



A STUDY ON INTERSTATE DISPARITY IN STUDENTS ENROLMENT IN POST GRADUATE PROGRAMMES IN INDIA

B.Elavarasan¹

Research Scholar in Economics, Annamalai University

V.Ramajayam²

Assistant Professor of Economics, DG Government Arts College, Mayiladudurai

Abstract

The balanced educational development is very essential to achieve the distribute justice and inclusive educational development in different parts of the country. In reality one may notice a interstate disparity in access to higher educational institutions and opportunities of acquiring higher education in the country. This paper deals with interstate disparity in students' enrolment in post graduate programmes in India. It outlines the indicators of students' enrolment in various states and union territories in India. This paper concludes with some interesting findings.

Introduction

The educational planning done at the national level does not applicable to at the state and regional level. Some states may be well developed in higher education and some states and UTs may be backward and most backward in higher education development. This situation leads to Inter State disparity in higher education development in India. In order to remove the regional disparity or interstate disparity in higher education development, the inclusive growth in higher education is need of the hour.

The inequality in the higher education development has been observed with respect to enrolment of students of different categories. In general, urban students might have benefitted much in availing the benefits of higher education in contrast to the rural students. One can find disparity in students' enrolment among the students of different socio-economic groups. It could be noted that enrolment of scheduled caste and scheduled tribe students may be quite low compared to the students of other backward caste and forward caste groups. The interstate disparity may be observed with respect of enrolment of minority students in higher education particularly Muslim students. The state wise and region wise disparity may be observed with respect to gender wise students' enrolment in higher education.

The balanced developments of higher education depend on removal of interstate disparity and inter regional disparity through the devices of identification of indicators of higher educational development. Even in the higher education sector, disparity has been observed course wise students' enrolment. It could be noted that in engineering and technical course students' enrolment may be higher in some states and it may be lower in some states and UTs. In some states one may notice an enrolment of large number of students in general arts and science courses and it is not the case for some other states. Some states and UTs might have enrolment a more number of students in medical course than the other states. Thus in general interstate disparity is inherent in the level of higher education development in India.

It is interesting to note that some states may have more concentration of universities and other educational institutions and the number may be low in some other states. This situation is inequality in the concentration of higher educational institutions. The presence of the inequality in concentration of number of higher educational institutions results in inequality in students' enrolment. The interstate disparity in higher educational institutions manifests in various angles and dimensions. It could be observed that inequality in under graduate level students enrolment, post graduate level, students enrolment, gender wise students' enrolment, socio-economic group wise students, enrolment, professional course wise students' enrolment, diploma course wise

students, enrolment, medical course wise students, enrolment and so on. Thus the studying of interstate disparity in higher education development is a multidimensional process.

Methods and Materials

This study aims at analyzing the interstate disparity in higher education in India. This study examines the higher education development from the point of view of students' enrolment in Post Graduate programmes during the period 2010-2011 to 2015-2016. The students' enrolment indicators relating to male students' enrolment in Post Graduate program, female students' Post Graduate program enrolment, total Post Graduate students enrolment has been analyzed. The relevant secondary data are collected from the All India Survey on Higher Education (2015-2016), Ministry Of Human Resource Development, Department Of Higher Education, and Government of India. To study the interstate disparity in the growth of higher education, the ANOVA two way model is applied. The general data interpretation is done with the help of percentage analysis.

Table 1 Male Students' Enrolment in Post Graduate Course

State	Male (Post Graduate)						Growth Rate	CV
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016		
A & N Islands UT	397	214	607	839	647	574	30.84	39.51
Andhra Pradesh	269000	264395	132290	157063	138690	140943	-90.86	35.27
Arunachal Pradesh	2740	1488	1985	2283	3471	1378	-98.83	244.85
Assam	21156	19158	21183	27797	30417	36783	42.48	26.14
Bihar	64270	54035	65501	73479	72890	73865	12.99	11.52
Chandigarh	12342	4806	8368	7550	9270	10043	-22.89	28.97
Chhatisgarh	20159	14200	21456	27872	26472	27245	26.01	23.24
D & N Haveli	95	127	157	173	125	122	22.13	20.81
Delhi	750	53599	55456	57902	54686	54390	98.62	48.30
Goa	12650	2800	1664	2747	2916	2862	-342.0	96.67
Gujarat	87862	62251	70758	69270	68982	83243	-5.55	13.20
Haryana	44635	36478	36686	36505	35542	38340	-16.42	8.84
Himachal Pradesh	9982	10774	12137	22070	12821	12567	20.57	32.78
Jammu & Kashmir	13028	23295	27866	32779	36714	37819	65.55	32.80
Jharkhand	17409	21733	22502	19006	21484	23260	25.15	10.69
Karnataka	116459	125899	131441	139835	114310	97648	-19.26	12.26
Kerala	38359	31422	31239	37915	39239	36860	-4.07	9.98
Lakshadweep	0	9	6	7	6	4	-125.0	23.38
Madhya Pradesh	84497	116480	121210	116300	110559	97825	13.62	12.97
Maharashtra	233783	208030	182974	237724	240724	206709	-13.10	10.46
Manipur	3313	1994	2478	2926	3263	3958	16.30	20.06
Meghalaya	1989	2472	2248	2946	3345	3683	46.00	23.67
Mizoram	1814	1321	1749	1824	1914	1807	-0.39	12.15
Nagaland	9317	7740	3900	4254	3372	2526	-268.84	52.09
Odisha	31120	28002	28233	24193	25948	30435	-2.25	9.37
Puducherry	1751	4388	7193	8610	9378	8874	80.27	45.09
Punjab	44054	31080	31114	36747	46714	38125	-15.55	17.05
Rajasthan	73513	76921	83456	75522	87496	92081	20.16	9.05
Sikkim	3849	2753	1963	2140	2255	5219	26.25	41.93
Tamil Nadu	201662	244234	236558	224102	213418	185764	-8.56	10.06
Telangana	0	0	115922	117040	116193	108325	-7.01	77.57
Tripura	8386	4026	4124	4780	4738	5016	-67.19	31.27
Uttar Pradesh	169768	210728	200448	206592	214572	236299	28.16	10.52
Uttarakhand	26891	30270	29155	28033	29509	27614	2.62	4.46
West Bengal	112673	72264	75571	80100	86250	84144	-33.90	16.96
India	1813992	1769276	1769101	1888637	1867142	1818443	0.24	2.70

