

A REVIEW OF HUMAN DEVELOPMENT INDEX (HDI) AND HUMAN POVERTY INDEX (HPI) IN THE INDIAN PERSPECTIVE**Pooja Muttneja**Institute of Company Secretaries of India,
NEW DELHI, INDIA.**ABSTRACT**

United Nations Development Programme lays down the criteria for the formation of the basis for the preparation of the Human Development Index and Human Poverty Index showing the levels of the development and poverty in and across the member states of the United Nations. This work compares the indices for Indian perspective to reach on the conclusion that a lot is done and a lot is still to be done by India for taking advantage of the developmental agenda of the United Nations.

Keywords: Human Development Index, Human Poverty Index, India, HDI, HPI, Review of HDI & HPI.

INTRODUCTION

Over sixty years since its independence India has accomplished many notable social and economic achievements in the form of higher economic growth, reduction in population growth, lowering of caste barriers to economic opportunity and eradication of poverty among others. Government efforts to reduce poverty through direct intervention have yielded mixed result. Many of these, however, have missed their targets and benefit more to the economically advantaged. As India moved ahead through economic liberalization that has resulted into higher growth and potential for higher level of welfare, it has got opportunity to re-arrange its priorities particularly in relation to reducing poverty. Before going to further discussion we must define the concept of Poverty. Poverty is multi-dimensional concept which is complex in origin as well as in its manifestation; it is curse, not only for an individual but for the entire nation as well (Choudhury, 2005 and Chamber, 1998). Poverty conventionally refers to inability of the people to attain certain predetermined minimum

consumption needs. But in wider sense, poverty is a constraint which restricts people to enjoy certain facilities of life. This is regarded as capability poverty. Thus, capability poverty is defined as the lack of basic capabilities to people. When people are unable to reach a certain level of essential human achievement of functioning, they suffer from capability poverty. Deprivation of basic needs such as health, education and other basic amenities like safe drinking water, sanitation etc. is the result of lack of opportunity, signifying that society has not been able to provide people with access to the means to develop and maintain essential human capabilities (Sen and Chakraborty, 2005). United Nation through its Human Development Report since 1990 have brought into focus that the objective of development is to increase the capabilities of people to lead full, productive and satisfactory life. Knowledge, ability to learn and to live a long and healthy life are essential inputs that enhance human capabilities. However, this is not to negate the significance of income, which is essential for achieving the functioning and expanding people's freedom. Thus a measure of human development must include all the three dimensions- knowledge, ability to learn a long & healthy life and a decent standard of living. The Human Development Index (HDI) is one such composite outcome index which looks at achievement in outcome indicators in these three dimensions- the Education Index, the Health Index and the Income Index (Human Development Report, 2011).

UNDP introduced another index called Human Poverty Index (HPI) in the annual Human Development Report 1997, which concentrated on deprivation in three basic elements of human life- longevity, Knowledge and a decent living standard. There exist a close and inverse relationship between human poverty and human development. The human development is measured through human

development index (HDI) which is composite of three basic components; education, health and basic components of human life; longevity, knowledge and a decent living standard. Human Development is possible either by raising the value of HDI closer to unity or by reducing the deprivation. Thus present study examines the relationship between economic growth, human development and poverty. The specific objectives of the study are:

3. Human Poverty Index (HPI) and per capita net state domestic product.
4. To find out the relationship and significance of human development and per capita NSDP in reducing poverty

1. DATA BASE AND METHODOLOGY:

2.1 The Data

The present study was based on secondary data. For the purpose of study data has been collected from various publication like National Human Development Report, 2001, National Family Health Survey (NFHS-I, II & III), Manpower profile, Planning Commission Reports, Publication of office of the Registrar General of India, Inequalities Adjusted National Human Development Report 2011.

2.2 Methodology

To construct Human Poverty Index (HPI) for the year 1991, 2001 and 2011, basically 10 variables were used. The variables were:

- Infant Mortality Rate (IMR) per thousand of live births.

