



## HUMAN DEVELOPMENT INDEX: A MEASURE OF SOCIO- ECONOMIC WELL-BEING IN CONTEXT OF INDIA

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### ABSTRACT

*Human development enhances the economic growth and due to economic growth human development is possible, thus economic growth and human development are depended on each other. Process of economic growth ends when human development is to stop. The main purpose of this exercise of development is to treat men, women and children- present and future generations-as ends, to improve the human condition and to enlarge people's choices. Human development is a means of higher productivity, so well-sustain healthy, educated, skilled, labor force is required for productive asset. Thus, investments in nutrition, health services and education are required for human development and higher productivity. The Human Development Index (HDI) is a statistical instrument, which is used to measure human resource development and overall performance of a country's social and economic dimensions. HDI measures the average achievement in three basic dimensions of human development- life expectancy, education level and standard of living.*

Present paper highlights the concept of HDI and its measurement. Paper also analyzed the comparative study of HDI of India with the rest of the world. Paper examines trend of India's HDI value in different year in past. Paper also analyzed the comparative study of HDI in state level of India.

**KEYWORDS:** -Human development, Human Development Index ,Life Expectancy, Education Level, Standard of Living.

Human development is a broad concept. Economic growth and human development are depended on each other. Human development enhances the economic growth and due to economic growth, human development is possible. Elucidating the concept of human development, UNDP Human Development Report (1997) describes it as "the process of



widening people's choices and the level of well-being they achieve are at the core of the nation of human development. Such theories are neither finite nor static. But anyhow of the level of development, the three essential choices for people are to live a long and healthy life, to obtain knowledge and to have approach to the resources needed for an up to mark living standard. Human Development does not end there, however, other choices highly valued by many people, range from political, economic and social freedom to opportunities for being creative and productive and enjoying self-respect and guaranteed human rights".<sup>1</sup>

There are many human ways that extend far beyond economic well-being. Knowledge, health, a clean environment, freedom, simple pleasures of life are not dependent on income and gender equality. Process of economic growth ends when human development is to stop. The main purpose of development is to treat men, women and children- present and future generations- as ends, to improve the human condition and to enlarge people's choices. Human development is a means of higher productivity, so well-sustained healthy, educated, skilled, labor force is required for productive asset. Thus, investments in nutrition, health services and education are required for human development and higher productivity. Human development helps in lowering the family. It is the experience that all developed countries who improvement its education levels (particularly of girls), and provide better health facilities to reduce in infant mortality rates leads to a lowering of the birth rates. While improved education facilities make people aware of the facilities make people aware of the small family. Human development is also good for physical environment. Deforestation, desertification and soil erosion decline when poverty decline. Reduction of poverty also contributes to a healthy civil society, increased democracy and greater social stability.

Human Development is required for improving the economic growth and sustainable development of India. Human development plays an important role in economic development because effective use of physical capital itself dependent upon human resource. Schultz indicates five activities as indicator of Human Resource Development-

- Health facilities and services which affect life expectancy.

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<sup>1</sup> UDNP, Human Development Report (1997), p.13-14.



- On the job training.
- Formally organized education in primary, secondary and higher level.
- Study programme for adults.
- Migration of individuals and families to adjust to changing job opportunities.

According to Mahhub ul Haq, there are four essential components in human development paradigm<sup>2</sup>- Equality, Sustainability, Productivity and Empowerment. Development of a country depends upon its labor forces, health of people, education level of people and income of people. For measuring above factors, three measures have been developed. They are Human Development Index (HDI), Gender development Index (GDI) and Human Poverty Index (HPI). HDI measures the average achievement in three basic dimensions of human development- life expectancy, education level and standard of living.

## **OBJECTIVES OF STUDY**

This paper examined the status of human development index of India in global level and within the country. This paper widely covers concept of human development index, its components and its measurement methods. The main objectives of this paper are:

- To explain the concept and dimensions of Human Development Index
- To explain methods of calculation of Human Development Index
- To do the comparative study of the Human Development Index of India
- To analyze the Human Development Index of India in different years
- To analyze the Human Development Index of various states of India

## **RESEARCH METHODOLOGY AND DATA COLLECTION**

The present study is entirely based on secondary data and data were obtained from the various reports of human resource development ministry, various Human Development Reports of United Nations Development Program (UDNP), Indian National Human Development Reports, state-level government statistical report, NSSO, different publications of Government of India, NSS Survey, various Economic Surveys and Internet.

