Journal of Humanities and Social Sciences Studies (JHSSS)
Website: www.jhsss.org
ISSN: 2663-7197

Comparing States through Educational Indicators for Last 9 Years: AISHE Data Analysis

Tushar Kanti Ghara
Joint Director of Public Instruction and State Nodal Officer, AISHE, WB, Govt. of West Bengal, BikashBhavan, Salt Lake City, Kolkata 700091
Corresponding Author: Tushar Kanti Ghara, E-mail: tkghara@gmail.com

ARTICLE INFORMATION

Received: August 21, 2020
Accepted: September 25, 2020
Volume: 2
Issue: 5

KEYWORDS

Average Enrolment per college, Gross Enrolment Ratio, Gender Parity Index, College Population Index, total enrolment

ABSTRACT

The higher education system in India is massive and structurally diverse with 4.3 million students in 1043 university and more than 43858 college level institutions. The educational planners, researchers and administrators may frequently need to evaluate various indicators of education using the data. The objective of the study is to compare the states in the light of few variables from AISHE database. The variables considered are number of universities-colleges/institutions, number of students enrolled (STD)- different levels and category, average number of enrolment per college(AEC), college population index (number of college per 1 lakh population)(CPI), gross enrolment ratio (GER), gender parity index (GPI), Human Development Index, etc. For this analysis only 14 states have been considered – Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharastra, Karnataka, Kerala, Odisha, Rajasthan, Tamil Nadu and West Bengal. The states have been compared in the light of each variables over last 9 years from 2011-12 to 2019-2020.

1. Introduction

The higher education system in India is massive and structurally diverse with 4.3 million students in 1043 university and more than 43858 college level institutions. Shortage of skilled teachers remains the biggest challenge for the education sector across the world, which is expected to pose a serious threat particularly for private school operators to maintain the quality of education provided by them. The enrolment rate in the higher education segment remains low in the other countries as compared to the developed nations, reflecting a mismatch between skills taught to graduates and requirements of the labor market. This is likely to have an effect on the unemployment rate of the region. In short, there are both economic and non-economic incentives to the individuals and to the society at large, for expansion of higher education. Investment in higher education is not just a step towards improvement of productivity and better income distribution, but also quite importantly, an action towards fostering higher autonomous citizens who will be able to decide more intelligently on the alternative life style they could have. Education helps man to climb up the social and corporate ladder for success in life. The contribution of education is significant not only in the improvement of basic needs like health and nutrition but also in the strengthening of democracy and political stability. Inadequate investment in education makes the people illiterate and backward. It is the main cause for slow growth of developing and underdeveloped economics. Education induces the process of economic growth by making available the manpower in right quantity and right quality. The economic development of a country by providing economic infrastructure, harmonizing conflicts between private and social interests, increasing labour productivity through education depends on the budgetary expenditure on social sectors. It has an influence on work, transport, health care and educational facility. Education is the engine of economic growth and social change. It creates motivation for progress and brings revolution in the ideas necessary for the progress of the country. Education not only increases the economic returns but also has a significant effect on poverty, income distribution, health, fertility, mortality, population growth and overall quality of human life.In order to take note of the effects of the New Economic Policy on social sector investment in general and educational sector in particular, it is necessary to identify the significant aspects of structural reforms in India, the measures already taken and the expected direction of the reforms.

Women's entry into higher education and employment came via the nurturing professions; nursing and teaching, towards the end of the last century, largely as a result of the efforts of social reformers to improve thelot of widows and other marginalised women. Gandhi affirmed the importance of education for women but this did little to change entrenched social attitudes. Access to education' is a telling indicator of women's status in a given society. Cultural perceptions of the roles which women are expected to fill are reflected in the extent to which women participate in formal education and the type of education to which they have access. Increasing retention rates in India suggest that young people recognise that in the new technological era their job prospects will be bleak without some form of higher level education. The rising aspiration for further education is placing increasing pressure on governments to expand all forms of post-higher secondary education or higher education.

Gross Enrolment Ratio (GER) is the total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in an year. The purpose is to show the general level of participation in a given level of education. It indicates the capacity of the education system to enroll students of a particular age group. Population censuses or estimates for higher education population obtained from the reports of Census Bureau for all the years based on last census data. A high GER generally indicates a high degree of participation, whether the pupils belong to the official age group or not.

The educational planners, researchers and administrators may frequently need to evaluate various indicators of education using the data. The Education for all Development Index (EDI) (framed by UNESCO) used 4 goals – Universal education, Adult Literacy, Quality of education and Gender. The proxies used to quantify EDI are – (1) adjusted net enrolment ratio (ANER), (2) adult literacy rate, (3) quality of education (may be inters of retention rate, drop-out rate, success rate, etc.), (4) gender equality (gender parity index – access, drop-out, success). The main aim is to choose indicators for quantifying development in education. In literature, the indicators used are – (i) percentage of population in the age group to the total population, (ii) apparent intake rate, (iii) net intake rate, (iv) gross enrolment ratio, (v) net enrolment ratio, (vi) age-specific enrolment ratio, (vii) percentage of private enrolment, (viii) enrolment by gender and social group/s, (ix) percentage of girls/female enrolment, (x) percentage of teachers by gender and social group, (xi) student class-room ratio, (xii) percentage of institutions with/without toilet, (xiii) percentage of institutions with furniture, (xiv) percentage of institutions with medium as mother tongue, (xv) percentage of institutions with/without library facilities, (xvi) percentage of trained teachers, (xvii) pupil teacher ratio, (xviii) expenditure, (xix) transition rate, (xx) percentage of repeaters, (xxi) repetition rate, (xxii) survival rate by grade, (xxiii) coefficient of efficiency, (xxiv) percentage of under-aged and over-aged students, (xxv) percentage of teachers in private institutions, etc.. To portray the status of higher education in the country, Ministry of Human Resource Development has endeavored to conduct an annual web-based effort 'All India Survey on Higher Education (AISHE)' since 2010-11. The survey covers all the institutions in the country engaged in imparting of higher education. Data is being collected on several parameters such as teachers, student enrolment, programmes, examination results, education finance and infrastructure. Indicators of educational development such as Institution Density, Gross Enrolment Ratio, Pupil-teacher ratio, Gender Parity Index, Per Student Expenditure will also be calculated from the data collected through AISHE. These are useful in making informed policy decisions and research for development of education sector.

HDI(2018) is more for the states like Kerala, Tamil Nadu, Haryana & Himachal Pradesh. Best performing state in education, healthcare is Himachal Pradesh, in economy it is Gujarat, in infra-structure & agriculture it is Punjab, in law &orders it is Tamil Nadu, in governance it is Rajasthan, in tourism, environment and cleanliness it is Kerala. Most improved state are Assam in economy, Madhya Pradesh in infra-structure & agriculture, Jharkhand in education, Andhra Pradesh in healthcare & tourism, Tamil Nadu in law & order, West Bengal in environment and Odisha in cleanliness.
Based on AISHE database, it is being tried in this paper,to compare the development in higher education based on different indicators. This communication is trying to state the trends in the different indicators for a selected number of states in India over the period of last 9 years.

