
ENROLLMENT IN WEST BENGAL ON DISTRICT GDP AND SEX RATIO

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1. INTRODUCTION

"EDUCATION IS THE MOST POWERFUL WEAPON
YOU CAN USE TO CHANGE THE WORLD"

- NELSON MANDELA

The necessity of education cannot be overstated. Education is one of the basic needs of human being .It is also essential for any kind of development .The purpose of education is to enlighten the individual and develop his/her capacity to the limit .Every human being needs oxygen to survive in the world . Education is as important as this because education gives people the knowledge and skills they require. Education is important to people of all ages and it has no limit. Children require education in order for them to learn how to speak and write.

In current situation unable to read and write has a significant affect on the quality of life of a person. Literacy is an essential aspect of education and gaining knowledge .At least if we can write and read the language that we speak ,them it will help in our daily life to overcome the difficulties in our society.

Literacy is not a luxury, it is a right and responsibility, Literacy produce a skilled workforce, which has a positive impact on the economy of country .The literate person can access and generate more jobs and services for other people. For those with low literacy, it is often a struggle to obtain job that to gain a comfort living. In National Adult Literacy Agency (NALA) survey conducted in the year 2009.It was found That the society with his or her literacy rate secure more economic gain for the individual. Which help to extend the growth of the overall economy.

Now to be educated our first duty us to enroll our child for primary school education.

During the years 1997-98 the government established around 1,000 child education center under the programme of Shisu Shiksha Karmasuchi (SSK), and the centre were called Shisu Shiksha Kendra .And in the year 2011-12 we found the number of primary school in West Bengal became 49908(Source -SSE) .And as well as the number of enrollment increased from 95,75246 in 2003-04 to 1,00,86,047in 2011-12(Source -DISE).

The major educational problem faced by girls, Specially girls from rural areas is that although they enrolled at the beginning of the year, they do not always remain in school. Girls are often taken out from the school to share the family responsibility .As per 2011 census the male literacy rate of West Bengal was 81.69% however the female literacy was 70.54%,And where we can find a huge difference between male and female .Many parents realize that educating son as an investment because the son will be responsible for caring the aging parents .And on the other hand parents may see education of daughter a waste of money as daughter eventually live with their husband's family .

The government of West Bengal has been working on solving this problem of how we can eradicate literacy in West Bengal for female. "Kannyashree " is one such innovative scheme that has been started by Government of Women development and social welfare , Government of West Bengal .This scheme helps girls of economically weaker section in improving their states and well being by educating them .And to ensure that girls stay in school ,attain basic education and delay their marriage till the age of 18 .Educating women uplifts her life as well as the quality of her life and her entire family .It is fact that and educated women will definitely support the education of her children specially a girl child and provide a better guidance to her children.

As Mahatma Gandhi said "Educate one man you educate one person, but educate a woman you educate whole civilization".

The government of West Bengal is constantly trying to improve the quality of education .Gross Enrollment Ratio us a measure of how much progress is being made in primary education. Gross Enrollment Ratio (GER) means the total enrollment in the specific level of education, regardless of age expressed as a percentage of school age population officially corresponding to the same levelled education.

Gross Enrollment Ratio (GER) can be calculated by dividing the number of students enrolled in a given level of education regardless of age by the population of the age group which officially corresponds to the given level of education ,and then multiplying the result by 100.we can find that the GER can be over 100% , because it includes students who may be older or younger than the official age group.GER widely used to show the general level of participation in and capacity of primary education.

Government of West Bengal has taken Various Step to improve the quality of education, and specially for the poor people who are unable to afford the high cost of education.

General vision of West Bengal Board of Education :-

Text books are distributed free of cost to all the students of pre- primary to XII reading in government sponsored school.

And also School bag, shoes and uniform are distributed to encourage the students in their education.

Mid- day meal program is one of the most important program to prevent the problem named hunger, malnutrition.

2. MOTIVATION

Education plays a vital role in securing economic progress in our country. Education in every sense is one of the fundamental factors of development, this provide people to reach higher income and improve the quality of income distribution thereby reduce inequality. It improves the quality of their lives and leads to broad social benefits to individuals and society.

Government has taken Various initiative for raising the enrollment rate in school as introducing free mid-day meal in government school. Encouraging children by giving school uniform, shoes, books etc. Establish the initiative like 'Sarva Shiksha Abhiyan' and many more.

In West Bengal there are several problem which effects the rate of gross enrollment in education .Mainly financial crisis is the most important reason .In rural culture most of the parents are illiterate ,they are doing the work as a daily laborer. So they don't know about the value of education. In West Bengal there are several problem which effects the rate of gross enrollment in education .Mainly financial crisis is the most important reason .In rural culture most of the parents are illiterate ,they are doing the work as a daily laborer . So they don't know about the value of education.

