EFFECT OF
'TOTAL NUMBER OF GOVERNMENT PRIMARY SCHOOLS'
AND
'TOTAL NUMBER OF GOVERNMENT PRIMARY SCHOOL TEACHERS' ON
'GROSS ENROLMENT RATIO OF THE GOVERNMENT PRIMARY SCHOOLS'
IN
THE DISTRICTS OF WEST BENGAL


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## 1. INTRODUCTION

"The curriculum of the schools did not neglect
India's cultural, analytical and scientific heritage, But was very involved also with the rest of the world"

## - Amartya Sen

The basic meaning of education refers to education as the process of facilitating, learning, or the gaining of knowledge, acquisition of skills, values, morals, beliefs and habits. Education shows us the importance of hard work and, at the same time, helps us grow and develop. Thus, we are able to shape a better society to live in by knowing and respecting rights, laws, and regulations. The more knowledge one gains the more opportunities will open up to allow individuals to achieve better possibilities in career and personal growth.
The education system or the education sector is a group of institutions (ministries of education, local educational authorities, teacher training institutions, schools, universities, etc.) whose primary purpose is to provide education to children and young people in educational settings.
Primary education can be determined as the first stepping stone towards future. Primary education is the foremost and basic right of every child. It is the first step in making of the character of child. The role of primary education is to ensure broad based learning of the child.
This includes development of social, cognitive, cultural, emotional and physical skills.
The primary education includes of smaller categories and a lot of variety of academics. The importance of primary education lies in the fact that this is the phase where students may be influenced positively or negatively. The future of a child is totally depending on the primary education. Primary education will boost the kids' self-confidence and offers them the skills they need for the long success in this competitive world.

Primary education is typically the first stage of formal education, coming after pre-school and before secondary school. Lower primary school or elementary schools are referred to as the school for children of age five to ten.

As schooling and educational development in West Bengal is gaining importance, literacy rate in West Bengal has increased steadily over years, along with the enrollment at primary level. For West Bengal, enrollment has increased from 95,75,246 in 2003-2004 to 1,00,86,047 in 2011-2012 (Source: DISE 2004 and DISE 2012).

Government of West Bengal has certainly taken measures to improve the quality of education for all the three stages, primary, secondary and higher. For the primary education, the government has also taken a few steps.

One of the main problems in the education of India is the economic problems in the families. For this, the government has made elementary education for the children in the age range 4-14 years compulsory and free of cost. Sarva Shiksha Abhiyan is made mainly for the poor children.
In this, children are given free education with one time meal. Added to this government has also taken steps in imparting computer education in the primary levels. Schemes like National Program of Nutritional Support to Primary Education,
The National Program for Education of Girls at Elementary Level and Sarva Shiksha Abhiyan promote education in the state.
General vision of West Bengal Board of Primary Education:
West Bengal board of primary education basically works with a view to attain the goals of education for all at the primary level (5+ to 9+ age group under the jurisdiction of Primary Education) the Board proposes to ensure
(i) Universal access,
(ii) Universal retention and
(iii) Universal quality achievement in the primary education sector.

Obviously, to reach these, the Board as per the powers and functions vested in it by the Act (W.B. Primary Education Act, 1973 as amended from time to time) has successfully made so far the following strategic interventions that are logically coherent.
The extent of expansion and spread of education in all the states of our country can be determined by various indices, one of which is Gross Enrollment. Gross Enrollment Ratio, and in short, GER refers to the number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education.
GROSS ENROLMENT RATIO of the primary section is the total enrollment in primary education, regardless of age, expressed as a percentage of the population of official primary education age. GER can exceed $100 \%$ due to the inclusion of over-aged and under-aged students because of early or late school entrance and grade repetition. Gross Enrolment Ratio for Primary Education (GER) is defined as the number of pupils (of any age) who are enrolled in primary education as a percentage of the total children of official school age population (Source: ISCED97).
GER of primary schools is obtained by dividing the number of students enrolled in the level of Primary Education regardless of age by the population of the age group which officially corresponds to the level of Primary Education, and the result is multiplied by 100.
The purpose of Gross Enrollment is to show the general level of participation in a given level of education. It indicates the capacity of the education system to enroll students of a particular age group.

Factors Affecting Gross Enrollment include the population, the school age population, family income, the count of enrolled students' age, the teacher count, the school even scale, the average GDP, the higher education institutions number, and the expansion of higher education organization.

There are certain initiatives taken by the government for increasing enrollment in schools such as Imparting free elementary education and providing free mid-day meal in the government schools, arranging campaigns to promote the importance of education, establishing initiatives like the "Sarva Shiksha Abhiyan", and so on.

## 2. MOTIVATION

The role of education in socio-economic progress of a country cannot be undermined. The minimum educational attainment has a direct and positive bearing on efficiency in resource allocation. This leads to higher income and an equitable distribution of such income thereby reduces inequality.
Education is the key to the development of society and further enriches the economy in various ways. To promote participation and access to elementary education, the state government has introduced free primary education and further has to increase teacher recruitment in primary schools.

There are certain initiatives taken by the government for raising enrollment in schools such as imparting free elementary education and providing free mid-day meal in the government schools, arranging campaigns to promote the importance of education, establishing initiatives like the "Sarva Shiksha Abhiyan", and so on.

The Gross Enrollment Ratio of Primary Education in West Bengal may depend on the average number of primary teachers in the state in accordance to the total number of government primary schools in the state. Teacher recruitment compared to student enrollment in primary schools highlights the fact that with the increasing number of primary schools in the state per year, we are facing a shortage of average number of primary teachers per school. Teacher-pupil ratio gradually goes on decreasing. An increase in primary teacher recruitment, in turn, may leave a major effect on student enrollment in primary schools that is the principal matter to be discussed in the latter part of this report.

Over the years, the system of education has gained prosperity, and sometimes has also faced failures. But as primary or elementary level of education falls in the first and foremost basic need of every individual, this topic is of much importance.
The relevance of this topic puts up the question that the initiative taken by Sarva Sikhaya Abhiyan to introduce many new primary schools in the state of West Bengal has ultimately fulfilled the objective of
the government, as well as the economy or not. The study related to this uprising question is of much importance and is discussed further in this research article.

The relevance of this topic in the present situation depicts the fact that more children may get enrolled in the government primary schools if they get proper care and guidance, no classes would be overcrowded and no classes will be missed due to lack of faculty.

Number of teachers per school may leave an impact on the student enrollment per school, and in turn the Gross Enrollment Ratio of the state.

