

## **GEN 214: Introduction to Development Studies**

# **Module 6: Human Development**

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## **Human Development**

- A process of enlarging people's choices
- long and healthy life,
- to be educated and to enjoy a decent standard of living
- Additional choices: political freedom, guaranteed human rights and self respect

## Can GNI per capita be used to measure human development instead of the HDI?

**No**

- Income: a means to human development, not its end.
- **GNI per capita**: average national income.
- **Not reveal**: how income is spent, whether it translates to better health, education, and other human development outcomes.

Source: <http://hdr.undp.org/en/faq-page/human-development-index-hdi/#292n2878>

## Example

Variables	Equatorial Guinea	Zambia
GNI per capita	\$13,944 (PPP\$)	\$3,326 (PPP\$)
GNI rank	88	107
HDI rank	145	146

# Human Development Index

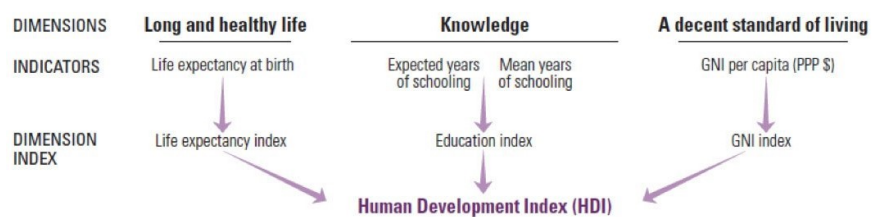


Prof. Amartya Sen

Prof. Mehabub Al Haque

<https://thelogicalindian.com/h-upload/2020/01/27/163698-hdi.jpg>

## Human Development Index (HDI)



Source: <http://hdr.undp.org/en/content/human-development-index-hdi>

## Indicator definition

### a. Dimension: Long and healthy life

- **Life expectancy at birth:**
  - Number of years a newborn infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's life.

*Indicator definition (cont.)*

### b. Knowledge

- **Mean years of schooling:**
  - Average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level.
- **Expected years of schooling:**
  - Number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life

*Indicator definition (cont.)***c. A decent standard of living**

- **GNI per capita (in 2017 \$PPP):**
  - 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.

## Data sources

- Life expectancy at birth:
  - UN Department of Economic and Social Affairs (UNDESA);
- Mean years of schooling (MYS):
  - UNESCO Institute for Statistics
- Expected years of schooling:
  - UNESCO Institute for Statistics
- GNI per capita (in 2017 \$PPP):
  - World Bank and the International Monetary Fund.

## Human development categories

Very high human development	0.800 and above
High human development	0.700–0.799
Medium human development	0.550–0.699
Low human development	Below 0.550

## Measuring Human Development Index

- Several issues to be addressed in a multidimensional index building process:
  - Selection of dimensions
  - Choice of indicators within a dimension
  - Number of indicators : a few or many?
  - Units of measurement and comparability
  - Aggregation or not ?
    - Aggregation within a dimension
    - Aggregation across dimensions

To be able to combine these values into a single index, the indicators of each dimension are first normalized using the general formula:

$$\text{Dimension index} = \frac{\text{Actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}} \quad (1)$$

The minimum and maximum values are set as follows:

Indicator	Minimum	Maximum
Life expectancy	20	85
Mean years of schooling	0	15
Expected years of schooling	0	18
Per capita income (PPP 2011 \$)	100	75000

<https://www.coursera.org>

The education index is computed as an arithmetic average of the two normalised values:

$$I_{education} = (I_{edu1} + I_{edu2})/2 \quad (2)$$

The income index is normalised using *logged* values.

Finally, the aggregation to the HDI is given by the geometric mean, which can be written in different ways:

$$HDI = \sqrt[3]{I_{health} \times I_{education} \times I_{income}} = I_{health}^{\frac{1}{3}} \times I_{education}^{\frac{1}{3}} \times I_{income}^{\frac{1}{3}} \quad (3)$$

Indicator	Value
Life Expectancy at Birth (years)	79.93
Mean Years of Schooling (years)	8.37
Expected Years of Schooling (years)	13.50
Per Capita Gross National Income (PPP US\$)	13011.7

Health Index:

$$I_{health} = \frac{79.93 - 20}{85 - 20} = 0.922$$

Education Index:

$$\text{Index of Mean Years of Schooling} = \frac{8.37 - 0}{15 - 0} = 0.558$$

$$\text{Index of Expected Years of Schooling} = \frac{13.5 - 0}{18 - 0} = 0.750$$

Education Index is given by the arithmetic mean of the two sub-indices :

$$I_{education} = (0.558 + 0.750)/2 = 0.654$$



Income Index :

$$I_{income} = \frac{\ln(13011.7) - \ln(100)}{\ln(75000) - \ln(100)} = 0.735$$

Finally the HDI :

$$HDI = \sqrt[3]{I_{health} \times I_{education} \times I_{income}} = I_{health}^{\frac{1}{3}} \times I_{education}^{\frac{1}{3}} \times I_{income}^{\frac{1}{3}}$$