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<sup>2</sup> Mahhub ul Haq, Ibid., pp. 16-20

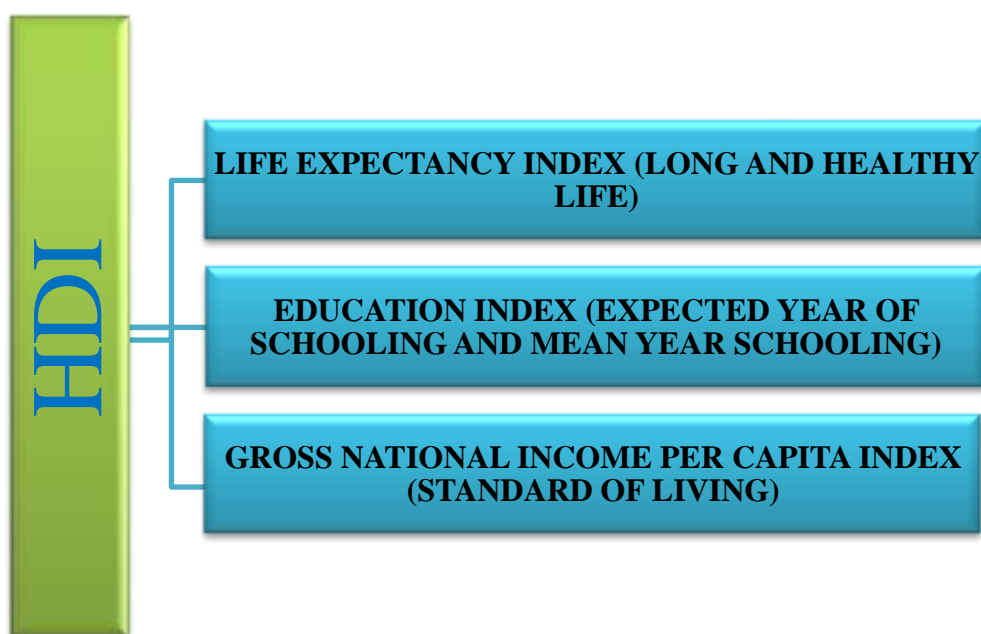


The data collected, tabulated and was subjected to statistical analysis as per the objectives of the study. Tabular analysis and graphical representation have been used for analysis the data.

## **HUMAN DEVELOPMENT INDEX (HDI)**

The Human Development Index (HDI) is a statistical instrument, which is used to measure human resource development and overall performance of a country's social and economic dimensions. The social and economic dimensions of a country are based on the health of people, their level of education, attainment and their standard of living. HDI is also the average achievement in three basic dimensions of human development. Pakistani economist Mahbub ul Haq created HDI in 1990. United Nations Development Program (UNDP) further used HDI to measure the country's development. Calculation of the HDI combines three major indicators: life expectancy for health, mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age for education and Gross National Income per capita for standard of living. Thus, HDI is the approach of entire human development. It does not review only inequalities, poverty, human security, empowerment, inequality, gender disparity and poverty etc.

### **Indicators and Dimensions of Human Development Index**





## METHOD OF CALCULATION OF HUMAN DEVELOPMENT INDEX

The Human Development Index (HDI) provides a single index value to measure three main dimensions of human development a long and healthy life, access to knowledge and a up to mark standard of living. HDI indicates

- A healthy and long life as measured by life expectancy at birth.
- Education level as measured by the adult literacy rate and the combined gross enrollment ratio in primary, secondary and tertiary level.
- Standard of living as measured by Gross National Income per capita (PPP US\$2011).

Prior to 2010 HDI is defined as simple mean of all three dimensions indices which are used but since 2010; HDI is being defined as the geometric mean of normalized indices measuring achievement in each dimension. There are two steps to calculate HDI

### STEP –1: Forming indices for each of the three dimensions

Values of each of the dimensions are first normalized to an index value of 0 to 1. To do this, the maximum and minimum limits on each dimension are set by the UNDP, as shown in the table-1

**Table -1**

**Dimension and Indicators of HDI**

Dimensions	Indicators	Minimum	Maximum
Health	Life expectancy (LE) (in years)	20	85
	Expected years of schooling (EYS) (in years)	0	18
Education	Mean years of schooling (MYS) (in years)	0	15
	Gross national income per capita (PPP US\$2011).	100	75000