Although we have noticed that where parents, both father and mother work as daily laborers, send their children to school upto a certain age for mid day meal and to protect their children. But after a certain age most of the students give up their education. Most of the girls abandon their school to attend domestic chores. They gave to face child marriage, where the boy leaves their school to supplement household income. The parents put their child at the same work to earn to earn little more.

The relevance of this topic raises a important question that the initiative taken by the Government to introduce free elementary primary education has ultimately fulfilled the objective of the government as well as the economy or not, these research related questions have considerable value which are describe in detail in the research paper.

The relevance of this topic in the present situation depict the fact that more children may got enrolled in the education, if there's no financial crisis. If the parents did not discriminate against the education of their daughter and son, then the number of enrollment will increase more.

Against this background, we have to check that whether these objectives of SSA are fulfilled or not with respect to time and on what factors the Enrollment Ratio depend.

3. LITERATURE REVIEW

It has been argued that there is a close relationship between education and economic development at both individual and social levels. Economists have found that the level of education infrastructure is an important indication of economic development. Similarly economic variables have been found to be strongly related to school enrollment in many studies. Thus we can find the relationship between GDP per capita and school enrollment rates in primary, secondary and tertiary levels. On the other hand gender based discrimination also become a crucial problem for enrollment. Here we can find gender priority for education and enrollment in many studies. 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:

According to Shreya Khaitan, (2021) India needs to spend 6% of its gross domestic product on education, every national education policy since 1968 has said. In 2019-'20, 52 years since that recommendation, India spent only 3.1% of its GDP on education, the 2019-'20 Economic Survey showed.

One of the results of this underspending on public education is that over 10 lakh government schools, where over half (52%) of India's nearly 24.8 crore children study, have remained poorly funded. This is among the reasons why enrollment in India have been so poor.

Pradhan (2009) investigates the casualty between public education spending and economic growth in India during 1951-2001. The empirical investigation has been carried out by error, correlation and economic growth in Indian economy. The direction of casualty is from economic growth to education spending and not vice versa.

Chandra (2010) has tested for a casual relationship between education investments and economic growth for India for the time period 1951-2009 using linear and non linear granger casual methods. He found that there is bidirectional casualty between education spending and GDP for India.

Dr. Tapas R Dash (2011) examines the relationship between the gross enrollment ratio (GER) in higher education and the per capita gross domestic product (GDP) at constant are highly and positively correlated. From the analysis it is also revealed that the per capita GDP has significant positive impact on the growth of total enrollment in higher education in the country.

On the other side Barro (1991) argued that there is a significant and positive association between economic growth and the education.

Barro argued that high enrollment rate causes rapid improvement in productivity; therefore faster growth in per capita income (PCI), resulted the countries there is high rate of enrollment in schools.

Haunshek and Kimko(2000) argued that there is a remarkable increase in productivity and national growth rates due to the quality of the education.

According to Pijush Kanti Dandapat and Sumitra Rani Jana (2014), Education is most important investment and input . This is also considered long term investment of any micro and macro level places .It has been also seen that the countries ora place which investigated more on education mere able to create skilled and qualified human resources which in turn transformed national economy.

According to World Bank (2001) positive correlation exist between the rate of literacy (Educational Improvement) and per capita income.

According to Acemoglu and Angrist (1999) additional year of schooling increases individual's earnings by 6-10%.

Similarly in their review of existing literature, Patrinos (2002) suggest that the average rate of return to another year schooling is 10% for 42 countries across the world.

There is also some evidence to suggest that the effect of education on growth is more explicit among less developed countries.

Barro and Sala-i Martin (1995) showed that the growth rate is more sensitive to human capital when the initial income is low. Krueger and Lindaul (2001) also found result that support, Barro and Sala-i Martin (1995).

Astetion and Agiomirgianalis (2001) use Locus (1988) model and showed the growth of enrollment rate in primary secondary and higher education positively affected the GDP.

According to Jean Dreze (2003) "educational disparities, which contribute a great deal to persistence of massive inequality in Indian Society, also largely derive from more fundamental inequalities such as those of class caste and gender.

Govinda(2008) conducted the most common form of education inequality in India is based on gender disparity , Several studies have revealed the vulnerability of girls in terms of enrollment , attendance and outcome .

Sundaram (2000) found that district with low level of agricultural development ,as measured by crop volume per agricultural worker ,had more gender inequality in rural literacy rate .

According to c the household level, the evidence that rich household have smaller gender gaps than poor household is well established . In studies of India increase in household income the probability that girl will be enrolled in school more than probability that boys will be enrolled in school.

Sen and Modal (2017) found interesting facts that families with low income or poor financial condition are the reason for the early child marriage in West Bengal .It is also a reason behind low GER.

Schultz,T.P (2002) discuss the importance of education for girls and it's implications on self, child healthcare ,job related skill development and overall well beings. The researchers also tried to find out the relationship between early marriage and dropout girls at secondary and higher secondary education.

