ISSN No:-2456-2165

Factors Affecting Total Enrolment and Learning Outcomes in the Elementary Schools in India

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ISSN No:-2456-2165

ACKNOWLEDGMENT

This paper is the cumulative result of our research, analysis and conclusive study. This is to certify that the material embodied in this present project is based on our original research work. Our indebtedness to other works, studies and publications have been duly acknowledge at the relevant places. The authors of this paper are Aarushi Jindal, Rachita Tripathi, Saumya Jain and Srishti Kalra, under the guidance of Ms. Riyanka Jain. We sincerely acknowledge the contribution, encouragement, and support offered by her at every stage as our guide.

We would like to express our gratitude towards our college Sri Guru Gobind Singh College of Commerce, University of Delhi for providing us with the required resources at the required time which helped us in the paper.

We have gained ample amount of satisfaction while doing this project. We are highly obliged for the consistent guidance and support shown by everyone.

The recommendations and conclusions expressed in this report are the views of the author and do not represent the views of University of Delhi, Sri Guru Gobind Singh College of Commerce, or those who provided their advice.

ISSN No:-2456-2165

CONTENTS

ISSN No:-2456-2165

CHAPTER 1
INTRODUCTION

The foundation of a country's growth and prosperity is its strong education system. An educated society is the only society which can think on rational lines. Education is important if we want to do away with the prevalent discriminations and differences between different social classes and genders. It is the backbone that children need to achieve their full potential in life. Primary Education enables a child to learn to read and write.

According to India's 2009 Right to Education (RTE) Act, education is a fundamental right of children between the ages of 6 and 14, and no child can be held back, expelled, or required to pass a board examination until completion of elementary education. This has contributed to primary school enrolment rates, in part, of over 95 percent. But only few students actually understand basic reading and math. According to 2012 ASER survey, in grade 5, only 47% of students could read a grade 2-level text proficiently, while about 25% were able to solve questions involving division, a grade 4 level competency. Also, 76% of grade 8 students read at the grade 2 levels, thus showing how this learning gap in the initial years of education tends to build over time.

With the aim to observe how National Policy on Education with its developments like Sarva Shiksha Abhiyan (SSA)/Right to Education (RTE) and National Programme for Education of Girls at Elementary Level (NPEGEL) have fared in the recent years, we seek to find a relationship between different factors on total enrolment in primary and upper primary levels (Elementary Schooling). These factors find great emphasis in the all the National Education Policies formulated till now. We then go on to find whether quality of education measured has improved over the years.

Kerala is India's first state to achieve total primary education. This is just one state; we have a long way to go. After such startling results, it becomes necessary to pay attention on improving the current situation and the quality of education being imparted. Thus, it is imperative to study the effect of various policies and factors on the learning outcomes of the student.

ISSN No:-2456-2165

CHAPTER 2

OBJECTIVES

Our objectives to undertake a research project on the status of elementary education in India are:

1. To assess the different factors like enrolment based indicators, school based indicators, teacher based indicators which might have an impact on the total elementary enrolment in India. The purpose is to evaluate the respective impacts in order to understand what factors have a major role in increasing the enrolment so the research could be used in formulation of further education policies targeting the factors which are most substantive.

2. In 1995, the Government of India launched the mid-day meal scheme to improve the nutritional status of school-age children nation-wide. In our report, we seek to note the impact of this scheme on enrolment in primary and upper primary level.

3. The government through various schemes and initiatives is increasing the expenditure on elementary education in the past few years. We aim to see how the government spending over the years has affected the Gross Enrolment Ratio of children in the age group of 6-13 years to determine the constructiveness of the same.

4. At the end, we want to review how all efforts by the government in the primary education have impacted the quality of education measured by student learning outcomes. For this, the impact of Gross Enrolment Ratio is measured on the reading and arithmetic levels of children.

ISSN No:-2456-2165

CHAPTER 3

LITERATURE REVIEW

1. LESSONS IN LEARNING: AN ANALYSIS OF OUTCOMES IN INDIA'S IMPLEMENTATION OF THE RIGHT TO EDUCATION ACT

Author: Ayukunle Abogan, Ayan Achakzai, Vera Bersudskaya, Sebastian Chaskel, Megan Corrariro, Emily Garen, Betsy Hoody, Chris Johnson and Sangita Vyas

Place of Publish: The Woodrow Wilson School of Public and International Affairs.

Date of Publish: February 2013

The research paper seeks to find whether India's Right to Education Act (RTE) is effective at improving learning outcomes of students, which is the dependent variable. The primary components of RTE are "grant delivery" and "infrastructure of the institutions", which are the independent variables. Using multiple datasets through surveys, this report analyzes how RTE's requirements, have impacted both intermediate outcomes such as attendance of students and educators and school infrastructure, as well as the ultimate goal of student learning. It also evaluates the efficacy of current accountability mechanisms.

The author explains the prevailing level of enforcement of standards such as school infrastructure, learning materials, teacher qualifications, admissions and quotas. The survey based data points out that RTE was ineffective at improving the learning outcomes of the students. The overall decline, notwithstanding the improved learning due to higher attendance because of the involvement of mid-day meal schemes, educated teachers, and increased private school enrolment and better supplementary materials.

The report also explains that teacher- headmaster attendance is directly related to each other, which is relatively low and that they are unaffected by the RTE accountability provisions. The author states that the resource pool from the government for RTE flows through Sarva Shiksha Abhiyan (SSA), and the Headmasters are responsible for taking care of the funds. But their lesser engagement has led to ineffective allocation of grants and grant expenditure have not been properly made for improving the infrastructure, ultimately, the learning outcome.

The author concludes that overall learning outcomes have declined year over year since the enactment of RTE.

2. THE PROGRESS OF SCHOOL EDUCATION IN INDIA Author: Geeta Gandhi Kingdon

Place of Publish: Esrc Global Poverty Research Group

Date of Publish: March 2007

This paper provides a glimpse of school education in India with respect to BRIC economies. Pakistan and Bangladesh lag seriously behind the BRIC countries with which they are increasingly compared, China in particular. The comparison is made especially in terms of youth literacy rates secondary school participation. In the early 2000s, India's adult literacy was 30 percentage points below China's. The paper follows the theoretical approach to examine the accessibility of the schools in terms of school attendance rates and enrolment. The quality of schooling is measured in terms of literacy rates, school resources, learning accomplishment levels and teacher inputs. The substantial silver lining in the cloud of Indian education is that its primary enrolment rates are now close to universal. However, poor quality of schooling is indicated by very low level of learning outcome in both primary and secondary schooling. Moreover, the facilities and resources provided by the school are insufficient and teacher absenteeism is also high. Evidence suggests that private schools are more effective in imparting education at a fraction of the cost of government schools. The fee-charging private schools have outspread throughout the country, representing growth in inequality in providing educational opportunities. Some public education initiatives including "Sarva Shiksha Abhiyan", mid-day meal scheme and the para-teacher scheme were each discussed briefly.

Unfortunately, the impacts of these obstructions on children's school attendance, enrolment and learning outcomes have not been strictly evaluated. The paper doesn't provide course of measures to be taken to eradicate these problems.

3. INSIDE PRIMARY SCHOOLS- A STUDY OF TEACHING AND LEARNING IN RURAL INDIA

Published by: Suman Bhattacharjea, Wilima Wadhwa, and Rukmini Banerji

Date of Publish: 2011

This study seeks to analyse the scenario of the teaching-learning process, particularly in the school or home premises– that hinders the children from getting at least eight years of quality education. A study conducted by ASeR each year since 2005 in all rural districts of the country, shows that in 2010, 53% of class 5 children in rural India could read a class 2 level text and 36% could solve a three digit by one digit division problem. The study took place in randomly selected rural districts of five Indian states.

One of the major findings of the study was that children were learning in the course of a year, but even in states with the best learning outcomes, children's learning levels were lagging behind the expectations of the textbook. At each grade level, children start learning well below the level of their textbooks. It also explained that teachers could hardly explain the text in simple language or ways.

The characteristics of the teachers such as qualification/degree, number of years of experience and length of training made little difference to children's learning. In both math and language, it indicated a substantial gap between what textbooks expect and what children can actually do.

Although there was some improvement in children's learning levels over the course of a year, most children were at least two grades below the proficiency level assumed by their textbooks. The letters that the students should have learnt to write by standard 1, more than 70% of children were able to do so, by early grade 3. Even in states which performed well, both standard 2 and standard 4 children had difficulty writing simple words correctly. In standard 4, most children were able to identify numbers under 100, but less than 30% could identify numbers above 1000. Further, they struggled with word problems which required them to apply basic arithmetic operations.