The dimension (indices) value for each metric is calculated with the actual value for a given country, and the global maximum and minimum, as:

$$\text{Dimension Index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

The UNDP began using a new method of calculating the HDI in 2010 Human Development Report. The following three indices are used- Life Expectancy, Education Level, Standard of Living.

$$\text{Life Expectancy Index} = \frac{LE - 20}{85 - 20}$$

LEI is equal to 1 when life expectancy is 85 years, and 0 when life expectancy at birth is 20 years. The education dimension is the arithmetic mean of the two education indices (MYS and EYS).

$$\text{Education Index} = \frac{MYSI + EYSI}{2}$$

Where, Mean Years of Schooling Index (MYSI), 15 is the projected maximum of this indicator for 2025, and Expected Years of Schooling Index (EYSI), 18 is equivalent to achieving a master degree in most countries.

$$MYSI = \frac{MYS}{15}$$

$$EYSI = \frac{EYS}{18}$$

$$\text{Income Index (II)} = \frac{\ln(\text{GNI PC}) - \ln(100)}{\ln(75000) - \ln(100)}$$

Income Index is 1 when GNI per capita is \$75,000 and 0 when GNI per capita is \$100.



**STEP-2: Aggregating the four metrics to produce the HDI**

After calculating each individual index then they are aggregated to calculate the HDI. The HDI is the geometric mean (equally-weighted) of life expectancy, education, and GNI per capita. The HDI is calculated as follows:

$$HDI = \sqrt[3]{LEI * EI * II}$$

**The Range of HDI**

The range of HDI value is in between 0-1, because the HDI sets a minimum and a maximum value for each dimension and then shows where each country stands in relation to these dimensions' values, expressed as a number **between 0 and 1**.

**Table -2**

**Value of HDI**

Very High Human Development Index	High Human Development Index	Medium Human Development Index	Low Human Development Index
<b>0.800 -01</b>	0.700-0.799	0.550-0.699	0-0.549

Higher a country's HDI score and the higher the level of human development of that country, being 1 the highest and 0 the lowest depicts that the lower level of human development and lower a county's HDI score. Cut off point HDI of less than 0.550 for low human development, 0.550–0.699 for medium human development, 0.700–0.799 for high human development and 0.800 or greater for very high human development.

**Comparative Study of Human Development Index of India at Global level**

Comparative study HDI of India at global level, researcher found that HRD value of India is not good enough. India with a HDI value of 0.429 ranks 114 in 1990, and in 2015 HDI value of India is 0.624 and rank is 131 out of 188 countries. Norway is in top rank with HDI value 0.947, followed by Australia and Switzerland with 0.938 HDI value. In 1990 HDI value for whole world is 0.601 in middle HDI range and value of HDI for India only 0.429 in the range of low HDI value .India opted HDI value 0.495 in compare to whole world with value



0.644 in 2000. In 2010 India's HDI value shifted lower HDI range to middle HDI range but it is still below to whole world range, in other hand countries like Norway, Australia, Switzerland, and Germany. have a high Human Development Index i.e., of the range of 0.8-1, because of their high-quality knowledge sector, high life expectancy rate, and high standards of living.

**Table-3**

**Human Development Index**

HDI rank in 2015	Country	Value of HDI					Average Annual HDI Growth	
		1990	2000	2010	2014	2015	1990-2000	2000-2010
1	Norway	0.849	0.915	0.940	0.944	0.947	0.75	0.27
2	Australia	0.871	0.903	0.930	0.933	0.938	0.36	0.30
2	Switzerland	0.840	0.898	0.941	0.942	0.938	0.67	0.47
4	Germany	0.808	0.876	0.927	0.937	0.937	0.81	0.57
5	Denmark	0.806	0.870	0.917	0.935	0.933	0.77	0.53
5	Singapore	0.721	0.821	0.909	0.926	0.933	1.31	1.02
7	Netherlands	0.836	0.882	0.917	0.932	0.934	0.54	0.39
8	Ireland	0.773	0.867	0.901	0.928	0.935	1.15	0.39
9	Iceland	0.807	0.867	0.898	0.931	0.934	0.72	0.35
10	Canada	0.850	0.867	0.901	0.918	0.921	0.20	0.39
10	United States	0.865	0.886	0.916	0.920	0.921	0.24	0.33
12	Hong Kong, China (SAR)	0.784	0.830	0.904	0.926	0.930	0.57	0.86
131	India	0.429	0.495	0.579	0.616	0.624	1.44	1.58
	World	0.601	0.644	0.699	0.720	0.724	0.69	0.82

