
Human and Infrastructural Development in India- Inter State

Comparison

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Abstract

In the present study, a comparative analysis among general category states in India is made to examine the Human and Infrastructural Development for the decade of 2000s and it is found that state finances improved significantly in 2000s (especially in mid of 2000s) but development of human and infrastructure has not been satisfactory. Indicators of Human and Infrastructural development found low in high income and financially sound states like Haryana, Punjab and Gujarat and vice-versa. Therefore, there is need of efforts by these state governments to incur more expenditure on social and economic services (especially on health, education (especially for females), agricultural development, development of roads & bridges) instead to showing attractive figures in their finance accounts.

1. Introduction

The constitution of India provides for division of functional domains and resource raising powers between centre and states as per central list, state list and concurrent list. In this scheme, the states have been entrusted with a crucial role in the growth process and most of the developmental functions have been assigned to them. These types of expenditures are now generally accepted to be more appropriately undertaken at the sub-national level than at the national, mainly because of regional variations in needs as well as tastes and preferences for the concerned services. Less formally stated, but no less important, is the reason that such expenditures are expected to affect individuals more directly and personally than, say, physical infrastructure. As such, it is important for the voters to have these services determined and provided by the nearest possible level of government that can feasibly undertake these interventions, so that they have the best chance of effectively influencing policy determination regarding these services.

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1.1 Objectives of the Study

After mid of 2000s, state finances in India improved significantly in terms of the broad fiscal key indicators². Before this, there was a prolonged period of fiscal imbalance. It is of interest to see how these changes in the overall fiscal situation impacted on various types of public interventions. Therefore, the objective of the study is to compare the Inter State development in Human and Infrastructural in India.

1.2 Methodology and Data Sources

The paper is descriptive and based on secondary and time series data. Simple ratios and percentages are used for the results and analyses. Simple ratios and percentages have been used for the results and analysis. Study covered the period from early 2000s to 2014-15, to compare the interstate human and infrastructural developments as improvements in the state finances. Data has been collected from the following sources:-

- RBI, A Study of State Finances, Various Issues.
- Economic Survey of India, Various Issues.
- Finance Accounts of Haryana, Various Issues.
- Statistical Abstract of Haryana, Various Issues.
- Report of Twelfth Finance Commission, Various Issues.
- Budget Document of Haryana, Various Issues.

1.3 Limitations of the Study

There is no uniquely acceptable answer to the question of what constitutes human development expenditure in terms of the budgetary categories. For our purposes it is a moot question as well, since it is not intended to cover the entire gamut of human development expenditures here. Instead, study focus on two most commonly accepted – in fact, universally accepted – categories, those of education and health. In this limited analysis, we try to look at two aspects, the public expenditures and the physical indicators of progress in these two areas to see if some features worth highlighting, at least tentatively, can be found.

² Budget Documents of the State Governments, and RBI Study of State Finances, Various Issues.

2. Education

Table 1 describes the expenditure on education on general category states in India as a ratio to aggregate expenditure. No, doubt with the improvement in state finances expenditure on education increased but a reverse picture can be seen here that even financial weaker states like Bihar, Rajasthan, U.P and West Bengal have more expenditure on education than the financially stronger states like Goa, Gujarat, Haryana, Kerala, Punjab and Tamil Nadu. Kerala may be taken as a exception case because this is the highest literate state and therefore it already may have good educational infrastructure therefore there is low expenditure on education.

Table 1: Expenditure on Education - As Ratio to Aggregate Expenditure (percent)