The study also studies enrolment and attendance patterns and facilities like availability of drinking water and toilets in school and their impact on student learning. It notes a strong relationship between children's attendance and learning levels, particularly for children in Std 4. Having more teachers present did not necessarily improve learning outcomes. Children in schools that had and followed a timetable had better learning outcomes than children in schools where there was no timetable or it was not being followed. No clear relationship was found between specific facilities and children's learning, other than the availability and utilization of library books. For effective teaching and satisfactory learning it is how these resources are used that makes a difference.

The findings of the study also suggest that the current nature of qualifications and usual types of teacher training are not sufficient to guarantee effective teaching. The study could not find clear relationship between social factors like gender, social groups and religion and learning outcome.

4. PRIORITIES FOR PRIMARY EDUCATION POLICY IN INDIA'S 12TH FIVE-YEAR PLAN

Published by: Karthik Muralidharan

Date of Publish: 4 April, 2013

The paper has summarized the research, while providing policy recommendations and suggesting an implementation pathway for 12^{th} 5-year Plan. The main findings reported in this paper are that there is next to no evidence to give weight to the notion that improving accessibility to primary leads to improvement in learning outcomes of students, unless various reforms are introduced in education

The paper has mentioned that a huge proportion of education spending from 2000-10 has been on improving school infrastructure, increasing teacher training, improving salaries, expenditure on student benefits such as school uniforms and mid-day meals and the like. The major and most salient measure of weakness of educating India is the high rate of teacher absence from schools.

Considering all the dynamics that work in India, this paper mentioned that during policy formulation, consideration of administrative, technical, ethical, and political factors should be taken into account. It also mentioned that for the policy implementation states should be allowed more autonomy to innovate with reforms and teachers should be a part of recommendations board.

ISSN No:-2456-2165

CHAPTER 4
HYPOTHESIS

RESEARCH 1

Hypothesis 1: Does there exist a significant linear relationship between the population aged 06 to 10 years and the total enrolment in primary and upper primary level?

Hypothesis 2: Does there exist a significant linear relationship between the enrolment in government schools and the total enrolment in primary and upper primary level?

Hypothesis 3: Does there exist a significant linear relationship between the number of schools with good classroom condition and the total enrolment in primary and upper primary level?

Hypothesis 4: Does there exist a significant linear relationship between the total number of teachers and the total enrolment in primary and upper primary level?

Hypothesis 5: Does there exist a significant linear relationship between the enrolment of OBC students and the total enrolment in primary and upper primary level?

Hypothesis 6: Does there exist a significant linear relationship between the number of schools with playground and the total enrolment in primary and upper primary level?

RESEARCH 2

Hypothesis 1: Does there exist a significant linear relationship between the schools providing Mid-Day Meal and the total enrolment in primary and upper primary level?

RESEARCH 3

Hypothesis 1: Does there exist a significant linear relationship between the expenditure on education as a percent of GDP and the Gross Enrolment Ratio (GER)?

RESEARCH 4

Hypothesis 1: Does there exist a significant linear relationship between the Gross Enrolment Ratio (GER) and the learning outcome of students?

ISSN No:-2456-2165

CHAPTER 5

RESEARCH METHODOLOGY

For this study, descriptive research design has been adopted because through this paper we will analyze the factors that help us in finding the impact on **total enrolment and learning outcome of students in India in primary and upper primary schools in India**.

Our study revolves around various factors such as total expenditure on education, classroom condition of schools, enrolment of other backward class (OBC) students, playground facility in schools etc.

- There are three stages to our research project

1. Model specification
2. Estimation of the model
3. Hypothesis testing

1. Model Specification

Model specification is based on the available literature and the theory. Such literature summarized in the literature review helped us to identify independent, dependent variables and the relationship between them.

- ✓ Our target sample is from class I-VIII.
- ✓ The sample size is 36(the states and union territories of India)
- ✓ The various independent variables we used are government expenditure on education, school conditions like provision of Mid-Day Meals, presence of playground, total number of teachers, OBC enrolment, and government school enrolment .

2. Estimation of the Model

a. We collected the data from official sites and reports and determined the type of data collected.

- Cross sectional Data – It is the data at a particular point of time

but observed over different regions. Eg. the total enrolment result or literacy rate result in the year 2014-15 for all 36 states

and union territories in Research 1 and 2 and 31 states in Research 4.

 Time series Data – It is the data collected from one period of time to another, like public expenditure on education as % of

GDP and the gross enrolment ratio from year 1950-51 to 2013-14 making n=28.

b. Aggregation of units

This process involved transforming the units in which data was collected was collected to a more convenient unit like percentages and ratios and consequently using them up for the purpose of analysis.

c. Choosing appropriate econometric technique

We then proceeded to determine the appropriate econometric technique that could justify a relationship between our independent and dependent variables like simple linear regression, correlation, descriptive statistics and the like.

3. Hypothesis testing

This process requires defining a null hypothesis and an alternate hypothesis

with their respective beta coefficients. H_0: $\beta=0$

H_1: $\beta \neq 0$

For $\beta=0$, there exists no linear relationship between the two variables.
For $\beta \neq 0$, there exists a linear relationship between the two variables.

After defining our hypothesis we begin to analyse the collected data on the basis of the chosen appropriate econometric technique. We use both excel and SPSS for the purpose of regressing and analyzing our data. After the analysis, the resulting output is then interpreted to determine if we should reject our null hypothesis and accept the alternate hypothesis or we should not reject the null hypothesis in the first place. This is done by observing the results of regression outputs ANOVA, F-test, correlation output, p values of coefficients and descriptive statistics which include parameters such as skewness and kurtosis.

TESTS AND FUNCTIONS

MICROSOFT EXCEL

- **MULTIPLE REGRESSION**

Regression Statistics

Multiple R	0.998184
R Square	0.996371
Adjusted R Square	0.99562
Standard Error	186669.5
Observations	36

- **ANOVA table**

	df	***SS***	***MS***	***F***	***Significance F***
Regression	6	2.77E+14	4.62E+13	1326.948	5.26E-34
Residual	29	1.01E+12	3.48E+10		
Total	35	2.78E+14			

	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**	**Lower 95.0%**	**Upper 95.0%**
Intercept	-40507.3	42640.38	-0.94998	0.349975	-127717	46702.02	-127717	46702.02
TOT_6_10_15	0.060132	0.021101	2.849677	0.007973	0.016975	0.103289	0.016975	0.103289
ENR2G	0.872557	0.037404	23.32782	2.44E-20	0.796057	0.949057	0.796057	0.949057

SPLAY2	84.15076	21.81586	3.85732	0.000589	39.53232	128.7692	39.53232	128.7692
TCH2	-6.45561	3.541543	-1.82282	0.078656	-13.6989	0.787659	-13.6989	0.787659
TOTCLGD2G	7.293079	3.494651	2.086926	0.045794	0.145714	14.44044	0.145714	14.44044
OBUTOT	0.206781	0.100558	2.056334	0.048848	0.001117	0.412446	0.001117	0.412446

