

A COMPARATIVE STUDY OF HUMAN DEVELOPMENT INDEX OF SELECTED INDIAN STATES USING STATISTICAL TOOLS

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ABSTRACT

This paper tried to find out major factor of Human Development Index like health index, Education index and income index. The objective of this study is found out the trend of human development of Indian states and to suggest measures for improving human development. The Human Development Index is a statistical tool used to measure countries overall achievements in its social and economic dimensions.

Key words: Human Development Index; Health Index; Education Index; Income Index.

INTRODUCTION

Human development is concerned with what I take to be the basic development idea: namely, advancing the richness of human life, rather than the richness of the economy in which human beings live. In 1990 Human Development Index was developed and launched by Pakistani economist Mahbub-ul-Haq, followed by Amartya Sen, an Indian economist. Human Development Index (HDI), is a comprehensive tool devised by the United Nations for measuring the levels of social and economic developments of the different countries and ranking them accordingly. It is a comparative measure of life expectancy, education, literacy and standard of living. Essentially, Human Development Index, makes use of four parameters for measuring and ranking countries according to their social and economic development which includes the Life Expectancy at Birth, Expected Years of Schooling, Mean Years of Schooling and Gross National Income per Capita. There are six basic pillars of human development: equity, sustainability, productivity, cooperation and security. Now a day's several recent model of development have given lot of importance to human development. It can take place through education, health and family welfare and also influenced by legal, political and social environments in the society. It's very much required for economic, social and cultural developments in society.

In 2004 Gustav Ranis in his study to define the important Interrelations between human development (HD) and economic growth (EG). Region of India. In 2005 Rajarshi Majumder in his study entitled that Human Development in India. In 2009 Purusottam Nayak in his study entitled that Human Development in North-eastern . In 2010 Santanu Ray and Purusottam Nayak in his study entitled that Human Development in North East India. The development goal is to create conditions where people can live a long and healthy life and benefit in knowledge. The Human Resource Development Index is one of the important indicators of economic development for each country and is considered to have an effective role in economic development. The importance of the Human Development Index is put to review on the Indian economy. Trends change each of the three human resource development indexes during the 30-year period from 1980 to 2010. In this article, we consider the relationship between GDP and three indicators of human resources in India. In addition, we will evaluate the relationship and mutual effects of each of the three indicators of human resource development in the Indian economy using the latest (2010) formula provided by the United Nations. In this study, GDP or income act as the dependent Variables and the three indicators of long life, health and education act as independent variables.

OBJECTIVES OF THE STUDY

1. To suggest measures for improving the human development
2. To analyze the trend of human development of Indian states

RESEARCH DESIGN AND METHODOLOGY &HYPOTHESIS

Data:	Secondary
Data source:	Research papers, Books, Periodicals, Journals and Government websites etc.
Period of study:	2001 to 2012
Type of Research:	Combination of descriptive and explorative research
Tools:	Simple statistical tools such as time series cross section analysis etc.
Universe size:	East zone, West zone, South zone, North zone, north east zone ,Central zone

Sample size:	20 States (Andhra Pradesh, Assam, Bihar, Gujarat, Karnataka, Kerala, M.P, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, U.P, West Bengal, Himanchal Pradesh, Goa, Jharkhand, Chattisgardh, Uttaarakhand, Arunachal Pradesh)
Parameters:	Human Development Indicators (education, income, health)

