Human Resource Development

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Dedicated to…

Father of Economics of Human Resources…

Theodore W. Schultz

(1902-1998)

"And for man to look upon himself as a capital good, even if it did not impair his freedom, may seem to debase him…by investing in themselves people can enlarge the range of choice available to them. It is one way free men can enhance their welfare." - Prof. T.W. Schultz

Nobel Laureate in Economic Science (1979)

"Most people in the world are poor. If we knew the economy of being poor, we would know much of the economics that really matter."

Investing in People, Schultz T. W., (1981), p.3. University of California Press.

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HUMAN CAPITAL

"...consider all human abilities to be either innate or acquired. Every person is born with a particular set of genes, which determines his innate ability. Attributes of acquired population quality, which are variable and can be augmented by appropriate investment, will be treated as human capital." - Schultz T. W. (1962)"Reflections in Investment in Man", Journal of Political Economy, Oct.,1962. , University of Chicago Press, Chicago.

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Introduction

- Many statistical investigations carried out in the Western countries have shown that output increased at a much higher rate than can be explained by an increase in physical inputs. The reason is that the quality of HR in terms of education, skills & the health services has been consistently improving in these nations for their economic development.

Links Between Economic Development & Human Development

- There is a very close relationship between economic development & human development. However, it is difficult to trace that it is our economic development which leads to human development or other way.
- The two schools of thoughts differs from their opinion in this regard.

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Significance of Human Resource Development (H.R.D.)

- HRD plays an important role in economic development. Infact, effective use of physical capital itself is dependent on human resources. This is due to the reason that if there is underinvestment in human resources the rate is which additional physical capital can be productively utilized will be limited.

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Education & Human Resource Development

- Education & training result in HRD in the following manner-

I. Education & Economic Growth: Investment in education promotes economic growth. According to M. Todaro & A. Smith, education contributes to economic growth in following ways-

a. It creates more productive labour force.
b. It provides widespread employment & income earning opportunities.
c. It helps in creating a class of educated leaders.
d. It helps in providing basic skills & encourages modern attitudes in diverse segment of population.

II. Education & reduction in income inequalities.

III. Education & Rural development.

IV. Education & family planning.

V. Other benefits of education – spillover of income gains to present & future generations, discovering potential talents, meeting the needs of skilled manpower requirements, promotes R&D activities, lawful behaviour, political stability, common cultural heritage widening intellectual horizons etc.

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Education Policy & Programmes so far…

Policy/ Programme	Year of Inception	Broad Objective(s)
National Education Policy, 1968	1968	Under the chairman ship of Prof. D.S. Kothari the polic aims at **compulsory education** of children up to th age of 14 yrs., improve the standard of education etc.
National Education Policy, 1986 & 1992	1986	It envisaged universalization of primary education & adult literacy by1990. In 1992 policy envisages a National System of Educatio to bring **Uniformity in education, making adul education prog.** as a mass movement, **providin universal access** etc.
Right to Education Act,2009	2009	The Constitution (86th Amendment) Act 2002 inserted Article 21A which provides **free & compulsory education** to all children.
National Education Policy-2020	2020	To bridge the **gap between the current state of learning outcomes and what is required?**

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Education Policy & Programmes so far…

Policy/ Programme	Year of Inception
Mid-Day Meal in Schools	Aug.,1995
Sarva Shiksha Abhiyan	2001
National Programme for Education of Girls at Elementary level	July, 2003
Kasturba Gandhi Balika Vidhyalaya	July, 2004
Rashtriya Madhyamik Shiksha Abhiyan	March,2009
Padhega Bharat- Badhega Bharat	2014

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Role of O.J.T.

- Productivity of physical capital is substantially enhanced if an improvement in human capital is affected. It is on the account of this reason that many firms in India provide on-the-job-training to their workers.
- OJT can be useful to the learning capabilities & peculiarities of workers.
- It enhances the skill & efficiency of workers & leads to an increase in production & productivity.

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Role of Health

- It is helpful in improving the productive capacity & it leads to qualitative improvement in human capital. Therefore, investment in health is important in budling & maintaining productive labour force.

