primary school number of student enrolled and number of periods offered per day are the only significant factors affecting the students' performance.

Table-4.21: Regression statistics of Private lower primary schools in BTAD

Regression Statistics	
R Square	0.81
Adjusted R Square	0.75
Standard Error	0.128412
Observations	26

ANOVA

	Df	SS	MS	F	Sig. F
Regression	6	1.320	0.220	13.342	000
Residual	19	0.313	0.016		
Total	25	1.633			

Variable	Coefficients	Standard Error	t-Stat	P-value
Const.	–0.398	2.240	–0.178	0.861
X_1	0.504	0.167	3.021	0.007***
X_2	0.032	0.200	0.163	0.872
X_3	0.169	0.132	1.278	0.217
X_4	0.219	1.021	1.683	0.089*
X_5	–0.615	0.383	–1.605	0.125
X_6	–0.360	1.177	–0.306	0.763

Source: Calculated using IBM SPSS 20 Version, 2017.
*** Significant at 1 %. *Significant at 10 % probability of significance level.

4.5.2: Results for public lower primary schools

Auto correlation is detected in the variable of FUT, so the variable has been dropped out and the new model is used for the determinants of performance in lower primary public school:

$$Y_D = \beta_O + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \mu \quad \text{(i)}$$

Where, Y_D measures the determinants of performance in private school, X_i is a vector of variables assumed to determine performance, βs are the corresponding vector of coefficients to be estimated and μ_i is an error term.

X_1= Number of students enrolled

X_2= Student teacher ratio

X_3= Student classroom ratio

X_4= Number of periods offered per day

X_5 = Frequency of bandhs and holidays

$$Y_{PULPS} = 1.869 + 0.968X_1 – 0.135X_2 – 0.049X_3 + 0.254X_4 – 1.428X_5$$

SE (B) (1.808) (0.079) (0.081) (0.055) (0.573) (1.029)

T Val. (1.034) (12.295) (–1.664) (–0.889) (0.443) (–1.388)

$R^2 = 0.621$, Adjusted $R^2 = 0.613$

The 0.62 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 62 percent change in dependent variable. However, the model is unable to explain 38% variations in dependent variables as R^2 takes the value 0.62 in lower primary public schools in BTAD. The value changes to 0.61 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value 1.869 significantly. The variable X_1 which is number of student enrolled in public lower primary school has highly significant positive effect on the target variable i.e. 0.968 while second variable of the model i.e. STR (X_2) has low significant negative effect on student's performance i.e. – 0.135. The third and fifth variable of the model which is SCR (X_3) and FBHD (X_5) of the model has insignificant negative effect on the student's performance respectively. However, the model shows that fourth variable X_4 which is number of periods offered per day pose insignificant positive effect on the performance. Thus, X_1 and X_2 are the only statistically significant variables affecting student's performance.

Table-4.22: Regression statistics of public lower primary schools in BTAD

Regression Statistics	
R Square	0.62
Adjusted R Square	0.61
Standard Error	0.18409
Observations	236

ANOVA

	Df	SS	MS	F	Sig. F
Regression	5	12.789	2.558	75.478	000
Residual	230	7.794	0.034		
Total	235	20.583			

Variable	Coefficients	Standard Error	t-Stat	P-value
	1.869	1.808	1.034	0.302
X_1	0.968	0.079	12.295	0.000***
X_2	– 0.135	0.081	–1.664	0.097*
X_3	– 0.049	0.055	–0.889	0.375
X_4	0.254	0.573	0.443	0.658
X_5	– 1.428	1.029	–1.388	0.166

Source: Calculated using IBM SPSS 20 Version, 2017.
***Significant at 1 %, *Significant at 10 % probability of significance level.