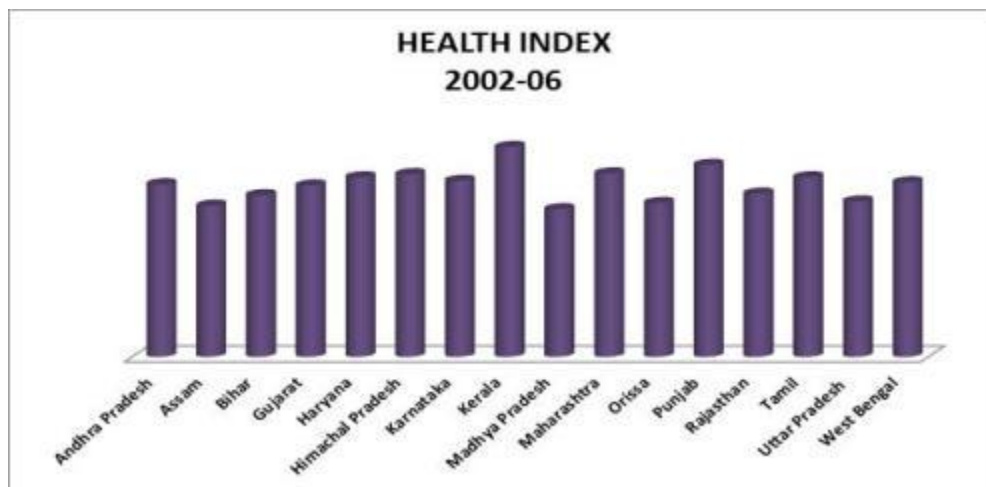
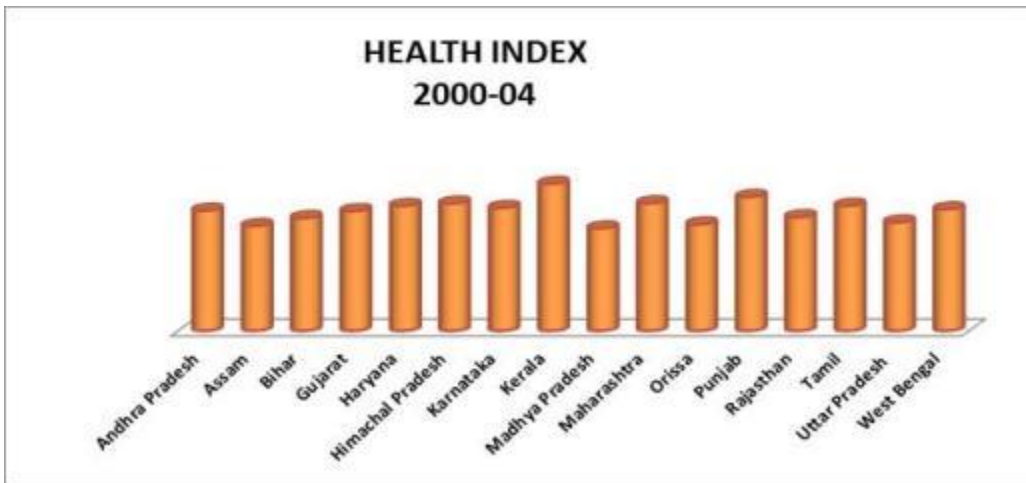
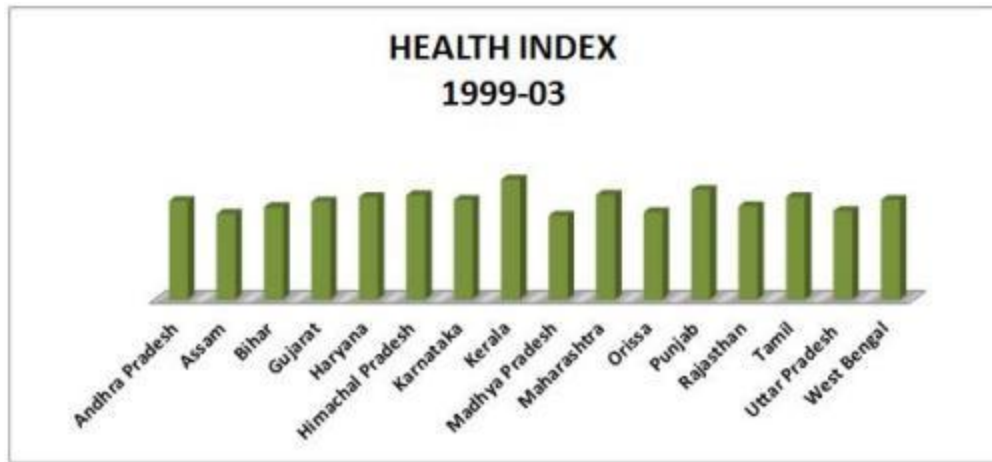
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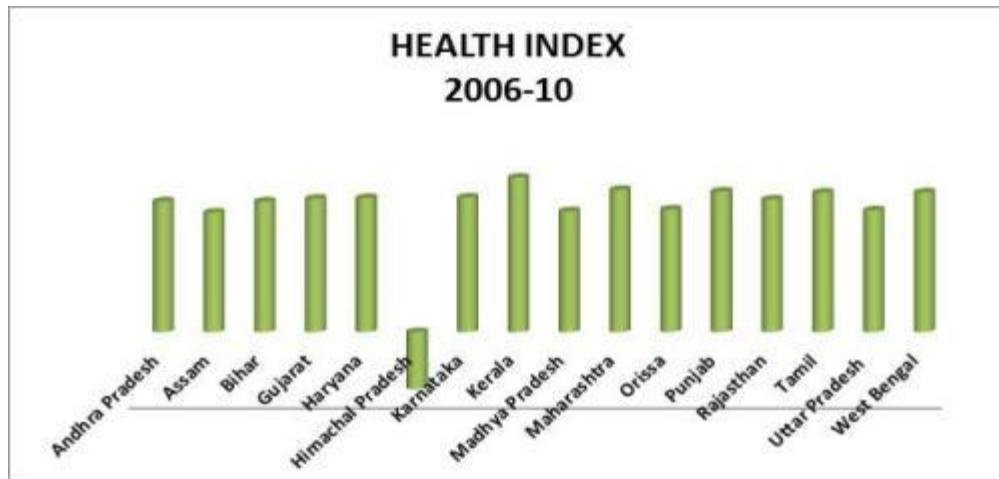
Human Development Index are Health Index, Education Index, Income Index