The first three objectives of Sarva Sikshya Abhiyan as outlined in the policy document are:
i. All children in school Education Guarantee Centre, Alternate School, "Back-to-School" camp by 2003 .
ii. All children complete 5 years of primary schooling by 2007.
iii. All children complete of elementary schooling by 2010.

Against this backdrop, it becomes imperative to discern how improving infrastructure in primary education might affect GER. In this report, we shall endeavor to study how an improvement in infrastructure in the education sector, like raising the number of teachers in primary schools and also increasing the outreach of schools (i.e., increasing the number of primary schools in districts of the state) might affect GER.
Against this background, we have to check that whether these objectives of SSA are fulfilled or not. Assessing this 'Back-to-School' Campaign, we have to see that whether the Enrollment ratio has increased or not with respect to time and on what factors the Enrollment Ratio depend.

## 3. LITERATURE REVIEW

The education system in India has savored a special bond between the teacher and the pupil since time unknown. Elementary Education and basically Primary Education besides being a basic human need, is vital for raising the standard of life, providing gainful employment, removal of regional backwardness, thereby ensuring overall development and wellbeing of a country. As said earlier, along with many other factors such as enactment of the mid-day meal scheme, developed infrastructure, etc., the increase in number of teachers in the schools (high teacher-pupil ratio, low pupil-teacher ratio) may leave an effect on the enrollment of students. It is therefore the need of the hour to review the literature carried out by different academicians, educational thinkers, researchers, policymakers and educational reformers in the field of education in India and particular in West Bengal state. The relevant published articles and research papers related to this study are thoroughly examined, with a view to find out further scope of the
objective of the research. The crux of the various studies, views and comments on the afore-side topics are as follows:

Govinda and Vergees (1993) conducted a study which shows that a trained teacher makes considerable difference in terms of teaching style and classroom management. Several researchers and reports indicated that improvement in learning level of children depend not only on expansion of schooling provision but also on availability of ample instructional time and its effective use. It is the teacher who plays an important role in effective use of instructional time.

Indian Institute of Education (2002), report has focused on various aspects of elementary education, infrastructure, teaching learning equipment, number of teachers, and training of teachers. Effective implementation of existing schemes like free mid-day meals, free provision of textbooks and attendance allowance has to be ensured in some way to reduce drop-out and raise retention and attendance. According to Rana, Rafiqueet. al. (2003) the problems regarding Primary Schools points out the fact that that current Student-Teacher Ratio at time of the report was $54: 1$ which is much higher than $40: 1$. The lack of trained teachers is an area of concern for the Primary Schools.

Bajpai.et.al.(2004) in their research, queried the basic policies implemented in increasing Enrollments in Primary School and figured out that The Federal government launched the Sarva Sikshya Abhiyan in 2001 with the goal to universalize Primary Education by 2007 and Elementary Education by 2010.Another policy that has been very successful in increasing enrollments in Primary School is that of the provision of mid-day meals.
Chand, Sherry.et.al.(2006), narrated innovations under the Sarva Shiksha Abhiyan. . They mentioned that Government of India has launched the Sarva Shiksha Abhiyan (SSA). The programme has been introduced in 2001-2002 in partnership with the state and local-self governments to universalize and improve quality of elementary education in the country. This played an important role in reducing the number of out-of-school children and increasing primary school enrollment.

Indian Institute of Education, Pune (2006), investigated the problem of school dropout which has been continually troubling the primary education system. In this article various factors affecting fewer attendances were explained. It was also suggested that local teachers should be made available for teaching in schools so as to reduce the problem of teacher absenteeism and improve punctuality; incentives should be provided to encourage women teachers; and the cultural gap between parents and teachers should be bridged through more elaborate form of participation in the school management and control system.

Mehta, Arun (2006) presented the analytical report for 2004-05 of elementary Education in India.
They concluded that there is still need to focus on filling vacancies of teachers in schools for improving enrolment and retention of children in schools.

The study realized by Khandelwal (2007)evaluated the theoretical and practical aspects of teachers training in India. Effective teaching involves the skills of introducing a new lesson, stimulating pupils’ interest and sustaining their motivation, helping pupils to learn new concepts framing thought provoking questions, organizing classroom interaction, etc.

According to Kingdon (2007) the steps taken by Sarva Sikshya Abhiyan in battling Primary School enrollment are funding -civil works, salaries of additional teachers to reduce the pupil-teacher ratio to 40:1.

Govinda and Bandyopadhyay (2008) questioned about the determinants affecting Primary enrollment. To this question, their article cited out that more than schools, motivated teachers play a vital role in ensuring that children attend school regularly and take an active part in the learning process.

Ghosh (2008) enquired what factors determined the quality of Primary School education. Her article cited out that Teacher-Student ratio is a very important indicator for the quality education imparted in a school. A higher ratio would imply low effectiveness.

Sharma.et.al.(2009) focused his study on Literacy and school attendance in India. According to them, "Operation Blackboard" and "Sarva Siksha Abhiyan" are state sponsored movements that aimed at universal enrolment and providing the basics.

Banerjee, Chakraborti.et.al.(2011) in their Interim Report - questioned what are roles performed by Right To Education ACT and concludes that the ACT provides for rational deployment of teachers by ensuring that the specified student teacher ratio is maintained for each school.

Mehra, Arora.et.al.(2013) also points out the importance of Right to Education Act in the field of Education. The study says that Under Right to Education Act 2009, the ideal pupil-teacher ratio is laid down. Their Report cites out that The Right to Education Act provides for rational deployment of teachers by ensuring that the specified student-teacher ratio is maintained for each school.
The study realized by Patel (2013) points out the loopholes in Primary Education System and quotes that due to shortage of resources and lack of political will, Education System in India suffers from massive gaps including high pupil-teacher ratios, shortage of infrastructure and poor levels of teacher-training. Zutshi and Rai (2013) interrogate the basic problems regarding Elementary education and respond that non-availability of teachers and large size of classes are more tangible and rudimentary problems that elementary education system faces today.

Chief Minister Mamata Banerjee (2014) points out in her Supplementary Annexure I to Final Report the current necessary actions to be taken for schools in West Bengal and recommends that immediate filling up of vacant teachers' or faculty positions for schools is of much necessity.

Nath (2014) interrogates about the determinants affecting Primary Education. His article justified that there are many schools with one or two teachers where student enrollment demands appointment of more teachers. Concept for sanctioned per post does not exist for the primary schools.

Tikadar (2015) discusses the determinants affecting student performance. She points out that teacherstudent interaction play an important role in student performance.

Sahani (2015) enquires about the general success attained in Primary Enrollment and concludes that Primary School Enrollment in India has been a success story largely due to various programs and drives to increase enrollment.