- Investment in health helps in …

a. Improving quality of life.
b. Expanding medical knowledge.
c. Disease prevention.
d. Improving the level of nutrition among masses.
e. Reduces malnutrition.

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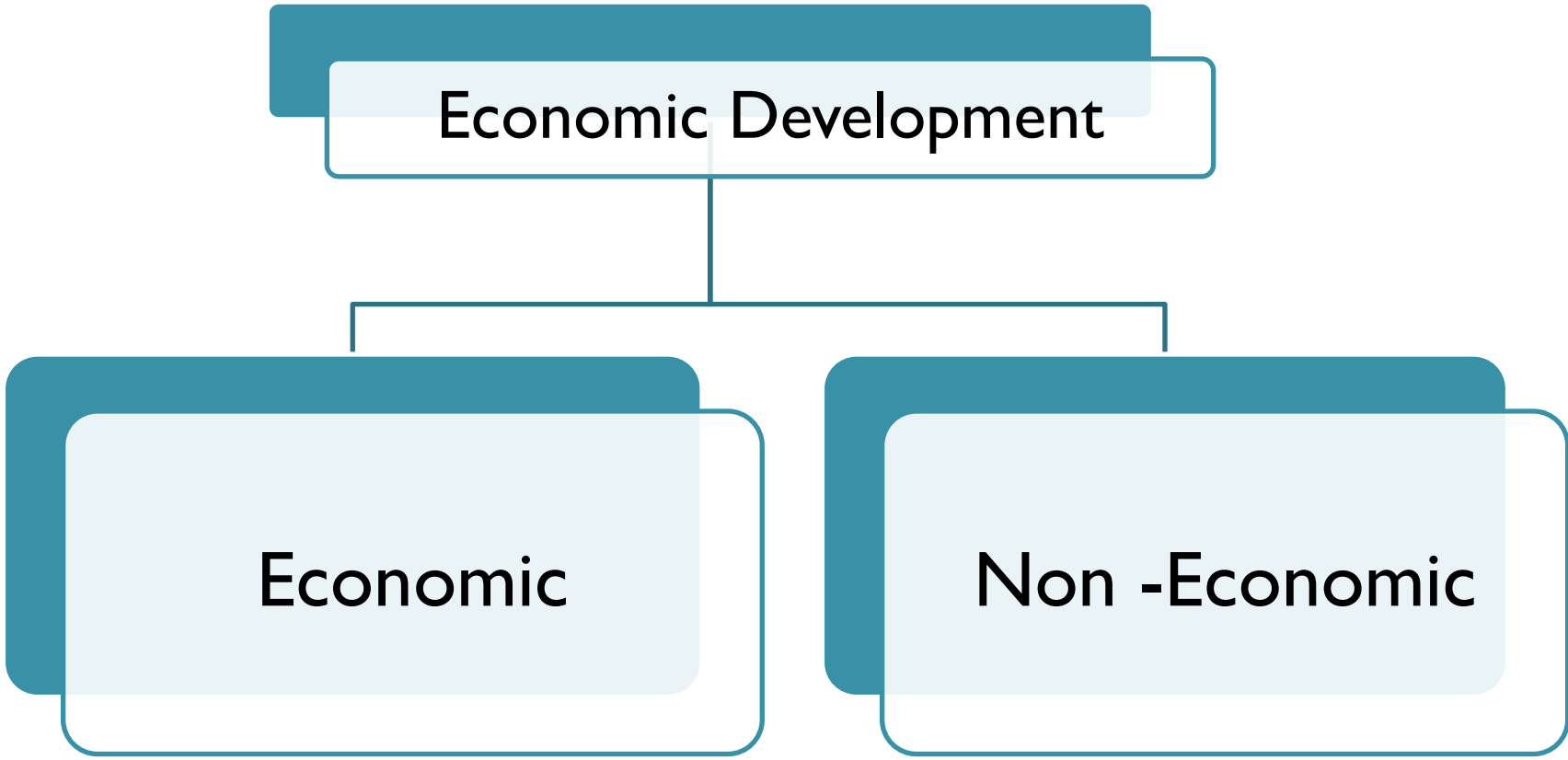
Determinants of Economic Development



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Non economic determinants…

- Human resource.
- Technical know how & education.
- Political freedom.
- Social organisation.
- Desire to develop.