Longevity Deprivation (P_1) has been calculated as:

$$P_1 = \frac{(\text{IMR} + \% \text{ of undernourished children})}{2}$$

- Knowledge Deprivation (P_2) has been calculated by using illiteracy and non-enrollment ratio. 35 % weights were given to illiteracy rate, 65 % to the proportion of children not enrolled in the school.

$$P_2 = (\text{Illiteracy rate} * 0.35) + (\text{non-enrollment ratio} * 0.65)$$

- Economic Deprivation (P_3) :

$$P_3 = 1/6 (P_{31} + P_{32} + P_{33} + P_{34} + P_{35} + P_{36})$$

$$= 1/6 \sum_{i=1}^6 (P_{3i})$$

P_{31} = Proportion of population below poverty line

material well-being. While human poverty may be measured in terms of deprivation in the three

1. To construct Human Poverty Index (HPI) based on three deprivations viz. longevity, knowledge and economic deprivation.
2. To analyze and compare the position of 15 major states of India on the basis of Human Development Index (HDI),
 - Percentage of undernourished children (proxies by weight for height below - 2SD).
 - Illiteracy rate for population in the age group of 7 years and above (in percentage).
 - Non-enrollment ratio in percentage.
 - Proportion of population below poverty line (in per cent).
 - Percentage of population not fully vaccinated.
 - Percentage of population living in kacha houses.
 - Population without access to safe drinking water in percentage
 - Percentage of population without access to toilet facility.
 - Population without access to electricity in percentage.

Following UNDP methodology Human Poverty Index (HPI) has been calculated for 15 major states of India based on three deprivations; Longevity (P_1), Knowledge (P_2) and Economic Deprivation (P_3).

P_{32} = Percentage of population not fully vaccinated
 P_{33} = Percentage of population living in kacha houses
 P_{34} = Population without access to safe drinking water in percentage
 P_{35} = Percentage of population without access to toilet facility
 P_{36} = Population without access to electricity in percentage.

To construct Human Poverty Index All three deprivations were given equal weight

$$HPI_j = [1/3(P_{31} + P_{32} + P_{33})]^{1/3}$$

Where HPI_j is for j^{th} state which varies from 1 to 15 and P_i refers to three deprivations goes from 1 to 3.

Human Development Index constructed by UNDP for the year 1991, 2001, 2011 and per capita net state domestic product was also used. Various states were ranked according to value of HDI, HPI and Per Capita Net State Domestic Product (NSDP).

3 RESULTS AND DISCUSSION

Section-1

Section-I described the relative position of major states with respect to human poverty index, human development index and per capita NSDP. Human Poverty Index has been calculated for 15 major states using UNDP methodology

Table 1
Human Poverty Index for Major States of India

States	1991		2001		2011	
	Value	Rank	Value	Rank	Value	Rank
Andhra	51.9	9	34.36	9	26.58	8
Assam	55.27	11	39.71	10	35.66	11
Bihar	64.00	15	42.79	15	44.19	15
Gujarat	40.89	5	33.35	7	26.25	7
Haryana	34.31	2	30.21	5	27.05	9
Karnataka	41.01	6	34.42	8	24.99	6
Kerala	34.17	1	25.46	1	11.47	1
Madhya	62.61	13	30.92	13	41.68	14
Maharashtra	39.11	4	30.92	3	20.68	3
Orissa	58.54	12	48.56	14	40.19	13
Punjab	37.68	3	25.62	2	21.45	4
Rajasthan	54.22	10	39.09	11	34.45	10
Tamil Nadu	42.61	7	33.41	4	19.16	2
Uttar Pradesh	63.61	14	40.66	12	37.29	12
West Bengal	49.87	8	33.66	6	21.81	5
All India	47.45		35.54		30.38	
C.V	21.41		16.92		33.06	

Source: Authors' Calculations.

The value of Human Poverty Index for the year 1991, 2001 and 2011 has been presented in table 1. The table shows that for the year 1991 Bihar (64) was the worst performing state in terms of HPI followed by Uttar Pradesh (63.61), Madhya Pradesh (62.61), Orissa (58.54), Assam (55.27) and Rajasthan (54.22). On the other hand Kerala was best performing state in 1991 followed by Haryana, Punjab, Maharashtra and Gujarat. Further in the year 2001 Bihar (42.79) was worst performing state followed by Orissa, Madhya