Karmakar (2016) placed the question regarding the determinants affecting Primary Education.
The article observed that availability of the teachers per school is more than two in all the districts but it is also found that there are number of grantable government schools across all districts where there is no presence of teacher.

Dey and Bandyopadhyay (2018) interrogated that what are the basic causes affecting quality of Primary Education. Their article responded that despite of having reasonable infrastructure, issues of teacher absenteeism, poor accountability of teachers, ineffective teaching learning materials, and inadequate teaching procedures are still the prevailing causes for poor educational quality in lower-tier schools. The study realized by Vohra (2019) states the problems regarding School Enrollment and cites out that while number of students is constantly increasing, the numbers of teachers aren't increasing at the same rate. What this means is that the teacher to student ratio is falling constantly which is a backlog of the country.

Rayan (2019) quoted in THE HINDU newspaper the problems regarding Primary education and says that 'The problems that plague school education in the country are lack of infrastructure, unqualified and untrained teachers, poor teacher-student ratio and an unhealthy education system.'

The study realized by Gogoi (2020) disputed the basic problems regarding Primary Schools and paved out that this include lack of trained teachers. In Primary level schools, teacher training programs conducted are very less and in primary school level number of teachers is very less according to students.

It can be concluded from the above literature review that there are several scattered factors enhancing the quality of education and enrollment of students in government primary schools. Hence, there is dire need to dig out the factors concerned because the foundation of learning is laid at primary level.

## 4. OBJECTIVE

The study is based on secondary data from various verified sources such as statistics under Census, DISE, SSA, and so on. The broad objective of this study is to look into the present state of education in West Bengal, more precisely elementary or primary education and will show in this paper the year wise and district wise statistics of government primary schools and primary teachers in the state of West Bengal. This paper aims to discuss the vital factors affecting the gross enrolment ratio of government primary schools; specifically we will see that in what way primary teacher recruitment affect student enrolment in government primary schools. With the data collected on government primary schools, Primary school teachers and the gross enrolment ratio year wise and district wise in West Bengal, we will show how number of primary school teachers, as a factor, affect the enrolment ratio in schools.
The specific objective of this paper contains the changes in inter-district and intra-district state of primary education, number of primary schools and teachers in West Bengal. Regression Analysis is to be performed to find the interrelation between number of government primary schools and teachers, and the Gross Enrolment Ratio of primary schools.
In this paper we have to regress the Gross Enrollment Ratio (GER) on number of primary school teachers and primary schools in West Bengal.

## 5. METHODOLOGY

We have certain academic limitations, and underlying critical situations related to the pandemic, so proper field survey and collection of primary survey data is not possible. Therefore we have to rely on published secondary data to continue our research.
There are various researches done by various authors and researchers on the topic of education precisely primary education in West Bengal. Some of the authors have synopsised about the factors affecting elementary education in West Bengal whereas many others spoke about the problems primary education or primary schools are facing. Some have spoke about the right to Education Act and the Sarva Sikshya Abhiyan and how they have affected elementary education in the state. A major number of authors have spoke about the poor teacher pupil ratio of the primary schools, and some have also synopsizedhow much important is teacher training.

All of the authors and researchers have used different methodologies in correspondence with their respective research topics.

In the literature review section, we have seen that the majority of the authors, namely, Rana, Vohra(2019), Rayan (2019), Banerjee (2011), Kingdon (2007), Patel (2013), Zutshi (2013), Gogoi (2020), Ghosh (2008) and more, have pointed out that Teacher Student Ratio plays a key role in shaping
up the Gross Enrolment of the schools. According to the authors, total number of Primary School Teachers is one of the vital factors that affect Gross Enrollment Ratio. Some authors, those include Bajpai (2004), Chand (2006), Kingdon (2007), Sharma (2009), Banerjee (2011), and Mehra (2013), have supposed the Right To Education Act as an important act to stabilize the enrolment of Primary Schools. Ensuring access to Elementary Education for all children, the Right to Education Act enforces Education as a fundamental right and assumes that setting up of Government Primary Schools, those impart free of cost elementary education is of dire need, in handling Gross Enrollment.

In this way, various separate methodologies continue for different researchers in their respective research articles. With the aegis of all these articles and their methods of research, it has been concluded that which methodologies to be used in this research work.

In this paper, year wise and district wise statistics of Government primary schools in the state of West Bengal has been collected. Collected precisely are total number of government primary schools in a particular district and the corresponding number of primary school teachers of that district. (Data collected form District Statistical Handbook, West Bengal, Bureau of Applied Economics and Statistics)

This is repeated for all the major 19 districts of the state of West Bengal for each time-gap ranging from 2006-2007 to 2013-2014. The gross enrolment for each district of the state are collected for two time gaps namely 2008 (DISE and other reports) and 2011 (West Bengal Sarva Sikshya Abhiyan)

With the collected data, this research study examines the issues in depth. The study is thoroughly analyzed with the help of simple descriptive statistics in order to see how the endogenous variable, in this research - Gross Enrolment Ratio of primary schools, is being affected. Using different figures and tables we will show how gross enrolment ratio is being affected. Relying on our sole objective, we have seen how total number of Government primary schools and total number of primary teachers are affecting the gross enrolment ratio in primary schools.
We will use the multiple regression or three variable regression model in this approach.
We will see that the factors and data we have collected are statistically significant or not. We will see this through p-test, and then will test that the overall regression is statistically significant or not through the ftest.

Now in this paper, the major factors that affect enrolment of students in primary government have been trimmed off. As a factor, how precise is the total number of primary teachers is to be seen in this work.

## 6. RESULT AND DISCUSSION

Primary Education in West Bengal: The study has considered the total number of Government Primary Schools enlisted district wise in the time gaps of 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12, 2012-13, and 2013-14 respectively and so are enlisted the total number of primary school Teachers in these time-gaps. The Gross Enrolment Ratio is also collected for 2008 and 2001 district wise. (Note: The GER can be greater than 100 due to due to inclusion of over-aged and under-aged pupils because of early and late entrants because of grade repetition).

The source for all of the data is precisely District Statistical Handbook of West Bengal, DISE 2008 and Other Reports and Sarva Sikshya Abhiyan 2011, West Bengal.