$$HDI = \sqrt[3]{0.922 \times 0.654 \times 0.735} = 0.763$$













Source: <http://hdr.undp.org>

## Human Development Index (HDI) Ranking

From the 2020 Human Development Report

Search in table

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	Rank	Country	HDI value (2019)	Life expectancy at birth (years) SDG3	Expected years of schooling (years) SDG 4.3	Mean years of schooling (years) SDG 4.6	Gross national income (GNI) per capita (PPP \$) SDG 8.5
	1	Norway	0.957	82.4	18.1	12.9	66,494
	2	Ireland	0.955	82.3	18.7	12.7	68,371
	2	Switzerland	0.955	83.8	16.3	13.4	69,394
	4	Hong Kong, China (SAR)	0.949	84.9	16.9	12.3	62,985
	4	Iceland	0.949	83.0	19.1	12.8	54,682
	6	Germany	0.947	81.3	17.0	14.2	55,314
	7	Sweden	0.945	82.8	19.5	12.5	54,508
	8	Australia	0.944	83.4	22.0	12.7	48,085
	8	Netherlands	0.944	82.3	18.5	12.4	57,707
	10	Denmark	0.940	80.9	18.9	12.6	58,662










<http://hdr.undp.org/en/content/latest-human-development-index-ranking>

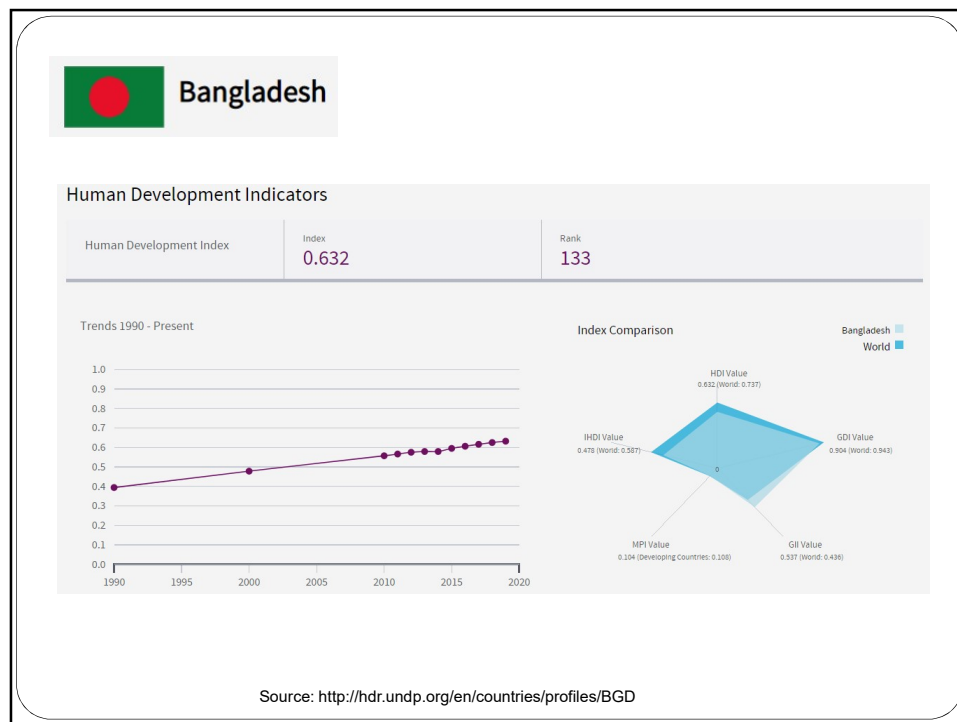
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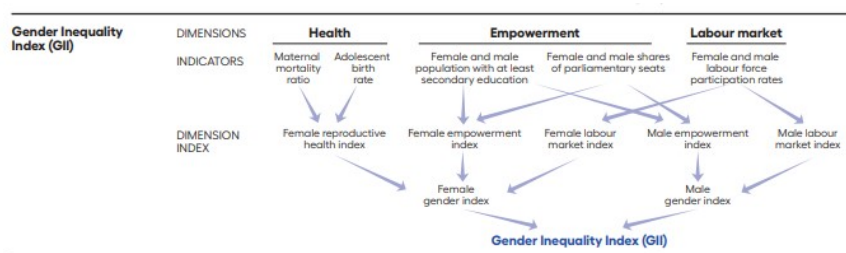
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	Rank	Country	HDI value (2019)	Life expectancy at birth (years) SDG3	Expected years of schooling (years) SDG 4.3	Mean years of schooling (years) SDG 4.6	Gross national income (GNI) per capita (PPP \$) SDG 8.5
	181	Mozambique	0.456	60.9	10.0	3.5	1,250
	182	Burkina Faso	0.452	61.6	9.3	1.6	2,133
	182	Sierra Leone	0.452	54.7	10.2	3.7	1,668
	184	Mali	0.434	59.3	7.5	2.4	2,269
	185	Burundi	0.433	61.6	11.1	3.3	754
	185	South Sudan	0.433	57.9	5.3	4.8	2,003
	187	Chad	0.398	54.2	7.3	2.5	1,555
	188	Central African Republic	0.397	53.3	7.6	4.3	993
	189	Niger	0.394	62.4	6.5	2.1	1,201



- **Limitation:**
  - captures only part of what human development.
  - does not reflect on inequalities, poverty, human security, empowerment, etc.
- **Success:**
  - development debate: a multidimensional human-centred vision of development.

# Gender Inequality Index



- **Reference**

Willis, Katie. 'Environment and development theory' in *Theories and practices of development*. Taylor & Francis, 2011.