

Testing Impact of Social and Economic Status on Gross Enrolment Ratio in Higher Education in India

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Abstract- The access to higher education is measured in terms of Gross Enrolment Ratio (GER). It plays an important role in the national development, especially in the progress of youth of the nation. India is a nation with heterogeneous social and economical segments. So, in this article we exhibit disparities in the attainment of enrolments through GER over various sections of society, particularly in terms of male-female and inter-cast groups. Also, we observe heterogeneity in the attainment of enrolment through GER between States/ Union Territories of India. Further, we statistically test significant correlation between Per Capita Net State Domestic Product (PCNSDP) and GER. Therefore, we conclude that economic status of student/ family of student is the major factor for deciding about his enrolments for higher education.

Keywords –Gross Enrolment Ratio (GER), Social and economic segment, Per Capita Net State Domestic Product (PCNSDP), Economic inequality, Significance of correlation, Z-test.

I. INTRODUCTION

The access to higher education is measured in terms of Gross Enrolment Ratio (GER), which is the ratio of persons enrolled in higher education institutions to total population of the persons in the age group of 18 to 23 years. It plays an important role in national development, especially in the progress of youth of nation.

India is a huge country with a huge population of around 1.3 billion people residing in it. They belong to different race, ethnicity, background and religion but they stay peacefully in a country which strives to provide better a better standard of living to its citizens. India is God gifted with huge resources. It has a very big and talented population which could be converted into the biggest resource on the Earth through Education and right platform. Ministry of Human Resource Development (MHRD), Government of India and University Grants Commission (UGC) are playing a very important role in providing and directing higher education to Indian youth.

MHRD and UGC had sponsored a number of studies on the various of Higher Education in the country. These studies were undertaken to develop necessary information base, as a source material to prepare the **Report on Approach and Strategies** for various **Five-Year Plans**. The higher education in India has witnessed many fold increase in its institutional capacity since independence. The studies observed that in spite of this many fold increase in enrolment; it is still relatively low by international comparison. Moreover, the studies bring to exhibit the problem of regional imbalance as well as inter-social groups imbalance in enrolment rate, in terms of male female, inter-religion, inter-occupational and poor and non-poor.

We have used secondary data for the five years 015-16 to 019-20 and it is properly arranged in section II in order to visualize distribution of GER among various categories. We have computed and tested statistical significance of correlation between Per Capita Net State Domestic Product (PCNSDP) and GER in section III. Discussion and concluding remarks are given in section IV.

II. ARRANGEMENT OF STATISTICAL DATA

This research article is based on secondary data.

Data on Gross Enrolment Ratio (GER) in Higher Education (18-23 Years) during the Academic Year 2015-2016 to 2019-20 are obtained from 'All India Survey on Higher Education' during 2015-2016 to 2019-20: publications of Ministry of Human Resource Development, Government of India, New Delhi. [3, 4, 5, 6, 7]. We tabulate national GER for various categories and genders in Table No. 1 for the Years 2015-2016 to 2019-20. GER for 'all categories' for above years is tabulated below in Table No. 2 for various States/ Union Territories.

Data on Per Capita Net State Domestic Product (PCNSDP) during the Financial Years 2015-2016 to 2019-20 are obtained from publication of Reserve Bank of India, which itself is having a source: National Statistical

Office, Ministry of Statistics and Programme Implementation, Government of India [10]. PCNSDP are given in rupees (Rs) and these are tabulated as given below in Table No. 3.

In Table No. 2 and Table No. 3 we consider only those States/ Union Territories, which are having values of both GER and PCNSDP during the years 2015-2016 to 2019-20. In case of non-availability of PCNSDP for some year(s), we consider PCNSDP value(s) of previous years.