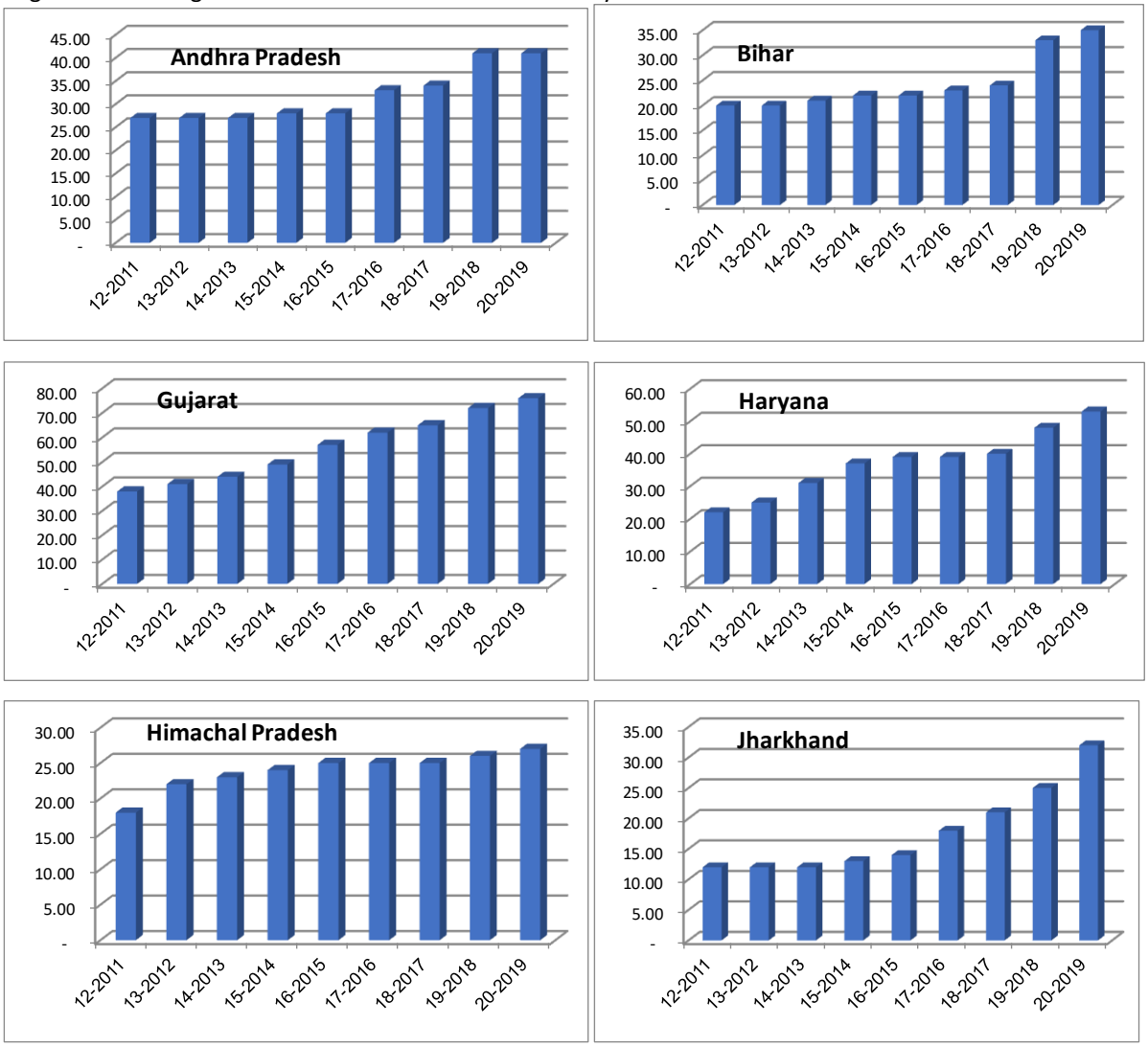
2. Data

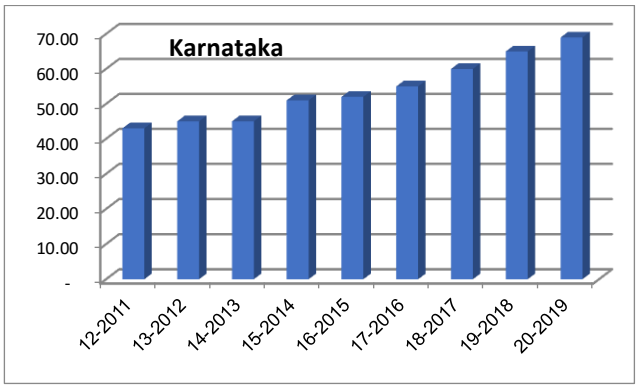
Ministry of Human Resource Development has endeavoured to conduct an annual web-based effort called All India Survey on Higher Education (AISHE) since 2010-11. The survey covers all the institutions in the country engaged in imparting of higher education. Data is being collected on several parameters such as teachers, student enrolment, programmes, examination results, finance, scholarship & stipend, infrastructure, etc.. Indicators of educational development such as Institution Density, Gross Enrolment Ratio, Pupil-teacher ratio, Gender Parity Index, Per Student Expenditure will also be calculated from the data collected through AISHE. These are useful in making informed policy decisions and research for development of education sector. Based on AISHE database, in this paper, attempt has been made to quantify the development in higher education of

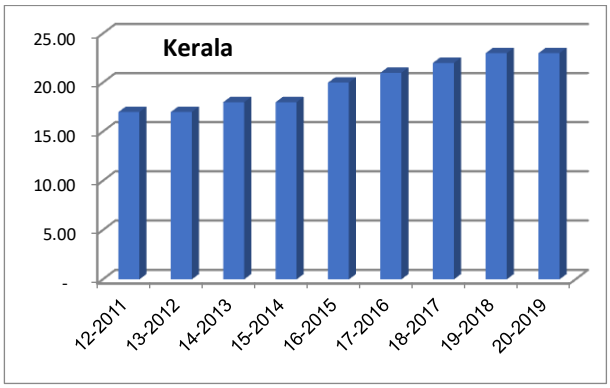
14 states(large). It is intended to have idea using data from 2011-12 to 2019-20. Data for 2019-2020 is provisional (as on 01.09.2020 and linearly estimated for the non-response HEIs). The reports and raw data of AISHE are being used. lt is being considered the variables like number of universities-colleges/institutions, number of students enrolled (STD)- different levels and category, average number of enrolment per college(AEC), college population index (number of college per 1 lakh population)(CPI), gross enrolment ratio (GER), gender parity index (GPI), Human Development Index, etc. For a primary analysis only 14 states have been considered like – Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharastra, Karnataka, Kerala, Odisha, Rajasthan, Tamil Nadu and West Bengal.