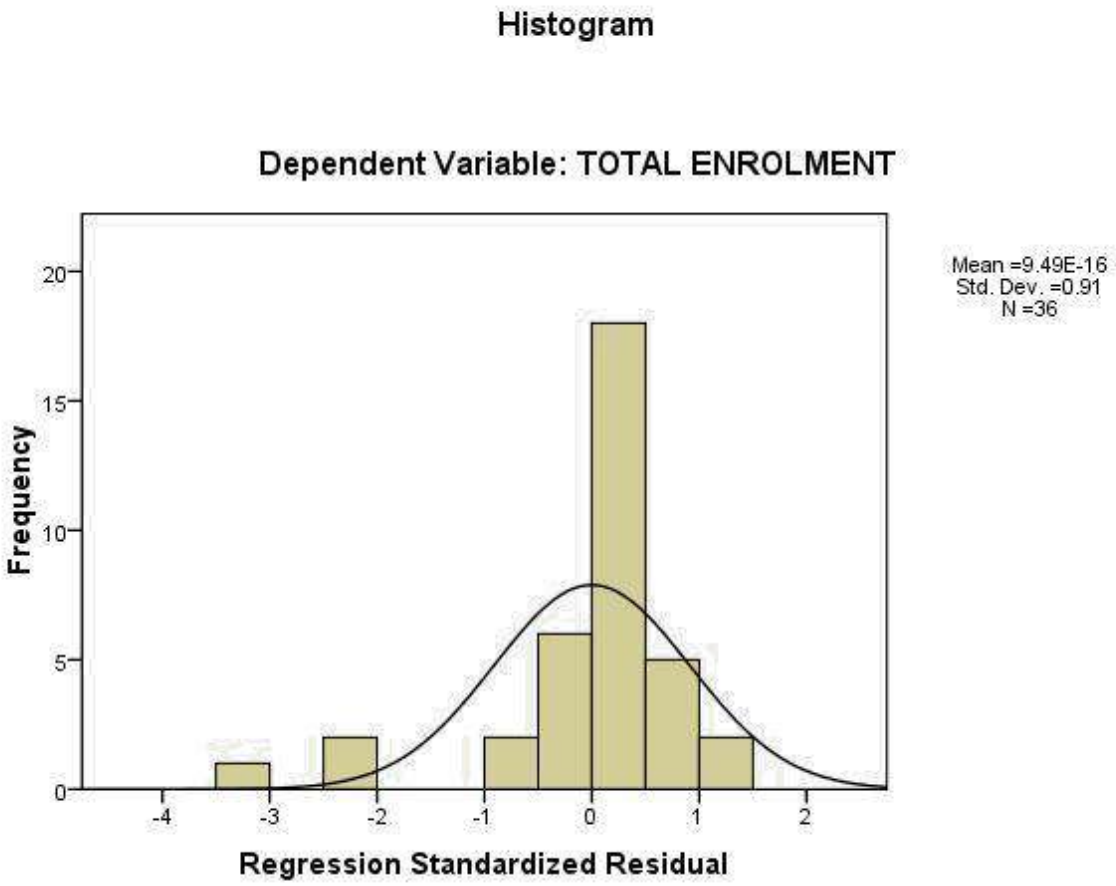
CORRELATION

	TOTAL ENROLMENT	Pop from 6-10	Enrolment-Gov Schools	Teachers	Good classroom conditions	OBC Enrolment	Playgrounds
TOTAL ENROLMENTNT	1						
Pop from 6-10	0.652663656	1					
Enrolment-Gov Schools	0.950187621	0.44769939	1				
Teachers	0.920380588	0.5805878	0.817782082	1			
Good classroom conditions	0.893241745	0.60537066	0.762132866	0.986518 19	1		
OBC Enrolment	0.769274389	0.95007882	0.592752238	0.686400 09	0.7002265 76	1	
Playgrounds	0.80281582	0.56791892	0.637246132	0.947888 48	0.9640504 39	0.64171396	1

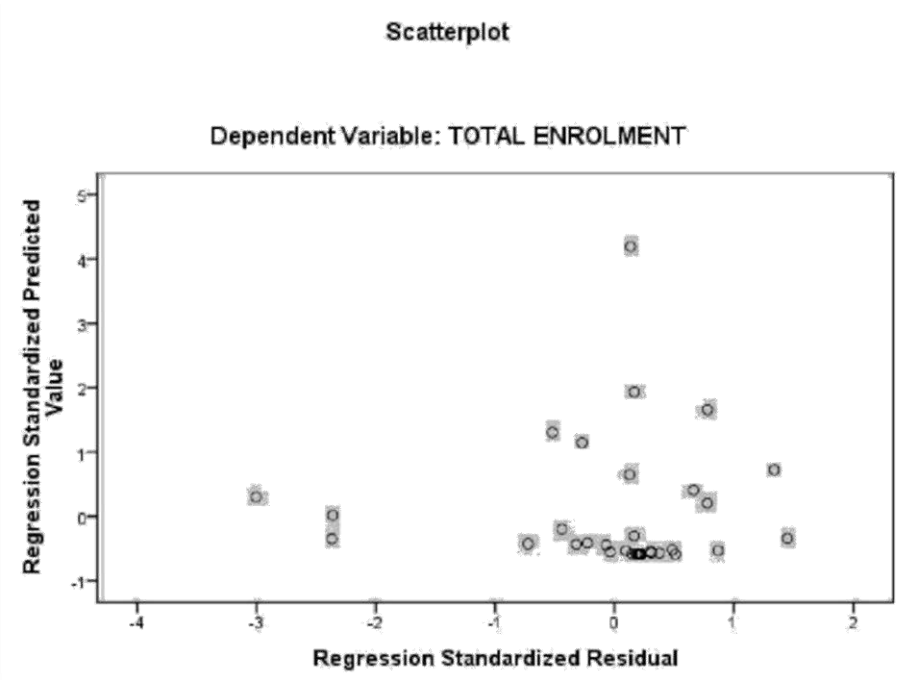
SPSS

- **TEST FOR HETEROSKEDASTICITY**

1. Histogram



2. Scatter Plot



DESCRIPTIVE STATISTICS

	N	RANG	MINI	MAXIM	MEAN	STD. DEVIAT	SKEWNESS		KURTOSIS	
	Statist	Statist	Statist	Statistic	Statistic	Statistic	statistic	Std. er	statistic	Std. error
TOTAL ENROLMI	36	13472	697	1347326	1629003.	2820534.	2.643	.393	8.269	.768
Popn. From 6-10yea	36	27158	5898	2716433	3707853.	5399178.	2.757	.393	9.730	.768
Enrolment-governm schools	36	12190	0	1219074	986507.7	2302542.	3.714	.393	16.244	.768
Total teachers	36	26337	58	263436	55548.47	77641.54	1.615	.393	1.463	.768
Good clas conditions	36	22215	53	222212	49052.72	69219.50	1.512	.393	1.025	.768
OBC Enrolment	36	55883	10	5588383	834256.5	1276077.	2.277	.393	5.764	.768
Playgrounds	36	25418	2	25420	4921.06	7353.422	1.732	.393	1.865	.768
Valid N (list-wise)	36									

MULTIPLE REGRESSION

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	Playgrounds, Pop from 6-10 , Enrolment- Gov Schools, OBC Enrolment, Good classroom conditions, Total Teachers	.	Enter

a. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.998[a]	.996	.996	186669.488

a. Predictors: (Constant), Playgrounds, Pop from 6-10, Enrolment- Gov Schools, OBC Enrolment, Good classroom conditions, Total Teachers

b. Dependent Variable: TOTAL ENROLMENT

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.774E14	6	4.624E13	1326.948	.000[a]

	Residual	1.011E12	29	3.485E10		
	Total	2.784E14	35			

Predictors: (Constant), Playgrounds, Pop from 6-10 , Enrolment- Gov Schools, OBC Enrolment, Good classroom conditions, Total Teachers

b. Dependent Variable: TOTAL ENROLMENT

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-40507.339	42640.377		-.950	.350
	Pop from 6-10	.060	.021	.115	2.850	.008
	Enrolment- Gov Schools	.873	.037	.712	23.328	.000
	Total Teachers	-6.456	3.542	-.178	-1.823	.079
	Good classroom conditions	7.293	3.495	.179	2.087	.046
	OBC Enrolment	.207	.101	.094	2.056	.049
	Playgrounds	84.151	21.816	.219	3.857	.001

a. Dependent Variable: TOTAL ENROLMENT

Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-38222.11	13448139.00	1629003.53	2815411.362	36
Residual	-560421.875	270488.031	.000	169917.579	36
Std. Predicted Value	-.592	4.198	.000	1.000	36
Std. Residual	-3.002	1.449	.000	.910	36

a. Dependent Variable: TOTAL ENROLMENT

RESEARCH 2

Impact of schools providing mid-day meals on total enrolment in elementary schools (2014-15)

		DEPENDENT VARIABLE	**INDEPENDENT VARIABLE**
		Total Enrolment	Schools providing Mid-Day Meal
S. No.	**STATE NAME**	ENR2	MDM2
01	JAMMU & KASHMIR	809729	7958
02	HIMACHAL PRADESH	66744	0

03	PUNJAB	354010	38
04	CHANDIGARH	14605	13
05	UTTARAKHAND	263742	22
06	HARYANA	371113	0
07	DELHI	302142	13
08	RAJASTHAN	4808621	21027
09	UTTAR PRADESH	3929469	357
10	BIHAR	13473261	26577
11	SIKKIM	35124	186
12	ARUNACHAL PRADESH	155403	906
13	NAGALAND	92247	489
14	MANIPUR	103017	508
15	MIZORAM	69667	1
16	TRIPURA	152756	1181
17	MEGHALAYA	26523	18
18	ASSAM	296603	944
19	WEST BENGAL	205677	95
20	JHARKHAND	3485258	13031
21	ODISHA	2906442	16244
22	CHHATTISGARH	425818	207

23	MADHYA PRADESH	2351568	66
24	GUJARAT	7101434	22174
25	DAMAN & DIU	697	0
26	DADRA & NAGAR HAVELI	38024	114
27	MAHARASHTRA	6443805	23999
28	ANDHRA PRADESH	1242211	5406
29	KARNATAKA	5213925	24381
30	GOA	6150	54
31	LAKSHADWEEP	2668	12
32	KERALA	943712	2093
33	TAMIL NADU	1927174	8691
34	PUDUCHERRY	15482	51
35	A & N ISLANDS	10517	62
36	TELANGANA	998789	3380

TESTS AND FUNCTIONS

- **DESCRIPTIVE STATISTICS**

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error

Total Enrolment	36	13472564	697	13473261	1629003.53	2820534.191	7.955E12	2.643	.393	8.269	.768
Schools providing Mid-Day Meal	36	26577	0	26577	5008.28	8500.379	7.226E7	1.607	.393	1.099	.768
Valid N (listwise)	36										