4.5.3: Results for private upper primary school

$Y_{PRUPS} = 9.850 + 0.596X_1 – 0.067X_2 + 0.088X_3 + 0.146X_4 – 0.110X_5 – 0.226X_6$

SE (B) (31.830) (0.033) (0.338) (0.079) (3.853) (1.578) (0.554)

T Val. (0.309) (2.630) (–0.316) (0.646) (1.183) (–0.911) (–1.793)

$R^2 = 0.596$, Adjusted $R^2 = 0.512$

The 0.59 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 59 percent change in dependent variable. However, the model is unable to explain 41% variations in dependent variables as R^2 takes the value 0.59 in upper primary private school setup of educational institutions in BTAD. The value changes to 0.51 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value 9.850 significantly. The variable X_1 which is number of student enrolled in upper primary private school has significant positive effect on the target variable i.e. 0.596 while the sixth variable (X_6) which is frequency of bandhs and holidays has a low significant negative effect on student performance i.e. –0.226. Second and fifth variables of the model which is student teacher ratio (STR) X_2 and frequency of unit test FUT (X_5) has insignificant negative effect on the students' performance i.e. –0.067 and –0.110 respectively. The third and fourth variables X_3 and X_4 which is student classroom ratio and number of periods offered per day shows very low insignificant positive effect on students' performance. Thus, X_1 and X_6 are the only significant factors affecting the target variable.

Table-4.23: Regression statistics of Private upper primary schools in BTAD

Regression Statistics	
R Square	0.596
Adjusted R Square	0.512
Standard Error	8.68
Observations	36

ANOVA

	Df	SS	MS	F	Sig. F
Regression	6	3225.61	537.60	7.122	000
Residual	29	2189.13	75.48		
Total	35	5414.75			

Variable	Coefficients	Standard Error	t-Stat	P-value
Const.	9.850	31.830	0.309	0.759
X_1	0.596	0.033	2.630	0.014**
X_2	–0.067	0.338	–0.316	0.754
X_3	0.088	0.079	0.646	0.523
X_4	0.146	0.853	0.183	0.246
X_5	–0.110	1.578	–0.911	0.370
X_6	–0.226	0.554	–1.793	0.083*

Source: Calculated using IBM SPSS 20 Version, 2017.
**Significant at 5 %, *Significant at 10 % probability of significance level.

4.5.4: Results for public upper primary school

$Y_{PUUPS} = -118.849 + 0.759X_1 - 0.159X_2 + 0.289X_3 + 0.080X_4 - 0.183X_5 + 0.043X_6$

SE (B) (158.832) (0.038) (0.275) (0.142) (6.818) (3.681) (2.619)

T Val. (–0.748) (5.553) (–1.306) (2.648) (0.821) (–2.051) (0.460)

$R^2 = 0.758$, Adjusted $R^2 = 0.716$

The 0.76 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 76 percent change in dependent variable. However, the model is unable to explain 24% variations in dependent variables as R^2 takes the value 0.76 in public upper primary school setup of educational institutions in BTAD.

The value changes to 0.72 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value -118.849 significantly. The variable X_1 which is number of student enrolled in private school has highly significant positive effect on the target variable i.e. 0.759 while the variable X_3 has a low significant positive effect on the student's performance i.e. 0.289 but frequency of unit test, FUT (X_5) has a low significant negative effect on the target variable i.e. –0.183. Second variable of the model which is student teacher ratio (STR) X_2 has a low negatively insignificant effect on the student's performance i.e. –0.159 while the other variables X_4 and X_6 shows insignificant positive effect on student's performance. Thus, X_1, X_3 and X_5 are the significant variables affecting the students' performance in the public upper primary schools.

Table-4.24: Regression statistics of public upper primary schools in BTAD

Regression Statistics	
R Square	0.758
Adjusted R Square	0.716
Standard Error	18.461
Observations	41

ANOVA

	Df	SS	MS	F	Sig. F
Regression	6	36334.192	6055.699	17.768	000
Residual	34	11588.198	340.829		
Total	40	47922.390			

Variable	Coefficients	Standard Error	t-Stat	P-value
Const.	–118.849	158.832	–0.748	0.459
X_1	0.759	0.038	5.553	0.000***
X_2	–0.159	0.275	–1.306	0.200
X_3	0.289	0.142	2.648	0.012**
X_4	0.080	6.818	0.821	0.417
X_5	–0.183	3.681	–2.051	0.048**
X_6	0.043	2.619	0.460	0.649

Source: Calculated using IBM SPSS 20 Version, 2017.
***Significant at 1 %, **Significant at 5 % probability of significance level.