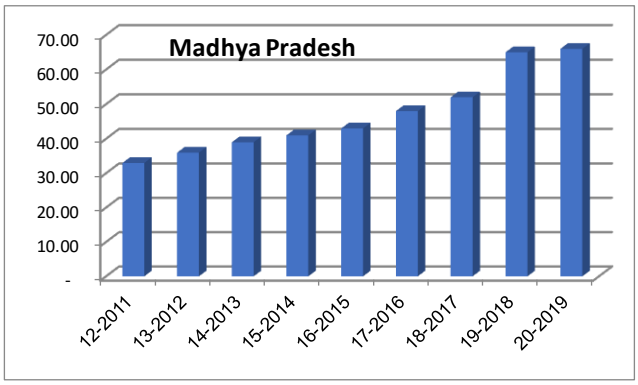
3. Results

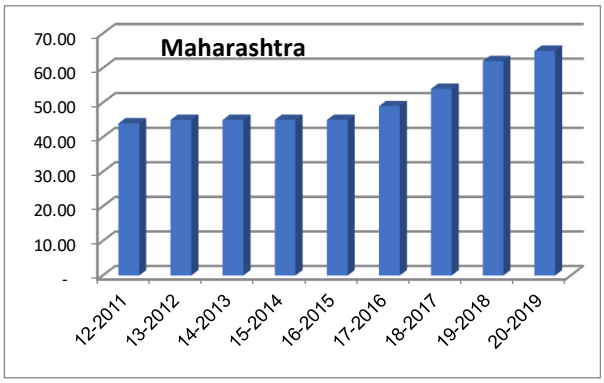
Figure-1 : showing the number of universities over last 9 years in selected 14 states