**Source:** Different Years Reports of UNDP





The Human Development Indicators i.e., Life Expectancy at Birth, Expected Years of Schooling and Gross National Income per Capita is also the highest in the case of Norway among the compared countries. Rank 1 in HDI table indicates that Norway is a highly developed country. The reason for this is low levels of inequality as well as low levels of corruption and hence, is a well-developed welfare state. Whereas countries in the African Continent have low Human Development Index which is suggestive of the fact that these countries have poor education system, low life expectancy rate and a low standard of living. India has an HDI of the range of 0.4 - 0.7 in between 1990 to 2015

As table 3 shows average annual growth rate of HDI of India is better than whole world. Average annual growth rate of India is 1.44 in between year 1990-2000 and 1.58 in between 2000-2010 that is much greater than average annual HDI growth rate of world. It indicates human resource development bounced in India but growth is still very poor. Improvement in social and economic indicators shows poor growth. HDI-2010 introduced three new measures- the inequality-adjustment Human Development Index, Gender Inequality Index, and Multidimensional poverty Index. As far as the inequality-adjustment Human Development Index(IHDI) is concerned, it takes into account not only country's average human development, as measured by health, education and income indicators, but also how it is distributed. The IHDI will be equal to HDI when there is no inequality across the people, but falls further below the HDI as inequality increased. The difference between the HDI and the IHDI measured the loss in potential human development due to inequality. In 2015 HDI of India 0.624 and IHDI is 0.435 its average loss in HDI of India about 28.6 percent due to loss of education 42.1 percent and education 25.1 percent.

#### **Year-wise Human Development Index of India**

HDI is composite index; its value takes into consideration (1) health, (2) Education and (3) Per capita income. The HDI value for India in 1990 was 0.429. By 2000, its HDI value has risen to 0.495. UNDP reported Human Development Index value for India as 0.536 for 2005, an 8.2 % increase over its 2000 HDI.



Table-4

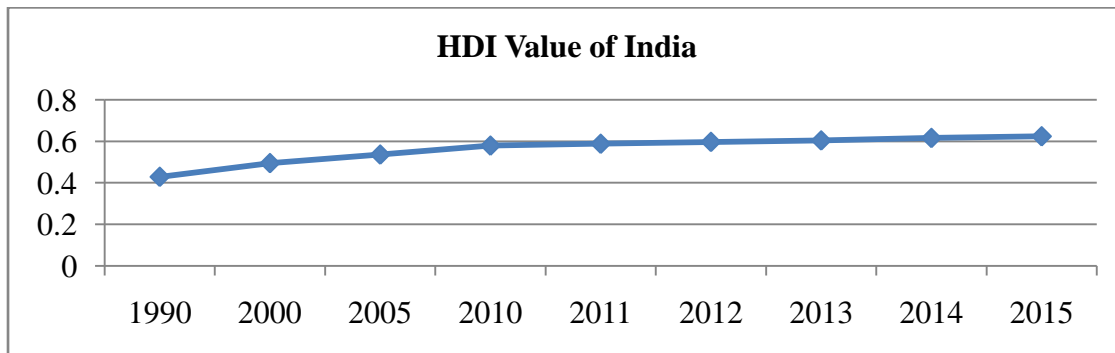
Year –wise Human Development Index of India

Year	HDI Value	HDI Rank
1990	0.429	114
2000	0.495	127
2005	0.536	135
2010	0.579	135
2011	0.588	135
2012	0.597	134
2013	0.604	134
2014	0.616	132
2015	0.624	131

Source: Different Years Reports of UNDP

Figure :2

Year –wise HDI Value of India



Source: Compiled from Table-4

United Nations declared India's HDI as 0.579 in 2010, about 8 % increase over 2005. As table shows for the year 2011, HDI for India stood at 0.588, only 1.55 % increases over year 2010. HDI value of India is 0.597 in year 2012, 0.604 in year 2013, only 1.53 percent and 1.17 percent increase over previous years respectively. HDI value of India is 0.616 in 2014 which jump the country in the medium human development category, positioning at 132 out of 188 countries. India's HDI value has marginally increased from 0.616 to 0.624



fromin 2014 to 2015. HDI Trends from India has been progressive from the year 1990 (when the first HDI was released) to the year 2015. In 1990 HDI of India was 0.427 whereas in 2015, it was 0.624; it shows 46.14 percent growth in human development in 25 years. As table shows HDI value of India vary slightly, it shows increasing trend in different year. Before year 2005 the value of India’s HDI is less than0.549, which shows low HDI value.

