



AN ANALYSIS OF HUMAN DEVELOPMENT INDEX WITH SPECIAL REFERENCE TO INDIA

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ABSTRACT

The Human Development Index (HDI) is a compendium of achievements in three major dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. HDI is the geometric mean of the normalized indices for each of the three dimensions. India was ranked 129 in the 2018 HDI ranking. This research examines the causes and impacts of India's HDI Ranking. It also explores various facets of Human Development such as access to electricity, mobile phone subscriptions, and sex ratio at birth.

KEYWORDS : Human Development; Human Development Index; India; Health; Education; Knowledge; Development

1. INTRODUCTION:

The concept of the Human Development Index (HDI) was developed by the United Nations Development Program in 1990 using insights from research by late Mahbub-Ul-Haq and Professor Amartya Sen amongst others.

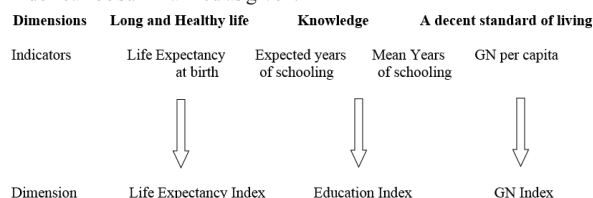
People are the most valuable resource of any nation. The basic objective of development is to create a conducive environment for people to enjoy a decent standard of living, with a long and healthy life.

The Human Development Index (HDI) is a compendium of achievements in three major dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. HDI is the geometric mean of the normalized indices for each of the three dimensions. It seeks to formulate the pattern of human development of India since the inception of the Index (1990).

India is ranked 129 amongst 189 countries in the latest Human Development Index formed by the United Nations Development Program. In 2017, India's HDI value of 0.643 positioned it at 131st rank. India's HDI value for 2018 is 0.647, putting the country in the 'medium' human development category.

Between 1990 and 2018, India's HDI value improved from 0.431 to 0.647, an increase of nearly 50 per cent. This is an indicator of India's remarkable achievement in bringing millions of people out of poverty.

The global trend shows improvement in Human Development over the years, with many countries moving through human development categories: HDI is measured out of 189 countries, 59 countries today are in a very high human development group and only 38 countries fall in the lower HDI group. The calculation of the Human Development Index can be summarized as given:



Human Development Index (HDI)

The Human Development Index (HDI) of the UNDP attempts to measure the achievements of a country or region in enhancing human capabilities. HDI includes three indicators as life expectancy at birth, to measure health status and longevity, educational attainment, to represent the level of knowledge and skills; an appropriate adjusted real GDP per capita (in purchasing power parity US dollar) to serve as a surrogate for command over resources. Thus, HDI is a composite of variables which captures the attainments in three dimensions of human development viz. economic, education and health.

1.1 HDI RANKING VERSUS INCOME RANKINGS:

As it is clear from Table 1, in Asian Countries, Hong Kong with an HDI of 0.939 has the fourth rank and Singapore with an index of 0.935 is at Ninth place. Pakistan is behind India in terms of HDI and its value is 0.560. India has the highest HDI rank in comparison to its neighboring countries viz. Bhutan (134), Nepal (147), Pakistan (152) and

Afghanistan (170). Refer Table 1

Table 1: HDI Ranking of Select Asian Countries

S N.	Country	HDI Rank 2018	HDI Value
1.	Hong Kong, China (SAR)	4	0.939
2.	Singapore	9	0.935
3.	Japan	19	0.915
4.	Malaysia	61	0.804
5.	Mauritius	66	0.796
6.	Sri Lanka	71	0.78
7.	Thailand	77	0.765
8.	Maldives	104	0.719
9.	India	129	0.647
10.	Bhutan	134	0.617
11.	Nepal	147	0.579
12.	Pakistan	152	0.56
13.	Afghanistan	170	0.496

2. REVIEW OF LITERATURE

This chapter reports a brief summary of the previous studies undertaken by various researchers and the approaches adopted for analyzing this subject so far.

The HDR 1990 (UNDP 1990: P. 10- 11), a commendable work on HDI, has defined human development as:

"Human development is a process of enlarging people's choices. The most critical ones are to lead a long and healthy life, to be educated, and to enjoy a decent standard of living. Additional choices include political freedom, guaranteed human rights and self-respect -what Adam Smith called the ability to mix with others without being "ashamed to appear in public".