Table 1. Health Index

Indian States	HEALTH INDEX			
	1999-03	2000-04	2002-06	2006-10
Andhra Pradesh	0.691455696	0.694620253	0.702531646	0.724684
Assam	0.601265823	0.606012658	0.615506329	0.662975
Bihar	0.648734177	0.651898734	0.658227848	0.724684
Gujarat	0.688291139	0.691455696	0.69778481	0.740506
Haryana	0.71835443	0.721518987	0.731012658	0.743671
Himachal Pradesh	0.731012658	0.735759494	0.743670886	-0.31646
Karnataka	0.699367089	0.710443038	0.716772152	0.746835
Kerala	0.841772152	0.849683544	0.85443038	0.857595
Madhya Pradesh	0.588607595	0.591772152	0.601265823	0.670886
Maharashtra	0.734177215	0.737341772	0.746835443	0.789557
Orissa	0.612341772	0.615506329	0.626582278	0.68038
Punjab	0.768987342	0.773734177	0.78164557	0.780063
Rajasthan	0.653481013	0.65664557	0.664556962	0.735759
Tamil	0.71835443	0.723101266	0.731012658	0.773734
Uttar Pradesh	0.621835443	0.626582278	0.632911392	0.675633
West Bengal	0.69778481	0.702531646	0.710443038	0.775316

Source: National Health Profile 2009





Interpretation

In this study using the data of life expectancy at birth researchers prepare the health index and providing the ranking on the basis of health index. Kerala has taken highest rank following Punjab, Maharashtra, then and Madhya Pradesh, Andhra Pradesh, Assam and Bihar. But the Karnataka, Tamil Nadu has obtained moderate rank.