LINEAR REGRESSION

Regression Statistics

Multiple R	0.875897
R Square	0.767195
Adjusted R Square	0.760348
Standard Error	1380773
Observations	36

ANOVA

	df	**SS**	**MS**	**F**	**Significance F**
Regression	1	2.14E+14	2.14E+14	112.0448	2.67E-12
Residual	34	6.48E+13	1.91E+12		
Total	35	2.78E+14			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	173429.5	268083.3	0.646924	0.522025	-371381	718240.2	-371381	718240.2
MDM2	290.6336	27.4568	10.58512	2.67E-12	234.8347	346.4326	234.8347	346.4326

- **CORRELATION**

	ENR2	*MDM2*
ENR2	1	
MDM2	0.875897	1

RESEARCH 3

Impact of expenditure on education as % of GDP on Gross Enrolment Ratio (GER) (1950-2014)

S. No.	**Year**	**DEPENDENT VARIABLE**	**INDEPENDENT VARIABLE**
		GER All Categories - Classes I-VIII (6-13 Years) - Total	**Expenditure on Education as % of GDP**
1	1950-51	32.10	0.64
2	1960-61	48.70	1.48
3	1970-71	61.90	2.11
4	1980-81	67.50	2.98

5	1990-91	78.60	3.84
6	1991-92	80.50	3.80
7	1992-93	77.60	3.72
8	1993-94	72.30	3.62
9	1994-95	78.40	3.56
10	1995-96	78.50	3.56
11	1996-97	78.00	3.53
12	1997-98	79.40	3.49
13	1998-99	79.90	3.85
14	1999-00	81.00	4.19
15	2000-01	81.60	4.28
16	2001-02	82.40	3.81
17	2002-03	82.50	3.78
18	2003-04	84.80	3.51
19	2004-05	93.50	3.25
20	2005-06	94.90	3.34
21	2006-07	97.10	3.48
22	2007-08	100.30	3.40
23	2008-09	101.10	3.56
24	2009-10	101.50	3.95

25	2010-11	103.90	4.05
26	2011-12	97.40	3.82
27	2012-13	94.80	4.10
28	2013-14	95.00	4.13

* GER= Total enrolment in elementary schools, regardless of age, expressed as
a percentage of the eligible official primary and upper primary school-age population in a given school-year

TESTS AND FUNCTIONS

- **DESCRIPTIVE STATISTICS**

	N	Range	Minimu	Maximu	Mean	Std. Deviati	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
GER All Categorie - Classes I-VIII (6-13 Years) - Total	28	71.8000	32.1000	103.9000	82.32857	16.16513984	261.312	-1.269	.441	2.495	.858
Expenditure on Education as % of GDP	28	3.64000	.64000	4.28000	3.458214	.80595494	.650	-2.327	.441	5.754	.858
Valid N (listwise)	28										

- **LINEAR REGRESSION**

Regression Statistics

Multiple R	0.78413874
R Square	0.61487356
Adjusted R Square	0.600061
Standard Error	10.2229525
Observations	28

- **ANOVA**

	Df	**SS**	**MS**	**F**	**Significance F**
Regression	1	4338.18943	4338.18943	41.5102954	7.9336E-07
Residual	26	2717.22771	104.508758		
Total	27	7055.41714			

	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**	**Lower 95.0%**	**Upper 95.0%**
Intercept	27.9392658	8.66005897	3.22622119	0.00337576	10.1382598	45.7402717	10.1382598	45.740271
% of GDP	15.7275695	2.4410895	6.44284839	7.9336E-07	10.7098383	20.7453008	10.709838 3	20.745300 8

- **CORRELATION**

	GER	*EXPENDITURE*
GER	1	
EXPENDITURE	0.784139	1

Research 4

Impact of Gross Enrolment Ratio (GER) on learning outcomes (2014-15)

S. No.	STATE NAME	SUBTRACTION*	WORD*	GER
1	ANDHRA PRADESH	0.25	0.153	79.47
2	ARUNACHAL PRADESH	0.288	0.232	122.53
3	ASSAM	0.217	0.182	95.86
4	BIHAR	0.142	0.09	98.07
5	CHHATTISGARH	0.186	0.09	101.23
6	DADRA & NAGAR HAVELI	0.181	0.128	92.91
7	DAMAN & DIU	0.188	0.166	83.72
8	GOA	0.276	0.13	100.19
9	GUJARAT	0.192	0.126	93.56
10	HARYANA	0.195	0.086	96.03
11	HIMACHAL PRADESH	0.226	0.078	103.09

ISSN No:-2456-2165

12	JAMMU & KASHMIR	0.299	0.188	70.89
13	JHARKHAND	0.176	0.16	99.97
14	KARNATAKA	0.239	0.139	93.18
15	KERALA	0.224	0.141	96.89
16	MADHYA PRADESH	0.148	0.113	96.63
17	MAHARASHTRA	0.179	0.108	98.82
18	MANIPUR	0.224	0.179	118.77
19	MEGHALAYA	0.247	0.175	122.03
20	MIZORAM	0.259	0.166	126.83
21	NAGALAND	0.288	0.246	97.67
22	ODISHA	0.215	0.124	90.13
23	PUDUCHERRY	0.252	0.195	90.18
24	PUNJAB	0.216	0.101	96.77
25	RAJASTHAN	0.169	0.089	85.79

18	MANIPUR	22.4	17.9	118.77
19	MEGHALAYA	24.7	17.5	122.03
20	MIZORAM	25.9	16.6	126.83
21	NAGALAND	28.8	24.6	97.67
22	ODISHA	21.5	12.4	90.13
23	PUDUCHERRY	25.2	19.5	90.18
24	PUNJAB	21.6	10.1	96.77
25	RAJASTHAN	16.9	8.9	85.79
26	SIKKIM	28.8	20.8	140.66
27	TAMIL NADU	25.3	16.1	94.58
28	TRIPURA	27.1	18.8	120.54
29	UTTAR PRADESH	15.4	10.4	74.54
30	UTTARAKHAND	18.5	9.1	85.53
31	WEST BENGAL	18.5	13.7	103.17

* All children in the age group 5-16 were administered a “floor level” reading test.

Word indicates the percent of children who could read 4 out of 5 words correctly. Subtraction indicates the percent of children who could solve two 2-digit by 2-digit subtraction problems with carryover.

*word and GER are in percentages

TESTS AND FUNCTIONS

- **DESCRIPTIVE STATISTICS**

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
WORD*	31	16.80	7.80	24.60	14.4323	4.48289	.417	.421	-.539	.821
SUBTRACTIO	31	15.70	14.20	29.90	21.9742	4.50895	.115	.421	-1.050	.821
GER	31	69.77	70.89	140.66	99.0397	15.45163	.786	.421	.831	.821
Valid N (listwis	31									

RELATIONSHIP BETWEEN GER AND READING LEVEL

- **LINEAR REGRESSION**

Regression Statistics

Multiple R	0.383937
R Square	0.147408
Adjusted R Square	0.118008
Standard Error	0.042101

Observations	31

- **ANOVA**

	Df	SS	MS	F	Significance F
Regression	1	0.008887	0.008887	5.013914	0.032981
Residual	29	0.051402	0.001772		
Total	30	0.060289			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.034003	0.049845	0.682177	0.50054	-0.06794	0.135947	-0.06794	0.135947
GER	0.001114	0.000497	2.239177	0.032981	9.65E-05	0.002131	9.65E-05	0.002131

RELATIONSHIP BETWEEN GER AND ARITHMETIC LEVEL

- **LINEAR REGRESSION**

Regression Statistics

Multiple R	0.36966439
R Square	0.13665176
Adjusted R	0.10688113

Square	
Standard Error	0.04261183
Observations	31

- **ANOVA**

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.00833466	0.00833466	4.59015369	0.04068105
Residual	29	0.05265728	0.00181577		
Total	30	0.06099194			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.11290581	0.050449 89	2.23797942	0.03306779	0.00972421	0.21608741	0.00972421	0.21608741
GER	0.00107872	0.0005035 644	2.14248105	0.04068105	4.8957E-05	0.00210848	4.8957E-05	0.00210848

- **CORRELATION**

	SUBTRACTION	*WORD*	*GER*
SUBTRACTION	1		
WORD	0.73606645	1	
GER	0.36966439	0.38393714	1

ISSN No:-2456-2165

CHAPTER 6
DATA INTERPRETATION

RESEARCH 1

A multiple regression is run between dependent factor total enrolments in elementary schools and 6 independent factors namely total population in the age group of 6-10 years, enrolment in government schools, good classroom condition, total number of teachers, OBC enrolment and schools with playgrounds.

- HETEROSKEDASTICITY:

1. Histogram

Histogram shows that the normal curve is approximately symmetrical. Histogram is quite symmetrical and it peaks at the mode. This implies that model is a significant fit and is homoscedastic.

