



**Research Article**

**A STUDY ON THE HUMAN DEVELOPMENT INDEX (HDI) AND CAUSES OF LAGGING IN HDI RANKING OF INDIA**

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**ARTICLE INFO**

**Article History:**

Received 10<sup>th</sup> August, 2019

Received in revised form 2<sup>nd</sup>

September, 2019

Accepted 26<sup>th</sup> October, 2019

Published online 28<sup>th</sup> November, 2019

**Key words:**

Development, human development, **HDI**, dimension, indicators, health, education, income, world, ranking, comparisons, India, trends, aspects.

**ABSTRACT**

Development is a long term process of structural societal transformation short-to-medium term outcome of desirable targets dominant discourse of western modernity. HDI is a tool used to measure a country's overall achievement in its social and economic dimensions. We can say that the HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. The HDI is an average measure of basic human development achievements in a country. Like all averages, the HDI shows inequality in the distribution of human development across the population at the country level. The present study is an attempt to highlight the basic concept of HDI, its uses and to explore the major causes which are responsible for lagging of our country in HDI ranking.

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**INTRODUCTION**

The human development index (HDI) is a statistic composite index of life expectancy, education & per capita income indicators, which are used rank countries into four tiers of human development. A country scores a higher HDI when the life span is higher, the education level is higher, and the GDP (PPP) per capita is higher. It was developed by Indian economist and Nobel Prize winner Amartya Sen and Pakistani economist Mahbub Ul Haq (1990), with help from Gustav Runes of Yale University and Lord Meghnad Desai of the London School of Economics and was further used to measure a country's development by the United Nations Development Programme (UNDP)'s human development report office.

The index is based on the human development approach, developed by Ul Haq, often framed in terms of whether people are to 'be' & 'do' desirable things in life. To produce the human development reports, Mahbub Ul Haq formed a group of development economists including Paul Streeten, Frances Stewart, Gustav Ranis, Keith Griffin, Farhan C.M., Sudhir Anand and Meghnad Desai. The national average HDI for India in 2008 was 0.467. By 2010 its average HDI had risen to 0.519. UNDP, the sponsor of HDI methodology since 1990, reported HDI India's to be 0.554 for 2012, an 18% increment over its 2008 HDI. United Nations declared India's HDI is 0.586 in 2014, a 5.77% increase over 2012.

As for the year 2018, HDI for India stood at 0.640. The major objectives of the study is to describe HDI and present scenario of human development of India.

**Objectives of the Study**

Following are the primary objectives of the study-

1. To study the HDI concept and its uses.
2. To explore the major causes for lagging in HDI of our country and to show some measures for inequality-adjustment in human development index (IHDI).

**ANALYSIS OF OBJECTIVE NO. 1**

**Concept of HDI**

The human development index (HDI) measures attainments in human development. It reflects what has been achieved in the key areas of human development. Yet it is not the most reliable measure. This is because it does not say anything about the distribution. The human development index ranks the countries based on their performance in the key areas of health, education and access to resources. These rankings are based on a score between 0 to 1 that a country earns from its record in the key areas of human development. Human development index indicates substance of human measure (HDI Report, 2006). These are three special fields to measure HDI (see figure 1)-

1. Life Expectancy at Birth or Life Expectancy Index (LEI)
2. General Literacy Rate or Education Index (EI)
3. Per Capita Income or Income Index (IE)

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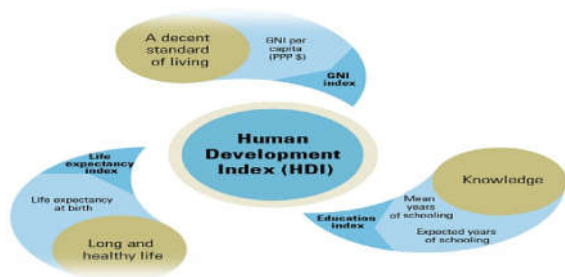


Figure 1 Dimensions of HDI

Source: United Nations Development Programme, 2018

To measure HDI, a dimensional indicator of every 'basic dimension' is determined of base is needed to determine dimensional indicator which is called Goal Post. The values of goal post to measure HDI as accepted in the 'report of 2005' (see table 1) -

Table 1 Goal Post

Sl. No.	Indicator	Maximum Value	Minimum Value
1	Life expectancy at birth	85	25
2	Adult literacy rate	100	0
3	Combined gross enrolment ratio	100	0
4	Per capita income, GDP(US \$)	40000	100

**Some Important matters to analysis of HDI**

1. **A Long & Healthy Life:** This is measured depending on expecting life span of a new born at the time of birth.
2. **Knowledge:** This is measured by the propagation between literacy rate of adults and the number of receiving learners of primary, secondary and higher secondary education.
3. **Descent Standard of Living:** This is measured by per head GDP (US \$).
4. **Dimension Index:** Dimensional indicator is needed to determine the measure the HDI.