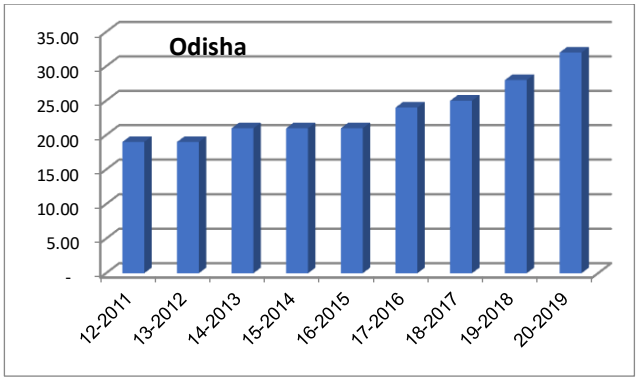


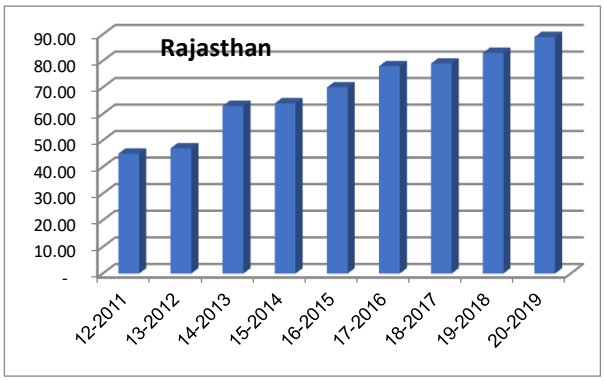


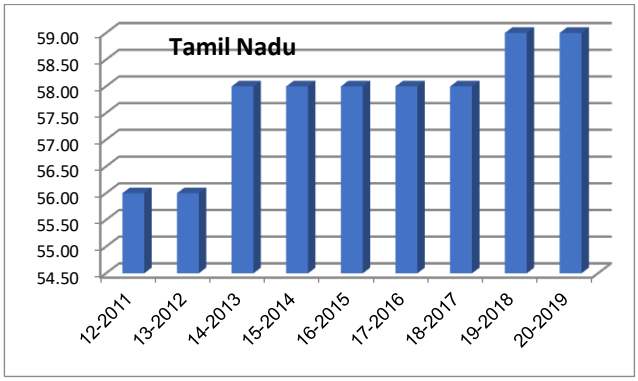


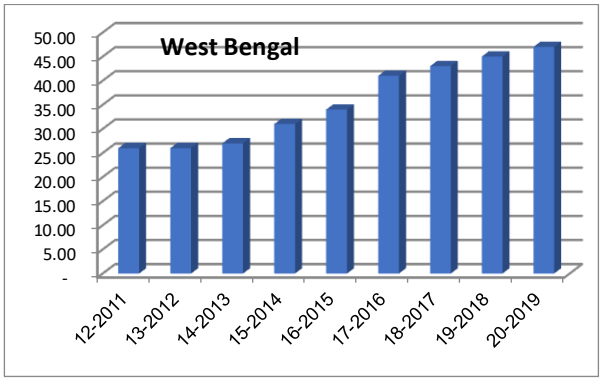






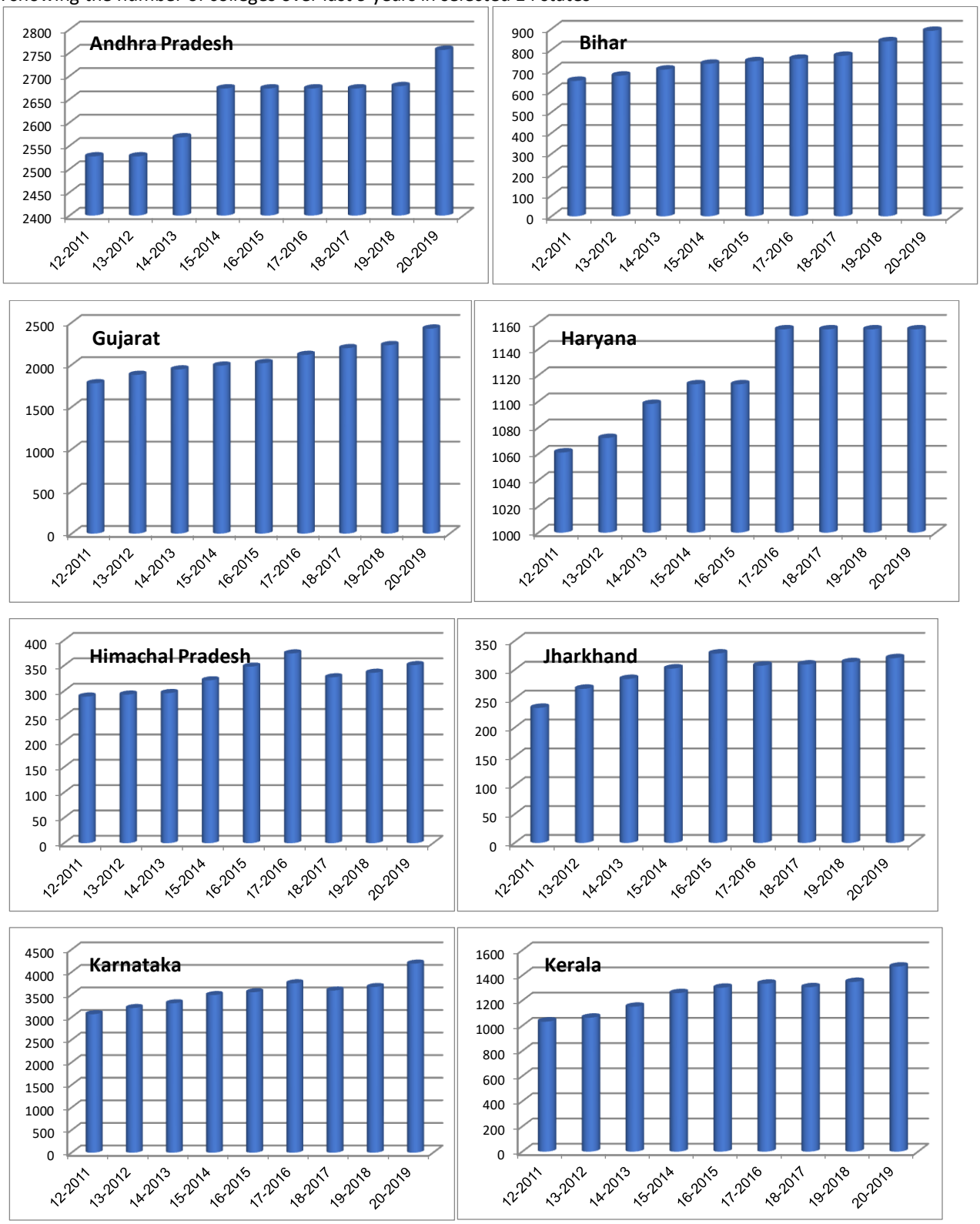


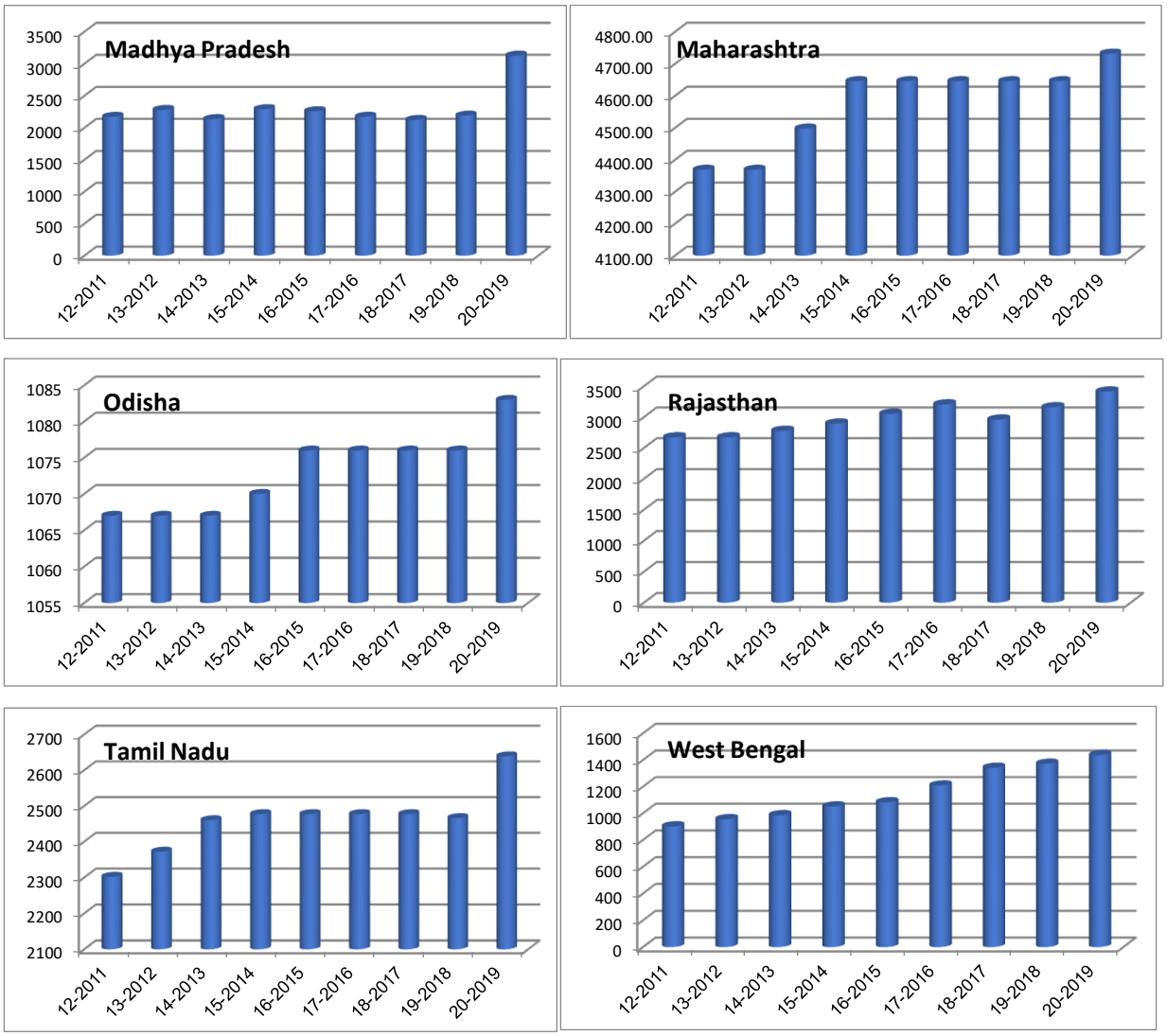




It is interesting to note that number of universities has been increased al lot from 2011-12 to 2019-20. It is almost double in Gujarat, Haryana, Jharkhand, Madhya Pradesh, Rajasthan and West Bengal.

Figure-2 : showing the number of colleges over last 9 years in selected 14 states





It may be noted that number of colleges has not much increased as compared to universities.

Table -1 : Showing the ratio of post-graduate enrolment to under-graduate enrolment for last 9 years

State	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Andhra Pradesh	19.41	18.86	19.89	17.44	18.71	18.70	17.00	15.45	14.53
Bihar	7.18	8.67	10.10	9.21	9.10	9.58	9.38	9.08	9.10
Gujarat	12.90	13.46	12.83	12.49	16.22	14.26	12.28	12.85	12.87
Haryana	11.55	12.21	12.46	12.63	14.94	21.49	18.82	15.07	15.33
Himachal Pradesh	14.28	16.60	20.77	15.35	15.00	13.62	14.57	12.12	11.92
Jharkhand	13.20	11.43	10.09	9.80	11.03	11.53	11.95	13.38	16.83
Karnataka	18.80	18.58	19.15	16.00	14.14	14.23	13.92	13.60	13.98
Kerala	16.29	17.38	17.54	16.36	15.12	12.70	13.69	14.35	16.46
Madhya Pradesh	16.42	16.76	18.41	17.63	16.37	13.76	14.24	14.60	17.19
Maharashtra	13.14	14.00	16.47	15.02	12.83	13.59	13.45	13.76	14.17
Odisha	7.82	8.17	7.86	7.52	8.18	8.65	9.23	10.65	13.58