State	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15 (RE)	2015-16 (BE)
Andhra Pr.	9.8	11.1	10.8	9.0	9.0	10.0	12.5	13.0	12.9	13.7	13.3	16.2
Bihar	15.8	19.6	19.7	17.6	18.5	18.1	16.3	17.0	20.9	18.7	19.8	18.6
Goa	13.9	12.3	13.7	12.3	13.3	14.1	15.4	14.8	15.4	15.7	14.7	14.8
Gujarat	11.5	12.6	12.7	13.4	11.7	13.8	15.9	15.8	14.3	15.0	14.7	15.0
Haryana	11.6	13.4	11.9	12.9	15.0	16.3	17.3	16.0	15.4	15.4	17.2	17.4
Karnataka	12.7	14.0	13.1	14.4	16.1	14.0	15.6	14.7	15.5	15.0	15.8	14.4
Kerala	16.2	16.6	17.1	15.9	16.7	16.8	17.0	17.7	17.2	17.2	16.2	16.6
Madhya Pr.	8.8	10.2	12.4	11.1	12.8	13.0	14.2	12.4	13.2	15.4	15.1	15.9
Maharashtra	14.0	15.7	16.4	17.2	17.0	19.1	20.8	20.2	20.7	20.5	18.3	19.1
Odisha	12.6	14.7	12.8	14.3	16.9	18.2	18.3	16.4	15.5	15.0	15.0	14.8
Punjab	10.1	11.3	8.9	10.3	11.3	12.2	11.7	14.8	15.3	14.2	15.1	15.3
Rajasthan	13.8	17.2	15.6	14.6	17.9	19.0	19.1	17.8	16.1	16.3	16.4	17.3
Tamil Nadu	11.2	13.6	12.2	12.7	13.1	15.2	15.2	14.3	14.7	16.0	14.9	14.4
Uttar Pr.	12.5	15.2	14.7	14.1	13.2	13.8	16.1	17.1	17.3	16.0	14.6	16.9
W. Bengal	14.9	13.7	15.2	15.2	13.1	17.7	19.7	19.1	18.1	17.2	15.8	18.4

Source: RBI- A Study of State Finances, Various Issues.

In 2011, inspite of sound state finances the literacy rate in Haryana and Punjab (highest per capita income states also) was the lowest among all the high, middle income states except Andhra Pradesh and even from West Bengal which is from the category of low income state (Table 2). In particular, female literacy was well below than the male literacy – in other words, an unusually large gap between male and female literacy can be seen. Thus, apart from the usual tasks of increasing enrolment, reducing dropouts, providing infrastructure and improving quality of education, Haryana and Punjab had the additional task of addressing the serious gender imbalance that was a characteristic of a large part of Northern India covering the states of Rajasthan, Haryana, Punjab, Uttar Pradesh and Bihar. Literacy rate in states in India not only

increased substantially, but also increased relatively faster in several states. Other indicators of the education sector indicate that the states failed to decrease the teacher-pupil ratio at the primary level³, in spite of having sufficient amount in the accounts of the state government.

Table 2: Literacy Rates of Indian States

States	Literacy Rate 1991			Literacy Rate 2001			Literacy Rate 2011		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Andhra Pr.	55.1	32.7	44.1	70.9	51.2	61.1	75.6	59.7	67.7
Bihar	52.5	22.9	34.5	60.3	33.6	47.5	73.4	53.3	63.8
Gujarat	73.1	48.6	61.3	80.5	58.6	69.9	87.2	70.7	79.3
Haryana	69.1	40.5	55.9	79.3	56.3	68.6	85.4	66.8	76.6
Karnataka	67.3	44.3	56.0	76.3	57.5	67.0	82.9	68.1	75.6
Kerala	93.6	86.8	89.8	94.2	87.9	90.9	96.0	91.9	93.9
Madhya Pr.	58.4	28.9	44.2	76.8	50.3	64.1	80.5	60.0	70.6
Maharashtra	76.6	52.3	64.9	86.3	67.5	77.3	89.8	75.5	82.9
Orissa	63.1	34.7	49.1	75.9	51.0	63.6	82.4	64.4	73.5
Punjab	65.7	50.1	58.5	75.6	63.6	69.9	81.5	71.3	76.7
Rajasthan	55.0	20.4	38.6	76.5	44.3	61.0	80.5	52.7	67.1
Tamil Nadu	73.8	51.3	62.7	82.3	64.6	73.5	86.8	73.9	80.3
Uttar Pr.	55.7	25.3	41.7	70.2	43.0	57.4	79.2	59.3	69.7
West Bengal	67.8	46.6	57.7	77.6	60.2	69.2	82.7	71.2	77.1

Source: Economic Survey of India, Various Issues.