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Indicators of Human Resource Development

- Theodore W. Schultz lists out five such indicators-

I. Health facilities & services,
II. On-the-job training,
III. Formal education,
IV. Adult education &
V. Migration.

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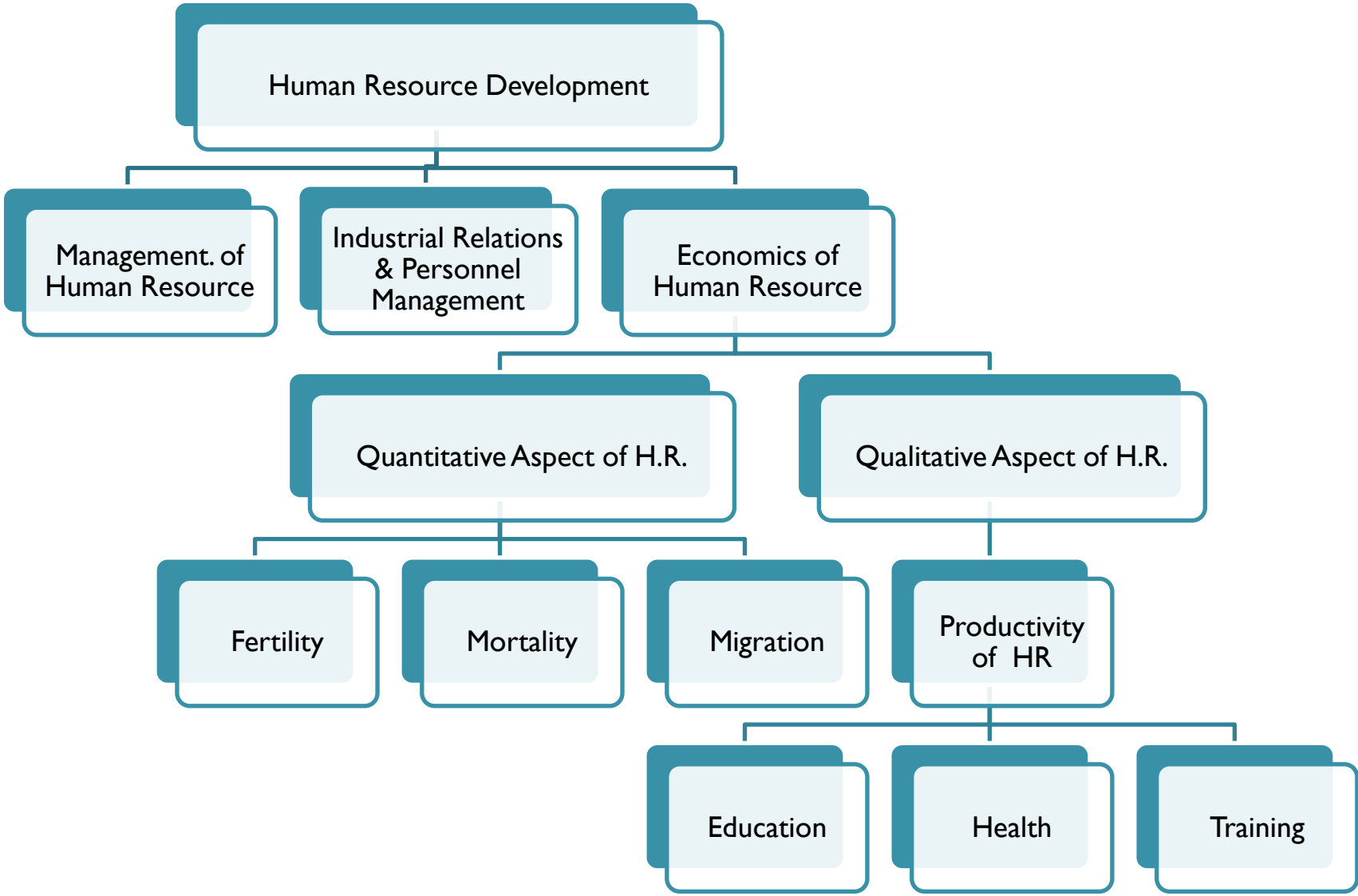


Theories of Demography

1. Malthusian Theory of Population.
2. Optimum Theory of Population.
3. Demographic Transition Theory.

Malthusian Theory of Population.