4.5.5: Results for private high school

$Y_{PRHS} = -122.212 + 0.423X_1 - 0.033X_2 - 0.724X_3 + 0.267X_4 - 0.036X_5 + 0.220X_6$

SE (B)	(106.574)	(0.109)	(0.372)	(0.237)	(11.255)	(3.427)	(1.304)
T Val.	(–1.147)	(3.769)	(–0.154)	(–2.055)	(1.081)	(–0.137)	(0.912)

$R^2 = 0.832$, Adjusted $R^2 = 0.663$

The 0.832 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 83 percent change in dependent variable. However, the model is unable to explain 17% variations in dependent variables as R^2 takes the value 0.83 % in private high school setup of educational institutions in BTAD. The value changes to 0.663 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value –122.212 significantly. The variable X_1 which is number of student enrolled in private high school has a significant positive effect on the target variable i.e. 0.423 while the third variable which is student classroom ratio X_3 has a negatively significant effect i.e. –0.724 on the student's performance. Second and fifth variable of the model which is student teacher ratio (STR) X_2 and frequency of unit test (FUT) X_5 has insignificant negative effect on the students' performance. However, the model shows that fourth (X_4) and sixth (X_6) variables pose insignificant positive effect on the performance. Thus, X_1 and X_3 are the only significant variables affecting student's performance.

Table-4.25: Regression statistics of private high schools in BTAD

Regression Statistics	
R Square	0.832
Adjusted R Square	0.663
Standard Error	7.3293
Observations	13

ANOVA

	Df	SS	MS	F	Sig. F
Regression	6	1590.606	265.101	4.935	0.037
Residual	6	322.317	53.719		
Total	12	1912			

Variable	Coefficients	Standard Error	t-Stat	P-value
Const.	–122.212	106.574	–1.147	0.295
X_1	0.423	0.109	3.769	0.009***
X_2	–0.033	0.372	–0.154	0.883
X_3	–0.724	0.237	–2.055	0.086*
X_4	0.267	11.255	1.081	0.321
X_5	–0.036	3.427	–0.137	0.895
X_6	0.220	1.304	0.912	0.397

Source: Calculated using IBM SPSS 20 Version, 2017.
***Significant at 1 %, *Significant at 10 % probability of significance level.

4.5.6: Results for public high school

$Y_{PUHS} = –117.081 + 0.519X_1 + 0.322X_2 + 0.318X_3 – 0.052X_4 – 0.417X_5 + 0.351X_6$

SE (B) (383.864) (0.070) (0.985) (0.185) (21.009) (10.469) (6.138)

T Val. (–0.305) (2.345) (2.127) (1.443) (–0.214) (–1.460) (0.454)

$R^2 = 0.889$, Adjusted $R^2 = 0.805$

The 0.889 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 88 percent change in dependent variable. However, the model is unable to explain 12% variations in dependent variables as R^2 takes the value 0.889 in private high school setup of educational institutions in BTAD. The value changes to 0.80 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value -117.08 significantly. In the public high school, the only significant variable affecting the students' performance positively is the number of student enrolled X_1 and student teacher ratio X_2, i.e. 0.51 and 0.322 respectively. Other variables do not have significant effect on the students' performance.

Table-4.26: Regression statistics of public high schools in BTAD

Regression Statistics	
R Square	0.889
Adjusted R Square	0.805
Standard Error	13.40267
Observations	15

ANOVA

	Df	SS	MS	F	Sig. F
Regression	6	11484.947	1914.158	10.656	002
Residual	8	1437.053	179.632		
Total	14	12922			

Variable	Coefficients	Standard Error	t-Stat	P-value
Const.	–117.081	383.864	–0.305	0.768
X_1	0.519	0.070	2.345	0.017**
X_2	0.322	0.985	2.127	0.016**
X_3	0.318	0.185	1.443	0.187
X_4	–0.052	21.009	–0.214	0.836
X_5	–0.417	10.469	–1.460	0.182
X_6	0.119	6.138	0.454	0.662

Source: Calculated using IBM SPSS 20 Version, 2017.
**Significant at 5 % probability of significance level.