The term human development here denotes both the process of widening people's choices and the level of their achieved well-being. It also helps to distinguish clearly between two sides of human development. One is the formation of human capabilities, such as improved health or knowledge. The other is the use that people make of their acquired capabilities, for work or leisure.

Human development brings together the production and distribution of commodities and the expansion and use of human capabilities. It also focuses on choices - on what people should have, be and do to be able to ensure their own livelihood. Human development is, then, concerned not only with the satisfaction of basic need, but is considered to be a participatory and dynamic process. It applies equally to less developed and highly developed countries."

HDR, 1992 (UNDP 1992: P 17) prescribes the minimum requirements for achieving sustainable development which include:

- The elimination of poverty.
- A reduction in population growth.
- More equitable distribution of resources.
- Healthier, more educated and better trained people.
- Decentralized, more participatory government.
- More equitable, liberal trading systems within and among countries, including increased production for local consumption.

- vii. Better understanding of the diversity of ecosystems
- viii. Locally adapted solutions to environmental problems
- ix. Better monitoring of the environmental impact of development activities.

3. RESEARCH METHODOLOGY

The emphasis of this chapter is to describe in detail the research methods adopted for the purpose of the present study. This includes the objectives of the study, research questions, research and statistical hypotheses, tools and various techniques applied for collection and analysis of data for the purpose of the study.

3.1 NATURE OF RESEARCH

The study is exploratory in nature. An attempt is made to gauge the Human development index of India.

3.2 SCOPE OF RESEARCH

The study covers an assessment of Human development index since 1990 to 2018. It tries to assess the pattern of Human development index of India since the inception of the Index.

3.3 RESEARCH OBJECTIVES

A well devised research objective facilitates an appropriate adoption of methodology for the research and reaching to the conclusion. Herein, the objective of the study is as follows:

- i. To know the paradigm shift in Human development index of India from 1990-2018.
- ii. To examine the present status of Human development index of India.

3.4 SAMPLE PERIOD

This study is quantitative in nature, dealing with multiple series of secondary data. Data pertaining to Human development index are derived into thirteen categories namely Demography, Education, Environmental Sustainability, Gender, Health, Human Security, Inequality, Mobility and communication, Poverty, Socio-economic sustainability, Work employment and vulnerability, Trade and financial flows and Income/ composition of resources. To reduce the number of indicators representing each category, I included only the main variable in this study. My objective was to maintain only those indicators that are largely independent of each other. The data has been collected from United Nations Development Programme (UNDP) websites from the year 1990 - 2018. The eight main factors are discussed in this study viz. Life Expectancy at Birth, Expected Years of Schooling, Gross national income (GNI) per capita (2011 PPP\$), Foreign Direct Investment, Mobile phone subscriptions (per 100 people), Rural population with access to electricity, Sex ratio at birth, Unemployment and Suicide rate of males and females.

3.5 RESEARCH TOOLS FOR DATA ANALYSIS

Selection of appropriate research tools and techniques plays a vital role in data analysis. It is required to achieve the desired research objectives and to arrive at logical, scientific and reliable conclusions in the study. Percentage analysis and line graphs have been used to achieve the objectives of the research.

4. DATA ANALYSIS AND FINDINGS

4.1 HUMAN DEVELOPMENT INDEX:

The HDI was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. Human Development Index from 1990 to 2018 for India is as under:

Table 2: Human Development Index

Human Development Index (1990-2018)					
Year	HDI	Year	HDI	Year	HDI
1990	0.431	2000	0.497	2010	0.581
1991	0.436	2001	0.502	2011	0.59
1992	0.442	2002	0.508	2012	0.6
1993	0.449	2003	0.521	2013	0.607
1994	0.456	2004	0.53	2014	0.618
1995	0.463	2005	0.539	2015	0.627
1996	0.471	2006	0.548	2016	0.637
1997	0.477	2007	0.558	2017	0.643
1998	0.484	2008	0.565	2018	0.647
1999	0.492	2009	0.571		

Source: Data compiled from UNDP Human Development index report

2018

HDI: HUMAN DEVELOPMENT INDEX

Human development index of India is increasing gradually from 0.431 in the year 1990 to 0.647 in the year 2018. Hence it indicates a 50.11% increase in this index. Average Annual HDI growth rate is 1.46% from 1990-2018.