According to Luise Hoffman (1986) educated female is in better position to know to keep balance between her job and family and compared to uneducated female because of well awareness and social interaction. So girl-enrollment important for our society.

According to Obanya (2007) the girl child educational attainment is low as records have shown that fewer girls go to school than boys.

Offorma (2009) noted that this is because the girl children have not been lucky to be cherished to go to school as easy as boys can go.

It can be concluded from the above literature review that there are several scattered factors enhancing the quality of education and enrollment of students. And also we can see that education has a significant effects on economic growth and economic development.

4. OBJECTIVE

The objective is based on secondary data from different sources like Statistics Under Census, SSE, DISE and may more. The main objective of this study is to know about the current situation of West Bengal education system, mainly enrollment in education.

The Gross Enrollment Ratio of primary education in West Bengal may depend on the number if girls enrollment in school, because sex differences plays a crucial role for West Bengal educational system. If there's no difference between male and female education, there's a chance to increase gross enrollment Ratio.

We also can see the relationship between enrollment and economic growth. We can see that school enrollment is an important indicator of economic growth. Similarly economic variable such as GDP have been found to be strong related with school enrollment .Thus here we found a bilateral and positive relationship between GDP ,per capita income and enrollment.

In this paper we gave regress the GER on district GDP and sex ratio.

5. METHODOLOGY

Due to some academic limitations and for this critical pandemic situation, it was not possible for us to collect primary data from proper field survey. So, we have to relay on secondary data to complete our research paper.

There are various authors and researchers who have discussed on the topic of enrollment and education in their research paper .A major number of authors spoke about the importance of enrollment in economic growth. Some of the researchers shows, the bilateral relations between economic growth and enrollment. Some authors told about the importance of girl literacy and enrollment for our economy and society. Some authors think that gender discrimination is the reason for low enrollment. 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,Shreya Khaitan (2021), Pradhan(2009), Chandra (2010), Dr. Tapas R dash(2011) have pointed out that

the GDP has a positive and significant relationship on Gross Enrollment Ratio. On the other hand Barro (1991), Barro (1991), Haunshek and Kimko(2000), Pijush Kanti Dandapat and Sumitra Rani Jana (2014), World Bank (2001), Acemoglu and Angrist (1999), Patrinos (2002), Barro and Sala-i Martin (1995), Astetion and Agiomirgianalis (2001) showed education or enrollment has a significant effect on GDP and Economic Growth.

Jean Dreze (2003), Govinda(2008), Sundaram (2000), Sen and Modal (2017), Schultz,T.P (2002), Luise Hoffman (1986), Obanya (2007), Offorma (2009) discussed the important of girls education and suggested that gender discrimination can be a problem behind Gross Enrollment Ratio.

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 Gross Domestic Product in the state of West Bengal has been collected. And also the district wise sex ratio has been collected.(Data collected form District Statistical Handbook, West Bengal, Bureau of Applied Economics and Statistics, Census of India1901-2011)

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 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 the Gross Domestic Product and Sex Ratio are affecting the gross enrolment ratio .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 have been trimmed off. As a factor, how precise is the Gross Domestic Product is to be seen in this work.

6. RESULT AND DISCUSSION

Enrollment in West Bengal: The study has considered the estimation of Gross Domestic Product district wise in the time gaps of 2004-05, 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12 and 2012-13 respectively and so are enlisted the Sex Ratio in the time gaps 1901-2011. The Gross Enrolment Ratio is also collected for 2008 and 2011 district wise. (Note: The GER can be greater than 100 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, Bureau of Applied Economics and Statistics Department of Statistics and Programme Implementation Government of West Bengal (2013-14), Census of India (1901-2011).