4.5.7: Results for private HS and HSS (Combined Results)

$Y_{PRS} = –58.710 + 0.985X_1 – 0.059X_2 – 0.189_3 + 0.071X_4 – 0.035X_5 + 0.351X_6$

SE (B) (72.120) (0.024) (0.314) (0.121) (8.760) (2.417) (0.827)

T Val. (–0.814) (14.669) (–0.769) (–2.976) (1.101) (–0.494) (0.235)

$R^2 = 0.974$, Adjusted $R^2 = 0.957$

The 0.97 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 97 percent change in dependent variable. The, model is unable to explain % only 13 percent variations in dependent variables as R^2 takes the value 0.79 in private high school and higher secondary school setup of

educational institutions in BTAD. The value changes to 0.95 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value –58.710 significantly. The variable X_1 which is number of student enrolled in private school has highly significant positive effect on the target variable i.e. 1.085 while the third variable X_3 which is student classroom ratio shows very low significant negative effect on student's performance i.e. –0.189. Second and fifth variable of the model which is student teacher ratio (STR) X_2 and frequency of unit test (FUT) X_5 has a negatively insignificant effect on the student's performance. However, the model shows that the fourth variable X_4 and sixth variable X_6 pose insignificant positive effect on the performance. The combined result of private high school and higher secondary schools shows that X_1 and X_3 are the only significant variables affecting the students' performance.

Table-4.27: Regression statistics of private HS and HSS in BTAD

Regression Statistics	
R Square	0.974
Adjusted R Square	0.957
Standard Error	7.04
Observations	16

ANOVA

	Df	SS	MS	F	Sig. F
Regression	6	16849.583	2808.264	56.624	000
Residual	9	446.355	49.59		
Total	15	15			

Variable	Coefficients	Standard Error	t-Stat	P-value
Const.	–58.710	72.120	–0.814	0.437
X_1	0.985	0.024	14.669	0.000***
X_2	–0.059	0.314	–0.769	0.462
X_3	–0.189	0.121	–2.976	0.016**
X_4	0.071	8.760	1.101	0.299
X_5	–0.035	2.417	–0.494	0.633
X_6	0.014	0.827	0.235	0.820

Source: Calculated using IBM SPSS 20 Version, 2017.
***Significant at 1 %, **Significant at 5 % probability of significance level.

4.5.8: Results for public HS and HSS (Combined Results)

$Y_{PUS} = -178.249 + 0.482X_1 + 0.262X_2 + 0.250X_3 + 0.110X_4 - 0.359X_5 + 0.068X_6$

SE (B) (263.430) (0.060) (0.871) (0.097) (16.168) (7.582) (0.658)

T Val. (–0.677) (2.575) (2.277) (2.403) (0.722) (–2.352) (0.553)

$R^2 = 0.940$, Adjusted $R^2 = 0.911$

The 0.94 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 94 percent change in dependent variable. The model is unable to explain only 16% variations in dependent variables as R^2 takes the value 0.94 in public high school and higher secondary schools in BTAD. The value changes to 0.911 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value –178.249 significantly. The variables X_1, X_2 and X_3 have significant positive effect on the target variable while the fifth variable X_5 has significant negative effect on the students' performance. However, the fourth X_4 and sixth X_6 variables pose insignificant positive effect on the students' performance. Thus, in the public high school and higher secondary schools, the combined results, shows that X_1, X_2 and X_3 are the variables that have significant positive effect on students' performance and X_5 is the only variable that have significant negative effect on the students' performance.