ANOVA					
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Variation due to states and UTs	8.68E+11	34	2.55E+10	81.06177	1.498671
Variation due to years	5.11E+08	5	1.02E+08	0.324726	2.267299
Error	5.35E+10	170	3.15E+08		
Total	9.22E+11	209			

Table 1 presents data on the male students admitted in the post graduate programmes. It could be noted that 1813992 male students joined the post graduate programmes in 2010-2011 and it rose to 1818443 in 2015-2016, showing a growth of 0.24 per cent at the national level. The growth of male students' enrolment is not uniform throughout the India and it shows interstate disparity. In Andaman and Nicobar Islands UT 397 male students joined the post graduate programmes in 2010-2011 and the number rose to 574 in 2015-2016, indicating a growth of 30.84 per cent in the period of analysis. In Andhra Pradesh state, the total 269000 male students joined the post graduate course in 2010-2011 and it slowed down to 140943 in 2015-2016, recording a shortfall of 90.86 per cent in the period of analysis. Arunachal Pradesh state had 2740 male students enrolment in post graduate programmes in 2010-2011 and it reduced 1378 in 2015-2016, registering a decline of 98.83 per cent during the period of investigation. In Assam state, 21156 male students joined the post graduate programmes in 2010-2011 and it expanded to 36783 in 2015-2016, showing an improvement of 42.48 percent in the period of analysis.

Bihar state had 64270 male students enrolment at the post graduate level education in 2010-2011 and it moved up to 73865 in 2015-2016, reporting an increase of 12.99 per cent in the period of analysis. In Chandigarh state 12342 male students joined the post graduate programmes in 2010-2011 and it declined to 10043 in 2015-2016, reporting a decline of 22.89 per cent in the period of analysis. The number of male students joined the post graduate level education in Chhattisgarh state was 20159 in 2010-2011 and it rose to 27245 in 2015-2016, indicating an enhancement of 26.01 per cent during the period of investigation.

In Delhi 750 male students joined the post graduate programmes in 2010-2011 and the number moved up to 54390 male students in 2015-2016, showing a hike of 98.62 per cent in the period of analysis. The number of male students joined the post graduate programmes in Goa state was 12650 in 2011-2012 and it moved down to 2862 in 2014-2015, indicating a slowdown of 342 per cent in the reference period. The male students' enrolment at the Post graduate programmes degree level was 87862 in 2010-2011 in Gujarat State and the number down to 83243 in 2015-2016, indicating a decline of 5.55 per cent in the period of analysis. Haryana state had Post graduate programmes male students enrolment of 44635 in 2010-2011 and it moved down to 38340 in 2015-2016, pointing out a decrease of 16.42 per cent in the period investigation. The number of male Post graduate programmes students enrolment was 9982 in 2010-2011 in Himachal Pradesh State and the number increased to 12567 in 2015-2016, revealing a growth of 20.57 per cent during reference period. In Jammu and Kashmir State 13028 male students enrolled in the Post graduate programmes in 2010-2011 and the number moved up to 37819 in 2015-2016, indicating an enhancement of 65.55 per cent in the period of analysis. The male students' enrolment in Post graduate programmes was 17409 in Jharkhand State in 2011-2012 and the number rose to 23260 in 2015-2016, showing an increase of 25.15 per cent during the period of investigation.