4.2 LIFE EXPECTANCE AT BIRTH:

The life expectancy index is one of three indices on which the Human Development Index is built. It can be stated that higher life expectancy is the result of better health services. Refer Table

Table 3: Life Expectancy at Birth (1990-2018)

Life Expectancy at Birth (1990-2018)					
Year	LEB	Year	LEB	Year	LEB
1990	57.9	2000	62.5	2010	66.7
1991	58.4	2001	62.9	2011	67.1
1992	58.9	2002	63.3	2012	67.5
1993	59.3	2003	63.7	2013	67.9
1994	59.8	2004	64.1	2014	68.3
1995	60.3	2005	64.5	2015	68.6
1996	60.8	2006	64.9	2016	68.9
1997	61.2	2007	65.3	2017	69.2
1998	61.7	2008	65.8	2018	69.4
1999	62.1	2009	66.2		

Source: Data compiled from UNDP Human Development index report 2018

LEB: LIFE EXPECTANCE AT BIRTH

Life Expectance at Birth in the year 2018 was 69.4% as compared to 57.9% in the year 1990. It means life expectancy increased by 19.86% during this period which indicates the good quality of health services provided in India. So far as health services are considered, the India government is focused on the providing better health services to the citizens. However, special efforts must be made to improve health services in rural India.

Healthy workers are more productive than workers with poor health conditions. The initial beneficiaries of health improvements are often the most vulnerable group- children. Health improvements can spur economic performance.

4.3 EXPECTED YEARS OF SCHOOLING

Expected Years of Schooling mean years that are to be spent by a 5 year old boy in school in a particular country. This assessment of goal posts (Minimum and maximum values) is -Low value for expected years of schooling is fixed at 0 and high value is fixed at 20.6. Refer Table 4

Table 4: Expected Years of Schooling (1990-2018)

Expected Years of Schooling (1990-2018)					
Year	EYS	Year	EYS	Year	EYS
1990	7.6	2000	8.3	2010	10.8
1991	7.7	2001	8.4	2011	11.3
1992	7.9	2002	8.6	2012	11.5
1993	8	2003	9.2	2013	11.6
1994	8.1	2004	9.4	2014	11.9
1995	8.2	2005	9.7	2015	12
1996	8.2	2006	9.9	2016	12.3
1997	8.2	2007	10.2	2017	12.3
1998	8.3	2008	10.5	2018	12.3
1999	8.3	2009	10.4		

Source: Data compiled from UNDP Human Development index report 2018

EYS: Expected Years of Schooling

It is observed that Expected Years of Schooling in 2018 was 12.3 as compared to 7.6 in 1990. It indicates a 61.84 per cent increase in the average years of schooling from the year 1990 to 2018.

4.4 GROSS NATIONAL INCOME (GNI) PER CAPITA (2011 PPP\$)

UNDP defines GNI as "Aggregate income of an economy generated by its production and its ownership of factors of production, less the

incomes paid for the use of factors of production owned by the rest of the world, converted to international dollars using PPP rates, divided by midyear population". Refer Table

Table 5: Gross national income (GNI) per capita (2011 PPP\$)

Gross national income (GNI) per capita (2011 PPP\$)					
YEAR	GNI Per Capita	YEAR	GNI Per Capita	YEAR	GNI Per Capita
1990	1882	2000	2683	2010	4403
1991	1859	2001	2769	2011	4584
1992	1922	2002	2832	2012	4760
1993	1977	2003	3002	2013	5001
1994	2070	2004	3189	2014	5315
1995	2188	2005	3387	2015	5674
1996	2313	2006	3602	2016	6075
1997	2364	2007	3833	2017	6446
1998	2465	2008	3887	2018	6829
1999	2637	2009	4134		

Source: Data compiled from UNDP Human Development index reports 2018

GNI: Gross National Income

India's GNI per capita in the year 2018 was 6829\$ as compared to 1882\$ in the year 1990. This indicates a 262.85% increase in per capita in last three decades. GNI per capita has positive impact on Human Development Index and the government has made a good effort to improve Gross National Income.

