

## HDI: Factors affecting the Development

The Human Development Report (HDR) is a separate self-dependent yearly report which is promulgated by the Human Development Report Office of the United Nations Development Programme and is the result of a group of selectively dedicated team of specialized learners, development practitioners and members of the Human Development Office of UNDP.

The Human Development Index (HDI) is a statistical index which is primarily formed of three factors i.e. life expectancy, education quotient and indicators of per capita income which helps in ranking countries into different tiers of human development. The HDI value basically is calculated as the average of life expectancy at birth, gross national income per capita, and mean and expected years of schooling to measure education level of a country. HDI categorizes countries into four levels of low, medium, high, and very high; where the low HDI level includes countries that are the least developed and the very high HDI level includes the most developed countries.

The key dimensions of human development are measured using 4 different metrics that defines a long and healthy life using data entry on life expectancy at birth, assessing access to knowledge and rise of education using data available on expected years of schooling and mean years of schooling and having a decent standard of living which is measured using per capita income. Life expectancy at birth is the average number of years that a new born is expected to live in light of current mortality level of a population. It summarizes the mortality trend over all age groups as the value of one additional year of anyone’s life is the reduction in per capita income which is mandate to keep the HDI constant. Expected years of schooling identifies the age at which a child enters the school and the mean year of schooling helps in calculating the knowledge attained and the overall education level. GI per capita income reflect average income of a nation and can analyze a lot about a country’s policy choices.

The minimum and maximum limits of all the 4 indicators are set and constant:

Key Dimension	Indicator	Minimum	Maximum
Health(H)	life expectancy at birth	20	85
Education(E)	expected years of schooling	0	18
	mean years of schooling	0	15
Income(I)	gross national income per capita	10	75000

Source: World Data

HDI of a country is calculated using geometric mean of the above factors giving equal weightage to all three as:  $HDI = 1/3(IH*IE*II)$



This aim at developing people’s abilities and giving them a chance to use them creating the awareness of right conditions for human development, such as environmental sustainability or equality between men and women, achievements in reproductive health, empowerment, and economic activity.

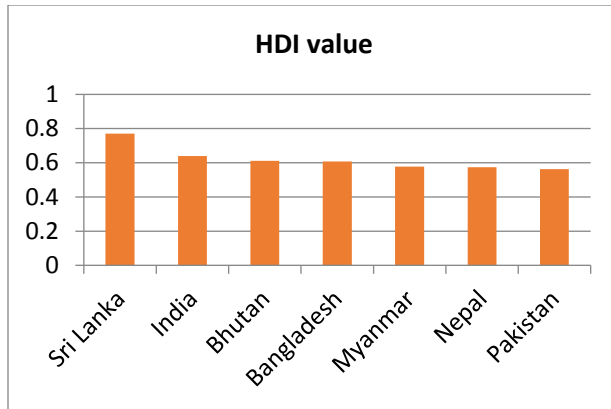
India is progressing continuously in terms of its HDI value. From 0.360 in 1980, it has reached to 0.430 in 1990 to 0.490 in 2000 to 0.580 in 2010 and to 0.630 in 2015(Historical Index of HD). The latest human development index (HDI) report released by the United Nations Development Programme (The Indian Express, September 17) shows India has reached to an HDI of 0.640. This shows that India is ahead of Bangladesh and Pakistan. The table below shows the data collected on the four factors corresponding to India and its neighboring countries in the increasing order of the HDI ranks:

Country	HDI Rank	HDI value	Life Expectancy at birth	Expected years of Schooling	Mean years of Schooling	GNI per capita
Sri Lanka	76	0.77	75.5	13.9	10.9	11326
India	130	0.64	68.8	12.3	6.4	6353
Bhutan	134	0.612	70.6	12.3	3.1	8065
Bangladesh	136	0.608	72.8	11.4	5.81	3677
Myanmar	148	0.578	66.7	10	4.9	5567
Nepal	149	0.574	70.6	12.2	4.9	2471
Pakistan	150	0.562	66.6	8.6	5.2	5311

Source: UNDP Report

The data above ranks India at second position in comparison with its neighboring countries having an HDI value of 0.640. Though India has its HDI value higher than the other 5 countries and has mean and expected years of schooling higher than the others but its life expectancy at birth is lower than 4 of the five countries i.e. Bhutan Bangladesh and Nepal which are ranked below it. This shows that the longevity index of the country is low and the health dimension is not as strong as other countries which might affect the other variables in long run also. Comparing different variable for India with the maximum set value, the country is far behind with a gap of 16.2 units on life expectancy at birth. Even on the education dimension India is not able to reach above average 60% of the said limit. It’s lacking behind with 16% of the GNI per capita income being achieved and covered as according to the HDI standards.





The graph above shows the HDI value of the countries taken in this case. This depicts that the country with the highest value 0.77 is Sri Lanka followed by India having 0.640 HDI value. There is a difference of 0.13 units between the two countries. Bhutan and Bangladesh have a small difference between them and Myanmar and Nepal competing with each other on 0.004 units with Pakistan having the lowest HDI value.

**Questions:**

1. Is the data relating to 'Mean years of schooling' shows a skewed distribution? If yes, calculate relative skewness in 'Mean years of schooling' and comment on the type of skewness.
2. If India is found to be in 3rd quartile among the countries given in terms of 'Expected years of schooling'. Find India's position.
3. The above case discusses India being lower on its Life Expectancy at birth in comparison with other countries. Show the comparison graphically and discuss the difference.
4. Find the probability that a country has 'Expected years of schooling' more than the median value.
5. Find the probability that a country has 'HDI Index' more than the 'coefficient of mean deviation from mean' relating to Life Expectancy at Birth.

*Developed by  
Ms. Poonam Arora  
Email - poonam.a@skips.in*