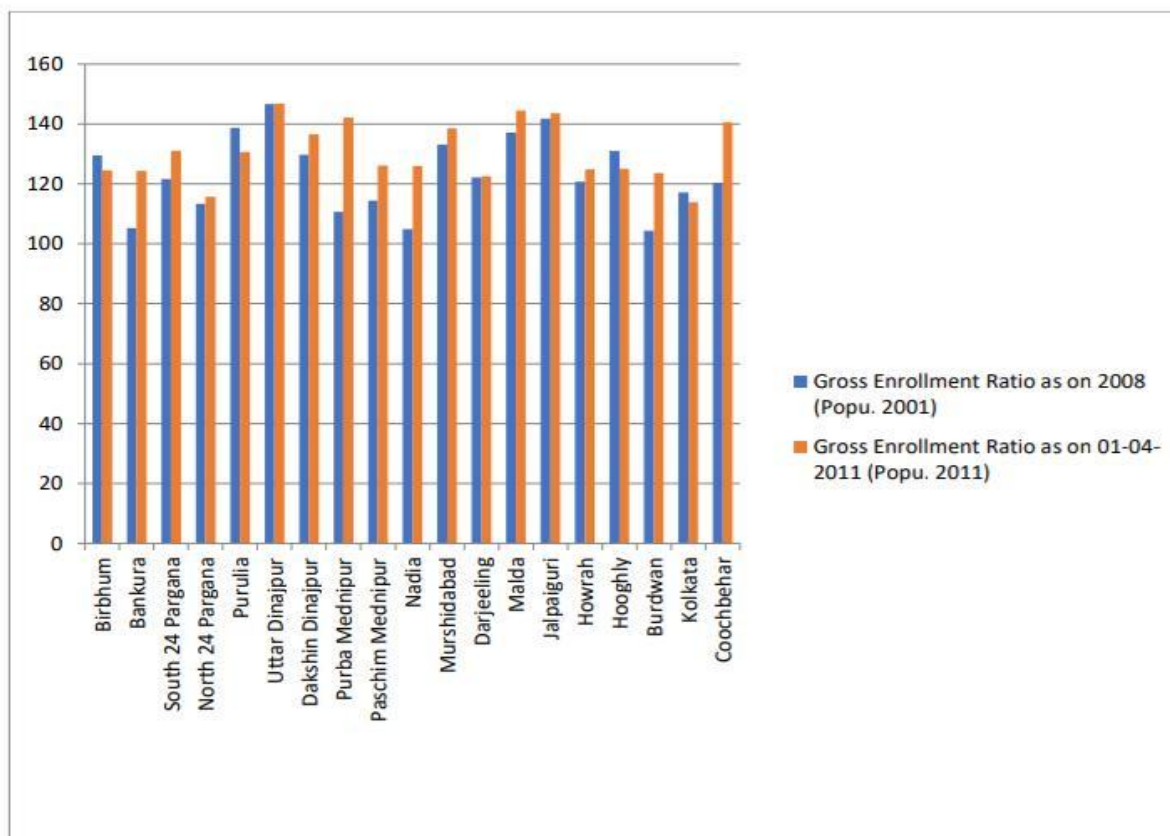
TABLE I: Gross Enrolment Ratio of Primary Schools in West Bengal [DISTRICT-WISE and YEAR-WISE]

District Name	Gross Enrollment Ratio as on 2008 (Popu. 2001)	Gross Enrollment Ratio as on 01-04-2011 (Popu. 2011)
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 2.1
Estimates of Gross District Domestic Product of West Bengal at Current Prices

District	(Rs. Crore)										
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12(P)	2012-13(Q)		
Burdwan	22357.47	23600.57	27759.01	31005.37	34611.33	42785.82	47012.71	58539.91	67808.60		
Birbhum	5924.68	6576.84	7698.74	8773.12	10004.71	11324.15	12668.87	15122.04	17532.81		
Bankura	6625.78	7447.22	8410.89	9784.21	11017.38	13424.87	14808.36	17964.50	20518.40		
Midnapore East	16728.73	17901.12	20519.15	23190.65	26585.61	29386.44	36800.88	40208.15	46377.85		
Midnapore West	10889.90	12125.49	13687.97	16400.36	17994.30	22289.05	25985.76	28622.50	34107.10		
Howrah	11614.02	12913.95	15046.05	17037.49	19186.92	23055.62	27690.25	30582.39	35872.54		
Hooghly	13613.00	15522.07	16439.29	19421.95	22121.72	26704.93	30845.56	34067.62	38986.01		
24-Parganas(N)	24416.69	27833.39	31332.56	36277.12	42657.90	47808.51	55436.74	63624.93	74475.24		
24-Parganas(S)	16884.94	18090.46	21654.50	24613.43	27590.50	30703.37	36348.69	41523.34	47999.76		
Kolkata	19725.04	22031.95	24952.55	27964.21	32170.51	34233.32	38820.97	44259.98	51249.74		
Nadia	10628.30	11850.26	13196.07	15141.44	17427.54	20822.41	23499.94	26801.30	31140.35		
Murshidabad	12332.96	13860.06	15656.33	17966.71	20106.06	23808.30	28156.91	31030.39	35106.92		
Uttar Dinajpur	3895.05	4523.09	4890.95	5784.36	6702.24	7911.23	9492.95	10647.99	12389.84		
Dakshin Dinajpur	3048.61	3325.82	3623.38	4183.27	4779.86	5833.77	6841.17	7785.96	9047.31		
Malda	7162.25	7623.01	8593.01	9744.67	11239.91	13171.09	15195.98	17756.07	20210.48		
Jalpaiguri	7948.42	8582.06	9903.31	11257.44	13206.73	15419.18	17621.97	20236.32	23848.40		
Darjeeling	4960.24	5633.86	6305.60	7130.89	8788.56	11080.09	12862.02	14916.92	17761.15		
Cooch Behar	5066.53	5635.81	6058.96	6997.68	7907.27	9731.49	10807.74	12163.58	13950.13		
Purulia	4833.75	5167.92	5953.55	6808.38	7843.43	9386.74	10061.47	12461.85	14318.33		
West Bengal	208656.36	230244.95	261681.87	299482.75	341942.48	398880.38	460958.94	528315.74	612700.96		