In Karnataka State 116459 male students joined the Post graduate programmes in 2010-2011 and the number moved down to 97648 male students in 2015-2016, showing a slowdown of 19.26 per cent in the period of analysis. The number of male students joined the post graduate programmes in Kerala state was 38359 in 2010-2011 and it moved down to 36860 in 2015-2016, indicating a slowdown of 4.07 per cent in the reference period. The male students' enrolment in post graduate programmes was 9 in Lakshadweep UT in 2011-2012 and the number declined to 4 in 2015-2016, showing a reduction of 125.0 per cent during the period of investigation. The

male students' enrolment at the post graduate programmes degree level education was 84497 in 2010-2011 in Madhya Pradesh State and the number turned up to 97825 in 2015-2016, indicating a growth of 13.62 per cent in the period of analysis. Maharashtra state had post graduate programmes male students enrolment of 233783 in 2010-2011 and it moved down to 206709 in 2015-2016, pointing out a shrinkage of 13.10 per cent in the period investigation. The number of post graduate programmes male students' enrolment was 3313 in 2010-2011 in Manipur State and the number increased to 3958 in 2015-2016, revealing a growth of 16.30 per cent during reference period. In Meghalaya state 1989 male students enrolled in the post graduate programmes in 2010-2011 and the number moved ahead to 3683 in 2015-2016, indicating a growth of 46 per cent in the period of analysis. The male students' enrolment in post graduate programmes was 1814 in Mizoram state during the year 2010-2011 and the number turned down to 1807 in 2015-2016, showing a slowdown of 0.39 per cent in the period of analysis.

The male students' enrolment in post graduate programmes was 9317 in Nagaland state in 2010-2011 and the number declined to 2526 in 2011-2012, showing a reduction of 268.84 per cent in the period of analysis. The number of male students joined the post graduate programmes in Odisha state was 31120 during the year 2010-2011 and it moved down to 30435 in 2015-2016, indicating a decline of 2.25 per cent in the reference period. The male students' enrolment at the post graduate programmes degree level was 1751 in 2010-2011 in Puducherry UT and the number increased to 8874 in 2015-2016, indicating a growth of 80.27 per cent in the period of analysis. Punjab state had post graduate programmes male students enrolment of 44054 in 2010-2011 and it moved down to 38125 in 2015-2016, pointing out a shrinkage of 15.55 per cent in the period investigation. The number of male post graduate programmes students enrolment was 73513 during the year 2010-2011 in Rajasthan and the number increased to 92081 in 2015-2016, revealing an increase of 20.16 per cent during reference period. In Sikkim state 3849 male students enrolled in the post graduate programmes in 2011-2012 and the number moved ahead to 5219 in 2015-2016, indicating an enhancement of 26.25 per cent in the period of analysis. The male students enrolment in post graduate programmes was 201662 in Tamil Nadu state in 2010-2011 and the number moved down to 185764 in 2015-2016, showing a decline of 8.56 per cent in the period of investigation.

In Telangana State 115922 male students joined the post graduate programmes in 2012-2013 and the number moved down to 108325 male students in 2015-2016, showing a slowdown of 7.01 per cent in the period of analysis. The male students' enrolment in post graduate programmes was 8386 in Tripura state in 2010-2011 and the number moved down to 5016 in 2015-2016, showing a decline of 67.19 per cent in the period of investigation. The male students' enrolment at the post graduate programmes degree level was 169768 during the year 2010-2011 in Uttar Pradesh State and the number turned up to 236299 in 2015-2016, indicating a growth of 28.16 per cent in the period of analysis. Uttrakhand state had post graduate programmes male students enrolment of 26891 in 2010-2011 and it rose to 27614 in 2015-2016, pointing out an increase of 2.62 per cent in the period investigation. The number of male post graduate programmes students enrolment was 112673 during the year 2010-2011 in West Bengal and the number decreased to 84144 in 2015-2016, revealing a reduction of 33.90 per cent during reference period.

The ANOVA two way model is applied for further discussion. At one point the computed ANOVA value 81.06 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant variation among the states and Union territories with respect to growth of enrollment of male students in post graduate programmes in India. In another point the computed ANOVA value 0.32 is lesser than its tabulated value. Hence there is no significant variation over the years in the growth of enrollment of male students in post graduate programmes in India.