Table-4.28: Regression statistics of public HS and HSS in BTAD

Regression Statistics	
R Square	0.940
Adjusted R Square	0.911
Standard Error	13.301
Observations	19

ANOVA

	Df	SS	MS	F	Sig. F
Regression	6	33533.386	5588.898	31.590	000
Residual	12	2123.035	176.920		
Total	18	35656.421			

Variable	Coefficients	Standard Error	t-Stat	P-value
Const.	–178.249	263.430	–0.677	0.511
X_1	0.482	0.060	2.575	0.024**
X_2	0.262	0.871	2.277	0.042**
X_3	0.250	0.097	2.403	0.033**
X_4	0.110	16.188	0.722	0.484
X_5	–0.359	7.582	–2.352	0.037**
X_6	0.068	4.249	0.553	0.590

Source: Calculated using IBM SPSS 20 Version, 2017.
**Significant at 5 % probability of significance level.

4.5.9: Results for private schools in BTAD

$Y_{PRS} = –1.558 + 0.660X_1 – 0.070X_2 + 0.030X_3 + 0.258X_4 – 0.\ 079X_5 – 0.351X_6$

SE (B) (2.887) (0.092) (0.106) (0.077) (0.799) (0.232) (0.658)

T Val. (–0.540) (7.185) (–0.662) (0.391) (0.324) (–0.339) (0.534)

$R^2 = 0.785$, Adjusted $R^2 = 0.618$

The 0.79 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 79 percent change in dependent variable. However, the model is unable to explain 21% variations in dependent variables as R^2 takes the value 0.79 in private school setup of educational institutions in BTAD. The value changes to 0.78 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value – 1.558 significantly. The variable X_1 which is number of student enrolled in private school has highly significant positive effect on the target variable i.e. 0.660 while the fourth variable X_4 which is number of periods offered per day pose a moderately low significant positive effect on the performance i.e. 0.258. Second, fifth and sixth variables of the model which is student teacher ratio (STR) X_2, frequency of unit test (FUT) X_5 and frequency of bandhs and holidays (FBHD) X_6 has negatively insignificant effect on the students performance while the third variable X_3 which is student classroom ratio shows very low and insignificant positive effect on student's performance. Thus, in

the private schools in BTAD, X_1 and X_4 are the only variables affecting the performance of the student's.

Table-4.29: Regression statistics of Private schools in BTAD

Regression Statistics	
R Square	0.79
Adjusted R Square	0.78
Standard Error	0.38630
Observations	82

ANOVA

	Df	SS	MS	F	Sig. F
Regression	6	17.976	2.996	20.077	000
Residual	75	11.192	0.149		
Total	81	29.168			

Variable	Coefficients	Standard Error	t-Stat	P-value
Const.	–1.558	2.887	–0.540	0.591
X_1	0.660	0.092	7.185	0.000***
X_2	–0.070	0.106	–0.662	0.510
X_3	0.030	0.077	0.391	0.697
X_4	0.258	0.799	0.324	0.047**
X_5	–0.079	0.232	–0.339	0.735
X_6	–0.351	0.658	–0.534	0.595

Source: Calculated using IBM SPSS 20 Version, 2017.
***Significant at 1 %, **Significant at 5 % probability of significance level.

4.5.10: Results for public schools in BTAD

$Y_{DPUS} = 4.486 + 0.969X_1 – 0.203X_2 – 0.013X_3 + 0.223X_4 – 0.264X_5 – 0.436X_6$

SE (B) (3.887) (0.061) (0.065) (0.049) (0.426) (0.154) (0.957)

T Val. (1.154) (17.435) (–3.139) (–0.261) (0.523) (–1.716) (–1.501)

$R^2 = 0.79$, Adjusted $R^2 = 0.78$

The 0.79 value of R^2 shows that the model is good showing significant effect of independent variables on dependent variable and show one unit changes in independent variables causes 79 percent change in dependent variable. However,

the model is unable to explain 21% variations in dependent variables as R^2 takes the value 0.79 in public school setup of educational institutions in BTAD. The value changes to 0.78 along with adjustments. The mean effect of included variables is reflected by intercept of the model which takes the value 4.486 significantly. The variable X_1 which is number of student enrolled in public school has a highly significant positive effect on the target variable i.e. 0.969 but the second variable of the model which is student teacher ratio (STR) X_2 has a highly significant negative effect on the students performance i.e. –0.20 while the fifth variable which is frequency of unit test (FUT) X_5 has a low significant negative effect on the students performance i.e. –0.264. The third and sixth variables which is student classroom ratio (SCR) X_3 and frequency of bandhs and holidays (FBHD) X_6 shows negative and insignificant effect on student's performance. However, the model shows that fourth variable X_4 which is number of periods offered per day pose positively insignificant effect on the performance. Thus, X_1, X_2 and X_5 are the variables affecting the student's performance significantly.