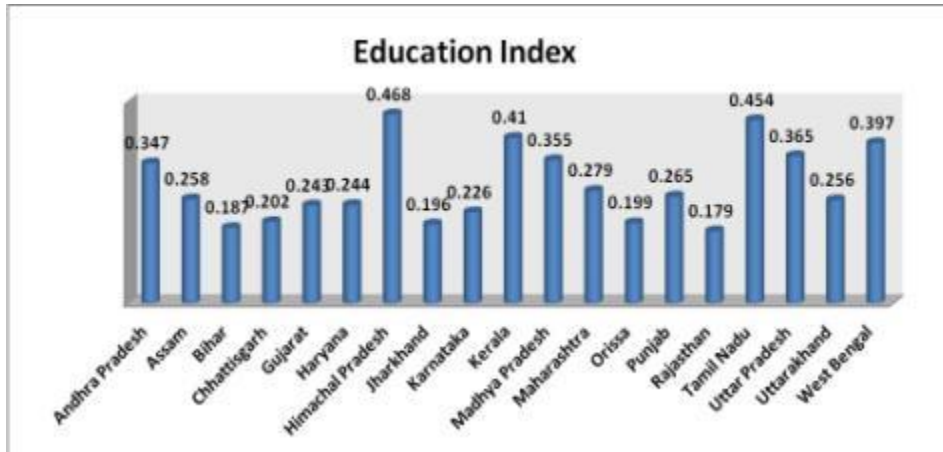
Education Index

Table 3. Education Index

State	Mean Years Of Schooling (Years) (2004/05)	School Life Expectancy (Years) (2007/08)	Education Index	Rank
Andhra Pradesh	3.06	9.66	0.347	7
Assam	3.96	9.54	0.258	10
Bihar	2.97	9.58	0.187	18
Chhattisgarh	3.39	9.31	0.202	15
Gujarat	4.54	8.79	0.243	13
Haryana	4.74	9.68	0.244	12
Himachal Pradesh	4.88	11.05	0.468	1
Jharkhand	3.32	9.68	0.196	17
Karnataka	3.95	9.75	0.226	14
Kerala	6.19	11.33	0.41	3
Madhya Pradesh	3.47	8.95	0.355	6
Maharashtra	5.12	9.86	0.279	8
Orissa	3.34	8.74	0.199	16
Punjab	5.12	9.8	0.265	9

Rajasthan	2.96	9.19	0.179	19
Tamil Nadu	4.79	10.57	0.454	2
Uttar Pradesh	3.56	9.19	0.365	5
Uttarakhand	4.97	10.23	0.256	11
West Bengal	4.36	8.87	0.397	4