Table 3: Enrolment of Pupils in States in India

States	Class (1-5) Age (6-11)			Class(6-8) Age (11-14)		
	Boys	Girls	Total	Boys	Girls	Total
Andhra Pradesh	92.2	93.6	92.8	76.5	78.5	77.5
Bihar	100.1	97.7	99	66.4	63.8	65.2
Gujarat	110.1	110.8	110.4	80.7	75.2	78.2
Haryana	85.9	93.9	89.5	76.7	83.6	79.8
Karnataka	103.8	101.4	102.6	91.1	90.2	91.1
Kerala	87.4	87.2	87.3	97.8	95.2	96.5
Madhya Pradesh	121.6	127.1	124.3	93.3	97.8	95.5
Maharashtra	102.5	101.6	102.1	93.5	90.9	92.3
Odisha	107.6	105.8	106.7	75.2	73.3	74.3
Punjab	106.7	106.6	106.6	92.8	91.9	92.4
Rajasthan	104.6	103.8	104.2	80.7	73.2	77.2
Tamil Nadu	114.8	116.7	115.7	104.9	105.9	105.4
Uttar Pradesh	109.1	112.9	110.9	77.2	71.2	74.4
West Bengal	113.7	116.9	115.3	81.9	92.3	87
All India	105.8	107.1	106.5	82.5	81.4	82

Source: Economic Survey of India, Various Issues.

³ www.dnaindia.com.

With lower dropouts, demand for post-primary education increased; this should have resulted in additional public expenditure on upper primary and secondary education and hence total public expenditure on education (as a share of aggregate expenditure), but this does not seem to have taken place. There is still a lot of ground to be covered in Haryana, Bihar, Rajasthan, U.P, W.B in this sector as a cursory comparison of indicators in states like Kerala, Tamil Nadu and Maharashtra shows (Table 3). Female education remains an area requiring continued focus in the state. Considering all these, the public expenditure on education appears to be on the lower side and probably needs substantial increase.

Health

India is known to be a country with low levels of public expenditure on health and inordinately high levels of private out-of-pocket expenditure. At sub national level it is found that Haryana and Punjab having less expenditure in health facilities in comparison of low income states like Rajasthan, U.P, Tamil Nadu and other states those financial condition is not sound as the finances of Haryana and Punjab (Table 4). In Haryana, public expenditure in terms of revenue as well as capital, both kinds of expenditure on Medical and Public Health as percentage of GSDP. Worse, it exhibits some decline over the study period (taking a broader view of public expenditures on health as including those on water supply and sanitation)⁴. Further damning evidence is provided by the availability of hospital beds; during the study period, both availability of medical institutions and number of beds in medical institutions for per lakh population decreased significantly. Instead of making the service available to more and more people, there appears to be a contraction.⁵

⁴ Dalal, Manju (2014), "Impact of State Finances on Development: A Case Study of Haryana, Journal of Social and Economic Development, Institute for Social and Economic Change, Vol.16 No.2.

⁵ Ibid.

Table 4: Expenditure on Medical and Public Health and Family Welfare* - As Ratio to Aggregate Expenditure (percent)

State	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15 (RE)	2015-16 (BE)
Andhra Pr.	3.2	3.4	3.3	3.3	3.6	3.9	4.1	4.4	4.2	4.3	3.9	5.2
Bihar	3.1	4.5	4.2	4.4	3.5	3.5	3.3	3.5	3.5	3.2	4.0	4.1
Goa	4.7	4.9	4.6	4.6	5.4	5.3	5.6	5.8	5.8	5.7	5.6	5.6
Gujarat	2.8	3.1	2.9	3.2	3.1	3.8	4.2	4.2	4.7	4.9	5.7	5.7
Haryana	2.7	3.1	2.5	2.6	2.9	3.4	3.2	3.1	3.4	3.6	4.1	4.2
Karnataka	3.0	3.3	3.1	3.8	3.8	3.6	3.9	3.9	4.1	4.1	4.7	4.4
Kerala	4.5	4.7	4.9	4.5	4.8	4.8	5.1	5.4	5.2	5.2	6.1	5.6
Madhya Pr.	3.1	3.4	3.8	3.5	3.4	3.3	3.6	3.2	4.0	3.8	4.4	4.4
Maharashtra	2.7	3.2	3.1	3.5	3.5	3.3	3.6	3.6	3.9	3.9	4.8	4.2
Odisha	4.0	3.0	3.1	3.3	3.5	3.8	3.5	3.2	3.7	3.5	4.9	4.5
Punjab	2.9	3.4	2.7	2.9	3.0	3.2	3.3	4.3	4.3	4.1	4.7	4.9
Rajasthan	3.7	4.4	4.1	4.0	4.8	4.8	4.8	5.1	4.8	5.0	5.9	6.8
Tamil Nadu	3.2	4.2	3.3	3.3	3.7	4.8	4.8	4.0	4.4	4.5	4.7	4.4
Uttar Pr.	3.8	5.1	5.7	4.8	4.7	5.0	4.8	4.4	5.0	4.6	5.3	5.5
W. Bengal	4.2	3.9	4.1	4.0	3.6	4.8	4.8	4.8	4.2	4.5	4.7	4.5

Source: RBI- A Study of State Finances, Various Issues.