TABLE I: Gross Enrolment Ratio of Primary Schools in West Bengal [DISTRICT-WISE and YEAR-WISE]

| District Name | Gross Enrollment Ratio as on <br> $\mathbf{2 0 0 8}$ (Popu. 2001) | Gross Enrollment Ratio as on <br> $\mathbf{0 1 - 0 4 - 2 0 1 1 ~ ( P o p u . ~ 2 0 1 1 ) ~}$ |
| :--- | :---: | :---: |
| Birbhum | 129.51 | 124.59 |
| Bankura | 105.23 | 124.3 |
| South 24 Pargana | 121.67 | 131.05 |
| North 24 Pargana | 113.33 | 115.72 |
| Purulia | 138.67 | 130.55 |
| Uttar Dinajpur | 146.56 | 146.82 |
| Dakshin Dinajpur | 129.7 | 136.5 |


| Purba Mednipur | 110.59 | 142.06 |
| :---: | :---: | :---: |
| Paschim Mednipur | 114.37 | 126.2 |
| Nadia | 104.86 | 125.93 |
| Murshidabad | 133.11 | 138.6 |
| Darjeeling | 122.11 | 122.56 |
| Malda | 137.14 | 144.49 |
| Jalpaiguri | 141.87 | 143.53 |
| Howrah | 120.74 | 124.95 |
| Hooghly | 130.97 | 125 |
| Burdwan | 104.38 | 123.62 |
| Kolkata | 117.18 | 113.99 |
| Coochbehar | 120.36 | 140.47 |

Source: DISE 2008 and Other Reports, Sarva Sikshya Abhiyan 2011.

DIAGRAM I: A Bar Diagram Depicting the Inter-District Variation of the Gross Enrolment Ratio for Primary Schools in two different time-gaps - WEST BENGAL


The above table and the respective bar diagram are depicting the Inter-District Variation of the Gross Enrolment Ratio for Primary Schools in two different time-gaps, namely 2008 and 2011 for the state of WEST BENGAL. From the above table and graph, we can see that overall GER is highest in Uttar Dinajpur District for both the time gaps. What we can see here, is that, in majority of the districts the GER has increased with time (GER of 2011 > GER of 2008), though there are some exceptions for the districts of Bankura, Hooghly and Kolkata.

TABLE II: Total number of Primary Schools in West Bengal [DISTRICT-WISE and YEAR-WISE]

| Districts | $2006-07$ | $2007-08$ | $2008-09$ | $2009-10$ | $2010-11$ | $2011-12$ | $2012-13$ | $2013-14$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Birbhum | 2382 | 2382 | 2372 | 2372 | 2379 | 2395 | 2428 | 2429 |
| Bankura | 3472 | 3475 | 3478 | 3475 | 3533 | 3556 | 3551 | 3550 |
| South 24 <br> Pargana | 3666 | 3666 | 3683 | 3689 | 3699 | 3722 | 3731 | 3756 |
| North 24 <br> Pargana | 3732 | 3751 | 3708 | 3601 | 3601 | 3673 | 3677 | 3677 |
| Purulia | 2981 | 2981 | 2995 | 2999 | 2998 | 2999 | 2999 | 3001 |
| Uttar <br> Dinajpur | 1461 | 1439 | 1439 | 1476 | 1476 | 1532 | 1570 | 1570 |
| Dakshin <br> Dinajpur | 1185 | 1188 | 1191 | 1175 | 1175 | 1175 | 1170 | 1176 |
| Purba <br> Mednipur | 3236 | 3253 | 3253 | 3253 | 3253 | 3253 | 3253 | 3253 |
| Paschim <br> Mednipur | 4668 | 4673 | 4674 | 4681 | 4691 | 4691 | 4692 | 4698 |
| Nadia | 2614 | 2601 | 2608 | 2607 | 2603 | 2624 | 2625 | 2625 |
| Murshidabad | 3179 | 3178 | 3172 | 3175 | 3179 | 3163 | 3180 | 3180 |
| Darjeeling | 1840 | 1843 | 1843 | 1843 | 1843 | 1846 | 1896 | 1896 |
| Malda | 1885 | 1889 | 1892 | 1894 | 1894 | 1895 | 1908 | 1942 |
| Jalpaiguri | 2023 | 2037 | 2044 | 2042 | 2035 | 2035 | 2035 | 2035 |
| Howrah | 2118 | 2113 | 2205 | 2185 | 2209 | 2209 | 2203 | 2203 |
| Hooghly | 3025 | 3023 | 3025 | 3026 | 3028 | 3053 | 3027 | 3013 |
| Burdwan | 4045 | 4050 | 4055 | 4071 | 4083 | 4082 | 4083 | 4083 |
| Kolkata | 1563 | 1567 | 1570 | 1555 | 1562 | 1554 | 1534 | 1534 |
| Coochbehar | 1820 | 1826 | 1826 | 1826 | 1826 | 1826 | 1830 | 1830 |

Source: District Statistical Handbook

DIAGRAM II: A Bar Diagram Depicting the Inter-District Variation of Total Number of Primary Schools for different time-gaps - WEST BENGAL


The above table and the respective bar diagram are showing the Inter-District Variation of Total Number of Primary Schools for different time-gaps, respectively from 2006-07 to 2013-14, in WEST BENGAL. It shows that the number of total primary schools is the highest in Paschim Mednipur district and the lowest in Dakshin Dinajpur District, for this time span. While Burdwan lies in the second position and Bankura, South and North 24 Parganas lie comparatively in the higher position; Uttar Dinajpur, Kolkata and Coochbehar show low bars.

TABLE III: Total number of Primary Teachers in West Bengal [DISTRICT-WISE and YEAR-WISE]

| Districts | $2006-07$ | $2007-08$ | $2008-09$ | $2009-10$ | $2010-11$ | $2011-12$ | $2012-13$ | $2013-14$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Birbhum | 7943 | 7728 | 7403 | 7435 | 7435 | 8470 | 8585 | 8210 |
| Bankura | 9113 | 8711 | 8130 | 8430 | 10452 | 10302 | 9361 | 9733 |
| South 24 <br> Pargana | 13022 | 12876 | 11080 | 10439 | 12179 | 11911 | 11013 | 11702 |
| North 24 <br> Pargana | 11959 | 10929 | 10527 | 12193 | 12167 | 13134 | 13232 | 13232 |
| Purulia | 6519 | 6209 | 6060 | 6933 | 7817 | 7487 | 7328 | 7131 |
| Uttar <br> Dinajpur | 4585 | 4229 | 4014 | 4923 | 5372 | 7513 | 7096 | 7096 |
| Dakshin <br> Dinajpur | 3755 | 3755 | 3755 | 3564 | 4481 | 4503 | 3899 | 3999 |
| Purba <br> Mednipur | 9053 | 9566 | 8606 | 9162 | 9082 | 8954 | 12067 | 11981 |
| Paschim <br> Mednipur | 12829 | 12481 | 11882 | 11473 | 15643 | 15349 | 14651 | 14374 |
| Nadia | 9075 | 8614 | 7984 | 9060 | 10044 | 10776 | 10308 | 11229 |
| Murshidabad | 11020 | 10604 | 10067 | 9586 | 11839 | 11212 | 10971 | 14010 |
| Sarjeeling | 7648 | 7648 | 7654 | 7654 | 7654 | 6791 | 7499 | 7499 |
| Malda | 5111 | 5111 | 5111 | 5999 | 6259 | 6437 | 5811 | 5882 |
| Jalpaiguri | 7151 | 6843 | 7315 | 7269 | 8357 | 8749 | 8746 | 8641 |
| Howrah | 7695 | 7562 | 7179 | 6900 | 7268 | 6162 | 6138 | 6138 |
| Booghly | 10231 | 9558 | 8731 | 8729 | 11694 | 11533 | 11493 | 11376 |
|  | 73890 | 13890 | 13890 | 12574 | 16952 | 16963 | 16319 | 16319 |
|  | 7245 | 7245 | 7252 | 8887 | 9368 | 9416 | 9416 |  |
|  | 6121 | 5830 | 5530 | 5850 | 5843 | 5849 | 5849 |  |