Table-4.30: Regression statistics of public schools in BTAD

Regression Statistics	
R Square	0.789
Adjusted R Square	0.784
Standard Error	0.430
Observations	298

ANOVA

	Df	SS	MS	F	Sig. F
Regression	6	201.073	35.512	181.166	000
Residual	291	53.829	0.185		
Total	297	254.902			

Variable	Coefficients	Standard Error	t-Stat	P-value
Const.	4.486	3.769	1.154	0.249
X_1	0.969	0.059	17.435	0.000***
X_2	–0.203	0.063	–3.134	0.002***
X_3	–0.013	0.048	–0.261	0.794
X_4	0.223	0.413	0.523	0.601
X_5	–0.264	0.149	–1.716	0.087*

X_6	–0.436	0.928	–1.501	0.135

Source: Calculated using IBM SPSS 20 Version, 2017.
***Significant at 1 %, *Significant at 10 % probability of significance level.

In the private school set up of educational institutions in BTAD, the regression statistics implied the mean effect of the included variables on the dependent variable is negative whose value is -1.558 and that only the number of student enrolled and number of periods offered per day is statistically the most significant factor which contributes positively to the students' performance, the other variables are not statistically significant. On the other hand, in the public school set up of educational institutions, the mean effect of included variable on the dependent variable is positive i.e. 4.486 and that number of student enrolment, student teacher ratio and frequency of unit test are the most statistically significant variables affecting the student's performance. Other variables are not statistically significant. Thus, number of student enrolment is the only statistically significant common variable for both the private and public schools which contributes positively to the students' performance. The contradictory variable is that number of periods offered per day (X_4) in private schools of BTAD contributes positively to the student's performance while student teacher ratio (X_2) in public schools of BTAD affects negatively to the student's performance. Frequency of unit test X_5 in the public schools of BTAD is statistically significant variable affecting negatively the target variable while it is not statistically significant variable in the private schools of BTAD.

4.6: Conclusion

From the above analysis and discussion the following conclusions are drawn as follows:

With regard to the pattern of growth of private and public school:

(i) Private schools in the Chirang district had its emergence and growth in the post 1980s while the public schools had its emergence in 1920s and continued its rapid growth till 1980s thereafter its growth has been declining.

(ii) Private schools in the Kokrajhar district have a growth in the post 1980s while public schools have a rapid growth in the pre 1980s.

(iii) In the Baksa district, private schools emerged and developed in the post 1990s while the public schools emerged and developed in the pre 1990s.

(iv) In the Udalguri district, private schools emerged and developed in the post 1990s while the public schools emerged and developed in the pre 1990s.

(v) There were sharp differences in the pattern of growth of private and public schools in the BTAD. There were steady and continuous growth of private schools in the post 1970s while there were steady and continuous growths of public schools in the pre 1970s, in the post 1970s, there were declining trends in the growth of public schools.

With regard to the growth of student enrolment in private and public school:

(i) In the Chirang district, the CAGR of student enrolment in the private schools is greater than that of the public schools. It is 9.47 percent in private schools and 1.60 percent in public schools.

(ii) In the Kokrajhar district also, the CAGR of student enrolment in the private schools is much higher than the student enrolment in the public school as it is 7.72 percent in private school while it is negative i.e. –0.04 in the public schools.

(iii) In the Baksa district, the CAGR of student enrolment in the private school 12.60 percent but the CAGR of student enrolment in the public school is negative i.e. -0.61 percent.