Table No. 1

Year	ALL CATEGORIES			Scheduled Cast (SC)			Scheduled Tribe (ST)		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
2015-16	25.4	23.5	24.5	20.8	19.0	19.9	15.6	12.9	14.2
2016-17	26.0	24.5	25.2	21.8	20.2	21.1	16.7	14.2	15.4
2017-18	23.5	25.4	25.8	22.2	21.4	21.8	17.0	14.9	15.9
2018-19	26.3	26.4	26.3	22.7	23.3	23.0	17.9	16.5	17.2
2019-20	26.9	27.3	27.1	22.8	24.1	23.4	18.2	17.7	18.0

Table No.2

State/Union territory	GER	GER	GER	GER	GER
	2015-16	2016-17	2017-18	2018-19	2019-20
Andaman and Nicobar Islands	23.5	22.8	21.8	23.2	20.0
Andhra Pradesh	30.8	32.4	30.9	32.4	35.2
Arunachal Pradesh	28.7	28.9	29.7	29.7	35.4
Assam	15.4	17.2	18.2	18.7	17.3
Bihar	14.3	14.4	13.0	13.6	14.5
Chandigarh	57.6	56.1	56.4	50.6	52.1
Chhattisgarh	15.1	16.1	18.4	18.6	18.5
Delhi	45.4	45.3	46.3	46.3	48.0
Goa	27.6	28.1	28.0	30.1	28.4
Gujarat	20.7	20.2	20.1	20.4	21.3
Haryana	26.1	29.0	28.7	29.2	29.3
Himachal Pradesh	32.5	36.7	37.9	39.6	40.8
Jammu and Kashmir	24.8	25.6	27.7	30.9	32.4
Jharkhand	15.5	17.7	18.0	19.1	20.9
Karnataka	26.1	26.5	27.8	28.8	32.0
Kerala	30.8	34.2	36.2	37.0	38.8
Madhya Pradesh	19.6	20.0	21.2	21.5	24.2
Maharashtra	29.9	30.2	31.1	32.0	32.3
Manipur	34.2	35.0	31.8	33.7	38.3
Meghalaya	20.8	23.5	24.7	25.8	26.1
Mizoram	24.1	24.5	22.9	25.7	26.1
Nagaland	14.9	16.6	17.8	18.7	18.5
Odisha	19.6	21.0	22.0	22.1	21.7
Puducherry	43.2	43.1	45.4	46.4	46.3
Punjab	27.0	28.6	30.3	29.5	28.2
Rajasthan	20.2	20.5	21.7	23.0	24.1
Sikkim	37.6	37.3	37.4	53.9	75.8
Tamil Nadu	44.3	46.9	48.6	49.0	51.4

Telangana	36.3	35.8	35.7	36.2	35.6
Tripura	16.9	19.1	21.2	19.2	20.2
Uttar Pradesh	24.5	24.9	25.9	25.8	25.3
Uttarakhand	33.3	33.4	36.3	39.1	41.5
West Bengal	17.7	18.5	18.7	19.3	19.9

Table No. 3

State/Union territory	PCNSDP	PCNSDP	PCNSDP	PCNSDP	PCNSDP
	2015-16	2016-17	2017-18	2018-19	2019-20
Andaman and Nicobar Islands	106237	118112	130670	130670*	130670*
Andhra Pradesh	88609	94115	103214	107241	115333
Arunachal Pradesh	85020	85644	90727	93191	93191*
Assam	50642	53575	57835	60695	60695*
Bihar	24064	25820	26699	28668	31287
Chandigarh	195205	208230	223083	234998	234998*
Chhattisgarh	61515	64372	66122	69500	71938
Delhi	233115	244255	255431	269505	283636
Goa	278601	305875	321289	368685	368685*
Gujarat	120683	129738	142068	153495	153495*
Haryana	137818	150241	159892	169409	180026
Himachal Pradesh	112723	122208	130644	139469	146268
Jammu and Kashmir	59967	60557	62984	65178	65178*
Jharkhand	44524	48826	52277	54982	57863
Karnataka	116813	131254	143827	153276	161931
Kerala	120387	129251	138368	148078	148078*
Madhya Pradesh	47351	52782	54264	56498	59929
Maharashtra	122889	133691	140724	147450	147450*
Manipur	46389	47151	51211	51180	51180*
Meghalaya	56039	57752	58493	62458	66153
Mizoram	91845	99089	106537	107853	107853*
Nagaland	60663	64939	68456	73276	73276*
Odisha	58838	67821	72760	76417	80330
Puducherry	121000	126556	135763	142583	150744
Punjab	100141	105848	110802	115882	120569
Rajasthan	68565	71394	74441	78570	81355
Sikkim	195066	207355	232483	242002	255772
Tamil Nadu	115875	123206	133029	142941	153853
Telangana	112267	121512	132293	143618	153927
Tripura	61612	69860	76358	82632	89285
Uttar Pradesh	36973	40641	42798	44421	45648
Uttarakhand	126952	138286	147204	155151	155151*
West Bengal	57255	60618	64007	67300	71757