**Table-5**

**Dimension and Indicators of HDI**

Year	Health	Education	Standard of living	HDI value	
	Life expectancy at birth	Expected years of schooling	Mean years of schooling	GNI per capita (2011 PPP\$)	
1990	57.9	7.6	3.0	1.751	0.429
1995	60.4	8.2	3.5	2.035	0.463
2000	62.6	8.3	4.4	2.495	0.495
2005	64.5	9.7	4.8	3.191	0.536
2010	66.5	10.8	5.4	4.358	0.579
2011	66.9	11.3	5.3	4.594	0.588
2012	67.3	11.5	5.6	4.776	0.597
2013	67.6	11.6	5.8	5.027	0.604
2014	68.0	11.6	6.1	5.329	0.616
2015	68.3	11.7	6.3	5.663	0.624

**Source:** Various Indian National Development Report

This is indicative of the fact that the indicators to determine human development index have shown positive results. For instance, Life Expectancy at Birth in 1990 was 57.9 years whereas it was 68.61 years in 2015. Similarly, expected years of schooling was 7.6 in 1990 whereas it was 11.7 in 2015 and mean years of schooling was 3.0 in 1990 whereas it was 6.3 in 2015. GNI per capita (2011 PPP\$) was 1.751 in 1990 whereas it was 5.663 in 2015. Therefore, there has been a significant improvement in human development over the years.



### State-wise Comparative Study of Human Development Index of India

Compared with the previous and the latest HDI value of state, India has significantly improved its HDI in all of its states as shown in table-6

Table -6

#### State –wise Human Development Index of India

States	Human Development Index					
	1990	1995	2000	2005	2010	2015
Uttar Pradesh	0.397	0.429	0.463	0.504	0.535	0.577
Madhya Pradesh	0.406	0.433	0.460	0.501	0.538	0.585
Uttarakhand	0.629	0.635	0.630	0.656	0.641	0.664
Punjab	0.496	0.536	0.578	0.615	0.657	0.703
Himachal Pradesh	0.479	0.530	0.589	0.644	0.667	0.704
Jammu and Kashmir	0.493	0.511	0.528	0.587	0.640	0.674
Haryana	0.467	0.506	0.549	0.591	0.634	0.686
Chandigarh	0.633	0.641	0.638	0.663	0.648	0.734
New Delhi	0.577	0.620	0.664	0.690	0.709	0.730
Bihar	0.378	0.407	0.436	0.470	0.514	0.557
West Bengal	0.440	0.473	0.505	0.539	0.572	0.619
Chhattisgarh	0.562	0.569	0.564	0.588	0.574	0.594
Jharkhand	0.562	0.568	0.564	0.588	0.574	0.584



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<b>Odessa</b>	0.400	0.429	0.458	0.494	0.535	0.585
<b>Andaman and Nicobar</b>	0.683	0.693	0.694	0.720	0.707	0.721
<b>Assam</b>	0.411	0.447	0.488	0.531	0.567	0.598
<b>Manipur</b>	0.495	0.526	0.559	0.598	0.681	0.694
<b>Meghalaya</b>	0.456	0.469	0.477	0.533	0.620	0.648
<b>Arunachal Pradesh</b>	0.437	0.471	0.502	0.535	0.641	0.661
<b>Nagaland</b>	0.531	0.533	0.522	0.557	0.661	0.679
<b>Mizoram</b>	0.525	0.547	0.569	0.630	0.686	0.698
<b>Sikkim</b>	0.541	0.548	0.548	0.590	0.633	0.691
<b>Tripura</b>	0.447	0.488	0.531	0.561	0.608	0.643
<b>Gujarat</b>	0.470	0.498	0.527	0.573	0.606	0.651
<b>Rajasthan</b>	0.403	0.436	0.469	0.510	0.548	0.605
<b>Maharashtra</b>	0.493	0.525	0.558	0.602	0.644	0.680
<b>Goa</b>	0.522	0.581	0.614	0.671	0.737	0.754
<b>Daman and Diu</b>	0.651	0.662	0.664	0.688	0.677	0.690
<b>Dadra and Nagar Haveli</b>	0.672	0.683	0.684	0.709	0.696	0.663
<b>Andhra Pradesh</b>	0.424	0.450	0.478	0.530	0.580	0.629
<b>Karnataka</b>	0.444	0.479	0.518	0.565	0.605	0.659
<b>Tamil Naidu</b>	0.471	0.504	0.542	0.599	0.646	0.689