Pradesh, Uttar Pradesh, Rajasthan and Assam. On the other hand Kerala (25.46) was still best performing state with lowest value of HPI, followed by Punjab, Maharashtra, Tamil Nadu and Haryana. In the year 2011 still Bihar (44.19) was worst performing state. Other states with high value of HPI in 2011 were Madhya Pradesh (41.68), Orissa (40.19), Uttar Pradesh (37.29) and Assam (35.66). On the other side Kerala (11.47) was still best performing state with lowest value of HPI followed by Tamil Nadu,

Maharashtra, Punjab and West Bengal. From above results one can infer that the value of HPI has declined for most of the states over time but not much change has been found in their relative

position. The coefficient of variation has declined from 21.41 in 1991 to 16.92 in 2001 but again in 2011 it increases to 33.06. The reason may be that income inequalities have increased.

Table 2
Human Development Index for Major States of India

States	1991		2001		2011	
	Value	Rank	Value	Rank	Value	Rank
Andhra Pradesh	0.377	9	0.416	10	0.485	9
Assam	0.348	10	0.386	14	0.474	10
Bihar	0.308	15	0.367	15	0.447	13
Gujarat	0.431	6	0.479	6	0.514	6
Haryana	0.443	5	0.509	5	0.545	4
Karnataka	0.412	7	0.478	7	0.508	8
Kerala	0.591	1	0.638	1	0.625	1
Madhya Pradesh	0.328	13	0.394	12	0.451	14
Maharashtra	0.452	4	0.523	4	0.549	3
Orissa	0.345	12	0.404	11	0.442	15
Punjab	0.475	2	0.537	2	0.569	2
Rajasthan	0.347	11	0.424	9	0.468	11.5
Tamil Nadu	0.466	3	0.531	3	0.544	5
Uttar Pradesh	0.314	14	0.388	13	0.468	11.5
West Bengal	0.404	8	0.472	8	0.509	7
All India	0.381		0.472		0.504	
C.V	19.01		16.29		10.28	

Source: UNDP, National Human Development Report, Planning Commission, India, various issues.

Table 2 shows the inter-state variations in Human Development Index over the three point of time. Kerala maintains its first position in all the three periods with HDI value of 0.591, 0.638 and 0.625 respectively and Punjab maintained its second position (with HDI value of 0.475, 0.537 and 0.569 respectively), followed by Tamil Nadu in 1991 and 2001 (0.466, 0.531) but the position of Tamil Nadu has gone down to fifth

place in 2011 and Maharashtra got third position followed by Haryana (0.545). However, the value of this index was found to be lowest in case of Bihar in 1991 as well as in 2001 (0.308, 0.367 respectively) whereas in the year 2011 Orissa has the lowest value. The co-efficient of variation has declined from 19.12 in 1991 to 16.30 in 2001 and further to 10.28 in 2011 showing that inter-state differences in human development index have been narrowing down over time.

Table3
Per Capita Net State Domestic Product for Different States of India in Rs. crore (at 2004-05 prices)

States	1991		2001		2011	
	Value	Rank	Value	Rank	Value	Rank
Andhra Pradesh	2731.52	7	13579.52	8	42710	8
Assam	1842.75	14	7097.22	14	22956	12
Bihar	1303.90	15	4193.72	15	15268	15
Gujarat	3214.35	4	17863.20	3	52708	5

Haryana	4338.76	3	17584.44	4	63045	1
Karnataka	3031.08	6	15431.44	6	49817	6
Kerala	2446.84	9	14350.06	7	53427	4
Madhya Pradesh	1984.02	13	9931.71	11	22382	13
Maharashtra	4656.63	1	20074.61	1	62729	2
Orissa	2004.30	12	7764.37	12	26900	11
Punjab	4513.50	2	17930.10	2	46688	7
Rajasthan	2263.95	10	11056.59	10	26436	10
Tamil Nadu	3087.20	5	17295.12	5	56461	3
Uttar Pradesh	2066.29	11	7222.49	13	18103	14
West Bengal	2652.39	8	12138.75	9	34229	9
C.V	36.21		37.78		42.09	

Source: www.indiastat.com and Data for use of Deputy Chairman Planning Commission, India.