Rajasthan	10.84	11.25	11.64	12.31	13.10	12.60	13.59	11.03	14.41

Tamil Nadu	24.26	22.85	22.36	21.38	19.64	18.35	17.61	17.81	18.54
West Bengal	11.98	11.03	11.42	11.81	11.64	10.20	11.25	9.37	8.72

It may be informative that the ratio of post-graduate enrolment to under-graduate enrolment is around 18% in Andhra Pradesh, 9% in Bihar, 13% in Gujarat, 15% in Haryana, 12% in Himachal Pradesh, 16% in Jharkhand, 15% in Karnataka, 16% in Kerala, 14% in Madhya Pradesh, 14% in Maharastra, 9% in Odisha, 12% in Rajasthan, 20% in Tamil Nadu and 11% in West Bengal. It is maximum 19.4 in 2011-12 and 14.5 in 2019-20 for Andhra Pradesh, 7.2 in 2011-12 and 9.1 in 2019-20 for Bihar, 12.9 in 2011-12 and 12.8 in 2019-20 for Gujarat, 11.5 in 2011-12 and 15.3 in 2019-20 for Haryana, 14.3 in 2011-12 and 11.4 in 2019-20 for Himachal Pradesh, 13.2 in 2011-12 and 16.8 in 2019-20 for Jharkhand, 18.8 in 2011-12 and 14.0 in 2019-20 for Karnataka, 16.3 in 2011-12 and 14.3 in 2019-20 for Kerala, 16.4 in 2011-12 and 17.2 in 2019-20 for Madhya Pradesh, 13.1 in 2011-12 and 14.2 in 2019-20 for Maharashtra, 7.8 in 2011-12 and 13.6 in 2019-20 for Odisha, 10.8 in 2011-12 and 14.4 in 2019-20 for Rajasthan, 24.3 in 2011-12 and 18.5 in 2019-20 for Tamil Nadu and 12.0 in 2011-12 and 8.7 in 2019-20 for West Bengal. It is also interesting to comment that the ratios of post-graduate enrolment to under-graduate enrolment remain same or increasing from 2011-12 to 2019-20 except for the states Andhra Pradesh, Karnataka, Tamil Nadu & West Bengal.