2. Scatter Plot

The scatter plot show a pattern and there is a presence of little heteroscedasticity. This could be because our sample size is quite small (n=36), hence inclusion or exclusion of outliers could affect. Also the skewness in the distribution of one or more regressor could be another reason for heteroscedasticity.

The Multiple Regression line is

$$\mathbf{Y = -40507.3 + 0.06X_1 + 0.87X_2 + 7.29X_3 + 0.21X_4 + 84.15X_5}$$

Where,

X_1 = Population between age group 6-10 years

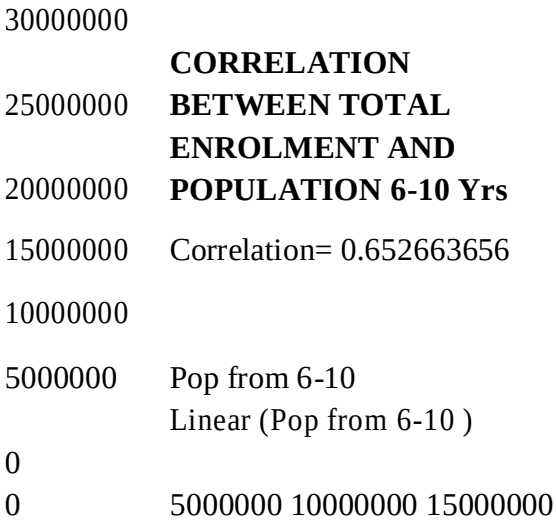
X_2 = Enrolment in government schools

X_3 = Good classroom condition

X_4 = OBC enrolment

X_5 = Number of schools with playgrounds

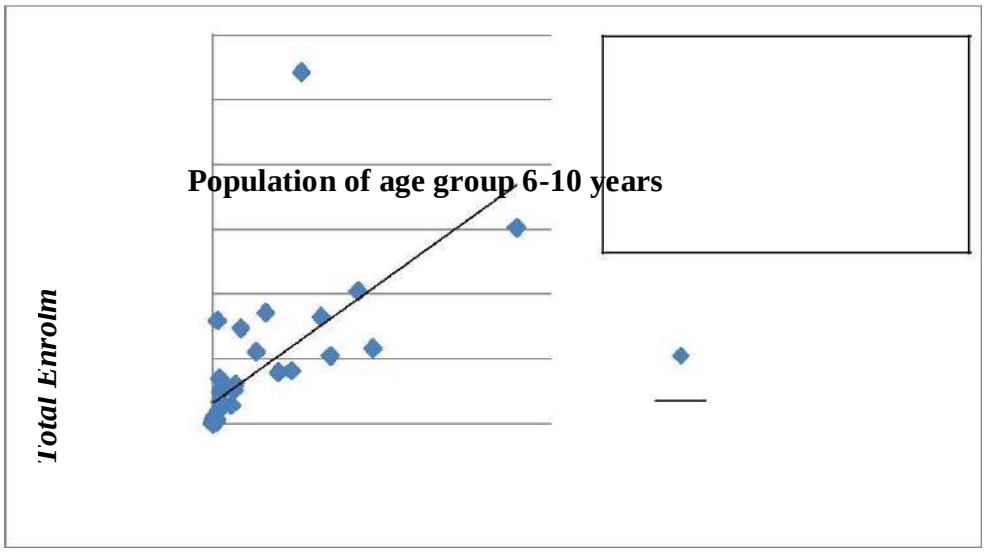
reject the null hypothesis. It means population of Age group 6-10yrs significantly affects the total enrolment in elementary schools in India.

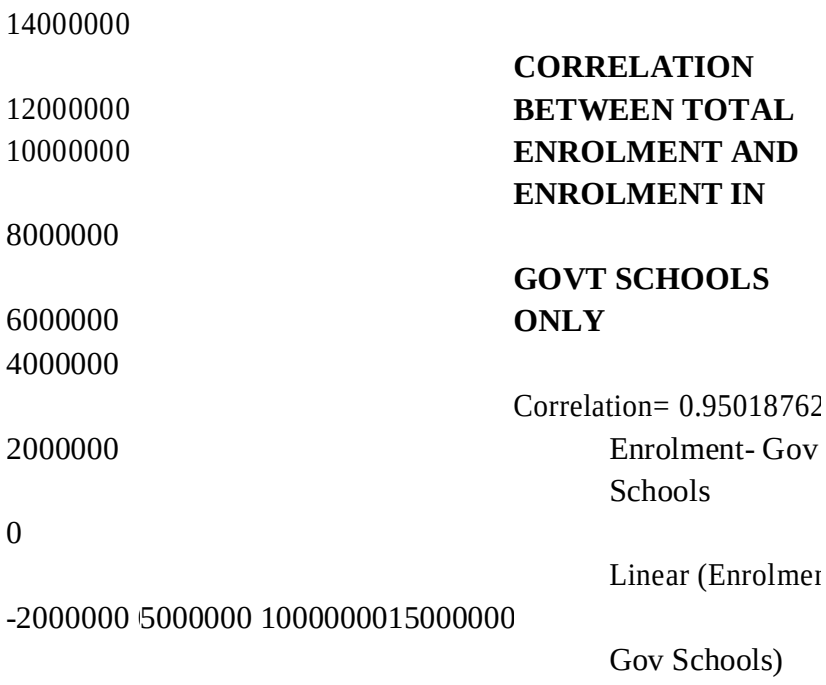


✓ Since the P value is 0.007973 i.e., it is less than 0.05. Therefore, we

✓ β value of this coefficient is 0.06 which implies that as the population in this age group increases by 1 unit, total enrolment increases by 0.06 units. This means that children in this age group are getting enrolled in schools.

✓ Correlation of 0.652663656 implies that a moderate positive relationship exists between population in the age group of 6-10 years and total enrolment.





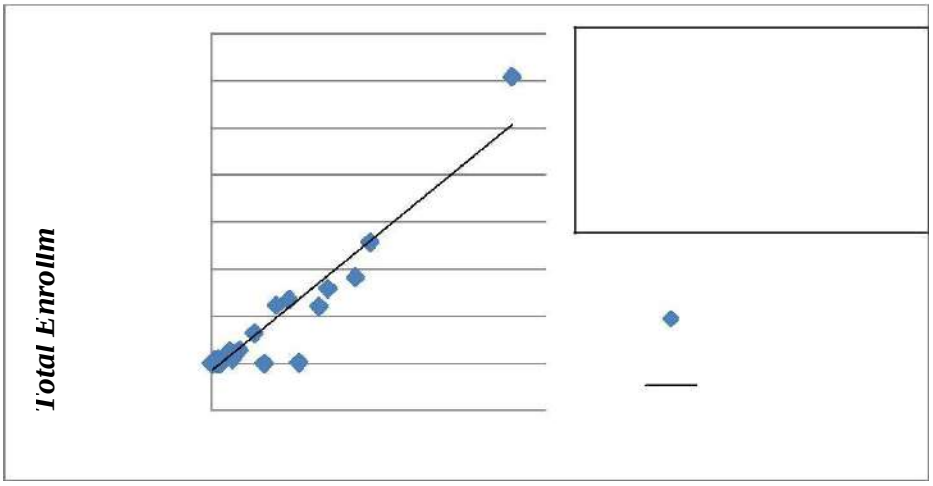
2. **Enrolment in government schools-**

✓ Since the P value is 2.44E-20 i.e., it is less than 0.05. Therefore, we reject the null hypothesis. It means enrolment in government elementary schools significantly affects the total enrolment in primary and upper primary schools in India.

 β value of 0.87 means that as 1 student gets enrolled in a government school, total enrolment increases by 0.87 units. This indicates that a greater proportion of students get enrolled in government schools to significantly affect the total enrolments.

 Correlation of 0.950187621 implies that a strong positive relationship exists between enrolment in government schools and total enrolment.

ISSN No:-2456-2165



3. **Good classroom condition**

- Since the P value is 0.045794 i.e., it is less than 0.05. Therefore, we reject the null hypothesis. It means good classroom condition significantly affects the total enrolment in Primary and Upper Primary schools in India.

✓ β value of 7.29 implies that as classroom with good condition increases by one unit or in other words, as 1 classroom becomes a good classroom, enrolment increases by about 7 students.

- Correlation of 0.893241745 implies that a strong positive relationship exists between number of classrooms with good condition and total enrolment.

4. OBC enrolment

- Since the P value is 0.048848 i.e., it is less than 0.05. Therefore, we reject the null hypothesis. It means OBC enrolment significantly affects the total enrolment in Primary and Upper Primary schools in India.

✓ β value of 0.21 means that 1 more student of OBC category enrolled increases the total enrolment by 0.21 units. This implies that OBC enrolment plays a significant role in total enrolment.