Similarly table 3 shows the inter-state per capita NSDP and it becomes clear from the table that value of per capita net state domestic product found to be highest for the state of Maharashtra (Rs.4656.63) for the period of 1991 and it continued its lead even in 2001 but in 2011

Haryana (Rs. 63045) has the highest value of per capita NSDP. Punjab's position has gone down from 2nd place in 1991 and 2001 to 7th place in 2011. The per capita NSDP was found to be lowest in case of Bihar over the period of three decades. The coefficient of variation for these three periods has increased from 36.21 in 1991 to 37.78 in 2001 and further to 42.09 in 2011 indicating that inter-state differences in per capita NSDP has increased over time.

Section-2

In this section attempt has been made to analyze the relative performance of 15 major states in the context of HDI, HPI and per capita NSDP for the year 1991, 2001 and 2011. For a better understanding, states were classified on the basis of their ranks. A state with ranks 1 to 5

considered to be better performing states compared to other states and on the other hand the states with rank 11 to 15 were considered as worst performing states. The table shows the HDI, HPI and per capita NSDP for major states in 1991.

Table 4

Human Development Index, Human Poverty index and Per Capita NSDP, 1991

States	HPI		HDI		Per Capita NSDP in Rs. crore	
	Value	Rank	Value	Rank	Value	Rank
Andhra Pradesh	51.9	9	0.377	9	2731.52	7
Assam	55.27	11	0.348	10	1842.75	14
Bihar	64	15	0.308	15	1303.9	15
Gujarat	40.89	5	0.431	6	3214.35	4
Haryana	34.31	2	0.443	5	4338.76	3
Karnataka	41.01	6	0.412	7	3031.08	6
Kerala	34.17	1	0.591	1	2446.84	9

Madhya Pradesh	62.61	13	0.328	13	1984.02	13
Maharashtra	39.11	4	0.452	4	4656.63	1
Orissa	58.54	12	0.345	12	2004.3	12
Punjab	37.68	3	0.475	2	4513.5	2
Rajasthan	54.22	10	0.347	11	2263.95	10
Tamil Nadu	42.61	7	0.466	3	3087.2	5
Uttar Pradesh	63.61	14	0.314	14	2066.29	11
West Bengal	49.87	8	0.404	8	2652.39	8

Source: UNDP, National Human Development Report, Planning Commission India, www.indiastat.com and Data for use of Deputy Chairman Planning Commission, India.

Among the major states Kerala occupied 1st position in respect of HDI (0.591) and HPI (34.17) while in terms of per capita NSDP (Rs. 2446.84) it occupied 9th position. From here one can infer that despite of modest economic performance Kerala still have higher human resource development and lower human poverty. Maharashtra which was at top in terms of per capita NSDP (Rs.4656.63), ranked 4th in terms of HDI (0.452) and HPI (39.11). Punjab occupied 2nd rank in terms of HDI (0.475), per capita NSDP (Rs. 4513.5) and 3rd according to

HPI (37.68). Further Haryana occupied 3rd position in terms of per capita NSDP (Rs.4338.76), 2nd position in terms of HPI (34.31) whereas in case of HDI its rank was 5th. On the other hand Bihar, Orissa, Uttar Pradesh, Madhya Pradesh and Assam were worst performing states in respect of these 3 indicators. Among these worst performing states Bihar was at bottom in terms of HDI (0.308), per capita NSDP (Rs. 1303.9) and human poverty (64).

Table 5

Human Development Index, Human Poverty index and Per Capita NSDP, 2001

States	HPI		HDI		Per Capita NSDP in Rs. crore	
	Value	Rank	Value	Rank	Value	Rank
Andhra Pradesh	34.36	9	0.416	10	13579.52	8
Assam	39.71	12	0.386	14	7097.22	14
Bihar	42.79	14	0.367	15	4193.72	15
Gujarat	33.35	6	0.479	6	17863.2	3
Haryana	30.21	3	0.509	5	17584.44	4
Karnataka	34.42	10	0.478	7	15431.44	6
Kerala	25.46	1	0.638	1	14350.06	7
Madhya Pradesh	30.92	4.5	0.394	12	9931.71	11
Maharashtra	30.92	4.5	0.523	4	20074.61	1
Orissa	48.56	15	0.404	11	7764.37	12
Punjab	25.62	2	0.537	2	17930.1	2
Rajasthan	39.09	11	0.424	9	11056.59	10
Tamil Nadu	33.41	7	0.531	3	17295.12	5
Uttar Pradesh	40.66	13	0.388	13	7222.49	13
West Bengal	33.66	8	0.472	8	12138.75	9

Source: UNDP, National Human Development Report, Planning Commission India, www.indiastat.com and Data for use of Deputy Chairman Planning Commission, India.