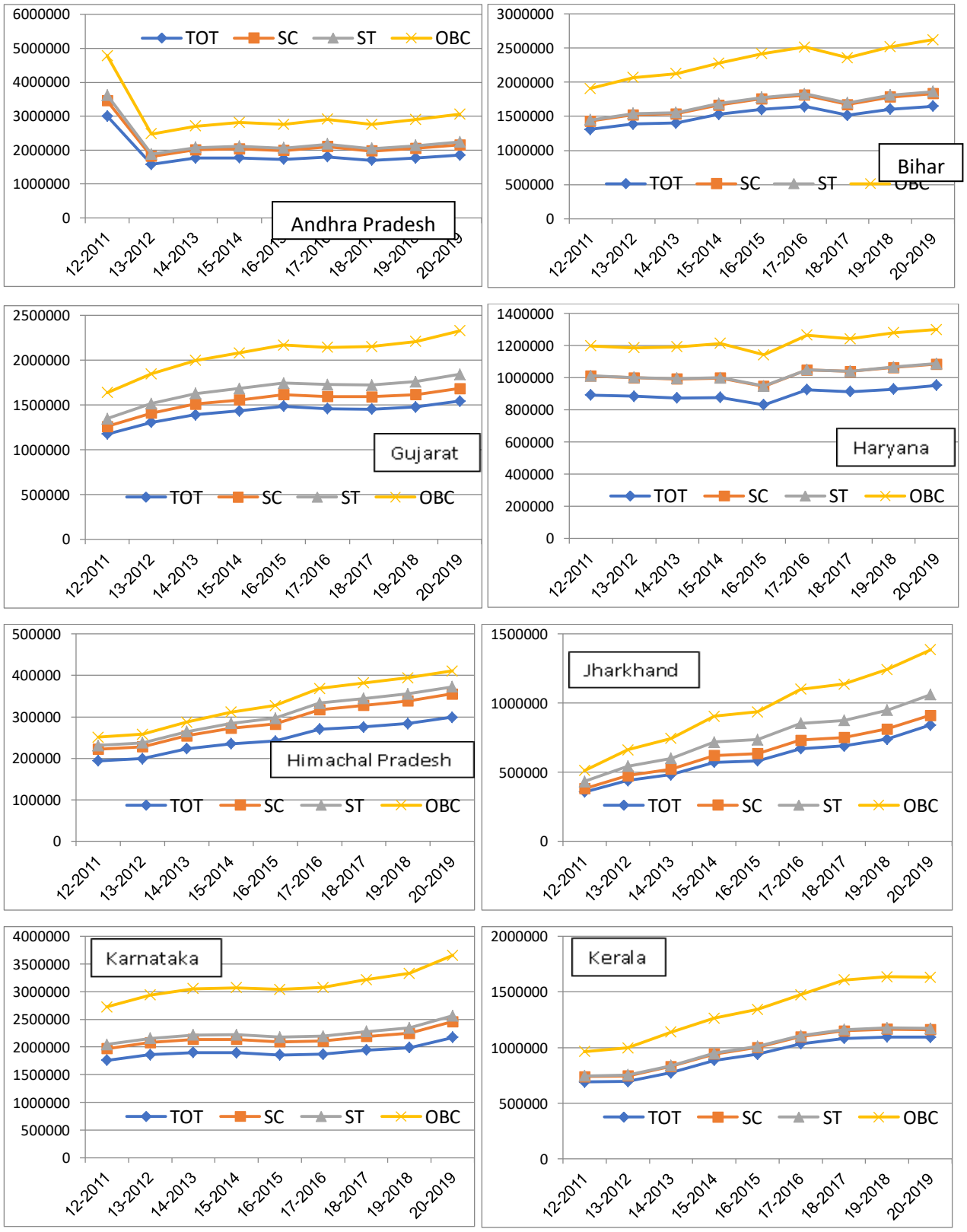
Table -2 : Showing the ratio of under-graduate enrolment to total enrolment for last 9 years

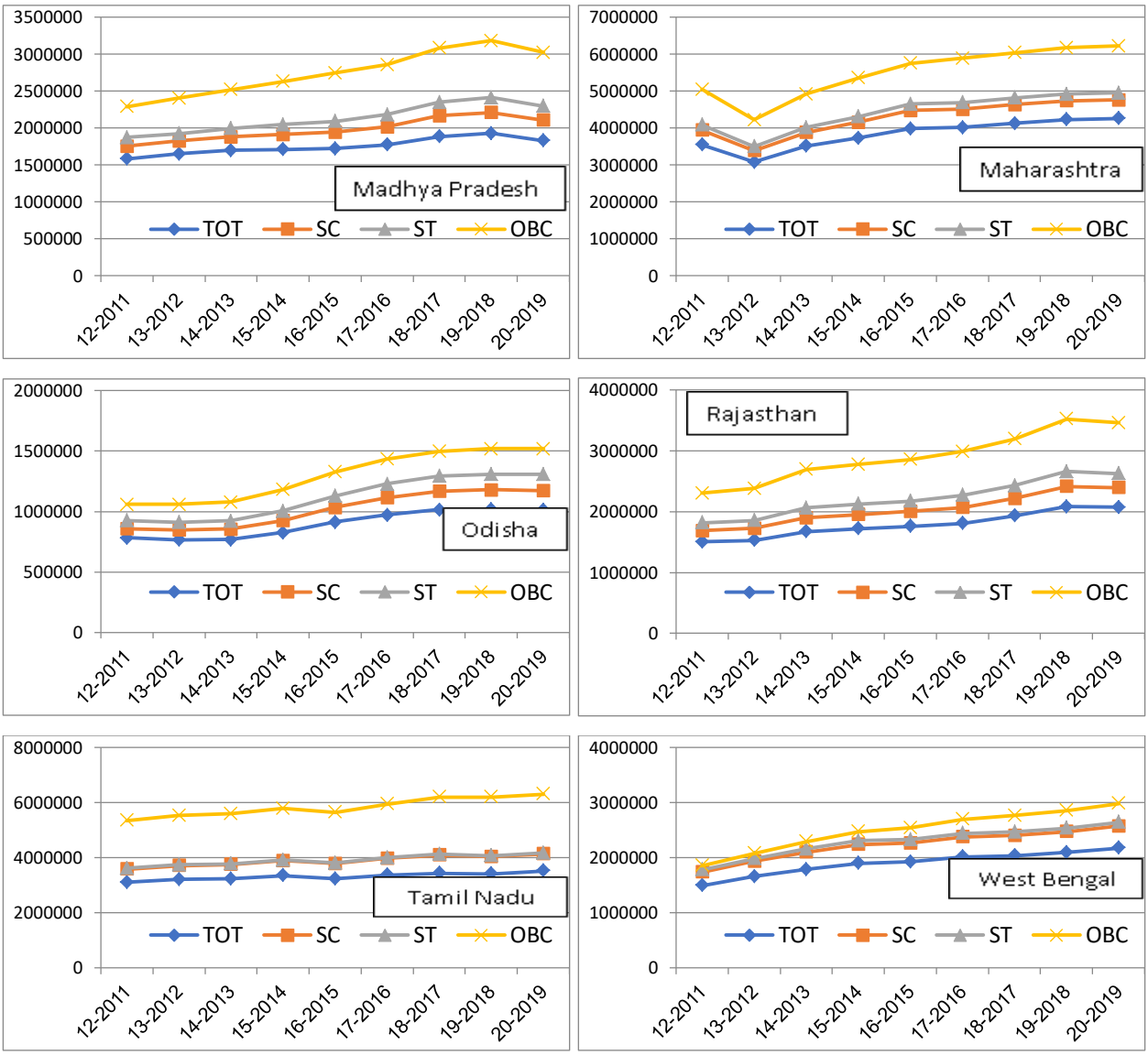
State	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
Andhra Pradesh	78.78	77.95	77.87	79.15	77.06	75.67	76.01	77.66	67.08
Bihar	91.74	90.52	89.22	89.87	89.32	88.76	88.06	87.84	77.68
Gujarat	76.08	75.47	75.47	76.22	74.81	76.10	77.73	77.64	78.20
Haryana	80.03	78.77	79.37	78.73	77.47	74.37	75.92	77.77	72.25
Himachal Pradesh	78.55	76.45	74.81	78.56	79.33	81.40	80.06	81.77	81.79
Jharkhand	86.95	88.01	88.49	87.89	85.16	84.90	84.04	82.61	77.77
Karnataka	71.07	72.29	73.14	74.82	76.47	76.56	77.32	78.35	76.22
Kerala	76.55	74.80	77.33	78.65	79.59	81.85	80.91	80.42	64.89
Madhya Pradesh	76.00	76.15	70.73	72.40	71.66	77.68	76.75	78.85	49.30
Maharashtra	77.99	74.62	74.92	77.04	79.45	79.43	80.23	79.23	79.57
Odisha	82.79	82.81	81.51	81.28	80.33	78.83	78.12	76.55	75.27
Rajasthan	85.73	84.80	83.74	81.99	81.74	81.96	81.05	82.96	69.61
Tamil Nadu	66.96	68.35	68.82	69.61	71.22	71.76	72.42	73.07	73.60
West Bengal	85.18	85.73	85.12	83.82	83.46	84.00	81.85	82.28	82.82