TABLE 2.2
Estimates of Gross District Domestic Product of West Bengal at Constant (2004-05) Prices

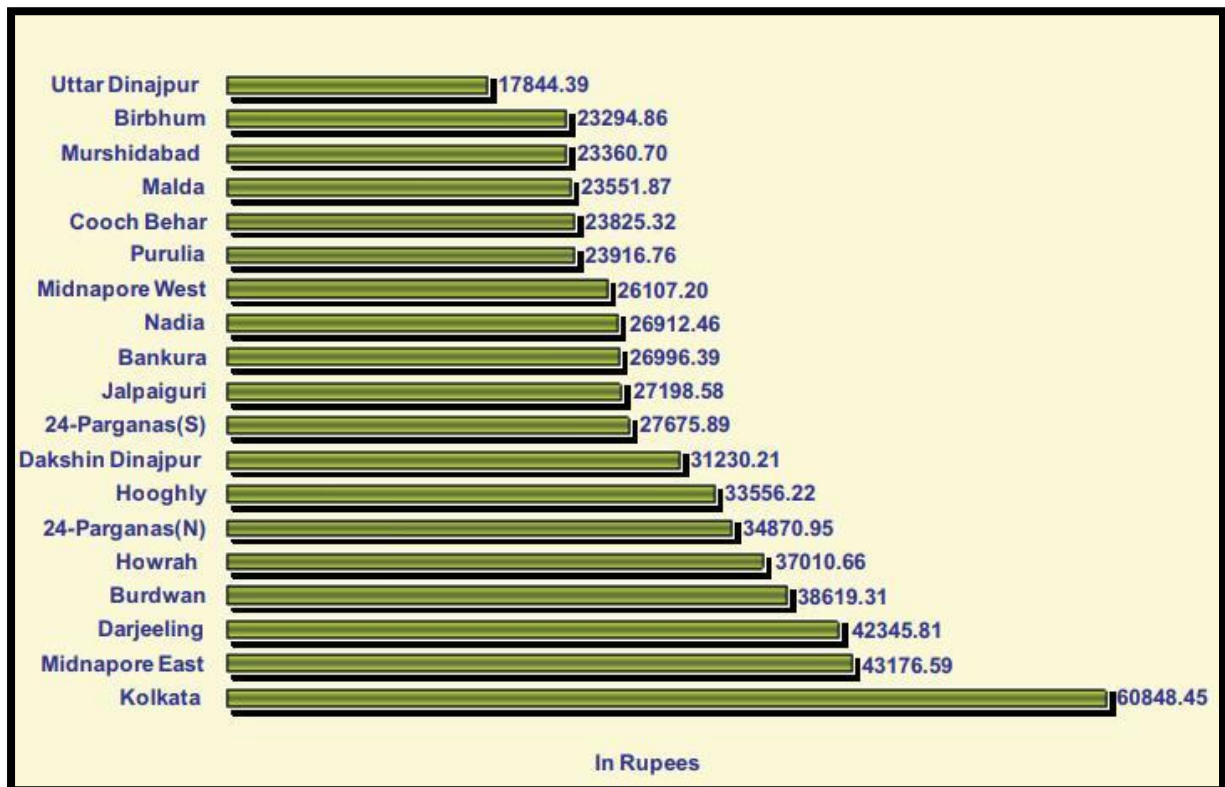
District	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12(P)	2012-13(Q)
Burdwan	22357.47	22946.58	25482.48	26731.47	27463.67	32208.56	33588.59	34901.71	36711.07
Birbhum	5924.68	6436.33	7044.16	7475.61	7735.64	8057.16	8162.88	8928.32	9320.62
Bankura	6625.78	7253.88	7677.04	8279.19	8501.46	9580.03	9397.08	10400.71	11095.06
Midnapore East	16728.73	16672.62	18089.79	19169.64	20441.05	21010.13	24134.15	24232.67	25827.83
Midnapore West	10889.90	11506.06	12359.28	13502.63	13638.37	15211.87	15625.54	15992.20	17734.39
Howrah	11614.02	12286.07	13591.92	14575.03	15255.97	17187.44	19433.37	19887.63	21297.31
Hooghly	13613.00	14673.07	14965.27	16604.91	17488.49	19702.00	20753.25	21217.78	22631.44
24-Parganas(N)	24416.69	27157.76	29049.04	32131.75	34747.10	36706.81	38989.62	41335.55	44705.65
24-Parganas(S)	16884.94	17443.65	19623.98	21026.40	21652.35	22442.53	24465.14	25688.17	27083.75
Kolkata	19725.04	21809.83	23642.98	25456.57	27157.46	27182.60	28394.04	30512.20	32754.75
Nadia	10628.30	11332.29	11907.09	12902.15	13582.01	14582.45	14952.63	15605.40	16674.99
Murshidabad	12332.96	13377.28	14250.25	15418.77	15673.97	16814.82	17474.78	18152.17	19208.84
Uttar Dinajpur	3895.05	4286.99	4427.94	4811.32	5103.75	5380.47	5755.56	6035.96	6380.83
Dakshin Dinajpur	3048.61	3208.83	3301.60	3543.92	3667.88	4030.10	4276.87	4455.07	4675.19
Malda	7162.25	7405.23	7876.82	8463.37	8834.46	9440.85	9809.23	10369.44	10967.86
Jaipalguri	7948.42	8174.99	9029.66	9616.55	10147.32	11013.99	11618.13	12093.17	12865.41
Darjeeling	4960.24	5408.76	5809.29	6168.89	6963.20	8077.38	8568.12	9166.81	9971.82
Cooch Behar	5066.53	5357.48	5439.69	5921.95	6086.57	6614.49	6752.86	7009.46	7469.76
Purulia	4833.75	5051.76	5508.84	5832.06	6107.54	6711.28	6685.21	7435.08	7779.72
West Bengal	208656.36	221789.46	239077.12	257632.18	270248.26	291954.96	308837.05	323419.50	345156.29