Source: District Statistical Handbook

DIAGRAM III: A Bar Diagram Depicting the Inter-District Variation of Total Number of Primary School Teachers for different time-gaps - WEST BENGAL


The above table and the respective bar diagram are showing the Inter-District Variation of Total Number of Primary School Teachers for different time-gaps, respectively from 2006-07 to 2013-14, in WEST BENGAL. It shows that the number of total primary school teachers is the highest in Burdwan district and the lowest in Dakshin Dinajpur District, for this time span. While Paschim Mednipur lies in the second position and South and North 24 Parganas lie comparatively in the higher position; Uttar Dinajpur and Coochbehar show low bars.

Now, let us take two time gaps into accounts, which are of 2008-2009 and 2011-2012 respectively in order to relate the Gross Enrolment Ratio of 2008 and 2011 with the total number of Primary Schools and total number of Primary Teachers of the major 19 Districts of West Bengal.

TABLE IV: Table for Statistical Analysis

| District Name | Total number of <br> Primary Schools (X1) |  | Total number of <br> Primary School <br> Teachers (X2) | Gross Enrolment <br> Ratio (Y) |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 2008 | 2011 | 2008 | 2011 | 2008 | 2011 |
| Birbhum | 2372 | 2379 | 7403 | 7435 | 129.51 | 124.59 |
| Bankura | 3478 | 3533 | 8130 | 10452 | 105.23 | 124.3 |
| South 24 Pargana | 3683 | 3699 | 11080 | 12179 | 121.67 | 131.05 |
| North 24 Pargana | 3708 | 3601 | 10527 | 12167 | 113.33 | 115.72 |
| Purulia | 2995 | 2998 | 6060 | 7817 | 138.67 | 130.55 |
| Uttar Dinajpur | 1439 | 1476 | 4014 | 5372 | 146.56 | 146.82 |
| Dakshin Dinajpur | 1191 | 1175 | 3755 | 4481 | 129.7 | 136.5 |
| Purba Mednipur | 3253 | 3253 | 8606 | 9082 | 110.59 | 142.06 |
| Paschim Mednipur | 4674 | 4691 | 11882 | 15643 | 114.37 | 126.2 |
| Nadia | 2608 | 2603 | 7984 | 10044 | 104.86 | 125.93 |
| Murshidabad | 3172 | 3179 | 10067 | 11839 | 133.11 | 138.6 |
| Darjeeling | 1843 | 1843 | 7654 | 7654 | 122.11 | 122.56 |
| Malda | 1892 | 1894 | 5111 | 6259 | 137.14 | 144.49 |
| Jalpaiguri | 2044 | 2035 | 7315 | 8357 | 141.87 | 143.53 |
| Howrah | 2205 | 2209 | 7179 | 7268 | 120.74 | 124.95 |
| Hooghly | 3025 | 3028 | 8731 | 11694 | 130.97 | 125 |
| Burdwan | 4055 | 4083 | 13890 | 16952 | 104.38 | 123.62 |
| Kolkata | 1570 | 1562 | 7245 | 8887 | 117.18 | 113.99 |
| Coochbehar | 1826 | 1826 | 5830 | 5850 | 120.36 | 140.47 |
| TOTAL | 51033 | 51067 | 152463 | 179432 | 2342.35 | 2480.93 |
|  |  |  |  |  |  |  |

Source: District Statistical Handbook, DISE 2008 and Other Reports, Sarva Sikshya Abhiyan 2011.

In the above table we can see that the Total Number of Primary Schools in the state has increased from 51033 in the year 2008 to 51067 in the year 2011 and the Total Number of Primary School Teachers in the state has increased from 152463 in the year 2008 to 179432 in the year 2011. The total enrolment has also increased from 234235 in 2008 to 248093 in 2011. The TABLE IV depicts an overall increase in the three variables taken thereafter.

## STATISTICAL ANALYSIS:

i. MEAN

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 123.29 | 130.58 |
| X1 | 2685.94 | 2687.74 |
| X2 | 8024.37 | 9443.79 |

In the above table we can see that the MEAN of Total Number of Primary Schools (X1) in the year 2008 was 2685.94 whereas 2687.74 in the year 2011. Thus we can see in the comparison of the mean of X 1 for two different time gaps, that the mean of the independent variable X 1 is greater in 2011 than 2008.

The MEAN of Total Number of Primary School Teachers (X2) in the year 2008 was 8024.37 whereas 9443.79 in the year 2011. Thus we can see in the comparison of the mean of X2 for two different time gaps, that the mean of the independent variable X2 is greater in 2011 than 2008.

The MEAN of Gross Enrolment Ratio (Y) in the year 2008 was 123.29 whereas 130.58 in the year 2011. Thus we can see in the comparison of the mean of Y for two different time gaps, that the mean of the dependent variable Y is greater in 2011 than 2008.
ii. MEDIAN

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 121.67 | 126.2 |
| X1 | 2608 | 2603 |
| X2 | 7654 | 8887 |

In the above table we can see that the MEDIAN of Total Number of Primary Schools (X1) in the year 2008 was 2608 whereas 2603 n the year 2011. Thus we can see in the comparison of the median of X 1 for two different time gaps, that the median of the independent variable X 1 is lesser in 2011 than in 2008.

