Human Development Index (HDI)

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The Human Development Index (HDI) is a statistical tool used to measure a country's overall achievement in its social and economic dimensions. In this composite index 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.

Description:

Based on Amartya Sen's concepts of functioning and capability, Pakistani economist Mahbub ul Haq created HDI in 1990 which was further used to measure the country's development by the United Nations Development Program (UNDP). 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. The HDI can also be used to question national policy choices, asking how two countries with the same level of GNI per capita can end up with different human development outcomes. These contrasts can stimulate debate about government policy priorities.

The Human Development Index (HDI) is a summary measure of average achievement in 3 key dimensions of human development:

i) a long and healthy life,

ii) being knowledgeable and

iii) have a decent standard of living.

The HDI is the geometric mean of normalized indices for each of the three dimensions.

- The education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age.
- The standard of living dimension is measured by gross national income per capita (at PPP $). The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI.
- The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean.

Every year UNDP ranks countries based on the HDI report released in their annual report. HDI is one of the best tools to keep track of the level of development of a country, as it combines all major social and economic indicators that are responsible for economic development.

The HDI simplifies and captures only part of what human development entails. It does not reflect on inequalities, poverty, human security, empowerment, etc.

Data sources for constructing HDI

• Life expectancy at birth: UNDESA (2019).

• Expected years of schooling: UNESCO Institute for Statistics (2019), ICF Macro Demographic and Health Surveys, United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys and OECD (2018).

• Mean years of schooling: UNESCO Institute for Statistics (2019), Barro and Lee (2018), ICF Macro Demographic and Health Surveys, UNICEF Multiple Indicator Cluster Surveys and OECD (2018).

• GNI per capita: World Bank (2019), IMF (2019) and United Nations Statistics Division (2019).

Method of Constructing HDI:

Minimum and maximum values (goalposts) are set in order to transform the indicators expressed in different units into indices between 0 and 1. These goalposts act as the "natural zeros" and "aspirational targets," respectively, from which component indicators are standardized. They are set at the following values:

Dimension	Indicator	Minimum	Maximum
Health	Life expectancy (years)	20	85
Education	Expected years of schooling (years)	0	18
	Mean years of schooling (years)	0	15
Standard of living	Gross national income per capita (2011 PPP $)	100	75,000

Having defined the minimum and maximum values, the dimension indices are calculated as:

Dimension index = (actual value – minimum value) / (maximum value – minimum value)

So it becomes,

- Life Expectancy Index = (LE – 20) / (85 – 20)
- Health Index = (Expected Years of Schooling Index + Mean Years of Schooling Index) / 2 ,

where

Expected Years of Schooling Index = (EYS) / 18
Mean Years of Schooling Index = (MYS) / 15

- Gross national income per capita Index = (log GNIPC – log 100) / (log 75000 – log 100)

For the education dimension, equation 1 is first applied to each of the two indicators, and then the arithmetic mean of the two resulting indices is taken. Using the arithmetic mean of two education indices

allows perfect substitutability between mean years of schooling and expected years of schooling, which seems to be right given that many developing countries have low school attainment among adults but are eager to achieve universal primary and secondary school enrolment among school-age children.

The HDI is the geometric mean of the three dimensional indices:

$$HDI = (I_{Health} \cdot I_{Education} \cdot I_{Income})^{1/3}$$