Source: Bureau of Applied Economics and Statistics Department of Statistics and Programme Implementation Government of West Bengal (2013-14).

DIAGRAM II: Contribution of Different District in NSDP of West Bengal at Constant (2004-05) prices : 2012-13 (Q)



DIAGRAM: III Per Capita Income of Different District of West Bengal Constant (2004-05) Prices : 2012-13(Q)



The above table and the respective bar diagram are depicting the Inter-District Variation of the

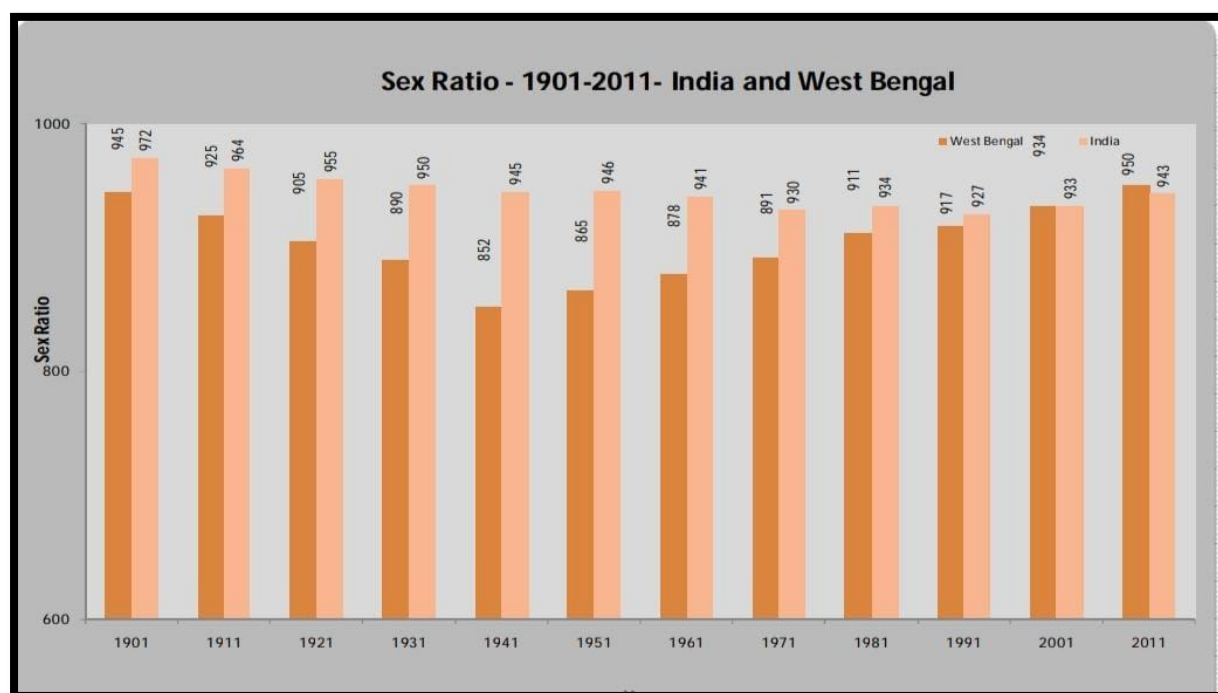
Gross domestic product in two time-gaps, Namely 2004 to 2013 for the state of WEST BENGAL. From the above table and graph, we can see that overall GDP is highest in North 24 Pargana District for both the time gaps.