The MEDIAN of Total Number of Primary School Teachers (X2) in the year 2008 was 7654 whereas 8887 in the year 2011. Thus we can see in the comparison of the median of X2 for two different time gaps, that the median of the independent variable X2 is greater in 2011 than 2008. The MEDIAN of Gross Enrolment Ratio (Y) in the year 2008 was 121.67 whereas 126.2 in the year 2011. Thus we can see in the comparison of the median of Y for two different time gaps, that the median of the dependent variable Y is greater in 2011 than 2008.
iii. RANGE

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 42.18 | 32.83 |
| X1 | 3483 | 3516 |
| X2 | 10135 | 12471 |

In the above table we can see that the RANGE of Total Number of Primary Schools (X1) in the year 2008 was 2608 whereas 2603 n the year 2011. Thus we can see in the comparison of the range of X 1 for two different time gaps, that the range of the independent variable X 1 is lesser in 2011 than in 2008.

The RANGE of Total Number of Primary School Teachers (X2) in the year 2008 was 7654 whereas 8887 in the year 2011. Thus we can see in the comparison of the range of X 2 for two different time gaps, that the range of the independent variable X2 is greater in 2011 than 2008.

The RANGE of Gross Enrolment Ratio (Y) in the year 2008 was 121.67 whereas 126.2 in the year 2011. Thus we can see in the comparison of the range of Y for two different time gaps, that the range of the dependent variable Y is greater in 2011 than 2008.
iv. SKEWNESS

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 0.127544 | 0.174475 |
| X1 | 0.303298 | 0.312897 |
| X2 | 0.432648 | 0.708385 |

In the above table we can see that the SKEWNESS of Total Number of Primary Schools (X1) in the year 2008 was 0.303298 whereas 0.312897 n the year 2011. Thus we can see in the comparison of the skewness of X1 for two different time gaps, that the skewness of the independent variable X1 is greater in 2011 than in 2008.

The SKEWNESS of Total Number of Primary School Teachers (X2) in the year 2008 was 0.432648 whereas 0.708385 in the year 2011. Thus we can see in the comparison of the skewness of X 2 for two different time gaps, that the skewness of the independent variable X 2 is greater in 2011 than 2008.

The SKEWNESS of Gross Enrolment Ratio (Y) in the year 2008 was 0.127544 whereas 0.174475 in the year 2011. Thus we can see in the comparison of the skewness of $Y$ for two different time gaps, that the skewness of the dependent variable Y is greater in 2011 than 2008.
v. KURTOSIS

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 0.966523 | -1.053006 |
| X1 | -0.792213 | -0.756778 |
| X2 | 0.125131 | 0.131071 |

In the above table we can see that the KURTOSIS of Total Number of Primary Schools (X1) in the year 2008 was -0.792213 whereas -0.756778 in the year 2011. Thus we can see in the comparison of the kurtosis of X 1 for two different time gaps, that the kurtosis of the independent variable X1 is lesser in 2011 than in 2008. Kurtosis of X1 in both 2008 and 2011 shows negative values which refers that the distributions are flatter and has thin tails.

The KURTOSIS of Total Number of Primary School Teachers (X2) in the year 2008 was 0.125131 whereas 0.131071 in the year 2011. Thus we can see in the comparison of the kurtosis
of X 2 for two different time gaps, that the kurtosis of the independent variable X 2 is greater in 2011 than 2008. Kurtosis of X2 in both 2008 and 2011 shows positive values which refers that the distributions are peaked and has thick tails.

The KURTOSIS of Gross Enrolment Ratio (Y) in the year 2008 was 0.966523 whereas - 1.053006 in the year 2011. Thus we can see in the comparison of the kurtosis of Y for two different time gaps, that the kurtosis of the dependent variable Y is lesser in 2011 than 2008. Kurtosis of Y in 2008 shows a positive value which refers that the distribution is peaked and has thick tails. Kurtosis of Y in 2011 shows a negative value which refers that the distribution is flatter and has thin tails.

## vi. STANDARD DEVIATION

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 12.5 | 9.57 |
| X1 | 949.36 | 950.67 |
| X2 | 2551.88 | 3263.72 |

In the above table we can see that the STANDARD DEVIATION of Total Number of Primary Schools (X1) in the year 2008 was 949.36 whereas 950.67 in the year 2011. Thus we can see in the comparison of the standard deviation of X1 for two different time gaps, that the standard deviation of the independent variable X1 is greater in 2011 than in 2008.

The STANDARD DEVIATION of Total Number of Primary School Teachers (X2) in the year 2008 was 2551.88 whereas 3263.72 in the year 2011. Thus we can see in the comparison of the standard deviation of X 2 for two different time gaps, that the standard deviation of the independent variable X2 is greater in 2011 than 2008.

The STANDARD DEVIATION of Gross Enrolment Ratio (Y) in the year 2008 was 12.5 whereas 9.57 in the year 2011. Thus we can see in the comparison of the standard deviation of Y for two different time gaps, that the standard deviation of the dependent variable Y is lesser in 2011 than 2008.
vii. VARIANCE

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 156.32 | 91.68 |
| X1 | 901291 | 903779 |
| X2 | 6512135.28 | 10651893.11 |

In the above table we can see that the VARIANCE of Total Number of Primary Schools (X1) in the year 2008 was 901291 whereas 903779 in the year 2011. Thus we can see in the comparison of the variance of X1 for two different time gaps, that the variance of the independent variable X1 is greater in 2011 than in 2008.

The VARIANCE of Total Number of Primary School Teachers (X2) in the year 2008 was 6512135.28 whereas 10651893.11 in the year 2011. Thus we can see in the comparison of the variance of X 2 for two different time gaps, that the variance of the independent variable X 2 is greater in 2011 than 2008.

The VARIANCE of Gross Enrolment Ratio (Y) in the year 2008 was 156.32 whereas 91.68 in the year 2011. Thus we can see in the comparison of the variance of $Y$ for two different time gaps, that the variance of the dependent variable Y is lesser in 2011 than 2008.
viii. MINIMUM