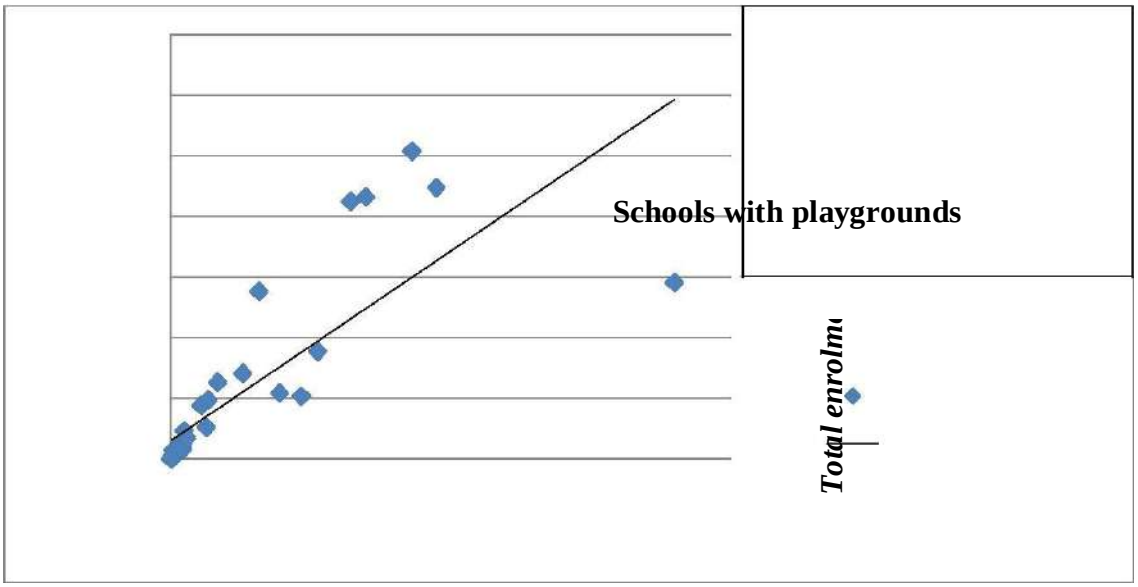
✓ Correlation of 0.769274389 implies that a strong positive relationship exists between OBC enrolment and total enrolment.

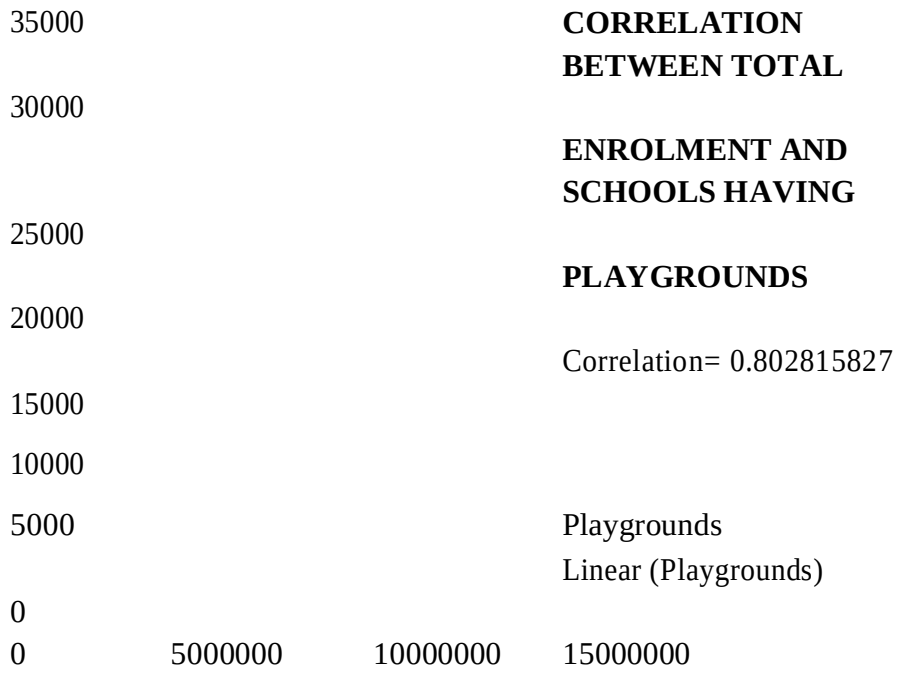
5. Schools with playgrounds

- ✓ β value of 84.15 means that as the number of playground increases by 1, total enrolment increases by about 84 students.

- Since the P value is 0.000589 i.e., it is less than 0.05. Therefore we reject the null hypothesis. It means playground in schools significantly affects the Total enrolment in Primary and Upper Primary schools in India.

 Correlation of 0.802815827 implies that a strong positive relationship exists between number of schools with playground and total enrolment.





6. Total number of teachers

 Since the P value is 0.078656 i.e., it is more than 0.05. Therefore, we do not reject the null hypothesis. This means there is no linear relationship between total enrolment and total number of teachers.

From the multiple regression we interpret the following.

✓ The value of R^2 in this case is 0.9963717, which means variation in above factors account for 99.63% variation in total enrolment in elementary schools. As R^2 is statistically significant, the independent variables affect the dependent variable significantly.

0.99562 is our adjusted R^2, which is slightly less than our R^2

Since $F_{(o.o5,6,35)}$=2.346, our model the F-statistics is large enough, thusour ability to predict the outcome variable is good. We reject the null hypothesis of equal population means and conclude that there is a statically significant difference among the population means.

 From the above observations, we interpret that total population in the age group of 6-10 years, enrolment in government schools, good classroom condition, OBC enrolment and schools with playgrounds play a significant role in increasing total enrolment.

RESEARCH 2

The regression line for this hypothesis is

Y= 173429.5+ 290.6336X

Where, Y= Total enrolment in elementary schools X= Number of schools providing mid-day meals

 Since the P value is 2.67E-12 i.e., it is less than 0.05. Therefore, we reject the null hypothesis. It means that the number schools providing mid-day meals significantly affects the total enrolment in elementary schools in India.

 β value of 290.6336 implies that if schools providing Mid-Day Meal increases by 1, total enrolment increases by about 290 students.

Regression between dependent factor Total Elementary Enrolment and independent factor Mid-Day Meal gives an R squared value of 0.767195. This means that 76.71% of variation in Total Elementary Enrolment is explained by variation in number of schools providing mid-day meals.

 Correlation of 0.875897 implies that a strong positive relationship exists between number of schools providing mid-day meals and total enrolment in elementary schools.

 Through this observation we interpret that increasing the number of schools providing Mid-Day Meals is significant in increasing Total Enrolment.

Correlation between total enrolment and schools providing mid-day meal

Correlation= 0.875897

RESEARCH 3

The regression line for this hypothesis is

Y= 27.93927+ 15.72757X

Where, Y= Gross Enrolment Ratio in primary and upper primary

X= Expenditure on education as a % of GDP

✓ Since the P value is 7.9336E-07 i.e., it is less than 0.05. Therefore, we reject the null hypothesis. It means that expenditure on education affects Gross Enrolment Ratio (GER) in elementary schools in India.

✓ β value of 15.7275695 implies that if expenditure on education (as % of GDP) increases by 1%, GER increases by 15%.

 Regression between dependent factor GER and independent factor expenditure on education expressed as a percentage of GDP gives an R squared value of 0.61. This means that 61% of variation in GER is explained by variation in expenditure on education.

 Correlation of 0.784139 implies that a strong positive relationship exists between expenditure on education as % of GDP and GER in elementary schools.

 Through this observation we interpret that allocation of a greater percentage of GDP to education sector is significant in increasing total enrolment.

Correlation between GER and expenditure

Correlation= 0.784139

RESEARCH 4

RELATIONSHIP BETWEEN GER AND READING LEVEL

The regression line for this hypothesis is

Y= 0.034003+ 0.001114X

Where, Y= Percentage of students who can correctly read 4 out of 5 words

X= Gross Enrolment Ratio in elementary schools

✓ Since the P value is 0.032981 i.e., it is less than 0.05. Therefore, we reject the null hypothesis. It means that GER affects Reading levels in elementary schools in India.

✓ β value of 0.001114≈ 0.1% i.e. we reject the null hypothesis that there is no linear relationship between percentage of students who can correctly read 4 out of 5 words and GER. It implies that if GER increases by 1%, reading levels increases by 0.1%.

✓ Correlation of 0.383937 implies that a weak positive relationship exists between GER in elementary schools and % of children who can correctly read 4 out of 5 words.