TABLE:3 Sex Ratio since 1911 for West Bengal and the Districts

District	Sex Ratio (Number of females per 1000 males)										
	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
West Bengal	925	905	890	852	865	878	891	911	917	934	950
Bankura	1024	1002	996	978	981	981	958	964	951	952	957
Bardhaman	997	965	934	893	888	858	886	897	899	922	945
Birbhum	1017	1004	1005	999	974	973	968	962	946	950	956
Darjiling	871	898	881	884	863	864	882	888	914	937	970
Haora	892	864	834	788	810	808	833	873	881	906	939
Hugli	959	921	879	864	883	892	896	909	917	947	961
Jalpaiguri	829	856	830	836	825	854	887	910	927	942	953
Koch Bihar	873	877	886	879	855	890	916	935	935	949	942
Kolkata	511	503	486	470	593	630	662	741	799	829	908
Malda	1004	991	989	983	966	965	948	949	938	948	944
Purba Medinipur	1000	991	975	955	955	952	945	951	944	947	938
Paschim Medinipur										961	966
Murshidabad	1022	1006	1005	990	973	974	956	959	943	952	958
Nadia	996	956	951	946	937	948	948	946	936	946	947
North 24-Parganas	881	855	849	826	846	834	862	891	907	926	955
Puruliya	1001	997	989	977	983	973	963	957	947	954	957
South 24-Parganas	894	871	866	846	861	921	917	927	929	937	956
Dakshin Dinajpur	920	929	923	910	884	932	941	946	944	951	956
Uttar Dinajpur						888	908	931	921	938	939

Source: Census of India, 1911 - 2011

DIAGRAM: IV Sex Ratio from the year 1901 -2011- India and West Bengal



The above table and diagram shows the Inter District Sex Ratio in the timer gaps 1901-2011 for the state of West Bengal.

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 district wise GDP and district wise Sex Ratio of the major 19 Districts of West Bengal.

Table:4 For Statistical Analysis

District Name	GDP(X1)		SEX RATIO(X2)		GER(Y)	
	2008	2011	2008	2011	2008	2011
Birbhum	7735.64	8928.32	0.950	0.956	129.51	124.59
Bankura	8501.46	10400.71	0.952	0.954	105.23	124.3
South 24 Pargana	21652.35	25688.17	0.937	0.956	121.67	131.05
North 24 pargana	34747.10	41355.55	0.926	0.955	113.33	115.72
Purulia	6107.54	7435.08	0.954	0.957	138.67	130.55
Uttar Dinajpur	5103.75	6035.95	0.938	0.939	146.56	146.82
Dakhin Dinajpur	3667.88	4455.07	0.951	0.956	129.7	136.5
Purba Mednipur	20441.05	24232.67	0.948	0.938	110.59	142.06
Paschim Mednipur	13638.37	15992.20	0.961	0.966	114.37	126.2
Nadia	13582.01	15605.40	0.946	0.947	104.86	125.93
Murshidabad	15673.97	18152.17	0.952	0.958	133.11	138.6
Darjeeling	6963.20	9166.81	0.937	0.956	122.11	122.56
Malda	8834.46	10369.44	0.984	0.944	137.14	144.49
Jalpaiguri	10147.32	12093.17	0.942	0.953	141.87	143.53

Howrah	15255.97	19887.63	0.906	0.939	120.74	124.95
Hooghly	17488.49	21217.87	0.947	0.961	130.97	125
Burdwan	27463.67	34901.71	0.922	0.945	104.38	123.62
Kolkata	27157.46	30512.20	0.829	0.908	117.18	113.99
Coochbehar	6086.57	7009.46	0.949	0.942	120.36	140.47
TOTAL	270248.26	323419.50	0.934	0.950	2342.35	2480.93

Source: Bureau of Applied Economics and Statistics Department of Statistics and Programme Implimentation Government of West Bengal (2013-14), DISE 2008, Sikshya Abhiyan 2011,Census of india 1901-2011.

In the above table we can see that the GDP has increased from 270248.26 in the year 2008 to 323419.50 in the year 2011 and the Sex Ratio has increased from 0.934 in the year 2008 to 0.950 in the year 2011. The total enrolment has also increased from 234235 in 2008 to 248093 in 2011. The TABLE 4 depicts an overall increase in the three variables taken thereafter.

Table:5 Table For Rgression Analysis

District Name	Gross Enrollment Ratio (2011)	Gross Domestic Product (2011)	Sex Ratio(2011)
Birbhum	124.59	8928.32	0.956
Bankura	124.3	10400.71	0.954
South 24 Pargana	131.05	25688.17	0.956
North 24 pargana	115.72	41355.55	0.955
Purulia	130.55	7435.08	0.957
Uttar Dinajpur	146.82	6035.95	0.939
Dakhin Dinajpur	136.5	4455.07	0.956
Purba Mednipur	142.06	24232.67	0.938
Paschim Mednipur	126.2	15992.20	0.966
Nadia	125.93	15605.40	0.947
Murshidabad	138.6	18152.17	0.958
Darjeeling	122.56	9166.81	0.956
Malda	144.49	10369.44	0.944
Jalpaiguri	143.53	12093.17	0.953
Howrah	124.95	19887.63	0.939
Hooghly	125	21217.87	0.961
Burdwan	123.62	34901.71	0.945
Kolkata	113.99	30512.20	0.908
Coochbehar	140.47	7009.46	0.942

