

EDUCATION INFRASTRUCTURE AND EDUCATION STATUS INDICES IN INDIA: AN INTER-STATE ANALYSIS

S V Hanagodimath

Assistant Professor, CMDR Dharwad, Karnataka, India

ABSTRACT:

To improve the education level, good amount of education infrastructure facilities are needed. At the same time, only increasing of infrastructure will not help in increasing of the overall of education status. Other factors also determine the development of the education status. Among the factors, service delivery is one of the important indicators. Along with this, socio-economic factors, like poverty, income, employment, health status, caste, gender and so on are also the determinant factors. India is spending less than 3 per cent of its GDP on education. A long back, Kothari Commission suggested for 6 per cent of the GDP towards education, which has not been achieved till date. Further, per student expenditure has to be fixed for different level of education.

Key Words: Education, Human Capital, Regional Imbalances

INTRODUCTION:

Among the components of human capital, education is the most important indicator. Educated citizens are the real wealth of the nation. Education plays a very important role in the overall development of any nation. Hence, most of the countries have given a significant budgetary allocation to develop the education level of their people. India is also not lagging behind in this regard. India has also spent a huge amount of money through the central and state budgets. Consequently, the education status as well as education infrastructure facilities in India have improved significantly after the independence.

In the year 1951, there were only 2,09,671 primary schools in India, which increased significantly to 7,86,300 in 2005. Similarly, number of upper primary schools (from 13,596 to 2,83,290); number of High/Sec/ Intermediate Pre Jr Colleges (from 7288 to 158445); number of Colleges For General Education (from 370 to 10489); number of Colleges for Professional Education (from 105 to 3432); and number of Universities (from 27 to 410) have also increased significantly in the same period.

With respect to education status, literacy rate in India was only 18.33 per cent in 1951, which increased to 64.80 per cent in 2001. Similarly, SC (from 10.27 in 1961 % to 54.69% in 2001) ST (from 8.53% in 1961 to 47.1% in 2001) literacy rates have also increased considerably. In the year 2001 around 90 per cent of enrolment was observed for the age group 6-11 years. Gap and disparity in rural-urban, male-female in all the education attainment indicators have decreased significantly. At the same time we need to go a long way in this sector.

In India there are number of studies, which have analysed and examined the different aspects of education such as public expenditure on education, growth of level/status of education, infrastructure facilities in education, regional imbalances in education level, impact of education of different socio-economic indicators and so on. Among the studies, Becker, G. S. (1964), Bhagavati, Jagadish (1973), Bhagavati, Jagadish (1973), Bhat G M and Padder Shabir Ahamad (2006), Chaudhri, D.P. (1968), Dreze, Jean and Amarthi Sen (1995), Gaur Achal Kumar (2006), Kumari Pushpa and Yadav Sudama (2006), Hariharan S V (2006), Hicks. N.L. (1987), Lockheed M,E, (1987), Malhotra Sandeepa and Singh Sandhya L S (2006), Panhamukhi, P.R. (1965), Parses Narendra (2005), Psacharopoulos, G. C (1973), Rao, V.K.R.V (1964), Sengupta Keya (2005), Tilak Jandhyala B G (2006), Tilak Jandhyala B G (2006) and so on are important. But with respect to construction of indices on education infrastructure and education status, are a few in numbers. Among them very important study by Hanagodimath (2008), which constructs the education infrastructure index (EII) and education status index (ESI). Using the data from the study by Hanagodimath (2008), in the present study an attempt has been made to discuss and analyse the indices on education infrastructure and education status in Indian states. Further, the association of between them are also analysed to find out the impact of education infrastructure on education status.

The present study has been divided into five sections, apart from the introduction, section second discusses the methodology. Section three analyses the status of different states in education infrastructure index and education status index. Section four examines the association between EII and ESI and last section concludes the present study.

2. METHODOLOGY:

Hanagodimath (2008) has constructed two indices on education namely education infrastructure index (EII) and education status index (ESI). Six indicators have been chosen to construct **Education Infrastructure Index (EII)** namely - Number of primary schools per lakh population, Number of primary schools per 100 sq km. area, Number of middle schools per lakh population, Number of middle schools per 100 sq km area, Number of teachers per lakh students in primary schools, Number of teachers per lakh students in middle schools. Similarly, seven indicators have been selected to construct **Education Status Index (ESI)** namely - Adult literacy rate, Rural literacy rate, Literacy rate of SCs, Literacy rate of STs, Urban literacy rate, Enrolment ratio of 6-11 years and Enrolment ratio of 11-14 years.