**Formula of DI (Dimension Index):**

$$= \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

**Basic Indicators**

1. **Health:** The indicator has chosen to assess health is the life expectancy at birth. A higher life expectancy means that people have a greater chance of living longer and healthy lives.
2. **Education:** The adult literacy rate and the gross enrolment ratio represent access to knowledge. The number of adults who are able to read and write and the number of children enrolled in schools show how easy or difficult it is to access knowledge in a particular country.
3. **Income:** Per capita income (PCI) or average income measures the average income earned per person in a given area (city, region, country etc.) in a specified year. It is calculated by its total population.

Access to resources is measured in terms of purchasing power (in US \$). Each of these dimensions is given a weightage of 1/3. The human development index is a sum total of the weights assigned to all these dimensions. The closer a score is to one, the greater is the level of human development. Therefore, a score of 0.983 would be consider very high while 0.268 would mean a very low level of human development.

**Calculation Method**

**To Calculate the Life Expectancy Index:** We calculate the life expectancy index by the expected life span of a baby at the time of birth of a particular year in a particular country. Suppose, in 2005 the expected life span of newly born baby in Norway was 79.4 years-

**Calculation of Life Expectancy Index**

$$= \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

$$= \frac{79.4 - 25}{85 - 25} = \frac{54.4}{60} = 0.906$$

**Goal post**  
Maximum Value = 85  
Minimum Value = 25

**Calculation of Education Index:** If we know the proportion between literacy rate and learners in a particular country in a particular year, we can calculate education index by the following law. Suppose, in 2005 in a particular country literacy rate of adults is 91.5% and rate of learners is 70.5%.

**Calculation of Adult Literacy Rate**

$$= \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

$$= \frac{91.5 - 0}{100 - 0} = 91.5/100 = 0.915$$

**Goal post**  
Maximum Value = 100  
Minimum Value = 0

**Calculation of Gross Enrolment Ratio**

$$= \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

$$= \frac{70.5 - 0}{100 - 0} = 70.5/100 = 0.705$$

**Goal post**  
Maximum Value = 100  
Minimum Value = 0

**The Education Index Should be**

$$= (2/3 * \text{Adult Literacy Rate}) + (1/3 * \text{Gross Enrolment Ratio})$$

$$= (2/3 * 0.915) + (1/3 * 0.705)$$

$$= 0.610 + 0.235 = 0.845$$

**Calculation of Income Index:** Suppose in a particular country in a particular year, the per capita income or GDP (Gross Domestic Production) is 8000 \$. Then the GDP index is -

$$= \frac{\text{Log Actual Value} - \text{Log Min. Value}}{\text{Log Max. Value} - \text{Log Min. Value}}$$

$$= \frac{\text{Log (8000)} - \text{Log (100)}}{\text{Log (40000)} - \text{Log (100)}}$$

$$= \frac{3.903 - 2.0}{2.0}$$

$$= 1.903/2.0 = 0.731$$

**Goal post**  
Maximum Value = 40000  
Minimum Value = 100

**Then the HDI:**

$$= \text{Health Index} + \text{Education Index} + \text{Income Index} / 3$$

$$= 0.906 + 0.845 + 0.731 / 3$$

$$= 2.482 / 3$$

$$= \mathbf{0.827}$$

Source: Contemporary Issues in Geography, Geo-observing Society, Editor- Amitabha Maitra, E-mail: geoobservingociety@gmail.com

According to data, the calculated HDI value is 0.827 and the value indicates the high level of human development of Norway in 2005.

**International Comparisons**

- Often smaller countries have been better than larger ones in human development.
- Relatively poorer nations have been ranked higher than richer neighbours in terms of human development.
- For example, Sri Lanka, Trinidad and Tobago have a higher rank than India in the human development index despite having smaller economies.
- Similarly, with in India, Kerala performs much better than Punjab and Gujarat in human development despite having lower per capita income.

**ANALYSIS OF OBJECTIVE NO. 2**

Today's Indian school-age children can expect to stay in school for 4.7 years longer than in 1990. Whereas, India's gross national income per capita increased by a staggering 266.6% between 1990 and 2017. About 26.8% of India's HDI value is lost on account of inequalities. This confirms that inequality remains a challenge for India as it progresses economically, though the government and various state governments have, through a variety of social protection measures, attempted to ensure that the gains of economic development are shared widely and reach the farthest first. In India, despite considerable progress at the policy and legislative levels, women remain significantly less politically, economically and socially empowered than men. For instance, women hold only 11.6% of parliamentary seats, and only 39% of adult women have reached at least a secondary level of education as compared to 64% males, Female participation in the labour market is 27.2% compared to 78.8% for men, (The Economic Times, 2018).