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 104.38 | 113.99 |
| X1 | 1191 | 1175 |
| X2 | 3755 | 4481 |

ix. MAXIMUM

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 146.56 | 146.82 |
| X1 | 4674 | 4691 |
| X2 | 13890 | 16952 |

x. QUARTILES

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | $\mathrm{Q}_{1}$--> 113.33 | $\mathrm{Q}_{1}$--> 124.3 |
|  | $\mathrm{Q}_{2}$--> 121.67 | $\mathrm{Q}_{2}$--> 126.2 |
|  | $\mathrm{Q}_{3}$--> 133.11 | $\mathrm{Q}_{3}$--> 140.47 |
| X 1 | $\mathrm{Q}_{1}$--> 1843 | $\mathrm{Q}_{1 ~-->} 1843$ |
|  | $\mathrm{Q}_{2}$--> 2608 | $\mathrm{Q}_{2}$--> 2603 |
|  | $\mathrm{Q}_{3}$--> 3478 | $\mathrm{Q}_{3}$--> 3533 |
| X 2 | $\mathrm{Q}_{1}$--> 6060 | $\mathrm{Q}_{1}$--> 7268 |
|  | $\mathrm{Q}_{2}$--> 7654 | $\mathrm{Q}_{2}$--> 8887 |
|  | $\mathrm{Q}_{3}$--> 10067 | $\mathrm{Q}_{3}$--> 11839 |

xi. INTER-QUARTILE RANGE

|  | 2008 | 2011 |
| :--- | :--- | :--- |
| Y | 19.78 | 16.17 |
| X1 | 1635 | 1690 |
| X2 | 4007 | 4571 |

## TABLE V: TABLE FOR REGRESSION ANALYSIS

| District Name | Gross Enrolment Ratio <br> of Primary Schools <br> $(2011)$ | Total Number of <br> Primary Schools (2011) | Total Number of <br> Primary School <br> Teachers (2011) |
| :--- | :---: | :---: | :---: |
| Birbhum | 124.59 | 2379 | 7435 |
| Bankura | 124.3 | 3533 | 10452 |
| South 24 Pargana | 131.05 | 3699 | 12179 |
| North 24 Pargana | 115.72 | 3601 | 12167 |


| Purulia | 130.55 | 2998 | 7817 |
| :--- | :---: | :---: | :---: |
| Uttar Dinajpur | 146.82 | 1476 | 5372 |
| Dakshin Dinajpur | 136.5 | 1175 | 4481 |
| Purba Mednipur | 142.06 | 3253 | 9082 |
| Paschim Mednipur | 126.2 | 4691 | 15643 |
| Nadia | 125.93 | 2603 | 10044 |
| Murshidabad | 138.6 | 3179 | 11839 |
| Darjeeling | 122.56 | 1843 | 7654 |
| Malda | 143.53 | 2035 | 6259 |
| Jalpaiguri | 124.95 | 2209 | 8357 |
| Howrah | 125 | 3028 | 7268 |
| Hooghly | 123.62 | 4083 | 11694 |
| Burdwan | 113.99 | 1562 | 16952 |
| Kolkata | 140.47 | 1826 | 8887 |
| Coochbehar |  |  |  |

In determining the interrelation, the study fits a three variable multiple regression model where the inter district variation of the Gross Enrolment Ratio of Primary Schools is the dependent variable and is regressed upon two independent variables - Total number of Schools and Total Number of Primary School Teachers.

Here the dependent variable is denoted with Y and the two independent variables with X 1 and X 2 respectively.

Now, we will perform the Regression Analysis and Descriptive Statistics, as follows:

## DESCRIPTIVE STATISTICS

| MULTIPLE R | 0.488932 |
| :---: | :---: |
| R SQUARE | 0.239055 |
| ADJUSTED R SQUARE | 0.143937 |
| STANDARD ERROR | 9.101787 |
| OBSERVATIONS | 19 |

## ANOVA TABLE

|  | Df | SS | MS | F | Significance F |
| :---: | :---: | :---: | :---: | :---: | :---: |
| REGRESSION | 2 | 416.4067 | 208.2034 | 2.513242 | 0.112416 |
| RESIDUAL | 16 | 1325.481 | 82.84253 |  |  |
| TOTAL | 18 | 1741.887 |  |  |  |


|  | Coefficients | Standard Error | t-stat | P-value |
| :---: | :---: | :---: | :---: | :---: |
| INTERCEPT | 142.036 | 6.48869 | 21.8898 |  |
| X1 | 0.00436 | 0.00492 | 0.88524 | 0.38914 |
| X2 | -0.00245 | 0.00143 | -1.71132 | 0.10634 |


|  | LOWER 95\% | UPPER 95\% | LOWER 95.0\% | UPPER 95.0\% |
| :---: | :---: | :---: | :---: | :---: |
| INTERCEPT | 128.281 | 155.792 | 128.281 | 155.792 |
| X1 | -0.00608 | 0.01479 | -0.00608 | 0.01479 |
| X2 | -0.00549 | 0.00059 | -0.00549 | 0.00059 |

## STATISTICAL TABLES

|  | Y | X1 | X2 |
| :---: | :---: | :---: | :---: |
| MEAN | 130.5753 | 2687.737 | 9443.789 |
| Standard Error | 2.25682 | 224.0758 | 769.2671 |
| MEDIAN | 126.2 | 2603 | 8887 |
| Standard Deviation | 9.837251 | 976.7237 | 3353.157 |
| Sample Variance | 96.77152 | 953989.1 | 11243665 |
| KURTOSIS | -1.05301 | -0.75678 | 0.131071 |
| SKEWNESS | 0.174475 | 0.312897 | 0.708385 |
| RANGE | 32.83 | 3516 | 12471 |
| MINIMUM | 113.99 | 1175 | 4481 |
| MAXIMUM | 146.82 | 4691 | 16952 |
| SUM | 2480.93 | 51067 | 179432 |
| COUNT | 19 | 19 | 19 |

In determining the interrelation the study feeds a multiple linear regression where the gross enrolment ratio is the dependent variable which is regressed upon two explanatory variables, namely total number of primary schools and total number of primary school teachers in the state.

Using the two tailed t-test, and the tail probability of 0.05 , we can see here as we are working with 19 districts, observations $(n)=19$, thus, Degrees of freedom $=16$. The value of $t$-statistic from the regression analysis of intercept X1 is 0.88524 , where as we can see the corresponding table value for 16 (degrees of freedom) is 2.120 , thus 0.88524 is less than 2.120. This shows that null hypothesis is rejected and thus the regression analysis for X 1 is insignificant. This means that the relationship between gross enrolment ratio and total number of primary schools in each district does not appear to be significant, therefore any relation between these two variables does not hold good.

Using the two tailed t -test, and the tail probability of 0.05 , we can see here as we are working with 19 districts, observations $(n)=19$, thus, Degrees of freedom $=16$. The values of $t$-statistic from the regression
analysis of intercept X2 IS 1.71132, where as we can see the corresponding table value for 16 (degrees of freedom) is 2.120 , thus 1.71132 is less than 2.120. This shows that null hypothesis is again rejected and thus the regression analysis for X 2 is also insignificant. This means that the relationship between gross enrolment ratio and total number of primary school teachers in each district does not appear to be significant, therefore any relation between these two variables does not hold good.