Table 5 shows the relative position of 15 major states in respect of HDI, HPI and Per Capita NSDP. Kerala still occupied 1st position in respect of Value of HDI (0.638) and HPI (25.46)

(Rs.17930.1). Whereas Maharashtra still ranked 1st in terms of per capita NSDP (Rs. 20074.61) and 4th in terms of HDI (0.523) and HPI (30.92). On the other Bihar, Orissa, Assam, and Uttar Pradesh were remained worst performing states in 2001.

and ranked 7th in terms of per capita NSDP (RS. 14350.06). Punjab ranked 2nd in terms of HDI (0.537), HPI (25.62) and Per Capita NSDP

Table 6

Human Development Index, Human Poverty index and Per Capita NSDP, 2011

States	HPI		HDI		Per Capita NSDP in Rs. crore	
	Value	Rank	Value	Rank	Value	Rank
Andhra Pradesh	26.58	8	0.485	9	42710	7
Assam	35.66	11	0.474	10	22956	12
Bihar	44.19	15	0.447	13	15268	15
Gujarat	26.25	7	0.514	6	52708	5
Haryana	27.05	9	0.545	4	63045	1
Karnataka	24.99	6	0.508	8	41545	8
Kerala	11.47	1	0.625	1	53427	4
Madhya Pradesh	41.68	14	0.451	14	22382	13
Maharashtra	21.68	5	0.549	3	62729	2
Orissa	40.19	13	0.442	15	26900	11
Punjab	21.45	4	0.569	2	46688	6
Rajasthan	34.45	10	0.468	11.5	26436	10
Tamil Nadu	19.16	3	0.544	5	56461	3
Uttar Pradesh	37.29	12	0.468	11.5	18103	14
West Bengal	16.81	2	0.509	7	34229	9
India	30.39		0.504		38005	

Source: UNDP, National Human Development Report, Planning Commission India, www.indiastat.com and Data for use of Deputy Chairman Planning Commission, India.

Further table 6 shows the relative performance of major states in terms of HDI, HPI and Per Capita NSDP. The table shows that Kerala still lead in respect to value of HDI and HPI and ranked 4th in terms of per capita NSDP. The economic position of Kerala has improved over time from 9th position in 1991 to 7th position in 2001 and to 4th position in 2011. From this one can infer that higher human resource development and low human poverty in Kerala result in higher economic performance over the time. Performance of Punjab has reduced in

terms of HPI (ranked 2nd in 2001 reduced to 4th in 2011) and per capita NSDP (ranked 2nd in 2001 reduced to 6th in 2011). Furthermore Bihar, Orissa, Madhya Pradesh, Uttar Pradesh and Assam were still worst performing states in 2011. From this one can infer that despite of many pro poor policies of the state governments, the worst performing states are still worst performing. The reason may be that due to the corruption and inefficient administration the benefit of various schemes of government are not reaching to needy people.

Table 7
Classification of States

Particulars	Human Development Index			Per Capita NSDP			Human Poverty Index		
	1991	2001	2011	1991	2001	2011	1991	2001	2011
5-Best Performing States	Kerala, Punjab, Tamil Nadu, Maharashtra, Haryana.	Kerala, Punjab, Tamil Nadu, Maharashtra, Haryana.	Kerala, Punjab, Maharashtra, Haryana, Tamil Nadu.	Maharashtra, Punjab, Haryana, Gujarat, Tamil Nadu.	Maharashtra, Punjab, Gujarat, Haryana, Tamil Nadu.	Haryana, Maharashtra, Tamil Nadu, Kerala, Gujarat.	Kerala, Haryana, Punjab, Maharashtra, Tamil Nadu, Gujarat.	Kerala, Punjab, Maharashtra, Tamil Nadu, Haryana.	Kerala, Tamil Nadu, Maharashtra, Punjab, West Bengal.
5-Worst Performing States	Bihar, U.P., M.P., Orissa, Rajasthan.	Bihar, Assam, U.P., M.P., Orissa.	Orissa, M.P., Bihar, Rajasthan, U.P.	Bihar, Assam, M.P., Orissa, U.P.	Bihar, Assam, U.P., Orissa, M.P.	Bihar, U.P., M.P., Assam, Orissa.	Bihar, U.P., M.P., Orissa, Assam.	Bihar, Orissa, M.P., U.P., Assam.	Bihar, M.P., Orissa, U.P., Assam.