Table 5 and 6 shows life expectancy and infant mortality of major general category Indian states respectively.

Table 5: Life Expectancy of Indian States

States	Life expectancy at birth (2002-06)			Life expectancy at birth (2009-13)		
	Male	Male	Male	Male	Female	Total
Andhra Pr.	62.9	65.5	64.4	65.5	70.4	67.9
Bihar	62.2	60.4	61.6	67.3	68.0	67.7
Gujarat	62.9	65.2	64.1	66.0	70.5	68.2
Haryana	65.9	66.3	66.2	65.8	70.9	68.2
Karnataka	63.6	67.1	65.3	66.4	70.8	68.5
Kerala	71.4	76.3	74	71.8	77.8	74.8
Madhya Pr.	58.1	57.9	58	62.5	65.5	63.8
Maharashtra	66	68.4	67.2	69.4	73.4	71.3
Orissa	59.5	59.6	59.6	63.8	65.9	64.8
Punjab	68.4	70.4	69.4	69.1	73.4	71.1
Rajasthan	61.5	62.3	62	65.4	70.0	67.5
Tamil Nadu	65	67.4	66.2	68.2	72.3	70.2
Uttar Pr.	60.3	59.5	60	62.5	65.2	63.8
West Bengal	64.1	65.8	64.9	68.5	71.6	69.9
All India	62.6	64.2	63.5	65.8	69.3	67.5

Source: Economic Survey of India, Various Issues (including 2011-12).

One can notice here that in spite of contracting public expenditures on the health sector in Haryana, life expectancy in M.P, Orissa and U.P states increased during the study period and has been lower in comparison to all other major general category states.

Table 6: Infant Mortality Rate and Child Sex Ratio of Indian States

States	Infant Mortality Rate (per 1000 live births) (2006)			Infant Mortality Rate (per 1000 live births) (2013)			Child Sex Ratio (0-6 yrs)	
	Male	Female	Total	Male	Female	Total	2001	2011
	Andhra Pr.	55	58	56	39	40	39	961
Bihar	58	63	60	40	43	42	942	935
Gujarat	52	54	53	35	37	36	883	890
Haryana	57	58	57	40	42	41	819	834
Karnataka	46	50	48	30	32	31	946	948
Kerala	14	16	15	10	13	12	960	964
Madhya Pr.	72	77	74	52	55	54	932	918
Maharashtra	35	36	35	23	25	24	913	894
Orissa	73	74	73	50	52	51	953	941
Punjab	39	50	44	25	27	26	798	846
Rajasthan	65	69	67	45	49	47	909	888
Tamil Nadu	36	37	37	20	21	21	942	943
Uttar Pr.	70	73	71	49	52	50	916	902
West Bengal	37	40	38	30	33	31	960	956
All India	56	59	57	39	42	40	927	918

Source: Economic Survey of India, Various Issues, (including 2014-15)

Similarly, infant mortality rate in states decreased significantly during the study period, although it remains relatively high among some low income states like Madhya Pradesh, Rajasthan, Orissa, U.P. and Bihar and high income state like Haryana. What is more, the distressingly large gap between the male and female infant mortality rates in most of the states (the higher rate for females indicating lack of care for the female child or even female infanticide) has all but disappeared in the latest figures after persisting for a long time. Although, child sex ratio among states improved but situation is still worse in high income states in comparison to low income states. This is also the matter of serious concern about the gender issues and policies.