4.5 FOREIGN DIRECT INVESTMENT, NET INFLOWS (% OF GDP)

Securities and Exchange Board of India (SEBI) defines FDI as "Foreign Direct Investment (FDI) is the investment through capital instruments by a person resident outside India (a) in an unlisted Indian company; or (b) in 10 percent or more of the post issue paid-up equity capital on a fully diluted basis of a listed Indian company." FDI is directly proportional to the Human Development Index(Ceteris Paribus)

Table 6: Foreign direct investment, net inflows (% of GDP)

Year	FDI Inflows (as % of GDP)
1990	0.1
1995	0.6
2000	0.8
2005	0.9
2010	1.6
2011	2
2012	1.3
2013	1.5
2014	1.7
2015	2.1
2016	1.9
2017	1.5

In the year 2017, FDI inflows were 1.5% of GDP as compared to 0.1% of GDP in the year 1990. 2015 was the best year in term of FDI inflows because 2% of GDP was received as FDI Inflows. India is far behind the Hong Kong China SAR and Singapore in terms of FDI inflows. Hong Kong and Singapore received 23.8% and 22.5% FDI inflows (as % of GDP) respectively. The Indian government should encourage Foreign direct investment in India. The government has launched various schemes such as 'Make in India' to motivate the Foreign direct investment. However, India still has a long way to go.

4.6 MOBILE PHONE SUBSCRIPTIONS

Proper, timely and effective communication can play a decisive role in promoting human development in today's new climate of social change by stimulating awareness, participation and capabilities of people. Communication skills and technology are central to this task. Refer Table

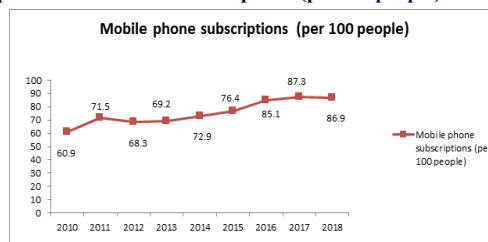
Table 7: Mobile phone subscriptions (per 100 people)

Year	Mobile phone subscriptions (per 100 people)
2010	60.9
2011	71.5

2012	68.3
2013	69.2
2014	72.9
2015	76.4
2016	85.1
2017	87.3
2018	86.9

Source: Data compiled from UNDP Human Development index report 2018

Graph 1: Mobile Phone Subscriptions (per 100 people)



Today, 86.9% (2018) people have mobile phones in India as compared to 60.9 % people in the year 2010. It indicates a sound telecommunication density in India.

4.7 RURAL POPULATION WITH ACCESS TO ELECTRICITY

Pasternak (2006) observed a high correlation between HDI and electricity consumption per capita, meaning thereby that electricity consumption per capita does have an impact on human development-higher the consumption, greater the development. Refer Table 6

Table 8: Rural population with access to electricity (%)

Year	Rural population with access to electricity (%)
1995	38.9
2000	48.1
2005	57
2010	68.4
2011	56.1
2012	72.4
2013	73.6
2014	77.1
2015	83.4
2016	85.2
2017	89.3

Source: Data compiled from UNDP Human Development index report 2018

In the year 2017, majority of the rural population 89.3% had access to electricity as compared to 38.9% in the year 1995. Government has launched various schemes over the years to provide electricity to rural area viz. Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) and Pradhan Mantri Sahaj Bijli Har Ghar Yojana (or Saubhagya). "As on 30th June 2015, works in 1,10,146 un-electrified villages and intensive electrification of 3,20,185 partially electrified villages have been completed and 220.63 lakh free electricity connections have been released to BPL households. " (Source: <https://powermin.nic.in/en/content/overview-1>)

4.8 SEX RATIO AT BIRTH:

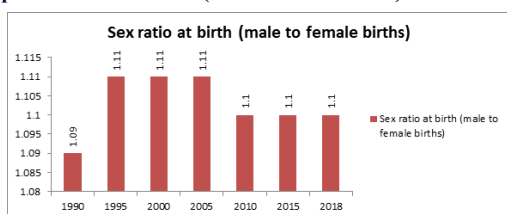
It is defined as Number of males per 100 females in the population. Ratio of male to female births has increased from 1.09 in the year 1990 to 1.10 in the year 2018.