Table 2 Female Students' Enrolment in Post Graduate Level Education

State	Female (Post Graduate)						Growth Rate	CV
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016		
A & N Islands UT	413	311	758	1009	747	907	54.47	39.75
Andhra Pradesh	189704	194024	99213	115611	105278	107697	-76.15	32.67
Arunachal Pradesh	1906	1434	1882	2657	3057	4097	53.48	38.93
Assam	12176	21661	24371	31404	36357	42770	71.53	39.06
Bihar	33256	32139	43344	52957	53755	56371	41.01	23.67
Chandigarh	7093	8886	11871	13099	13717	15494	54.22	26.93
Chhatisgarh	17000	16060	20854	26824	27859	29435	42.25	25.23
Dadra & Nagar Haveli	24	78	114	132	162	170	85.88	48.58
Delhi	54039	51880	57949	68360	70058	76342	29.21	15.62
Goa	9554	1730	3472	4297	4374	4523	-111.23	56.13
Gujarat	61810	53061	62072	65374	67645	97261	36.45	22.44
Haryana	49767	46077	48334	50025	51731	57892	14.03	7.95
Himachal Pradesh	11229	10989	13133	12621	15516	16202	30.69	16.31
Jammu and Kashmir	11881	21131	30819	35875	38871	39758	70.12	37.33
Jharkhand	14837	19113	21733	24042	27800	31353	52.68	25.71
Karnataka	93054	109327	118272	126549	112799	103261	9.88	10.56
Kerala	57452	54578	59147	67065	74595	76166	24.57	14.15
Lakshadweep	0	28	19	18	19	17	-64.71	54.37
Madhya Pradesh	68527	81404	89740	104777	107981	104560	34.46	16.97
Maharashtra	173789	155378	138809	196616	191539	199916	13.07	14.04
Manipur	2290	2024	2426	2760	3095	3541	35.33	20.81
Meghalaya	2649	2842	3071	4112	4447	5333	50.33	28.33
Mizoram	1527	1248	1579	1742	1783	1844	17.19	13.53
Nagaland	1158	1230	1449	2365	3471	3292	64.82	48.17
Odisha	19246	22686	23665	25000	24595	29694	35.19	14.11
Puducherry	1485	3158	5300	5748	6478	6234	76.18	41.91
Punjab	34626	55613	61831	69946	78074	75433	54.10	25.66
Rajasthan	61561	63081	62544	87518	86193	96571	36.25	20.45
Sikkim	1092	1575	2384	2750	2963	5209	79.04	53.94
Tamil Nadu	187009	260189	265520	274595	285601	266691	29.88	13.73
Telangana	0	0	85734	94458	94069	93984	8.78	77.64
Tripura	5775	3334	3445	3562	3286	3431	-68.32	25.48
Uttar Pradesh	153618	189916	202177	236293	256483	308811	50.26	24.38
Uttarakhand	27785	31261	30712	29950	29937	31426	11.59	4.41
West Bengal	88345	80468	81307	93471	101961	103027	14.25	10.74
India	1455677	1597914	1679050	1933582	1986296	2098713	30.64	14.02

ANOVA

Source of Variation	SS	df	MS	F	F crit
Variation due to states and UTs	8.31E+11	34	2.45E+10	90.81509	1.498671
Variation due to years	9.01E+09	5	1.8E+09	6.69437	2.267299
Error	4.58E+10	170	2.69E+08		
Total	8.86E+11	209			

Table 2 presents data on the female students enrolment at the post graduate level education in India during the period 2010-2011 to 2015-2016. At the national level 1455677 female students joined the post graduate course in 2010-2011 and the number increased to 2098713 in 2015-2016, indicating a growth of 30.64 per cent in the period of investigation. It could be noted that the growth of female student enrolment at the post graduate level education is not uniform throughout the country and it shows interstate disparity. It is explained here in details. In Andaman and Nicobar Islands UT 413 female students joined the post graduate programmes in 2010-2011 and the number rose to 907 in 2015-2016, indicating a growth of 54.47 per cent in the period of analysis. In Andhra Pradesh state, the total 189704 female students joined the post graduate course in 2010-2011 and it slowed down to 107697 in 2015-2016, recording a decline of 76.15 per cent in the period of analysis. Arunachal Pradesh state had 1906 female students enrolment in post graduate programmes in 2010-2011 and it increased to 4097 in 2015-2016, registering a growth of 53.48 per cent during the period of investigation. In Assam state 12176 female students joined the post graduate programmes in 2010-2011 and it expanded to 42770 in 2015-2016, showing a growth of 71.53 percent in the period of analysis. Bihar state had 33256 female students enrolment in the post graduate level education in 2010-2011 and it moved up to 56371 in 2015-2016, reporting a growth of 41.01 per cent in the period of analysis. In Chandigarh state 7093 female students joined the post graduate programmes in 2010-2011 and it increased to 15494 in 2015-2016, reporting an increase of 54.22 per cent in the period of analysis. The number of female students joined the post graduate level education in Chhattisgarh state was 17000 in 2010-2011 and it rose to 29435 in 2015-2016, indicating an improvement of 42.25 per cent during the period of investigation. In Dadra and Nagar Haveli 24 female students joined the post graduate programmes in 2010-2011 and the number rose to 170 in 2015-2016, indicating a growth of 85.88 per cent in the period of analysis.

In Delhi 54039 female students joined the Post graduate programmes in 2010-2011 and the number moved up to 76342 female students in 2015-2016, showing a growth of 29.21 per cent in the period of analysis. The number of female students joined the post graduate programmes in Goa state was 9554 in 2011-2012 and it moved down to 4523 in 2014-2015, indicating a decline of 111.23 per cent in the reference period. The female students' enrolment at the Post graduate programmes degree level was 61810 in 2010-2011 in Gujarat and the number went up to 97261 in 2015-2016, indicating an increase of 36.45 per cent in the period of analysis. Haryana state had post graduate programmes female students enrolment of 49767 in 2010-2011 and it enlarged to 57892 in 2015-2016, pointing out a growth of 14.03 per cent in the period investigation. The number of female post graduate programmes students enrolment was 11229 during the year 2010-2011 in Himachal Pradesh and the number increased to 16202 in 2015-2016, revealing an increase of 30.69 per cent during reference period. In Jammu and Kashmir State, 11881 female students enrolled in the Post graduate programmes in 2010-2011 and the number moved ahead to 39758 in 2015-2016, indicating an enhancement of 70.12 per cent in the period of analysis. The female students' enrolment during the year post graduate programmes was 14837 in Jharkhand State in 2011-2012 and the number rose to 31353 in 2015-2016, showing an increase of 52.68 per cent during the period of investigation.