It may be informative that the ratio of under-graduate enrolment to total enrolment is around 76% in Andhra Pradesh, 88% in Bihar, 76% in Gujarat, 77% in Haryana, 79% in Himachal Pradesh, 85% in Jharkhand, 75% in Karnataka, 77% in Kerala, 72% in Madhya Pradesh, 78% in Maharastra, 80% in Odisha, 81% in Rajasthan, 71% in Tamil Nadu and 84% in West Bengal. It is maximum 78.8 in 2011-12 and 67.7 in 2019-20 for Andhra Pradesh, 91.4 in 2011-12 and 77.7 in 2019-20 for Bihar, 76.1 in 2011-12 and 78.2 in 2019-20 for Gujarat, 80.0 in 2011-12 and 72.2 in 2019-20 for Haryana, 78.5 in 2011-12 and 81.8 in 2019-20 for Himachal Pradesh, 87.0 in 2011-12 and 77.8 in 2019-20 for Jharkhand, 71.1 in 2011-12 and 76.2 in 2019-20 for Karnataka, 76.5 in 2011-12 and 64.9 in 2019-20 for Kerala, 76.0 in 2011-12 and 49.3 in 2019-20 for Madhya Pradesh, 78.0 in 2011-12 and 79.6 in 2019-20 for Maharashtra, 82.8 in 2011-12 and 75.3 in 2019-20 for Odisha, 85.7 in 2011-12 and 69.6 in 2019-20 for Rajasthan, 67.0 in 2011-12 and 73.6 in 2019-20 for Tamil Nadu & 85.2 in 2011-12 and 85.7 in 2019-20 for West Bengal. It is also interesting to comment that the ratios of under-graduate enrolment to total enrolment remain same or decreasing from 2011-12 to 2019-20 except for the states Gujarat, Himachal Pradesh, Karnataka, Maharashtra &Tamil Nadu.

Average enrolment per college is increasing for all the selected states. It is more than 1.5 time that of 2011-12 for the states Himachal Pradesh, Madhya Pradesh, Kerala & Tamil Nadu and remains almost same for West Bengal & Gujarat. College population index is increasing for the selected states. It is more for the states West Bengal, Madhya Pradesh & Karnataka.

Figure-3 : showing the enrolment in different category over last 9 years of selected 14 states





The total enrolment trend has been observed over the years for each of the selected states. The results are so that the rate of increase in enrolment is positive for all the states except in Haryana.

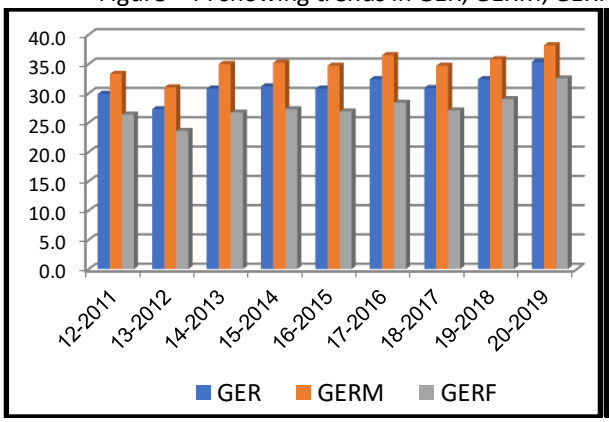
Table -3 : showing regression equation of total enrolment with year

State	Regression expression with respect to year(t)	R^2
Andhra Pradesh	$5485.t^3 - 77255.t^2 + 33242.t + 10^6$	0.978
Bihar	$(-)6132.t2 + 10050.t + 10^6$	0.917
Gujarat	$(-)6617.t^2 + 10166.t + 10^6$	0.912
Haryana	$3015.t^2 – 21850.t + 91179$	0.669
Himachal Pradesh	$13595.t + 17895$	0.981
Jharkhand	$55867.t + 31761$	0.982
Karnataka	$3823.t^3 – 51863.t^2 + 22154.t + 2.10^6$	0.992
Kerala	$(-)4123.t^2 + 10089.t + 54679$	0.962
Madhya Pradesh	$37553.t + 2.10^6$	0.855
Maharastra	$13051.t + 3.106$	0.819

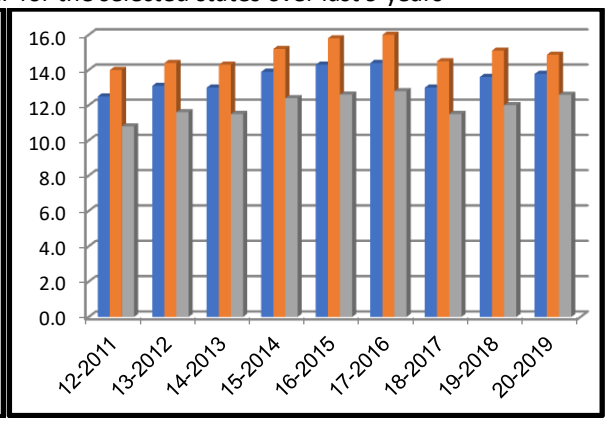
Odisha	(-)322.t2 + 42022.t + 69810	0.899
Rajasthan	75646.t + 106	0.967
Tamil Nadu	44846.t + 3.106	0.866
West Bengal	77516.t + 2.106	0.944

The slope of trend in total enrolment are positive except in Haryana.