Source: UNDP Report 2011



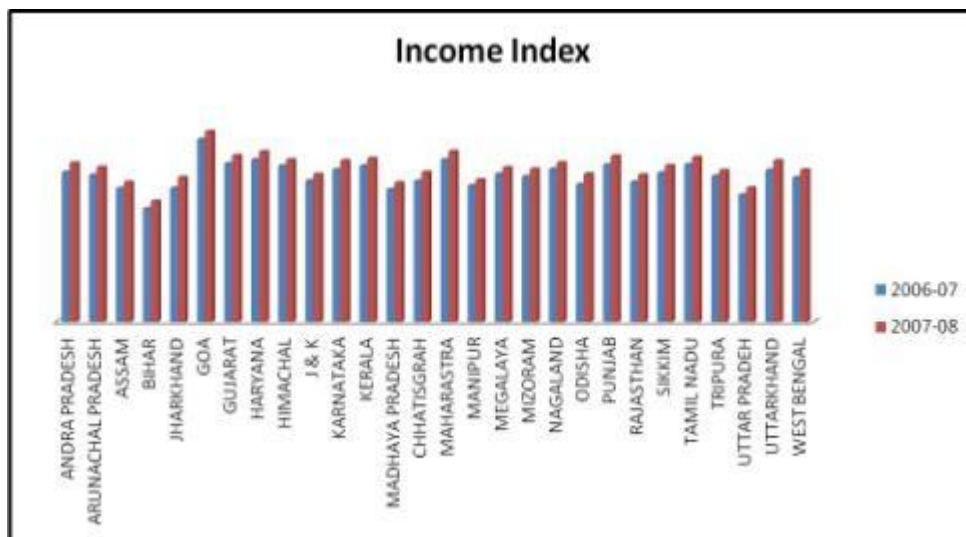
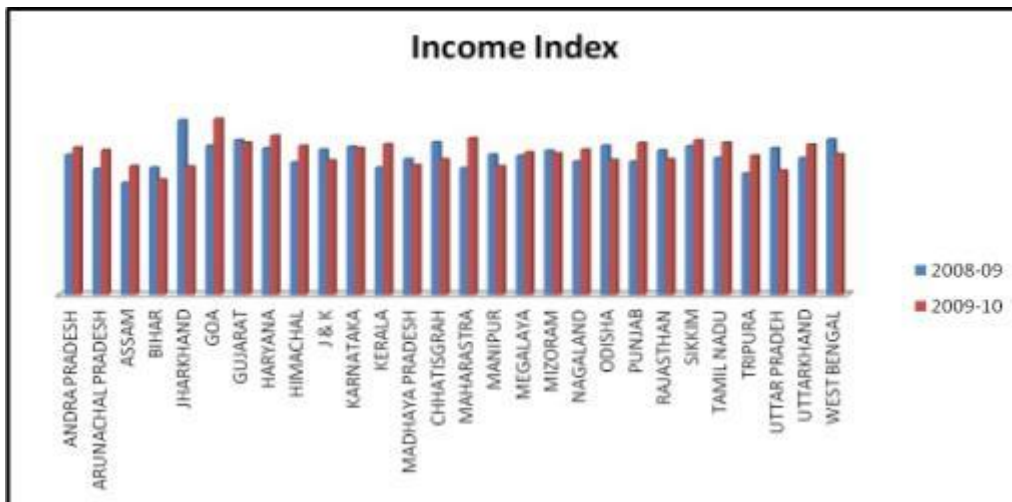
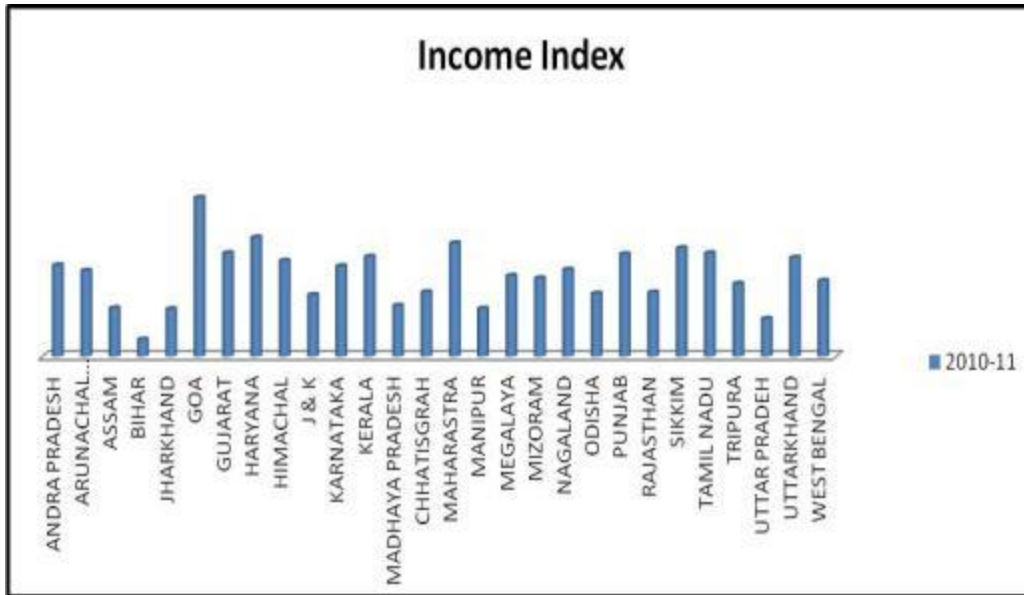
Interpretation