(iv) In the Udalguri district, the CAGR of student enrolment in the private school is 14.36 percent but its counterpart is only 0.20 percent.

(v) In the entire BTAD, the CAGR of student enrolment in the private school is 10.8 percent while CAGR of its counterpart is only 0.20 percent.

With regard to the performance in terms of overall passed percentages:

(i) The performance of private schools in Chirang district is 13.23 percentages ahead than that of the public schools.

(ii) Private schools performance in the Kokrajhar district outshined the public schools by 12.4 percentages.

(iii) Private schools in Baksa district perform better by 11.45 percentages than that of the public school.

(iv) Private schools in Udalguri district perform better by 13.99 percentages than that of the public school.

(v) The mean percentage of private school performance is 91.86 percent while in the public schools it is only 80.04 percent. So, Private schools in BTAD perform much better than the public schools by 11.82 percentages.

With regard to the performance in terms of first division passed percentages:

(i) The performance of private schools in terms of first division passed percentage in Chirang district is 9.78 percentages ahead than that of the public schools.

(ii) The performance of private schools in terms of first division passed percentage in Kokrajhar district is 20.04 percentages ahead than that of the public schools.

(iii) The performance of private schools in terms of first division passed percentage in Baksa district is better by 21.62 percentages than that of the public school.

(iv) Private schools in Udalguri district, in terms of first division passed percentage perform better by 18.90 percentages than that of the public school.

(v) The mean percentage of private school performance in terms of first division passed percentage is 54.22 percent while in the public schools it is only 34.55 percent. So, Private schools in BTAD perform much better than the public schools by 19.67 percentages. The study made by Ronguno, S.K. (2017)[12] in Wareng district, Kenya also showed that private schools perform much better in academic than public schools.

With regard to the determinants of the performance of private and public schools:

(i) In the private lower primary schools in BTAD, the variables affecting the students' performance significantly are number of student enrolled, X_1 and number of periods offered per day, X_4.

(ii) In the public lower primary schools, the number of student enrolled, X_2 has significant positive impact on the students' performance while the STR, X_2 has negatively significant effect on the students' performance.

(iii) In the private upper primary schools, variable X_1 has significant positive effect on the target variable while the variable X_6 has significant negative effect on the students' performance.

(iv) In the public upper primary schools, the variables X_1, X_3 has significant positive effect and X_5 has significant negative effect on the students' performance.

(v) In the private high schools, X_1 is the only variable that has highly significant positive effect on the students' performance while the variable X_3 and X_5 affects the students' performance significantly negative.

(vi) In the public high schools, X_1 and X_2 are the two variables that have significant positive effect on the students' performance.

(vii) The combined results for private high schools and higher secondary schools have shown that variable X_1 have significant positive effect while the variable X_3 have significant negative effect on the students' performance.

(viii) The combined results for public high schools and higher secondary results have shown that variables X_1, X_2 and X_3 have significant positive effect and X_5 have significant negative effect on the students' performance.

(ix) In the private school set up of educational institutions (all categories) in BTAD, the regression statistics implied the mean effect of the included variables on the dependent variable is negative whose value is –1.558 and that only the number of student enrolled and number of periods offered per day is statistically the most

significant factor which contributes positively to the students' performance, the other variables in the model are not statistically significant.

(x) In the public school set up of educational institutions, the mean effect of included variable on the dependent variable is positive i.e. 4.486 and that number of student enrolment, student teacher ratio and frequency of unit test are the most statistically significant variables. The number of student enrolled contributes positively to the students' performance while the student teacher ratio and frequency of unit test impacts negatively to the students' performance. The other variables in the model are not statistically significant.

The number of student enrolment is the only statistically significant common variable for both the private and public schools which contributes positively to the students' performance.

The contradictory variable is that number of periods offered per day (X_4) in private schools of BTAD contributes positively to the student's performance while student teacher ratio (X_2) in public schools of BTAD affects negatively to the student's performance. Frequency of unit test X_5 in the public schools of BTAD is statistically significant variable affecting negatively the target variable while it is not statistically significant variable in the private schools of BTAD.

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