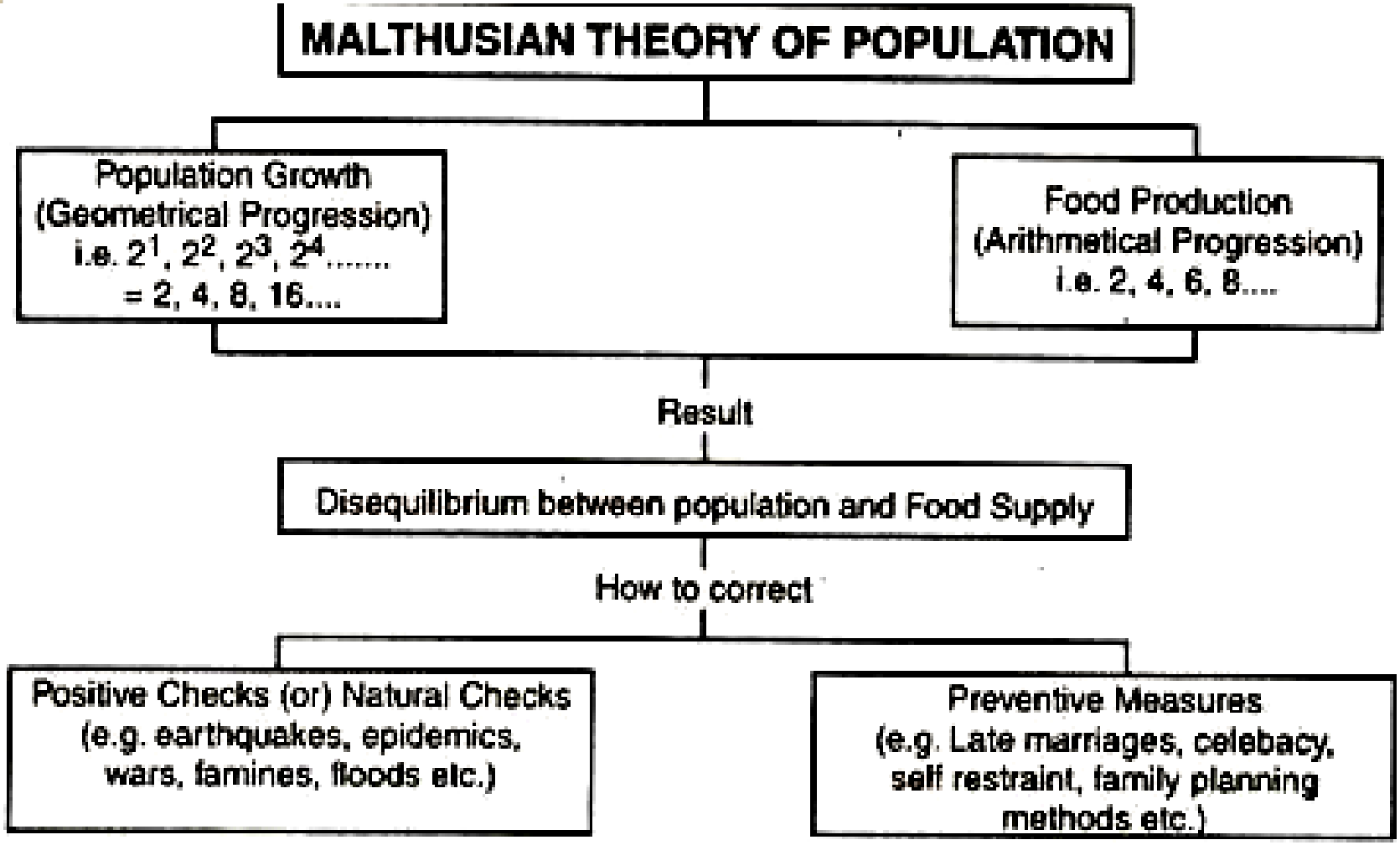
In1798 a book entitled *"An Essay on the principle of Population"* Malthus gave his theory.