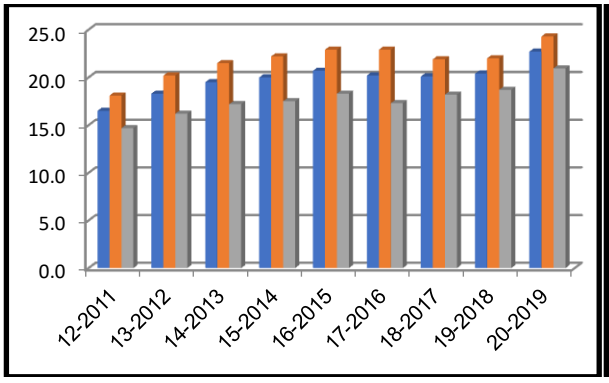
Figure - 4 : showing trends in GER, GERM, GERF for the selected states over last 9 years



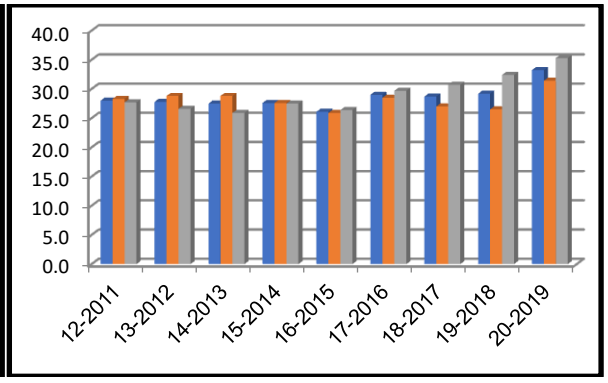
Andhra Pradesh



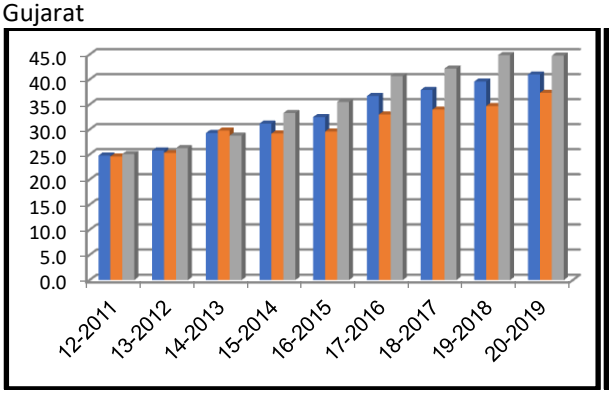
Bihar



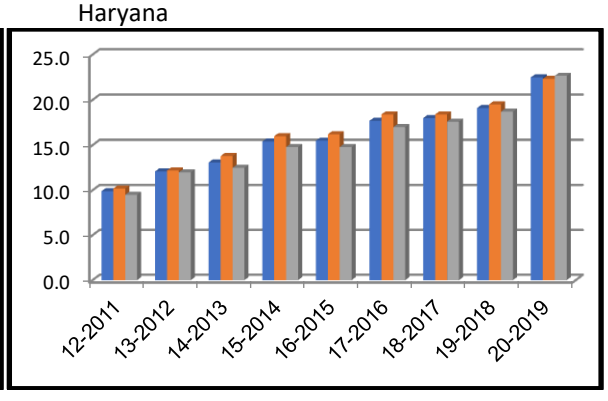
Gujarat



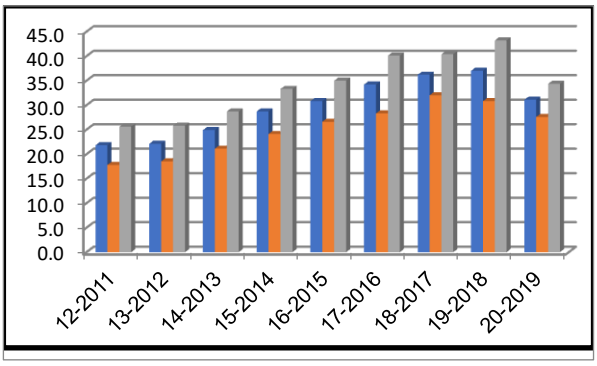
Haryana



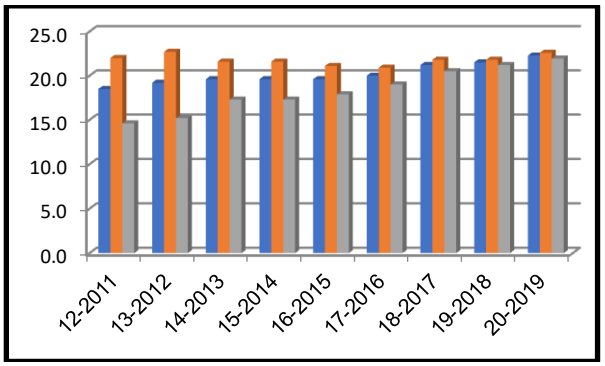
Himachal Pradesh



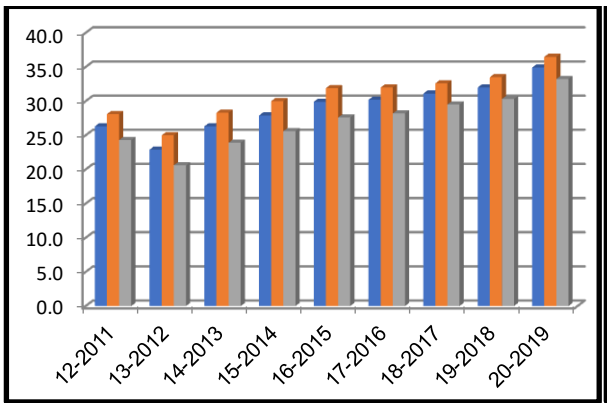
Jharkhand



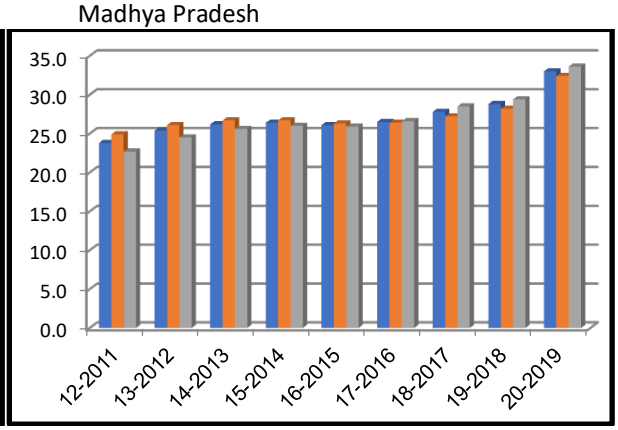
Kerala



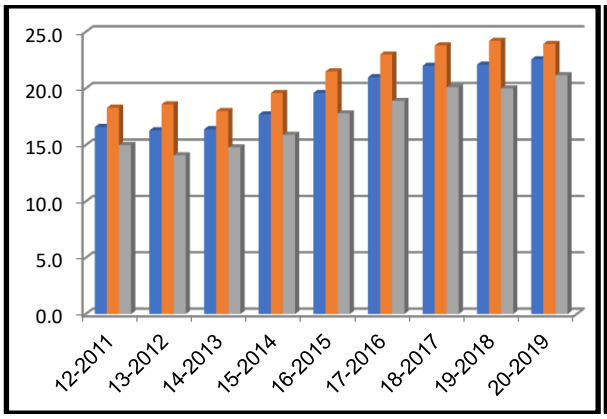
Madhya Pradesh



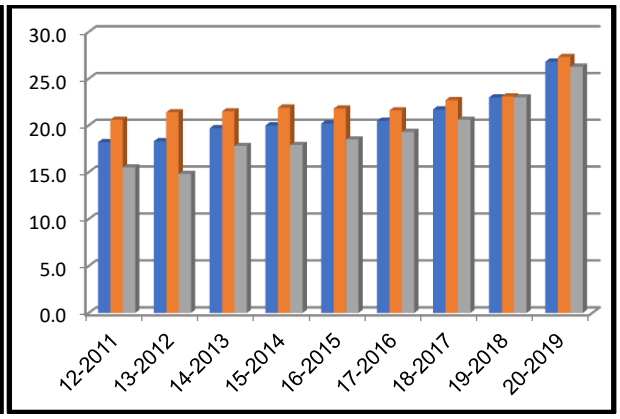
Maharastra



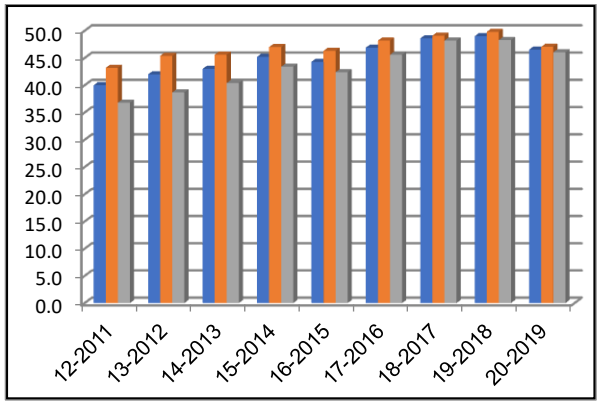
Karnataka



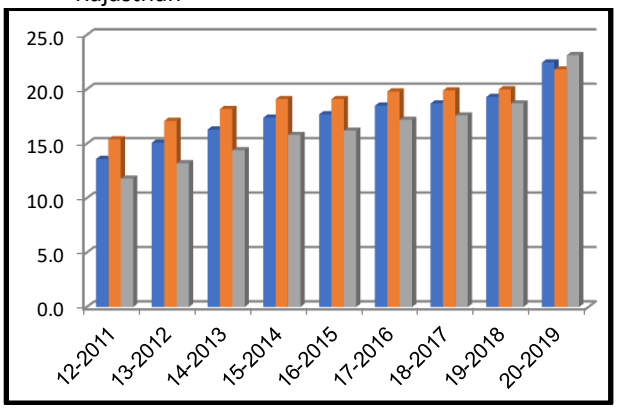
Odisha



Rajasthan



Tamil Nadu

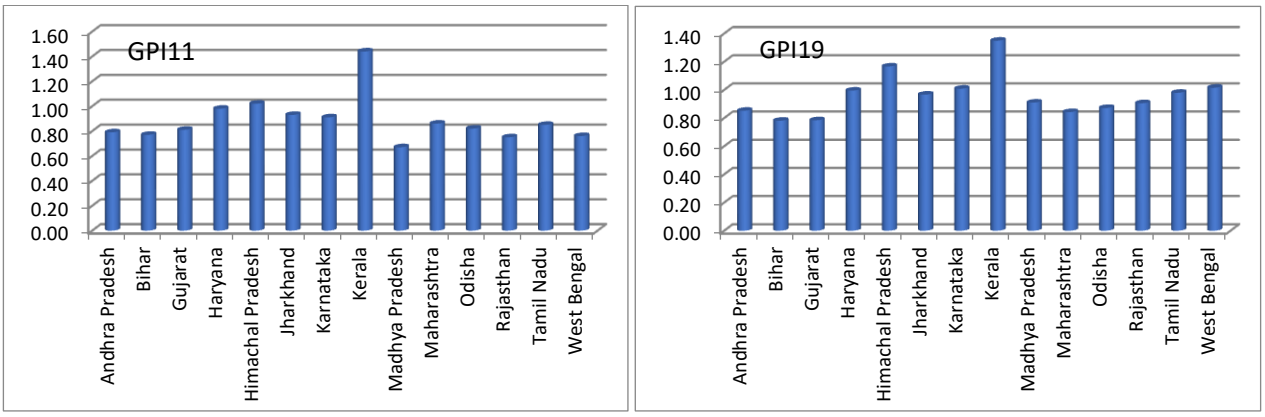


West Bengal

The trend in GER, GERM(GER for Male) and GERF(GER for Female) are not always increasing. These are high in Tamil Nadu, Karnataka, Maharastra, Himachal Pradesh, Haryana and Andhra Pradesh. The Gender Parity Index(GPI) have not yet reached

1 or near 1 for all the states under discussion. The average over last 9 years is least for Andhra Pradesh and maximum for Kerala. It is one for ideal. The ratio of change of GPI of 2019-20 with respect to 2011-12 is minimum for Gujarat and highest for Madhya Pradesh and West Bengal.

Figure - 5 : showing Gender Parity Index for all 14 states of 2011-12(GPI11) and 2019-20(GPI19)



4. Remarks

The variables considered here are number of universities-colleges, number of students enrolled (STD)- different levels and category, average number of enrolment per college(AEC), college population index (number of college per 1 lakh population)(CPI), gross enrolment ratio (GER), gender parity index (GPI), etc. 14 states have been considered – Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharastra, Karnataka, Kerala, Odisha, Rajasthan, Tamil Nadu and West Bengal. The states have been compared separately for each of the variables. The trend in GER, GERM(GER for Male) and GERF(GER for Female) are not always increasing. GPI is minimum in Gujarat. The slope of trend in total enrolment are positive except in Haryana. Average enrolment per college is increasing for all the selected states. The under-graduate enrolment is more than 75% of total enrolment and post-graduate enrolment is more than only 18% of total enrolment. The number of colleges have not increased quite smoothly over the last 9 years but number of universities have increased sharply over last 9 years in all 14 states.

References

[1] AISHE Report 2018-19 published in 2019, MHRD, Govt. of India
[2] Bhandari, P(2012), Refining State Level Comparisons in India, Working Paper Series, Planning Commission, India
[3] Census of India 2011. Provisional Tables, Paper 2, Office of the Registrar General and Census Commission, India, New Delhi
[4] Ghara, T.K. (2016). Analysis Of Higher Education GER – A Study For West Bengal. *IOSR Journal of Humanities And Social Science, 21*(11), 13-19
[5] Ghara, T. K. (2017). Analysis of Higher Education GER–A Study for West Bengal and Orissa. *Volume*, *22*, 32-35.
[6] Samanta, G. (2012). In Between Rural and Urban: Challenges for Governance of Non-recognized Urban Territories in West Bengal, in Jana, N.C. et al. (edited), West Bengal, Geo-Spatial Issues, Department of Geography, The University of Burdwan
[7] Sarkar, D., & Jhingran, D. (2012). *Educational Development Index*. Working Paper Series, MHRD, Govt. of India.