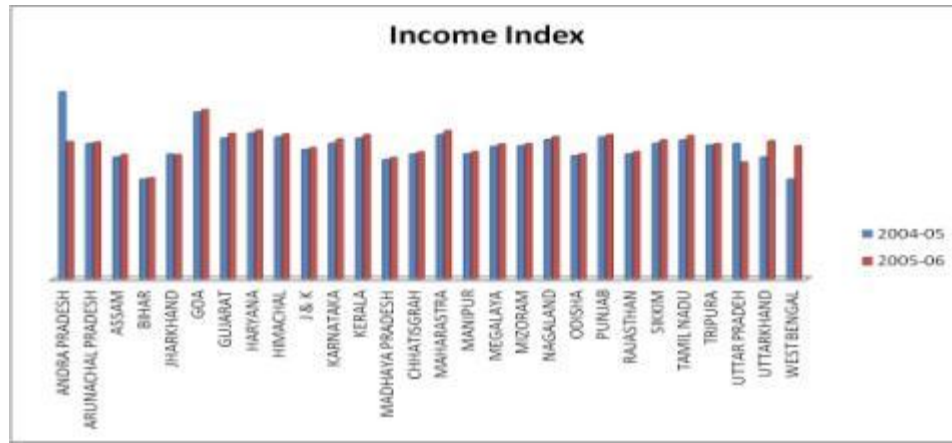
After perusal of the data obtained from UNDP report of HDI 2011 on education index, it is clear that Himachal Pradesh has taken highest rank followed by Tamil Nadu and Kerala. Assam, Jharkhand, Bihar and Rajasthan have taken consistently lowest rank. Whereas Punjab, Orissa, Uttarakhand then Maharashtra has a moderate rank in education Index.

INCOME INDEX

STATE	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Andhra Pradesh	2.761	2.025	2.08	2.21	2.152	2.263	0.605
Arunachal Pradesh	1.998	2.018	2.037	2.147	1.936	2.227	0.569
Assam	1.798	1.835	1.855	1.94	1.722	1.979	0.321
Bihar	1.472	1.492	1.572	1.676	1.953	1.772	0.114
Jharkhand	1.841	1.833	1.857	2.006	2.688	1.974	0.315
Goa	2.46	2.498	2.537	2.648	2.295	2.711	1.052
Gujarat	2.079	2.147	2.198	2.311	2.383	2.343	0.685
Haryana	2.153	2.196	2.253	2.367	2.252	2.447	0.789
Himachal Pradesh	2.096	2.138	2.166	2.255	2.034	2.294	0.635
J & K	1.91	1.936	1.959	2.05	2.236	2.067	0.409

Source: Central Statistics Office (CSO)





RANKING

State	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Andra Pradesh	1	13	12	12	15	11	11
Arunachal Pradesh	14	14	15	14	26	14	14
Assam	24.5	24	25	25	28	24	24
Bihar	27.5	27	28	28	24	28	28
Jharkhand	22	25	24	23	1	26	26
Goa	2	1	1	1	6	1	1
Gujarat	7	4	4	4	3	5	5.5
Haryana	3	2	3	3	10	2	2
Himachal Pradesh	5	5	8	8	22	10	10
J & K	18	19	19	21	11	22	22
Karnataka	11	10	10	10	8	12	12
State	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Kerala	8	6	7	7	23	8	8
Madhya Pradesh	26	26	26	26	19	23	23
Chhattisgarh	20.5	22	20	19	4	19	19
Maharashtra	4	3	2	2	25	3	3
Manipur	19	20	23	24	14	25	25
Meghalaya	17	17	14	15	16	15	15
Mizoram	16	15.5	17	16	13	16	16
Nagaland	9	9	9	11	20	13	13
Odisha	23	23	22	20	5	21	21
Punjab	6	7	6	5	21	7	7
Rajasthan	20.5	21	21	22	12	20	20
Sikkim	12	11	13	13	7	4	4
Tamil Nadu	10	8	5	6	17	6	5.5
Tripura	15	15.5	16	18	27	18	18
Uttar Pradesh	14	26	27	27	9	27	27
Uttarakhand	24.5	12	11	9	18	9	9
West Bengal	27.5	18	18	17	2	17	17