In Karnataka State 93054 female students joined the Post graduate programmes in 2010-2011 and the number moved up to 103261 female students in 2015-2016, showing an enhancement of 9.88 per cent in the period of analysis. The number of female students joined the post graduate programmes in Kerala state was 57452 in 2010-2011 and it moved up to 76166 in 2015-2016, indicating a growth of 24.57 per cent in the reference period. The female students enrolment in post graduate programmes was 28 in Lakshadweep UT in 2011-2012 and the number turned down to 17 in 2015-2016, showing a shrinkage of 64.71 per cent during the period of investigation. The female students' enrolment at the post graduate programmes degree level was 68527 in 2010-2011 in Madhya Pradesh State and the number turned up to 104560 during the year 2015-2016, indicating a growth of 34.46 per cent in the period of analysis. Maharashtra state had post graduate programmes female students enrolment of 173789 in 2010-2011 and it

moved up to 199916 in 2015-2016, pointing out a growth of 13.07 per cent in the period investigation. The number of post graduate programmes female students' enrolment was 2290 in 2010-2011 in Manipur State and the number increased to 3541 in 2015-2016, revealing a growth of 35.33 per cent during reference period. In Meghalaya state 2649 female students enrolled in the post graduate programmes in 2010-2011 and the number moved ahead to 5333 in 2015-2016, indicating a growth of 50.33 per cent in the period of analysis. The female students' enrolment in post graduate programmes was 1527 in Mizoram state during the year 2010-2011 and the number increased to 1844 during the year 2015-2016, showing a growth of 17.19 per cent in the period of analysis.

The female students' enrolment in post graduate programmes was 1158 in Nagaland state in 2010-2011 and the number enhanced to 3292 in 2011-2012, showing a growth of 48.17 per cent in the period of analysis. The number of female students joined the post graduate programmes in Odisha state was 19246 in 2010-2011 and it rose to 29694 in 2015-2016, indicating an increase of 35.19 per cent in the reference period. The female students' enrolment at the post graduate programmes degree level was 1485 in 2010-2011 in Puducherry UT and the number increased to 6234 in 2015-2016, indicating a growth of 76.18 per cent in the period of analysis. Punjab state had post graduate programmes female students enrolment of 34626 in 2010-2011 and it moved up to 75433 in 2015-2016, pointing out a growth of 54.10 per cent in the period investigation. The number of female post graduate programmes students enrolment was 61561 during the year 2010-2011 in Rajasthan and the number increased to 96571 in 2015-2016, revealing a growth of 36.25 per cent during reference period. In Sikkim state 1092 female students enrolled in the post graduate programmes in 2011-2012 and the number moved ahead to 96571 in 2015-2016, indicating an enhancement of 79.04 per cent in the period of analysis. The female students' enrolment in post graduate programmes was 187009 in Tamil Nadu state in 2010-2011 and the number increased to 266691 in 2015-2016, showing an improvement of 29.88 per cent in the period of investigation.

In Telangana 85734 female students joined the Post graduate programmes in 2012-2013 and the number enhanced to 93984 female students in 2015-2016, showing an increase of 8.78 per cent in the period of analysis. The female students' enrolment in post graduate programmes was 5775 in Tripura state in 2010-2011 and the number moved down to 3431 in 2015-2016, showing a slowdown of 68.32 per cent in the period of investigation. The female students' enrolment at the post graduate programmes degree level was 153618 in 2010-2011 in Uttar Pradesh State and the number turned up to 308811 in 2015-2016, indicating a growth of 50.26 per cent in the period of analysis. Uttrakhand state had post graduate programmes female students enrolment of 27785 in 2010-2011 and it rose to 31426 in 2015-2016, pointing out a growth of 11.59 per cent in the period investigation. The number of female post graduate programmes students enrolment was 88345 in 2010-2011 in West Bengal State and the number increased to 103027 in 2015-2016, revealing an improvement of 14.25 per cent during reference period.

The ANOVA two way model is applied for further discussion. At one point the computed ANOVA value 90.81 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant variation among the states and Union territories with respect to growth of enrollment of female students in post graduate programmes in India. In another point the computed ANOVA value 6.69 is greater than its tabulated value. Hence there is a significant variation over the years in the growth of enrollment of female students in post graduate programmes in India.