The formulas of Infrastructure Index and status indices,

$$\text{Education Infrastructure Index} = \frac{\sum X_s}{X_n} * 100$$

Where, s is state, n is nation and X is variable

$$\text{Education Status Index} = \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum value} - \text{Minimum Value}}$$

This formula is used to normalise the indicators. Further, average of these seven indicators is considered as the ESI. For this purpose selected indicators are assigned the maximum and minimum weights, for literacy rate maximum is 100 and minimum is 0, similarly, for enrolment ratio 100 is the maximum and 0 is the minimum.

Education Infrastructure Index of Indian States:

In table 1 information related to education infrastructure index has been presented. The table reveals the values of EII and its rank for 15 major Indian states for the years 1981, 1991 and 2001. It is found from the table that in the year 1981 Assam found in the first position and Haryana is found in the bottom position. States like Assam, Orissa, West Bengal, Bihar are observed in the top position. On the other hand, Tamil Nadu, Rajasthan, Andhra Pradesh and Haryana are observed in the bottom position in the same year.

As against to this, in the year 2001, Rajasthan was in the last position and Assam continued to be in the first position. Assam, Karnataka, Madhya Pradesh and Orissa are in the top position. Whereas, Haryana, Tamil Nadu, Andhra Pradesh, Rajasthan are in the bottom position in the year 2001 in EII.

Table 1: State-wise Education Infrastructure Index (EII) in India

States	1981		1991		2001	
	Index	Rank	Index	Rank	Index	Rank
Andhra Pradesh	77.78	14	76.80	15	89.85	14
Assam	149.98	1	148.78	2	157.29	1
Bihar	127.56	4	114.41	6	120.05	6
Gujarat	114.95	7	120.04	4	105.32	7
Haryana	70.32	15	94.58	12	93.34	12
Karnataka	116.25	6	115.47	5	147.82	2
Kerala	105.15	10	98.48	11	95.04	11
Madhya Pradesh	107.96	9	108.76	7	138.47	3
Maharashtra	103.11	11	103.82	8	101.83	10
Orissa	147.07	2	153.44	1	136.00	4
Punjab	109.69	8	99.89	10	104.19	9
Rajasthan	80.63	13	91.16	13	87.97	15
Tamil Nadu	98.17	12	87.58	14	91.00	13
Uttar Pradesh	117.01	5	100.17	9	125.06	5
West Bengal	135.62	3	122.95	3	104.32	8
All India	100.00		100.00		100.00	

Source: Hanagodimath 2008

Education Status Index and Ranks for Indian States:

Table 2 depicts the education status index for major Indian states for the years 1981, 1991 and 2001. It is found from the table that in the year 1981 Kerala was in the first position and Rajasthan was in the

last position. States like Kerala, Maharashtra, Gujarat and Tamil Nadu have shown good performance. Contrary to this, Uttar Pradesh, Andhra Pradesh, Bihar and Rajasthan have registered lower performance in ESI in the same year.

In the year 2001, Kerala continues to be in the first position. Along with Kerala, Gujarat, Tamil Nadu, and Maharashtra have also maintained the top position. On the other hand, Uttar Pradesh, Andhra Pradesh and Bihar were observed the in bottom position. Rajasthan has improved its position from 14th in 1981 to 9th in 2001. Punjab has deteriorated its position from 5th to 12th in the same period.