Now, using the two tailed t-test, and the tail probability of 0.10 , we can see here as we are working with 19 districts, observations $(n)=19$, thus, Degrees of freedom $=16$. The value of $t$-statistic from the regression analysis of intercept X 1 is 0.88524 , where as we can see the corresponding table value for 16 (degrees of freedom) is 1.7 , thus 0.88524 is less than 1.7. This shows that null hypothesis is rejected and thus the regression analysis for X 1 is insignificant. This means that the relationship between gross enrolment ratio and total number of primary schools in each district does not appear to be significant, therefore any relation between these two variables does not hold good.

Using the two tailed $t$-test, and the tail probability of 0.10 , we can see here as we are working with 19 districts, observations $(n)=19$, thus, Degrees of freedom $=16$. The values of $t$-statistic from the regression analysis of intercept X2 IS 1.7113, where as we can see the corresponding table value for 16 (degree of freedom) is 1.7 , thus 1.7113 is slightly than 1.7. This shows that null hypothesis is accepted and thus the regression analysis for X 2 is significant. This means that the relationship between gross enrolment ratio and total number of primary school teachers in each district appears to be marginally significant, therefore there is a proper relationship between these two variables.

Therefore, at 5\% significance of the t -test, the regression analysis stands insignificant for both X1 and X 2 and at $10 \%$ significance of the t -test; the regression analysis stands insignificant for X 1 but marginally significant for X 2 .

Thus, in the end of this t-test, we can conclude that there is no significant relationship between the independent variable X 1 and the dependent variable Y which are the total number of primary schools and Gross Enrolment Ratio respectively, but at $10 \%$ level of significance, a marginal relationship is proved between the dependent variable Y and the independent variable X2 which are Gross Enrolment Ratio and total number of primary school teachers respectively.

While performing the F-test we can see that the value of F we get from the ANOVA table is 2.513242257. The corresponding value of $F$ when Degrees of Freedom $=16$ is 3.63 which is obviously
greater than 2.513242257 . Thus we can conclude that the overall regression analysis has no significance and thus null hypothesis for the overall regression is rejected.

From the preceding regressions, we can see that Total number of government Primary schools do not affect the Gross Enrolment Ratio of the government primary schools whereas Total number of government Primary school teachers marginally or partially affects the Gross Enrolment Ratio of the government primary schools. This is so because the power of test is very low for the regression analysis, we have come across only 19 observations for our model. May have we got more observations for our model, the result may have changed.

## 7. POLICY SUGGESTION

Based on the study, the present section puts forward some of the policies that can be implemented as a tool of education and economic development in the districts of West Bengal.

Steps must be taken to boost up the quality of education in all the districts of the state. Teacher recruitment should be a major objective of the government for educational as well as economic welfare of the state. Teacher recruitment affects student enrolment in a positive manner, so in order to increase enrolment; the government should take up the policy to recruit enough teachers per school, in all the districts.

Ensuring free elementary schooling and provision of compulsory mid-day meals should be implemented in the first row. With zero cost of education, many families get rid from the burden of educational expenses and thus they get convinced in sending their wards to receive elementary education. Moreover the free meals would generally attract backward classes and poor families towards sending their children to school.

Policies must be formed to upgrade the level of Education for both the rural and urban areas of the state, so that the students may get proper guidance and the urge of the parents to send their wards for elementary schooling may increase. This will retard dropout rates and speed up enrolment.

Sarva Sikshya Abhiyan should implement its objectives in a better way. "Operation Blackboard' and 'Back to School campaign' should be embedded in each and every child of the elementary age group. Right to Education Act should be enhanced and its aims should come into practice, so that the basic objective of increasing primary school enrolment can be fulfilled.

Pupil-teacher ratio should be merged to a specified level. With the perfect ratio, and a decline in overcrowding of classrooms, the urge for enrolment would increase. Over-crowding of classrooms lessens the interest of the students in getting involved in the education imparted, thus less students in each classroom or a proper pupil-student ratio thus would enhance better quality of schooling.

Better schooling which includes new techniques of teaching, perfectly trained teachers and more efficient teachers should be precisely implemented. Trained teachers would impart better education and would enhance better learning.

Not only enrolment in schools would stand as a pillar towards educational as well as economic welfare, but also we should take a look at the fact that the students are actually getting educated or not. Many parents send their wards to school, not for learning but to get the basic necessities such as meals, clothes and other essentials provided by the government. We have to look into this matter that the enrolled children are indeed acquiring proper education or not.

We have not taken all the factors into account, and have only taken two stepping stone variables namely Total number of government Primary schools and Total number of government Primary school teachers, among which the first variable returns insignificant result and the second one returns a marginal significant result. In our future researches we will work with the other factors which we have not taken into account in this research.

## 8. CONCLUSION

Present analysis shows that there has been changing scenario of primary education streams in the state from 2001 Census to 2011 Census and further to 2014.

Emergence of new educational techniques and facilities, increase in the total number of Government primary school teachers and in turn, stabilization in the pupil-teacher ratio are the major factors that has enhanced the Gross Enrolment of Primary Schools in the state of West Bengal.

Expect for a few districts, the study shows that there is a direct relation between Gross Enrolment Ratio and Total number of Primary School Teachers of a particular district. This shows that with the increase in the Total number of Primary School Teachers of a particular district, the Gross Enrolment of that district has increased, To the obvious, there are a number of exceptions, which are to be ignored for the time being.

The Gross Enrolment Ratios of two time gaps are taken into concern, namely 2008 (determined from CENSUS 2001) and 2011 (determined from CENSUS 2011), of which we see that 2011 holds higher GER than 2008, except for four districts. All of the other fifteen districts show a consequent rise in GER in the time gap of 2011.

With time rolling forward we can see that, the Total number of Primary School Teachers has increased. The total number of Primary school Teachers are much high during 2013-2014 than compared to 20062007.

Low quality of education, cost-management troubles, high pupil-teacher ratio, and overcrowding of classrooms were the main causes of low Gross Enrolment in the Primary Schools. With the solving of these problems, Gross Enrolment Ratio of the State has encountered a rise and the quality of schooling has improved much.

From the preceding regressions, seen that Total number of government Primary schools do not affect the Gross Enrolment Ratio of the government primary schools whereas Total number of government Primary school teachers marginally or partially affects the Gross Enrolment Ratio of the government primary schools. This is so because the power of test is very low for the regression analysis, we have come across only 19 observations for our model. May have we got more observations for our model, the result may have changed.

From the Regression Analysis, we have concluded that Increase in Total number of Primary School Teachers and has left a positive impact on the Gross Enrolment in Primary Schools whereas due to shortage of data, Total number of Primary Schools has left no such impact on the Gross Enrolment in Primary Schools, and thus our objective is partially solved.

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