Table 3 Total Students' Enrolment in Post Graduate Course

State	Both (Post Graduate)						Growth Rate	CV
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016		
A & N Islands UT	810	525	1365	1848	1394	1481	45.31	38.99
Andhra Pradesh	458704	458419	231503	272674	243968	248640	-84.49	34.15
Arunachal Pradesh	4646	2812	3370	4642	5340	7568	38.61	35.34
Assam	33332	40819	45554	59201	66774	79553	58.10	32.11
Bihar	97526	86174	108845	126436	126645	130236	25.12	16.07
Chandigarh	19435	13692	20239	20649	22987	25537	23.89	19.47
Chhatisgarh	37159	30260	42310	54696	54331	56680	34.44	23.83
Dadra & Nagar Haveli	119	205	271	305	287	292	59.25	29.09
Delhi	129108	105479	113405	126262	124744	130732	1.24	8.21
Goa	22204	4530	5136	7044	7290	7385	-200.66	74.03
Gujarat	149672	115312	132830	134644	136627	180504	17.08	15.54
Haryana	94402	82555	85020	86530	87273	96232	1.90	6.12
Himachal Pradesh	21211	21763	25270	24691	28337	28769	26.27	12.69
Jammu and Kashmir	24909	44426	58685	68654	75585	77577	67.89	35.02
Jharkhand	32246	40846	44235	43048	49284	54613	40.96	17.28
Karnataka	209513	235226	249713	266384	227109	200909	-4.28	10.58
Kerala	95811	86000	90386	104980	113834	113026	15.23	11.66
Lakshadweep	37	25	25	25	25	21	-76.19	20.15
Madhya Pradesh	153024	197884	210950	221077	218540	202385	24.39	12.45
Maharashtra	407572	363408	321783	434350	432263	406625	-0.23	11.10
Manipur	5603	4018	4904	5686	6358	7499	25.28	21.04
Meghalaya	4638	5314	5319	7058	7792	9016	48.56	26.18
Mizoram	3341	2569	3328	3566	3697	3651	8.49	12.40
Nagaland	10475	8970	5349	6619	6843	5818	-80.04	26.91
Odisha	50366	50688	51898	49193	50543	60129	16.24	7.69
Puducherry	3236	7546	12493	14358	15856	15108	78.58	43.14
Punjab	78680	86693	92945	106693	124788	113558	30.71	17.35
Rajasthan	135074	140002	146000	163040	173689	188652	28.40	13.31
Sikkim	4941	4328	4347	4890	5218	10428	52.62	41.23
Tamil Nadu	388671	504423	502078	498697	199019	452455	14.10	28.05
Telangana	-	-	201656	211498	210262	202309	0.32	77.51
Tripura	14161	7360	7569	8342	8024	8447	-67.65	28.62
Uttar Pradesh	323386	400644	402625	442885	471055	545100	40.67	17.39
Uttarakhand	54676	61531	59867	57983	59446	59040	7.39	3.94
West Bengal	201018	152732	156878	173571	188211	187171	-7.40	10.78
India	3269669	3367190	3448151	3822219	3853438	39171156	91.65	153.27

ANOVA					
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Variation due to states and UTs	3.14E+12	34	9.23E+10	66.03541	1.498671
Variation due to years	9.29E+09	5	1.86E+09	1.329076	2.267299
Error	2.38E+11	170	1.4E+09		
Total	3.39E+12	209			

Table 3 presents data on the total students' enrolment at the post graduate level education in India. It could be observed that at the national level 3269669 total students joined the post graduate level education in 2010-2011 and the number multiplied to 39171156 in 2015-2016, indicating a growth of 91.65 per cent in the period of analysis. The growth of total students' enrolment is not uniform throughout the country. It shows interstate disparity. It is explained here in details. In Andaman and Nicobar Islands UT 810 total students joined the post graduate programmes in 2010-2011 and the number moved up to 1481 in 2015-2016, indicating an increase of 45.31 per cent in the period of analysis. The total 1288425 students joined the post graduate programmes in Andhra Pradesh and it came down to 248640 in 2015-2016, recording a decline of 84.49 per cent in the period of analysis. Arunachal Pradesh state had 4546 total students' enrolment at the post graduate level education in 2010-2011 and the number increased to 7568 in 2015-2016, pointing out a growth of 38.61 per cent in the period of investigation. In Assam state, 33332 total students joined post graduate programmes in 2010-2011 and it went up to 79553 in 2015-2016, indicating a growth of 58.10 per cent in the reference period. In Bihar state, the total 97526 number of students joined the post graduate level programmes in 2010-2011 and it rose to 130236 in 2015-2016, showing a growth of 25.12 per cent in the period of analysis. The total 19435 students joined the post graduate programmes in 2010-2011 in Chandigarh state and it increased up to 25537 in 2015-2016, indicating a growth of 23.89 per cent in the period of analysis. In Chhattisgarh 37159 total students joined the post graduate programmes in 2010-2011 and it increased to 56680 in 2015-2016, showing a growth of 34.44 per cent in the period of analysis.