Table 2: State-wise Education Status Indices (ESI) in India

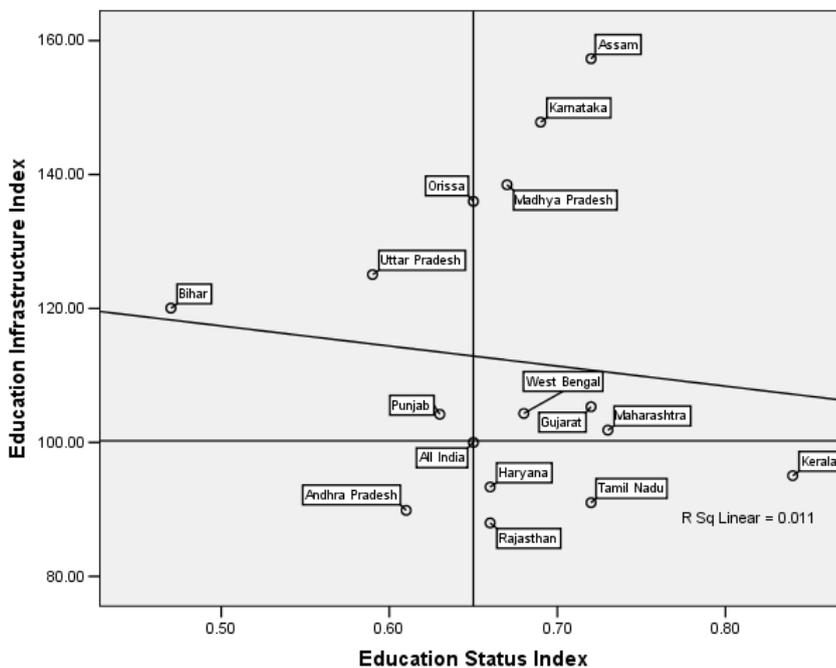
States	1981		1991		2001	
	Index	Rank	Index	Rank	Index	Rank
Andhra Pradesh	0.35	12	0.44	12	0.61	13
Assam	NA	NA	0.58	5	0.72	5
Bihar	0.35	13	0.41	14	0.47	15
Gujarat	0.50	3	0.60	4	0.72	4
Haryana	0.42	8	0.55	7	0.66	10
Karnataka	0.43	7	0.54	8	0.69	6
Kerala	0.74	1	0.85	1	0.84	1
Madhya Pradesh	0.37	10	0.46	11	0.67	8
Maharashtra	0.52	2	0.62	2	0.73	2
Orissa	0.41	9	0.50	10	0.65	11
Punjab	0.46	5	0.57	6	0.63	12
Rajasthan	0.32	14	0.40	15	0.66	9
Tamil Nadu	0.49	4	0.60	3	0.72	3
Uttar Pradesh	0.37	11	0.43	13	0.59	14
West Bengal	0.45	6	0.53	9	0.68	7
All India	0.42		0.51		0.65	

Source: Hanagodimath 2008

4. ASSOCIATION BETWEEN EDUCATION INFRASTRUCTURE INDEX AND EDUCATION STATUS INDEX:

In this section an effort has been made to examine the association between the EII and ESI. For this purpose correlation coefficient as well as scatter diagram methods are employed. In figure 1 data of EII and ESI of 15 Indian states have been scattered. The figure categories the states in to four groups,

- Out of 15 states, seven states (47%) are found in the group-I (High-ESI and High-EII) viz., namely, Assam, Karnataka, Madhya Pradesh Gujarat, Maharashtra and West Bengal.
- Four states (27%), namely Kerala, Tamil Nadu, Rajasthan and Haryana are observed in the group-II (High-ESI Low-EII).
- Bihar, Orissa, Punjab, and Uttar Pradesh are the four states, which fell in the group-III (Low-ESI and high-EII)
- Only Andhra Pradesh is found in the category-IV (Low-ESI and Low-EII)

Figure 1: Scatter Diagram of EII and ESI

Correlation coefficient between EII and ESI is negative and not significant. There is no significant association between the education infrastructure and education status. Mere improving of education infrastructure facilities will not yield to the higher education status. This finding is not a surprise or a shock. Similar findings are observed by the studies such as Ravi Shankar, 1988; Prabhu and Chatterjee, 1993; Kaur and Misra 2003. It means to improve the education status, improving of education infrastructure facilities is necessary but not a sufficient condition. Along with this service delivery mechanism has to be improved and awareness needs to be created to develop the education status in India.

CONCLUSION:

From the ongoing analysis it is clear that in India considerable regional disparity is observed (inter-state imbalances) with respect to education infrastructure facilities as well as education status. Even though the lower level of education infrastructure facilities, states like Kerala, Tamil Nadu, Haryana

and Rajasthan have show good education status. It clearly shows that improving of education infrastructure facility is not the sufficient condition to develop the education status/level. Along with this, service delivery mechanisation has to be improved. Infrastructure facilities should be user friendly, and should attract the students to learn happily in schools. Modern teaching methods should be adopted. Awareness programmes needs to be provided to the parents to encourage the enrolment. India is spending less than 3 per cent of its GDP on education. A long back, Kothari Commission suggested for 6 per cent of the GDP towards education, which has not been achieved till date. Further, per student expenditure has to be fixed for different level of education.

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