✓ Regression between dependent factor percentage of students who can correctly read 4 out of 5 words and independent factor GER in elementary schools gives an R squared value of 0.147408. This means that 14% percent of variation in percentage of students who can read is explained by GER. Ideally, to indicate the improving status of quality of education, increase in enrolment in elementary schools should be accompanied by increase in reading levels of the students but this regression shows that increasing enrolment does not explain much variation in reading level

RELATIONSHIP BETWEEN GER AND ARITHMETIC LEVEL

The regression line for this hypothesis is

Y= 0.11290581+ 0.00107872X

Where, Y= Percentage of students who can correctly carry out subtraction

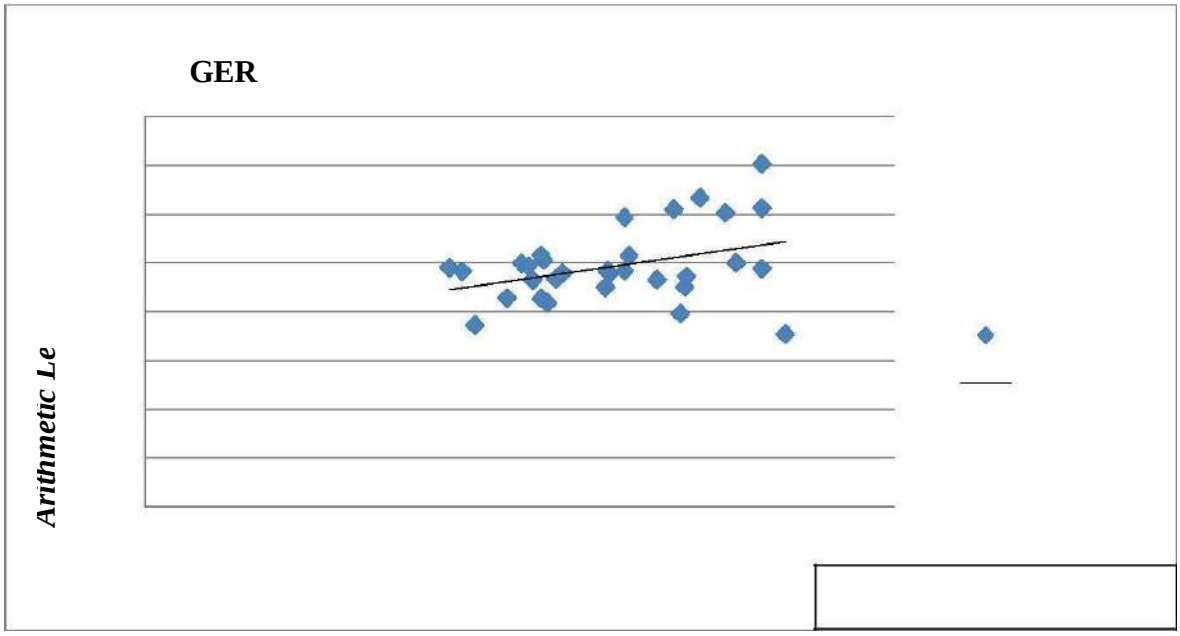
X= Gross Enrolment Ratio in elementary schools

✓ Since the P value is 0.01068105 i.e., it is less than 0.05. Therefore, we reject the null hypothesis. It means that GER affects arithmetic levels in
elementary schools in India.

✓ β value of 0.00107872≈ 0.1% i.e. we reject the null hypothesis that there is no linear relationship between percentage of students who can correctly carry out subtraction and GER. It implies that if GER increases by 1%, arithmetic levels increases by 0.1%.

 Correlation of 0.36966 implies that a weak positive relationship exists between GER in elementary schools and % of children who can correctly carry out subtraction.

Regression between dependent factor percentage of students who can correctly carry out subtraction and independent factor GER in elementary schools gives an R squared value of 0.13665176. This means that 13.6% percent of variation in percentage of students who can subtract is explained by GER. Ideally, to indicate the improving status of quality of education, increase in enrolment in elementary schools should be accompanied by increase in arithmetic levels of the students but this regression shows that increasing enrolment does not explain much variation in arithmetic level.



ISSN No:-2456-2165

CHAPTER 7

CONCLUSION

India has made commendable progress in increasing access to education and building a strong policy and planning framework for education. There has been substantial progress in increasing enrolment rates. But the learning outcomes have proved to be declining over the years. For 6th year in a row, enrolment rates in primary education have been 96% or above in 2014 (ASER 2014). The results are higher than the desired level due to the concentrated efforts of both centre and state governments in implementing policies that led to the improvements in factors like classroom conditions, playground facilities, mid-day meal scheme, enrolment in government schools, reducing caste disparities etc. But the ultimate goal of achieving quality of education through improved learning outcomes still remains a distant dream. Below are the results of factors stating their effect on enrolment rate and also the reason why gross enrolment ratio doesn't significantly affect the learning outcome of the students.

ISSN No:-2456-2165

FINDINGS AND POLICY IMPLICATIONS

1. Population aged 06-10 years and Total Enrolment

As per our analysis, there exists a significant relationship between these two variables, which causes us to believe that the total enrolment in elementary schools is moving along with an increase in population of age group 06-10 years. It can be concluded that the new generation of children of the age group are getting enrolled and the reach of elementary education is expanding.

The Right to Education Act specifies that "age appropriate mainstreaming" is a goal that needs to be achieved. To achieve this goal, integrated efforts of centre and state governments have proved to be fruitful in increasing the enrolment of students in this age group by providing free and compulsory education.

2. Enrolment in government schools and Total Enrolment

The analysis states that 80 percent increase in the Total Enrolment is explained by the increase in enrolment of government schools. This may indicate that more children of lower income strata, who prefer government schools because of affordability, are getting education. This may also indicate the improving conditions of government schools, thereby causing an increase in their enrolment over private schools.

It is estimated that 90% of the 112 million children, who enroll in primary schools, annually attend government schools. Three out of four students in elementary classes are from the government schools (ASER 2012). The Common School System (CSS) recommended in 1964 by the Kothari Commission, provides a government school in each neighborhood that all children of that neighbourhood are to attend. All the efforts combined significantly affect the enrollment rates.

3. Good Classroom Condition and Playground in schools

Under Sarva Shiksha Abhiyan, commendable progress has been made over the last few years, in providing basic infrastructure such as classrooms, water, toilets and boundary walls to all schools. The Right of Children to Free and Compulsory Education Act (2009) requires that all schools meet specified minimum infrastructural provisions terms of compliance with RTE norms. About 75% of schools comply with the norms for classrooms (ASER 2012). As per a survey conducted by ASER in government schools of India, most classrooms had basic facilities such as blackboards, few had children's work displayed. Most classrooms had well under 30 students present in all.

This has led to the positive relationship outcome of the study, showing that with each additional good classroom and additional playground, the enrolment in the respective state is increasing.

4. Total number of teachers

There is no significant relationship between the total number of teachers and the total enrolment of the state, indicating that extrinsic factors are more relevant to increase the student enrolment.

5. OBC Enrollment

There exists a significant relationship between the enrolment of Other Backward Class (OBC) students and the total enrolment implying that 20 percent of the total enrolment is from backward classes. This stands for a positive step in the goal of removal of disparities in education.

NPE 1968 gave importance to education of marginalized groups i.e. women, Scheduled Caste, Scheduled Tribes and other backward communities. The new policy underscored the need to put a special emphasis on the removal of inequalities and balancing of educational opportunity. Also, the RTE Act mandated all the private and public schools to reserve 25 percent of their seats for students from socially and economically backward families. That implies one-fourth of students in classes will be from marginalized section of the society. This has changed the structure of classes, promoting enrolment and increasing diversity.

Scheme of Infrastructure Development in Minority Institutions (IDMI) has been implemented to boost infrastructure in private aided/unaided minority schools/ institutions in order to increase the enrolment and enhance quality of education to minority children. The policies mentioned above have improved the enrollment rates of OBC category students.

6. Mid-Day Meal Scheme

The objectives and potential benefits of the Mid-day Meal scheme were mainly to increase enrolment, attendance and retention. It also aimed to improve child nutrition and social equity. However, quality in education and food has not increased despite the improvement in enrolment statistics and the reduction of dropouts. Since, the quality of food is affected by the lack of proper care while preparing the food, there is a need to have strict supervision on the quality of food. Also, since the teachers are occupied in various other duties, therefore, the quality in terms of class size, child-centered teaching process, and continuous assessment of learning of students, suffers a lot.

7. Public Expenditure

The regression on total expenditure by government as a percent of GDP and Gross Enrolment Ratio shows that 61 percent of the change in GER can be explained by the change in total public expenditure and with each unit increase in the expenditure, GER increases by 17 units. Therefore, public expenditure has a substantial effect on the student enrolment.

The budgetary allocation and expenditure by the central government has increased significantly between 2007–08 and 2014–15. Budgetary allocation has tripled in the case of elementary education to Rs 68,963 crores. One major factor augmenting the resources available for primary education in India is the revenue mobilized on

account of the education cess. Initially levied at 2 per cent of all taxes collected by the central government, the education cess was increased to 3 per cent onwards on all central taxes other than corporation and income tax.