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<b>Kerala</b>	0.544	0.568	0.598	0.678	0.714	0.757
<b>Telangana</b>	0.622	0.630	0.627	0.652	0.638	0.651
<b>Lakshadweep</b>	0.693	0.704	0.705	0.731	0.717	0.732
<b>Pondicherry</b>	0.717	0.730	0.730	0.757	0.743	0.730
<b>India</b>	0.429	0.463	0.495	0.536	0.579	0.624

**Source:** Indian National Development Reports and State-level Government Statistical Report.

This is a list of union territory and states by their respective Human Development Index (HDI), as of 1990 Pondicherry stands first in Human Development Index with value 0.717 among the all states and union territories in India, Uttarakhand stands first in Human Development Index among the states in India and Bihar stood at last place with index value 0.378. Uttar Pradesh, Bihar, Orissa, Madhya Pradesh, Assam, Andhra Pradesh and Rajasthan are the only seven states that have lower HDI value than all India, rest states and all the union territories has high HDI value than India in 1990 and 1995. In 1995 and 2000 HDI high and lower value are also in similar manner as 1990, but compared to the states and union territories HDI value with all India HDI value, there are eight states instead of seven states that have lower value than All India value in 2000, Meghalaya has also decreased in Human Development Index value. In 2005, HDI value of Arunachal Pradesh is also below the all-India value and there are nine states that have lower value than All India value in 2005. In 2010 and 2015, there are nine states Uttar Pradesh, Bihar, Orissa, Madhya Pradesh, Assam, West Bengal Chhattisgarh, Jharkhand and Rajasthan which are also below the all-India value. In the list of states by their respective Human Development Index (HDI), as of 2015, Kerala stands first in Human Development Index among the states in India and Bihar stands at last place. All the union territories always have higher HDI value than all India HDI value.

**Table -7**

**Range of HDI of Different States and Union Territories of India**





rank in state wise analysis. Change in ranks for all the States has been observed in between 1990 to 2015. State wise analysis also shows that all the states which have low HDI value range in 1990 jump to middle value range, so in low HDI value group, there is not a single state in 2015. Places of Haryana, Himachal Pradesh, Tamil Nadu and Karnataka have seen a significant surge in their HDI rank, while most of the North-Eastern states like Nagaland, Meghalaya and Manipur have seen a down trend in the rank in between 1990 to 2015. Both U.P. and Bihar have continued to remain at the bottom of the rank list in the last 25 years due to unemployment, high poverty, inequality and poor education system, high fertility and population growth rates, high infant mortality rates, and a high crude death rate. The reason for high Human Development Index is improvements in the quality of life by reductions in infant mortality and birth rates, and increases in life expectancy at birth, improvements in the women status and overall improvements in relative social and economic inequality.

## **CONCLUSION**

Human Development is important for any country because it increases the pace of economic growth by enhancing the quality of life in terms of health, education and skill development of people. Human Development Index is calculated in terms of health, education and quality of life, but there is a need to include some Qualitative Indicators of Human Development like levels of poverty, gender discrimination to calculate the Human Development Index. The involvement of these indicators would make the Human Development Index even more realistic. UNDP introduced HDI-2010 with three new measures- the inequality adjusted Human Development Index, Gender Inequality Index, and Multidimensional poverty Index. Value of HDI for India is not good enough, because of unemployment, high poverty, inequality, gender differentiation, poor education system, high population growth rates, high infant mortality rates, and a high crude death rate. The government should need to improve the public expenditure on health and education. Government should also invest in medical colleges and teachers' training programs which will directly affect the standards of health and education respectively. Government should introduce more schemes for improvement of poor health facilities and unhealthy education





system. Some growth-oriented schemes like Ayushman Bharat and Sarva Shiksha Abhiyan should be launched and well implemented by the Government of India. The government should encourage vocational training programmes to reduce unemployment in India.

Income and gender inequality are very prominent in India. These inequalities create structural barriers to the overall development of the society and economy. Though, removing these inequalities from the country, India can improve its human development. By removing corruption, lack of basic facilities like safe drinking water, malnourishment problems India can also improve quality of life of their people. Low public and private investment, poor physical and institutional infrastructure, unequal land distribution, a poor agrarian social structure including the persistence of feudal elements not only hindered the growth of productivity in agriculture but also reinforced social inequality that creates structural barriers to the overall development of the society and economy

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