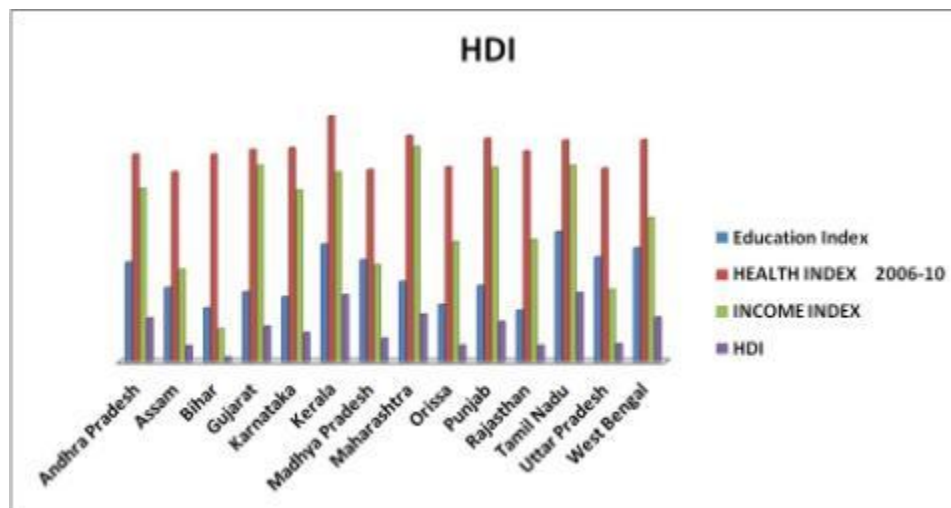
Interpretation

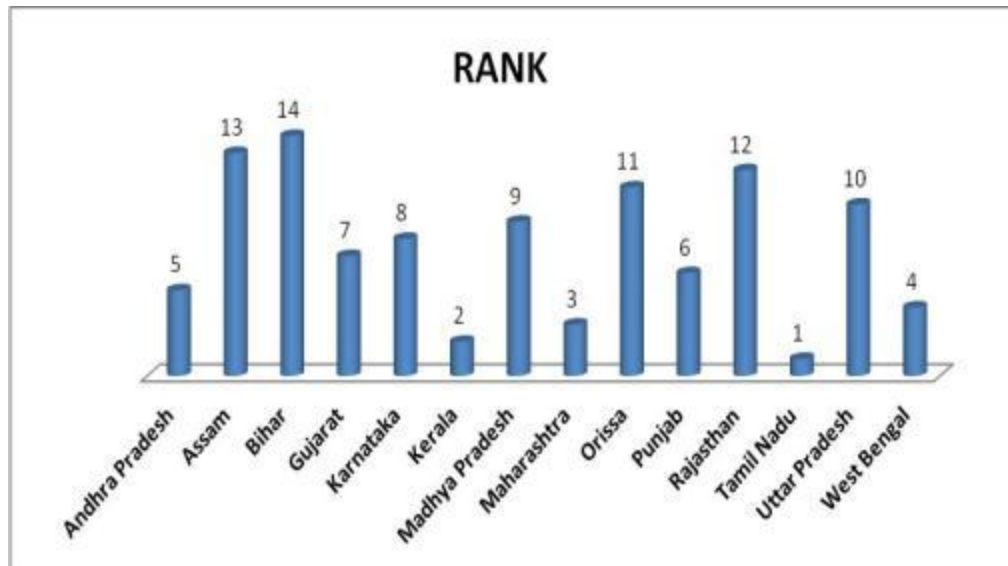
On study the income index data obtained from planning commission, it is clear that GOA has obtained top rank following Haryana and Maharashtra whereas Gujarat, Madhya Pradesh, Jharkhand, Assam and Bihar have taken consistently lowest rank. Karnataka, Tamil Nadu and Andhra Pradesh has taken moderate ranking in income index