Source: Authors' Calculations.

An Attempt has been made to classify the states into 5 best and worst performing states based on their ranks. The result of table 4 shows that in terms of Human Development Index the best performing states (Kerala Punjab, Maharashtra, Haryana and Tamil Nadu) were still best performing and worst performing states (Bihar, Orissa, U.P., M.P. and Rajasthan) were still worst performing over the period of three decades. With respect to per capita NSDP the results show that in the year 1991 Maharashtra, Punjab, Haryana, Gujarat and Tamil Nadu were 5 best performing states whereas in the year 2011 Haryana, Maharashtra, Tamil Nadu, Kerala and Gujarat were the 5 best performing states which revealed that now Kerala and Gujarat are also included in top five states in terms of per capita NSDP. As per Human Poverty Index is concerned the results show that Kerala, Haryana, Punjab, Maharashtra and Gujarat were the top 5 best performing states (having low deprivation) in the year 1991. In 2011 Kerala, Tamil Nadu, Maharashtra, Punjab and West Bengal were best performing states which revealed that the position of Gujarat and Haryana goes down and other two states Tamil Nadu and West Bengal came in top 5. From above results it has been observed that the states which are worst performing in terms of Human Development Index and per capita NSDP are still worst performing in Human Poverty Index over a period of three decades. From here one can infer that to solve the problem of human

poverty, India have to promote growth (increase per capita NSDP) and invest in Human Development.

4 CONCLUSIONS AND POLICY IMPLICATIONS:

The challenges that India faces in reducing poverty in the future and more effectively than it has in the past are enormous one. India has met and mastered other major challenges and is pursuing its goal of higher economic growth with the policies of liberalization and structural adjustment programmes. Building on this foundation for faster growth would require that the challenges of poverty reduction remain at the fore front. Liberalization of the economy needs to focus on deregulating sectors on which depends the livelihood of many of the poor and on improving the provision of infrastructure and social services to the underprivileged. The lessons for future are clear: promote growth and invest in human development and infrastructure.

From the results of present study following implications are made:

Two main approaches to reducing poverty can be found from India's experience. One is through economic growth which when combined with good initial conditions in physical infrastructure, produced significant reduction in poverty in states such as Punjab and Haryana.

The second approach relied on human development. This has allowed Kerala to reduce its poverty.

Some states such as Bihar failed on both counts: there was too little growth and human resources were underdeveloped. These states made the least progress in the fight against poverty.

The study suggests use of both the approaches to achieve rapid reduction in poverty.

References :-

- I. "A wealth of data. A useful new way to capture the many aspects of poverty". The Economist. July 29, 2010. Retrieved 2010-08-04. Aided by the improved availability of survey data about living conditions for households in over 100 developing countries, the researchers have come up with a new index, called the Multidimensional Poverty Index (MPI)
- II. Clarke, M. (2006) Assessing well-being using hierarchical needs, in Mark McGillivray, Matthew Clarke (eds), Understanding Human Well-being, pp. 217-238, United Nations University Press, India
- III. Hastings, David A. (2009). "Filling Gaps in the Human Development Index". United Nations Economic and Social Commission for Asia and the Pacific, Working Paper WP/09/02.
- IV. MINHAS B. S. Rural Poverty, Land Redistribution and Development Strategy. Indian Economic Review, 1970, 5(1), pp. 97-128
- V. SAMPLE REGISTRATION SYSTEM (SRS). Office of Registrar General and Census Commissioner. Planning Commission and Economic Survey, New Delhi, 1999-2000.
- VI. UNDP. Human Development Report. The Real Wealth of Nations: Pathways to Human Development. New York: UNDP, 2010