In determining the interrelation, the study fits a three variable multiple regression model where the inter district variation of the Gross Enrolment Ratio is the dependent variable and is regressed upon two independent variables – Gross Domestic Product and Sex Ratio Here the dependent variable is denoted with Y and the two independent variables with X1 and X2 respectively. Now, we will perform the Regression Analysis and Descriptive Statistics, as follows:

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.585563
R Square	0.342885
Adjusted R Square	0.255269
Standard Error	8.640112
Observations	18

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	584.3006	292.1503	3.91352	0.042886
Residual	15	1119.773	74.65154		
Total	17	1704.074			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	174.5415	157.3579	1.109201	0.284811	-160.859	509.9419	-160.859	509.9419
X1	-0.00056	0.000204	-2.76469	0.014453	-0.001	-0.00013	-0.001	-0.00013
X2	-35.609	164.9775	-0.21584	0.832019	-387.25	316.0321	-387.25	316.0321

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 gross domestic product and sex ratio 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 2.76469 where as we can see the corresponding table value for 16 (degrees of freedom) is 2.120, thus 2.76469 is greater than 2.120. Thus the regression analysis for X1 is significant. This means that the relationship between gross enrolment ratio and gross domestic product is significant, therefore any relation between these two variables does 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, 0.21584 where as we can see the corresponding table value for 16 (degrees of freedom) is 2.120, thus , 0.21584 is less than 2.120. This shows that null hypothesis is again rejected and thus the regression analysis for X2 is insignificant. This means that the relationship between gross enrolment ratio and Sex Ratio 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 X1 is 2.76469 , where as we can see the corresponding table value for 16 (degrees of freedom) is 1.7, thus 2.76469 is greater than 1.7. This shows that the regression analysis for X1 is significant. This means that the relationship between gross enrolment ratio and gross domestic product is significant, therefore any relation between these two variables does 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 0.21584 where as we can see the corresponding table value for 16 (degree of freedom) is 1.7, thus , 0.21584 is less than 1.7 This shows that null hypothesis is again rejected and thus the regression analysis for X2 is insignificant. This means that the relationship between gross enrolment ratio and Sex Ratio in each district does not appear to be significant, therefore any relation between these two variables does not hold good.

Therefore, at 5% significance of the t-test, the regression analysis stands significant for X1 but insignificant for X2 and at 10% significance of the t-test; the regression analysis stands significant for X1 but insignificant for X2.

Thus, in the end of this t-test, we can conclude that there is a significant relationship between the independent variable X1 and the dependent variable Y which are the Gross Domestic Product and Gross Enrolment Ratio respectively, and also at 10% level of significance, a relationship is proved between the dependent variable Y and the independent variable X1 .But in the both test we also found a insignificant relationship between the independent variable X2 and the dependent variable Y, Which are the Sex Ratio and Gross Enrollment Ratio respectively.

From the preceding regressions, we can see that Sex ratio do not affect the Gross Enrolment Ratio whereas the Gross Domestic Product has a significant effect on Gross Enrolment Ratio

7. POLICY SUGGESTION

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

Steps must be taken too boost up the quality of education in all district of the state. West Bengal needs to spend more GDP on education. The per capita GDP has significant positive impact on the growth of total enrollment.

Free elementary schooling and free mid -day meal should be made available to all. With Zero cost of education, parents easily get the opportunity to enroll their child in school. The free mid-day meal has also provided one time meals to the backward poor children .And that's the reason for the poor parents to enroll their child at school.

The ' Sarva Shiksha Abhiyan' should implement its goal better. 'Back to School Campaign' should be included in every child of early age. 'The Right of Education Act' should be developed and its goals should be implemented and its goals should be implemented, so that the purpose of increasing primary school enrollment can be fulfilled.

Not only school enrollment is important for education and economic growth, but also we should have to look care if students are actually getting educated or not. Because most of the time parents send their child to school not for learning but to get the basic necessities such as meal, uniform, shoes, scholarship and other essential provided by the government. We have to took care if the enrolled students are indeed acquiring proper education or not.

We have not taken all the factors into account, just only taken two variable namely District GDP and Sex Ratio. In near future we will try to 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 GDP expenditure in education are the major factors that has enhanced the Gross Enrolment Rate 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 Gross Domestic Product of a particular district. This shows that with the increase in GDP 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 GDP has increased.

There are several problem which causes the low Gross Enrollment Ratio namely, low quality of education ,district wise low GDP. 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 Sex Ratio do not affect the Gross Enrolment Ratio whereas the Gross Domestic Product has a significant effect on Gross Enrolment Ratio. So we can obviously say that in West Bengal there is no gender discrimination for enrollment.

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

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