Human Development Index

Human Development Index

State	Education Index	Health Index 2006-10	Income Index 2010-11	HDI	Rank
Andhra Pradesh	0.347	0.724684	0.605	0.152137	5
Assam	0.258	0.662975	0.321	0.054906	13
Bihar	0.187	0.724684	0.114	0.015449	14
Gujarat	0.243	0.740506	0.685	0.123261	7
Karnataka	0.226	0.746835	0.599	0.101102	8
Kerala	0.41	0.857595	0.662	0.232768	2
Madhya Pradesh	0.355	0.670886	0.338	0.0805	9
Maharashtra	0.279	0.789557	0.751	0.165435	3
Orissa	0.199	0.68038	0.418	0.056595	11
Punjab	0.265	0.780063	0.678	0.140154	6
Rajasthan	0.179	0.735759	0.426	0.056105	12
Tamil Nadu	0.454	0.773734	0.685	0.240624	1
Uttar Pradesh	0.365	0.675633	0.251	0.061898	10
West Bengal	0.397	0.775316	0.503	0.154824	4





Interpretation

On the basis of the health index, education index and income index researcher came on conclusion Tamil Nadu has taken highest rank followed by Kerala whereas Bihar, Assam is at lowest rank. The state like Punjab, Gujarat and Karnataka obtained moderate rank.

FINDINGS

- In this study researcher construct the health index and find the trend of health index from different states during different period of time.
- Researcher found that the Kerala has taken highest rank Punjab, Maharashtra, Madhya Pradesh, Andhra Pradesh, Assam and Bihar has taken a consistency lowest rank. Karnataka, Tamil Nadu has obtained moderate rank in health index.
- According to UNDP report regarding education index Himachal Pradesh has taken highest rank, Tamil Nadu then Kerala. Rajasthan, Bihar, Jharkhand, Assam and Bihar have taken a consistency lowest rank. Punjab, Orissa, Uttarakhand, Maharashtra have obtained moderate rank.
- In this study researcher construct the income index and find the trend of income of different states from different period of time. And also scattered trend of states of India. Goa has taken highest rank then Haryana, Maharashtra and Gujarat. Madhya Jharkhand, Assam and Bihar has taken a consistency lowest rank. Karnataka, Tamil Nadu, Andhra Pradesh have taken moderate rank.
- According to the HDI Tamil Nadu has taken a highest rank followed by Kerala and lowest rank is taken by Bihar and Assam. Punjab, Gujarat, and Karnataka have taken moderate rank.

SUGGESTION

In this study researcher obtained that some states facing backward situation facing in major area like: education, health facility, low income etc. This study provide help to state government create an awareness activities regarding vocational skills, development for income generation, focus on education system and also providing medical facility and health insurance etc. it is compulsory for every people.

CONCLUSION

In this study researcher obtained that several states have good health index and highest ranked like Kerala then Punjab, Maharashtra. Some states have good education index and highest ranked like Himachal Pradesh has taken highest rank, Tamil Nadu then Kerala. Some states have good income index and highest ranking like Haryana, Maharashtra, and then Gujarat. But some states have lowest health index and lowest ranked Madhya Pradesh, Andhra Pradesh, Assam then Bihar. Some states have lowest education index and lowest ranked Rajasthan, Bihar, Jharkhand, Assam then Bihar. Some states have lowest income index and lowest ranked Madhya Jharkhand, Assam then Bihar.

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