* In case of non-availability of PCNSDP for some years, we consider PCNSDP value(s) of previous year(s).

III.COMPUTATION AND TESTING SIGNIFICANCE OF CORRELATION

Let

X1 = Per Capita Net State Domestic Product (PCNSDP) during the Financial Year 2015-2016

X2 = Per Capita Net State Domestic Product (PCNSDP) during the Financial Year 2016-2017

X3 = Per Capita Net State Domestic Product (PCNSDP) during the Financial Year 2017-2018

X4 = Per Capita Net State Domestic Product (PCNSDP) during the Financial Year 2018-2019

X5 = Per Capita Net State Domestic Product (PCNSDP) during the Financial Year 2019-2020

and

Y1 = Gross Enrolment Ratio (GER) in Higher Education (18-23 Years) during the Academic Year 2015-2016

Y2 = Gross Enrolment Ratio (GER) in Higher Education (18-23 Years) during the Academic Year 2016-2017

Y3 = Gross Enrolment Ratio (GER) in Higher Education (18-23 Years) during the Academic Year 2017-2018

Y4 = Gross Enrolment Ratio (GER) in Higher Education (18-23 Years) during the Academic Year 2018-2019

Y5 = Gross Enrolment Ratio (GER) in Higher Education (18-23 Years) during the Academic Year 2019-2020

By using data from Table No. 2 and Table No. 3, we compute correlation coefficient between pair of variables (X_i, Y_i) for $i = 1, 2, \dots, 5$. We compute Z-Statistic, p-Value and then decide significance of correlation between pair of variables (X_i, Y_i) for $i = 1, 2, \dots, 5$. All these computed values are summarized below in Table No. 4.

Table No. 4

	(X1, Y1)	(X2, Y2)	(X3, Y3)	(X4, Y4)	(X5, Y5)
r(Xi, Yi)	0.648317	0.614725	0.611301	0.621902	0.588723
Z-Statistic:	4.230558	3.924331	3.894282	3.987974	3.701013
p-Value:	0.000023	0.000087	0.000098	0.000067	0.000215

IV. DISCUSSION AND CONCLUSION

Observing Table No. 1, we see that there is most significant difference in enrolment rates between students of different social groups. GER of ST category students is least which is followed by SC category students. Among all categories of students, difference between GER of Male and Female students is decreasing over the years. Further, it can be observed that GER of Female students in ALL CATEGORY students and SC students is started dominating to that of Male students. It is really an indication for empowerment of Female students in India.

Observing Table No. 2, we see that there is most significant difference in GER between students of different States/ Union Territories of India.

Observing Table No. 3, we see that there is significant difference in PCNSDP between different States/ Union Territories of India.

Observing p-Values in Table No. 4, these are almost equal to zero. Therefore, we conclude that correlation coefficients between PCNSDP and GER is highly significant for every year. It indicates that PCNSDP plays most significant role in GER. It also implies that major cause of less GER among students of SC and ST category may be weak economic status of their families.

With respect to high significance of correlation between PCNSDP and GER, broad conclusion to increase GER is to increase economic status of family of student of every category. Every higher education institution needs to provide economic source or earning source for every needy student.

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