8. Learning outcome

The primary objective of the RTE ACT is improving quality of education. Reading and arithmetic skills are primary components of learning that form the foundation without which desired learning outcomes, however defined, cannot take place.

a. The 12th Five Year Plan explicitly states the key policy goal which is to improve learning along with enrolment. This was followed by the Ministry of Human Resource Development's launch of the 'Padhe Bharat, Badhe Bharat' scheme to reaffirm the importance of addressing the learning challenge. The scheme emphasizes on evaluation of student learning and early reading and mathematics skills (for standard 1 and 2 students).

b. Attendance is the most important factor in children's learning. While enrollment rates are high, attendance patterns of teachers and children vary considerably across the country. The results obtained in the paper show that higher enrolment rates hardly affect the learning outcomes of the students at primary level. Even if the child does get enrolled in a school, there is no guarantee that (s)he will attend. There are a number of factors that keeps the child away and violates the requirements of the RTE ACT.

c. Teachers are held accountable for enrolment, seldom for attendance; they don't see the need to encourage the students to attend the school.

d. The children belonging to the EWS and backward category sometimes need to lend their hands, at home or in the family enterprise (farming, trading etc) or in another enterprise to bring in money to help feed the family.

e. There is a lack of strengthening in research on education. There is less focus on the use of information technology. The institutions lack the high-quality content such as intelligent teaching systems and tools that will help students to hone basic skills like reading and mathematics, and developing content in multiple Indian languages.

The policies have definitely increased the enrolment rates in the schools due to the significant impact of factors like mid-day meal scheme, public expenditure on education, increase in total population, improved classroom conditions and playground facilities, increased enrolment of students in government schools and enrolment of OBCs. While the education policy has been robust in conception and orientation, it has not delivered the desired results in terms of acceptable learning outcomes in the education. Despite the stated priority accorded to this sector and the plethora of specific programs which have been launched, as well as the infusion of massive public outlays over the years, the state of education remains a conspicuous weak spot in the economy, indeed in society at large.

POLICY RECOMMENDATIONS

Based on the findings from regression analysis of performance indicators of elementary schools and students, we suggest enhancements in the current policies and some reforms to improve the quality of education.

1. Quality of instruction needs to be improved by improving teacher capability. Competence of teachers and their motivation should be increased by increasing new ways of in-service training though government-conducted seminars NGO intervention. Implementation of effective new initiatives curricular reforms and spreading a sense of ethical values in teacher education could help inculcate skills and a sense of responsibility.

2. Attention should be paid to building teacher accountability. This can be done through efficient use of technology. J-PAL recently conducted a research in Rural Udaipur where they used a simple camera picture with a timestamp to understand whether a teacher was in school or not. The 30-month study showed significant improvement in teacher attendance as well as student learning. Such simple and innovative use of technology could help bring a foundational change in school accountability.

3. The Right to Education Act specifies that "age appropriate mainstreaming" is a goal that needs to be achieved. But a majority of school children in government schools are significantly behind the grade level expected of them. The galloping pace of the textbooks needs to be brought down to reasonable levels, keeping children's actual learning trajectories in mind.

4. Education quality is essentially dependent on curriculum and learning objectives and materials, classroom assessment structures, teaching methods, teacher assistance in the classrooms, and school leadership and management development. A new structure for syllabus is required to be developed periodically in order to take into account the emerging issues in society and device ways to address them.

5. A School Quality Assessment and Accreditation System should be put in place to cover all aspects of school operations. Efforts such as better governance structures in schools finding a balance between mandating and convincing, training of district and block-level education officers in addition to head teachers for better management system, on using data to better supervise and support school performance, and to mobilise community resources and efforts to enhance school performance could improve management of village schools through local community and Gram Panchayat participation.

6. To improve enrolment, attendance, and retention rate and simultaneously enhance nutritional level among school children, more schools should be equipped to provide wholesome mid-day meals. Currently, not all schools in the country provide mid-day meals. Our study suggests that mid-day meal has a significant impact on increasing enrolment and therefore, plan to cover all schools under mid-day meal scheme should be put in place. Studies have also shown mid-day meal to increase learning outcomes and retention rate of children.

7. For improving learning, a three to five year policy is necessary to ensure continuity. A three-year time frame will also allow states to plan for how these goals are to be accomplished incrementally. Achievable targets

should be set and all elements of the education system (teacher training, on-site support, materials, and measurement) should be aligned to help schools and teachers

8. help children learn better. States should articulate these plans to the centre for specific allocation of budget towards education according to their respective needs. This would result in targeted spending which implies that the expenditure is influencing progress towards goals, especially in terms of improving learning outcomes and not just enrolment of children in elementary school.

9. Development of educational infrastructure including classroom conditions, playground facilities and learning aids like chalk, blackboard, textbooks, notebooks etc. should consistently be a part of education policies as they have shown to increase school participation of children in elementary education. Educational infrastructure should consistently undergo innovation with each plan in order to maintain its impact on enrolment.

ISSN No:-2456-2165

RESEARCH LIMITATIONS

Several study design, impact and statistical limitations encountered by the team over the course of undertaking the research project are as follows:

1. There were certain parameters that could not be numerically quantified but were relevant nevertheless. For example, we saw an overall increase in Gross Enrolment Ration and literacy rate over the last 2 decades, but we could not take into account the effect CCE (Continuous Comprehensive Evaluation) introduced under Right to Education Act (2009) first in October 2009, had on quality of education. There was a lot of controversy surrounding it regarding its success and its hasty introduction.

2. There was a lack of availability of the Gross Enrolment Ratio (GER) of each year prior to 1990. Hence, the GER of beginning year of each decade was used for the regression, making the total number of observations equal to 28.

3. We could not find out the effect of Enrolment Rate on the literacy rate of India since the literacy rate data available was of Census data, occurring every 10 years and not for individual years

4. In addition to this we did not have data for Telangana in the cases of literacy rate and GER since it was formed in June 2014.

5. **Other parameters** – We could not include other parameters such as Pupil Teacher Ratio, qualifications of teachers, SC and ST enrolment due to time constraint and huge amount of data available.

Thus anyone undertaking research project under the topic ‘Education and learning outcomes’ must keep these problems in mind.

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SOURCES OF DATASETS

District Information System for Education (DISE)

Developed by the National University of Educational Planning and Administration, DISE is an annual survey that compiles school level data in each district level using specifically designed Education Management Information Systems (EMIS). Intended for planning, management, monitoring, and feedback on District Primary Education Programme interventions, the survey contains rich information on district demographics, enrollment in all types of primary and upper primary schools, student characteristics, teacher assignment and qualifications, incentives, infrastructure etc. More information on the DISE instrument, methodology and limitations, as well as reports can be found at http://www.dise.in/

SCHOOL REPORT CARDS

Raw data from School Report Cards of UDISE was collected for year 2014-15, district and state wise, regarding enrollment based indicators, school condition based indicators, teacher based indicators and basic census data on population and literacy rates.

http://schoolreportcards.in/SRC-New/Links/DISEPublication.aspx
http://dise.in/Downloads/Publications/Documents/ElementaryFlash2014-15.pdf http://dise.in/drc2014-15.htm

Annual Status of Education Report (ASER)

This is an annual survey that aims to provide reliable annual estimates of children's schooling status and basic learning levels for each state and rural district in India. ASER has been conducted every year since 2005 in almost all rural districts of India. In each rural district, 30 villages are sampled. In each village, 20 randomly selected households are surveyed. This process generates a total of 600 households per district, or about 300,000 households for the country as a whole. Approximately 600,000 children in the age group 3-16 who are resident in these households are surveyed. More information about the survey process, information collected and data quality can be found at http://www.asercentre.org/

Reading level and Arithmetic level results of enrolled children in the year 2014 of each state obtained by administering a "floor level" test of all children in the age group 5-16 of reading and basic arithmetic is obtained by the source.

http://www.asercentre.org/education/data/india/statistics/level/p/66.html

Ministry of Human Resource Development- Department of School Education and Literacy

The Ministry of Human Resource Development (MHRD) works through two departments: Department of School Education & Literacy and Department of Higher Education.

The Department of School Education & Literacy is responsible for development of school education and literacy and has its eyes set on the "universalization of education" and making better citizens out of our young brigade. For this, various new schemes and initiatives are taken up regularly and recently like Sarva Shiksha Abhiyan, Mid-Day Meal, Scheme of Support to Voluntary Agencies for Adult Education and Skill Development, those schemes and initiatives have also started paying dividends in the form of growing enrolment in schools.

Data regarding the incentives by the government on elementary education and the expenditure by different sectors of government on each state under different policies is obtained by this source.

http://mhrd.gov.in/sites/upload_files/mhrd/files/statistics/PubExpdt-2013.pdf https://data.gov.in/catalog/gross-enrolment-ratio-ger-0

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