Table 9: Sex ratio at birth (male to female births) (SRB)

Year	1990	1995	2000	2005	2010	2015	2018
Sex ratio at birth (male to female births)	1.09	1.11	1.11	1.11	1.1	1.1	1.1

Source: Data compiled from UNDP Human Development index reports 2018

SRB: Sex Ratio at Birth

Graph 2: Sex ratio at birth (male to female births)

In India, the birth rate for males is still higher than the female birth rate. The government has launched various schemes for the welfare of the girl child and has worked on the rights of women.

4.9 UNEMPLOYMENT, TOTAL (% OF LABOUR FORCE)

'Unemployed are those who are willing to work, but are not currently working or working fewer hours and days than desired or working places where their qualifications are not fully employed.'

Therefore, unemployment and under-employment include unused, under-utilized or mis-used labor. Unemployment is often an element of poverty, low education and a vicious cycle with human capital, health diseases, social and political marginalization. Given the negative impact of unemployment on growth, it has also been taken into consideration for calculating HDI.

Table 10: Unemployment, total (% of labour force)

Year	Unemployment, total (% of labour force)
1991	2.4
1995	2.6
2000	2.7
2005	3.1
2010	2.4
2011	2.5
2012	2.7
2013	2.8
2014	2.8
2015	2.8
2016	2.7
2017	2.6
2018	2.6

Source: Data compiled from UNDP Human Development index report 2018

Indian Government has still not achieved the target of full employment. In the year 2018, 2.6% of the population of total labor force was still unemployed.

4.10 SUICIDE RATE, MALE AND FEMALE (PER 100,000 PEOPLE)

Suicide rate has a negative impact on the Human development index, Higher the suicide rate, lower the HDI value. Government should focus on the reducing suicide rate. India has the sixth highest number of female suicides in the world. Suicide rates for men and women in India were much higher than the global average. Since 1990, India's global share in suicides has increased significantly.

Table 11: Suicide rate, male and female (per 100,000 people)

Year	Suicide rate, female (per 100,000 people)	Suicide rate, male (per 100,000 people)
2000	16.1	21.3
2010	15.1	19.1
2015	14.7	18.8
2016	14.5	18.5

Source: Data compiled from UNDP Human Development index report 2018

The Suicide rate is quite high in India. In 2018, 18,500 males and 14,500 females committed suicide, per one lakh people. In comparison to the year 2000, Male suicide rate has decreased to 21.3% in 2018 whereas female suicide rate has decreased to 13.5%. Women are committing more suicides than men.

5. CONCLUSION:

The last three decades has witnessed a transformation in development of thinking and there is a paradigm shift which has led to the introduction of the concept of human development. The overall trend globally is towards continued improvement in human development, with many countries moving up through the human development categories: out of the 189 countries for which the HDI is calculated, 62 countries are today in the very high human development group and only 54 countries fall in the High HDI group and 37 countries fall in the Medium HDI group Still, India performs better than its neighbouring countries- Bangladesh, Nepal, Bhutan and Pakistan.

In this study, eight factors have been identified viz. Life Expectancy at Birth, Expected Years of Schooling, Gross national income (GNI) per capita (2011 PPP\$), Mobile phone subscriptions, Rural population with access to electricity, Sex ratio at birth, Unemployment and Suicide rate of male and female which affect human development.

Movements in the HDI are driven by changes in health, education and income. Health has improved considerably as shown by life expectancy at birth, which has increased by 19.86% from 1990 to 2018. Today's school-age children can expect to be in school for 12.3 years longer than those in 1990 (7.6 years).

India's GNI per capita increased by 262.85% increase in per capita in last three decades. GNI per capita has a positive impact on the Human Development Index and the government has made a good effort to improve the Gross National Income.

Unemployment and Suicide rate of males and females has a negative impact on the Human Development index. When it comes to India, unemployment rate and suicide rate has been continually increasing and the government should resolve these two issues in a timely manner.

Life Expectancy at Birth, Expected Years of Schooling, Gross national income (GNI) per capita (2011 PPP\$), Foreign direct investment, Mobile phone subscriptions (per 100 people), Rural population with access to electricity have a positive impact on the Human Development Index.

From the analysis of the data, it is observed that these factors have boosted India's Human Development Index.

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