

Discuss in detail the Human Development Measures. Write down few of its critiques.

5/4/13
Introduction :

* A.K. Sen and his collaborators ^{developed} not only contributed in giving development economics, ^{but contributing} the new approach of "capability" but also new measures of development have been introduced by them.

"As the 1990 Human Development Report argued, a basic distinction need to be made between the means and the ends of development. Human Beings are the real ends of all activities, and development must be centered on enhancing their achievements, freedoms and capabilities."

[S. Anand and A.K. Sen, 1994, HDI: Methodology and Measurement]

In fact these new measures are in a way related to this new dimension of development. The motivation behind the introduction of these new measures is that, the traditional measures of per capita income, income poverty and income inequality should be replaced or at least ^{new} should be complemented with these new measures which are more comprehensive, having multiple dimensions compared to the traditional measures. In spite of being very much incomplete, given the vast domain of the capability approach, these measures have been incorporated into the "development discourse" and are slowly gaining dominance.

The index has been prepared under the able stewardship of Mahbub-ul-Haq, and was introduced by the United Nations Development Report Programme (UNDP) in its first Human Development Report (HDI) published in 1990.

Methodological Measures of HDI :

HDI is most important among these new measures. The HDI as used in the first HDR [UNDP, 1990] had three components dealing respectively with ~

- (1) Life expectancy at Birth (Health) [ends]
- (2) The proportion of literacy among young and adult population (Education)

Index
of
quality
of
life
ratio

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(means) (3) The logarithm of the Gross National product or Income. (Income) ^{*1} measured in PPP\$

Thus, the HDI has three dimensions - health, education attainment and standard of living. We shall elaborate as we move forward. The HDI value ranges between 0 and 1.

$$[0 \leq \text{HDI} \leq 1.] \quad *2.$$

① Health Index (Life expectancy at Birth): - ~~****~~

Longevity is measured by life expectancy at Birth which is actually a proxy for actual access to basic health facilities. *3.

It is calculated by the ratio of the differences between actual life expectancy at birth (L_A^A) of a country, say A , and the life expectancy at birth of a country, say i ($L_{\min}^i$) of the world recorded minimum to the life expectancy at birth of a country of the world recording maximum ($L_{\max}^i$) and the life expectancy at birth of a country of the world recorded minimum ($L_{\min}^i$).

∴ Life Expectancy at Birth (L_A)

$$L_A = \frac{L_A^A - L_{\min}^i}{L_{\max}^i - L_{\min}^i} = H_A^A \quad (\text{Health Index})$$

where, $i \in$ any country of the world.

$A \in$ The respective country ^{for which} the L_A is measured.

eg: If, L_A of Nepal is considered to be calculated then,

$$L_A^A = 48 \text{ yrs (Nepal)} ; L_{\min}^i = 40 \text{ yrs (Niger)} ; L_{\max}^i = 70 \text{ yrs (Norway)}$$

$$L_{\text{Nepal}}^A = \frac{48 - 40}{70 - 40} = \frac{8}{30} = 0.2666 = 0.267.$$

** Thus the actual access to basic health facilities to the popln of Nepal is 26.7% compared to the present maximum accessibility of ~~100%~~ popln of Norway (which is 100%).

1 Educational Index :

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Educational attainment is measured by the combination of adult literacy ($\frac{2}{3}$ rd weights) and combined primary, secondary and tertiary education enrolment ($\frac{1}{3}$ rd weight) ratios. #4.

The combined Gross Enrolment Ratio (CGER) is measured as an average percentage of Gross enrolment ratio in primary sector ($GER_p\%$), Gross enrolment ratio in secondary sector ($GER_s\%$), Gross enrolment ratio in Tertiary Sector ($GER_t\%$); which combinedly determines what percentage of total population ranging from ages of primary to tertiary levels are actually enrolled in these respective sectors.

And thus,

$$CGER_A = \frac{GER_p + GER_s + GER_t}{3}$$

Similarly, the Adult Literacy Rate is measured as a percentage of total workable human capital created. Both the Adult Literacy Rate (ALR) and CGER are calculated separately by the formula provided below for a country, say, A.

$$E_I^A = \frac{E_A^A - E_{min}^i}{E_{max}^i - E_{min}^i}$$

where, E_A^A = The actual average of the respective country, A.