In Dadra and Nagar Haveli 119 total students joined the post graduate programmes in 2010-2011 and the number rose to 292 in 2015-2016, indicating a growth of 59.25 per cent in the period of analysis. In Delhi 129108 total students joined the post graduate programmes in 2010-2011 and the number enhanced to 130732 total students in 2015-2016, showing a growth of 1.24 per cent in the period of analysis. The total 22204 students joined post graduate programmes in Goa state in 2011-2012 and it moved down to 7385 in 2014-2015, indicating a shortfall of 200.66 per cent in the reference period. The total 149672 students' enrolment at the post graduate programmes degree level in 2010-2011 in Gujarat State and the number rose to 97218050461 in 2015-2016, indicating an increase of 17.08 per cent in the period of analysis. Haryana state had Post graduate programmes total students enrolment of 94402 in 2010-2011 and it enlarged to 96232 in 2015-2016, pointing out a growth of 1.90 per cent in the period investigation. The number of total post graduate programmes students enrolment was 21211 in 2010-2011 in Himachal Pradesh State and the number increased to 28769 in 2015-2016, revealing an increase of 26.27 per cent during reference period. In Jammu and Kashmir State 24909 total students enrolled in the post graduate programmes in 2010-2011 and the number increased to 77577 in 2015-2016, indicating an enhancement of 67.89 per cent in the period of analysis. The total students' enrolment in post graduate programmes was 32246 in Jharkhand State in 2011-2012 and the number rose to 54613 in 2015-2016, showing a growth of 40.96 per cent during the period of investigation.

In Karnataka State 209513 total students joined the post graduate programmes in 2010-2011 and the number moved down to 200909 total students in 2015-2016, showing a decline of 4.28 per cent in the period of analysis. The number of total 95811 students joined post graduate

programmes in Kerala state in 2010-2011 and it rose to 113026 in 2015-2016, indicating a increase of 15.23 per cent in the reference period. The total students enrolment in Post graduate programmes was 37 in Lakshadweep UT in 2010-2011 and the number turned down to 21 in 2015-2016, showing a shrinkage of 76.19 per cent during the period of investigation. The total students' enrolment at the post graduate programmes degree level was 153024 in 2010-2011 in Madhya Pradesh State and the number turned up to 202385 in 2015-2016, indicating a growth of 24.39 per cent in the period of analysis. Maharashtra state had post graduate programmes total students enrolment of 407572 in 2010-2011 and it declined to 406625 in 2015-2016, pointing out a slowdown of 0.23 per cent in the period investigation. The number of post graduate programmes students enrolment was 5603 in 2010-2011 in Manipur State and the number increased to 7499 in 2015-2016, revealing a growth of 25.28 per cent during reference period. In Meghalaya state 4638 total students enrolled in the post graduate programmes in 2010-2011 and the number moved ahead to 9016 in 2015-2016, indicating a growth of 48.56 per cent in the period of analysis. The total students' enrolment in post graduate programmes was 3341 in Mizoram state during the year 2010-2011 and the number increased to 3651 in 2015-2016, showing an increase of 8.49 per cent in the period of analysis.

The total students' enrolment in post graduate programmes was 10475 in Nagaland state in 2010-2011 and the number decreased to 5818 in 2011-2012, showing a shrinkage of 80.04 per cent in the period of analysis. The total 50366 students joined post graduate programmes in Odisha state during the year 2010-2011 and it moved up to 60129 in 2015-2016, indicating a growth of 16.24 per cent in the reference period. The total students' enrolment at the post graduate programmes degree level was 3236 in 2010-2011 in Puducherry and the number increased to 15108 in 2015-2016, indicating a growth of 78.58 per cent in the period of analysis. Punjab state had post graduate programmes total students enrolment of 78680 in 2010-2011 and it rose to 113558 in 2015-2016, pointing out a growth of 30.71 per cent in the period investigation. The number of total post graduate programmes students enrolment was 135074 during the year 2010-2011 in Rajasthan State and the number increased to 188652 in 2015-2016, revealing a growth of 28.40 per cent during reference period. In Sikkim state 4941 total students enrolled in the post graduate programmes in 2011-2012 and the number moved ahead to 10428 in 2015-2016, indicating an enhancement of 52.62 per cent in the period of analysis. The total students' enrolment in post graduate programmes was 399671 in Tamil Nadu state for the year 2010-2011 and the number declined to 452455 in 2015-2016, showing a reduction of 14.10 per cent in the period of investigation.

In Telangana State 201656 total students joined the post graduate programmes in 2012-2013 and the number rose to 202309 total students in 2015-2016, showing a growth 0.32 per cent in the period of analysis. The total students' enrolment in post graduate programmes was 14161 in Tripura state in 2010-2011 and the number went down to 8447 in 2015-2016, showing a decline of 67.65 per cent in the period of investigation. The total students' enrolment at the post graduate programmes degree level was 323386 in 2010-2011 in Uttar Pradesh State and the number turned up to 545100 in 2015-2016, indicating a growth of 40.67 per cent in the period of analysis. Uttrakhand state had post graduate programmes total students enrolment of 54676 in 2010-2011 and it rose to 59040 in 2015-2016, pointing out a growth of 7.39 per cent in the period investigation. The number of total post graduate programmes students enrolment was 201018 in 2010-2011 in West Bengal and the number decreased to 187171 in 2015-2016, revealing a decline of 7.40 per cent during reference period.