Physical Infrastructure

Impact of expenditure on economic services on the development of infrastructure may be measured by considering changes in various indicators like length of roads in total areas under irrigation. Here, it can be seen that irrigation and road facilities are better only in some financial sound and high income states. Except Haryana, Punjab and U.P agriculture in all other remaining states seems depends on monsoon reflect the backwardness of the Indian agricultural economy. Condition of Availability per lakh of population for road is worse in Punjab, Bihar and West Bengal (Table. 7)

Table 7: Irrigation and Position of Roads in States in India

States	Irrigation			Roads		
	Net Area Under Irrigation in States in India			Length of Roads in 2012-13 in K.M	per 100 K.M of area	Per Lakh of Population
	2006-07	2009-10	2012-13			
Andhra Pradesh	43.9	42.2	45	71893	26.1	85
Bihar	56.9	63.7	57.6	18052	19.2	17
Gujarat	34.4	42.1	41.1	79124	40.3	131
Haryana	84.1	86.4	82.1	27067	61.2	107
Karnataka	29.2	32.6	33.2	75275	39.2	123
Kerala	18.7	18.6	20	33268	85.6	100
Madhya Pradesh	43.2	46	47.2	65165	21.1	90
Maharashtra	16.9	18.7	18.7	287984	93.6	256
Odisha	32.2	39.1	27.4	19977	12.8	48
Punjab	94.9	98	97.9	10125	20.1	36
Rajasthan	38.7	34.5	36.3	99169	29.0	145
Tamil Nadu	56.4	58.5	58.8	62004	47.7	86
Uttar Pradesh	78.6	81.1	80.7	201361	83.6	101
West Bengal	59.2	59.2	59.2	18326	20.6	20
All India	43.4	45.2	44.9	-	-	-

Source: Statistical Abstract of Haryana, Various Issues.

Taking the roads first, Table 14 shows that per km. revenue expenditure on roads increased as well as capital expenditure on roads also increased but by declining growth rates over the study period with the exception of year 2010-11, in which capital expenditure on roads decreased as indicated by negative growth rates. Length of roads increased, but by declining and much lower growth rates in comparison to growth rates of capital expenditure. *Prima facie*, this points to a typical weakness relating to public sector assets – maintenance is inadequately

provided for and thus poor, resulting in eventually rebuilding the asset incurring far larger capital expenditures. In this case, poor maintenance of roads could be resulting in unnecessarily large capital expenditures only to rebuild the existing roads instead of making new roads.

Detailed examination of issues like those raised above would clearly be more instructive both in terms of policy priorities and systemic corrections to derive full benefit from public expenditure. The broad point that is sought to be made here is that government expenditures need to be juxtaposed to physical indicators of the service concerned on a regular basis through a systemic process like performance evaluation to ensure value for money with respect to public expenditures.

Table 8: States Grouped According to Selected Indicators (2007--08)

Human Development Index	Infrastructure Index
High Goa, Kerala, Maharashtra, Mizoram	High Goa, Maharashtra, Punjab
High Middle Gujarat, Manipur, Nagaland, Punjab, Sikkim, Tamil Nadu	High Middle Gujarat, Haryana, Kerala, Tamil Nadu
Middle Andhra Pradesh, Arunachal Pradesh, Haryana, Himachal Pradesh, Meghalaya, Karnataka, Tripura, West Bengal, Uttaranchal	Middle Andhra Pradesh, Karnataka
Lower Middle Assam, Chhattisgarh, J&K, Jharkhand, Rajasthan	Lower Middle Himachal Pradesh, Madhya Pradesh, Orissa, U.P, Uttaranchal, West Bengal
Low Bihar, Madhya Pradesh, Orissa U.P	Low Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Jharkhand, Nagaland, Assam, Chhattisgarh, Sikkim, J&K, Tripura, Bihar, Rajasthan.

Source: Report of Twelfth Finance Commission.

Table 8 shows that in spite of increase in Literacy, Life expectancy and real per capita income and decrease in infant mortality rates, Haryana, Gujarat and Punjab still lies in middle category of Human Development Index, which does not match with its status in terms of per capita income. Other high income states do not have this dubious distinction; perhaps provincial pride also calls for greater expenditure on human development areas like health and education in the state to speedily correct this anomaly.

5. Conclusions

In the present study, a comparative analysis among general category states in India is made to examine the Human and Infrastructural Development for the decade of 2000s and it is found that state finances improved significantly in 2000s (especially in mid of 2000s) but development of human and infrastructure has not been satisfactory. Indicators of Human and Infrastructural development found low in high income and financially sound states like Haryana, Punjab and Gujarat and vice-versa. Therefore, there is need of efforts by these state governments to incur more expenditure on social and economic services (especially on health, education (especially for females), agricultural development, development of roads & bridges) instead to showing attractive figures in their finance accounts.

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