E_{min}^i = The min. value of any country of the world

E_{max}^i = The max. value of any country of the world

Thus, the education index (e^A) of the country A is represented as,

$$e^A = \frac{1}{3} CGER^A + \frac{2}{3} ALR^A$$

where,

$$CGER^A = \frac{CGER_A^A - CGER_{min}^i}{CGER_{max}^i - CGER_{min}^i}$$

$$ALR^A = \frac{ALR_A^A - ALR_{min}^i}{ALR_{max}^i - ALR_{min}^i} \quad * 5.$$

New methodology:

The modified education index, since 2010 as per UNDP report is modified as -

$$e^A = \frac{\sqrt{MYS \cdot EYS}}{0.951}$$

where,

MYS = Mean Years of schooling.

EYS = Expected Years of schooling.

③ Income Index :

* 6.

$$I^A = \frac{\log Y_A^A - \log Y_{min}^i}{\log Y_{max}^i - \log Y_{min}^i}$$

where, Y = Per capita income adjusted at PPP \$.

The fundamental reason behind taking logarithm is to reduce the impacts of such per capita income levels which are higher than the world average, stated otherwise, by taking this log the impacts of rising income across the countries on the HDI values are reduced. This is because ~~the~~ income is only a mean and not an end ~~in~~ in itself. If we do not take the log formula, very high levels of per capita income of certain countries of the world will unjustifiably inflate the impact of income on the HDI formula. Income here captures the different dimensions of the quality of life other than health and education; but income is only a proxy in the present case representing various dimensions of human capabilities. But to have a decent standard of living, i.e. to achieve certain basic capabilities income is needed but only to a limited extent. Hence, to reduce the impact of very large income levels on HDI very high values of _{pc} income should be discounted. Hence we have this log transformation.

The performance¹⁰⁷ is expressed as the value between 0 and 1, thus applying the general formula

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

The H.D.I. is then calculated as a simple average of the dimension index.

$$\text{HDI}^{\text{wt}} = \frac{\text{AI}^{\text{wt}} + \text{E}^{\text{wt}} + \text{I}^{\text{wt}}}{3}$$

It is directly the value judgement of the Capability Approach, and it is formulated or reduced into a representation of the reality into a comprehensive character or value.

III Reasons behind adopting such a formula :-

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

(a) To make it unit free ;

$$\text{eg. } L_A^{\text{wt}} = \frac{48\text{yrs} - 40\text{yrs}}{70\text{yrs} - 40\text{yrs}} = \frac{8\text{yrs}}{30\text{yrs}} = \frac{8}{30}$$

(b) (i) Statistical explanation :- Given the measure of central tendency in order to incorporate the measure of dispersion; this formula was adopted. Any provided data can only be analysed appropriately/accurately by measure of dispersion, say, standard deviation, given the measure of central tendency, say, mean gives us only the average. Only Average of any data can provide misleading information about the data.

Thus, to judge the extent of development of a country with respect to two extreme goal posts the min. and the max., but not only the just in comparison to the corresponding averages.

(ii) Economic Explanation :- The index gives us the minimum achievable by a society and the maximum achievable.

$$\text{eg. } L_A = \frac{L_A^{\text{wt}} - L_{\text{Min}}^{\text{wt}}}{L_{\text{Max}}^{\text{wt}} - L_{\text{Min}}^{\text{wt}}}$$

(ii) Mathematical :- ^{10%} The formula gives us the propⁿ normalisation of the numerator.
The total journey that the people have already covered on earth ($L_{max}^i - L_{min}^i$).

Criticisms :-

- (a) "Capability approach" was of the idea of set of functionings, but it is not well defined and more importantly not very comprehensive.
- (b) Ranking :- Whether the functionings to be able to participate in economic life comes prior to the functioning of health accessibility, if not why not?
All ~~have~~ the three dimensions have equal weight i.e. $\frac{1}{3}$ rd or 0.33% , i.e. evenly ranked, thus why they are equally ranked?
- (c) HDI measure does not take into account the conflicts between the process of generation of income through accumulation and of enhancement of human capabilities.