The ANOVA two way model is applied for further discussion. At one point the computed ANOVA value 66.03 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant variation among the states and Union territories with respect to growth of enrollment of total students in post graduate programmes in India. In another point the computed ANOVA value 1.32 is lesser than its tabulated value. Hence there is no significant variation over the years in the growth of enrollment of total students in post graduate programmes in India.

Conclusion

It could be seen clearly from the above discussion that a more than 18 lakh male students got admission in post graduate program every year in India. The growth of male post graduate students during the period 2010-2011 to 2015-2016 is worked out to 0.24 per cent in the period of investigation. The post graduate male students' admission has become negative in Andhra Pradesh, Arunachal Pradesh, Chandigarh, Goa, Gujarat, Haryana, Karnataka, Kerala, Lakshadweep, Maharashtra, Mizoram, Nagaland, Odisha, Punjab, Tamil Nadu, Telangana, Tripura and West Bengal during the period 2010-2011 to 2015-2016. The male post graduate students' enrolment is highest in Uttar Pradesh, Tamil Nadu and Maharashtra and also attracted a large number of male post graduate students' enrolment is quite low in Lakshadweep and Dadra and Nagar Haveli during the period 2010-2011 to 2015-2016. The co efficient of variation in male post graduate students' enrolment is more than 90 per cent in Arunachal Pradesh and Goa and it is below 15 per cent in Uttarkhand, Tamil Nadu, Rajasthan, Odisha, Maharashtra, Kerala, Karnataka, Jharkhand, and Bihar during the period.

It could be seen clearly from the above discussion that an average of 129 lakh female students' joined the post graduate program every year in India. The growth of female students' admission in post graduate programmes in India shows 30.64 per cent growth during the period 2010-2011 to 2015-2016. The female students' enrolment in post graduate program has become negative in Andhra Pradesh State, Goa, Lakshadweep and Tripura during the period of analysis. A more than 60 per cent growth in female students' enrolment in post graduate is observed in Assam, Dadra and Nagar Haveli, Jammu and Kashmir, Nagaland, Puducherry UT and Sikkim during the period 2010-2011 to 2015-2016. An average of a more than 2 lakh female student's enrolment in post graduate program has been observed in Uttar Pradesh and Tamil Nadu during the study period. A more than 50 per cent co efficient of variation in the growth of female post graduate course admission is observed Lakshadweep and Telangana State during the period of analysis. An average of a more than 2 lakh female students' enrolment in post graduate programmes is observed in Uttar Pradesh and Tamil Nadu during the period 2010-2011 to 2015-2016. The female students' enrolment in post graduate programmes is lowest in Lakshadweep in the period of analysis.

The findings of total students' enrolment in post graduate program during the period 2010-2011 to 2015-2016 reveal the following facts. The total students' enrolment in post graduate program has become negative in Andhra Pradesh State, Karnataka State, Lakshadweep State, Maharashtra, Nagaland, Tripura and West Bengal. An average of above 3 crore total students enrolled in post graduate program with a growth rate of 91.65 per cent during the period 2010-2011 to 2015-2016. Goa state records 200.65 per cent of growth in post graduate students enrolment and a more than 50 per cent growth in post graduate students' admission has been observed in Assam, Dadra and Nagar Haveli, Jammu and Kashmir, Puducherry and Sikkim during the period of investigation. An average of a more than 4 lakh total students' enrolment in post graduate program has been observed in Uttar Pradesh, Tamil Nadu and Maharashtra during the period 2010-2011 to 2015-2016. The post graduate students' enrolment is low in Lakshadweep and Dadra and Nagar Haveli in the period of analysis. A more than 40 per cent co efficient of variation in the growth of post graduate students' enrolment has been observed in Goa, Puducherry, Sikkim and Tamil Nadu in the period of analysis.

References

Deshpande, Satish (2006, 17 June). Exclusive inequalities: Merit, caste and discrimination in higher education today. *Economic and Political Weekly*, 41(24): 2438-44.

Raftery, Adrian E., & Hout, Michael (1993, January). Maximally maintained inequality: Expansion, reform and opportunity in Irish education, 1921-75. *Sociology of Education*, 66(1): 41-62.

Abebe Abebe (2016) Can higher education reduces inequality in developing countries? *IZA World of Labor*, 273

Abhijaat Sahu and Preeti Jain (2015) Impact of Higher Education System in India through Rusa No 2015-09-11, Working papers from Voice of Research Acta Universitatis Danubius. Of Economica, issue 9(4), 451-461

Adalgiso Amendola, Floro Caroleo and Gianluigi Coppola (2006) Regional Disparities in Europe Chapter 2 in The European Labour Market. Regional Dimensions, pp 9-31 from AIEL - Associazione Italiana Economisti del Lavoro

Adolfo Maza and Jose Villaverde (2004) Regional disparities in the EU: mobility and polarization Applied Economics Letters, vol. 11, issue 8, 517-522

Ahmet Akyol and Kartik Athreya (2003) Risky higher education and subsidies No 03-02, Working Paper from Federal Reserve Bank of Richmond