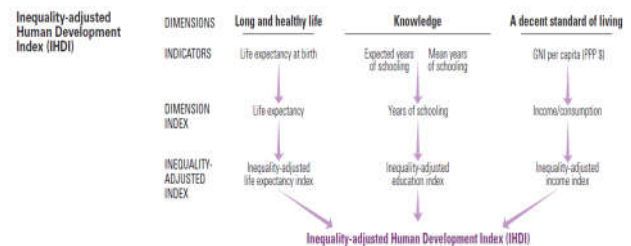
**The Main Causes of Lagging in India is HDI:**

- Large number of population in India lives in slums those are around 158.4 million. Lack of schemes for urban poor like NRHM (National Rural Health Mission) etc
- 42% children below 5 years age are under weight and 59% stunted. 85.7% of births were attended by skilled health personnel (2012-17). MMR (Measles, Mumps and Rubella) during 2015 was 174/lakh due to pregnancy related causes.
- India threats its environment poorly. Ranks 125 out of 132 countries in a study done by Yale University.
- India lost 13.9% in total life expectancy as health expectancy in 2016.
- There were only 7.6 physicians per 10,000 people in the period 2007-2017 falling behind Pakistan who have a better physician to people ratio with 9.8 physicians for every 10,000 people.
- There are only 7 beds for every 10,000 people in India where a small nation like Nepal has 50 beds for every 10,000 people and has a lot to catch up with international standard.
- Low spending on education by the government. Only 70% teachers in primary schools are trained to teach in Indian schools. Gross enrolment ratio in pre-primary, primary and secondary during 2012-17 was 0.94, 1.17 and 1.02 respectively.
- Only 0.64 female aged above 25 have some secondary education in comparison to one male having same educational standard.

- There is only one teacher in primary schools for every 35 pupils in India falling in the bottom tercile. International model standard comes up to somewhere 15-18 pupils per children.
- 77% of the employed people are engaged as unpaid family workers and own account workers. 77.6% of the rural population had access to electricity in 2016.
- 87.6% of the total population was using improved drinking water sources in 2015, with only 44.2% people having access to improved sanitation facilities in 2015.
- For every unemployed male 1.02 females are unemployed. 18.6% of total employment in non-agriculture sector comprises of women (industry, services).
- Child labour is one of the most issues for lagging of HDI in India. 10.1 million Children engaged in work between 5 to 14 years (5.6 million boys and 4.5 million girls – according to 2011 census) in India. Child labour more prevalent in Uttar Pradesh (2.1 million), Bihar (1 million), Rajasthan (0.84 million), Madhya Pradesh (0.7 million), Maharashtra (0.72 million) etc. Child labour constitutes for 13% of the work force in India (according to 2001 census). A recent change of child labour, is now invisible because the location of the work has changed from factories to the homes of business owners and workers, children are engaged in manual work which includes: cotton growing, match box, lock making factories, mining and stone quarrying, tea gardens etc. (UNDP, 2018).

**Inequality-Adjusted Human Development Index (IHDI):**

The IHDI combines a country's average achievements in health, education, income with how those achievements are distributed among country's population by 'discounting' each dimension's average value according to its level of inequality. Thus, the IHDI is distribution-sensitive average level of HDI. Two countries with different distributions of achievements can have the same average HDI value. Under perfect equality the IHDI is equal to the HDI, but falls below the HDI when inequality rises. The difference between the IHDI and HDI is the human development cost of inequality, also termed - the loss to human development due to inequality. The IHDI allows a direct link to inequalities in dimensions. It can inform policies towards inequality reduction and leads to better understanding of inequalities across population and their contribution to the overall human development cost. A recent measure of inequality in the HDI, the coefficient of human inequality, is calculated as an average inequality across three dimensions (<http://hdr.undp.org/en/content/inequality-adjusted-human-development-index-ihdi>).



Source: Human Development Report, 2018

## CONCLUSION

The HDI gives an overall Picture of economic development. There are certain differences among different states development conditions so there must be equal opportunities for development for all. The HDI has been a politically powerful counter point to measure of “development that focus exclusively on economic indicators such as gross domestic product per capita or household consumption expenditures”. An educated and empowered population resulting from proper human development strategies can significantly contribute to increase productively and thereby, sustainable economic growth and development. The United Nations HDI is intended to allow economists to draw broad conclusions about which countries enjoy relatively high standards of living, and which are, by comparison, under developed, Whilst the HDI has faults there could always be more factors included it has fulfilled a basic mission of moving the debate on from GDP (Gross Domestic Product) growth. It allows for questioning of government policies. There is now an IHDI (In-equality Adjusted Human Development Index), which adjust for inequality.

Instead of having some discrepancies HDI is widely used to measure of economical prospects, international comparisons of any country, HDI ranking of India, economic status, India's HDI trends, HDI value for the states of India, HDI aspects of India, global ranking and also help the development of planning. We have also seen that the HDI trends for India are better than Bangladesh and Pakistan. India has jumped one place from 2017 to 130 in 2018 in HDI. Average expected life expectancy at birth is 68.8 years. Expected years at schooling stands at 12.3 years with a mean of 6.4 years along with a GNI of Rs. 63536. India has seen a positive change of 50% in its HDI value since its inception in 1990 from 0.427 to 0.640 in 2018. 2000-10 decade saw the highest annual growth rate at 1.64%.

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### How to cite this article:

Souvik Paul and Alik Kumar Mondal (2019) 'A study on the Human Development Index (HDI) and causes of Lagging in HDI Ranking of India', *International Journal of Current Advanced Research*, 08(11), pp. 20469-20472.  
DOI: <http://dx.doi.org/10.24327/ijcar.2019.20472.4000>

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