Thomas Robert Malthus
FRS

Portrait by John Linnell

Born	13/14 February 1766 Westcott, Surrey, England
Died	23 December 1834 (aged 68) Bath, Somerset, England
Field	Demography · macroeconomics
School or tradition	Classical economics
Alma mater	Jesus College, Cambridge
Influences	David Ricardo · Jean Charles Léonard de Sismondi
Contributions	Malthusian growth model

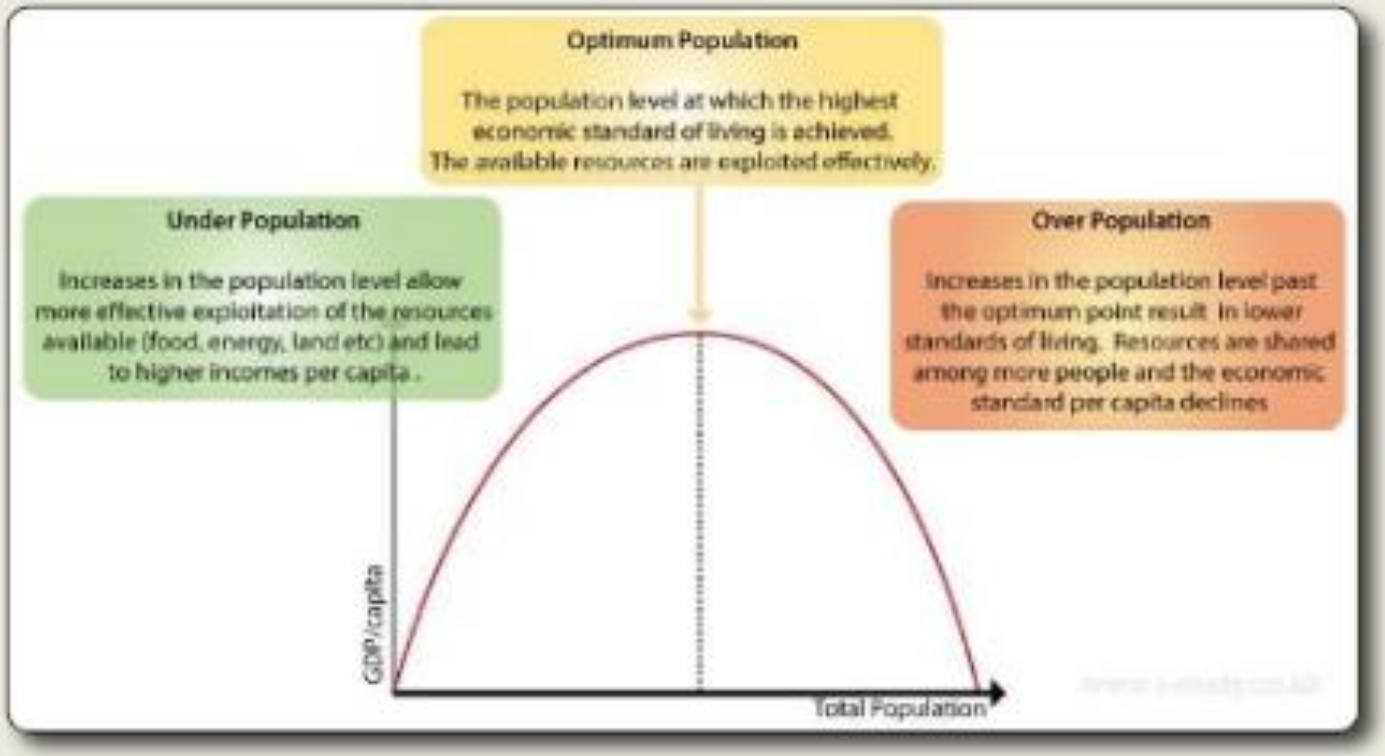
Flow Chart of Malthusian Theory



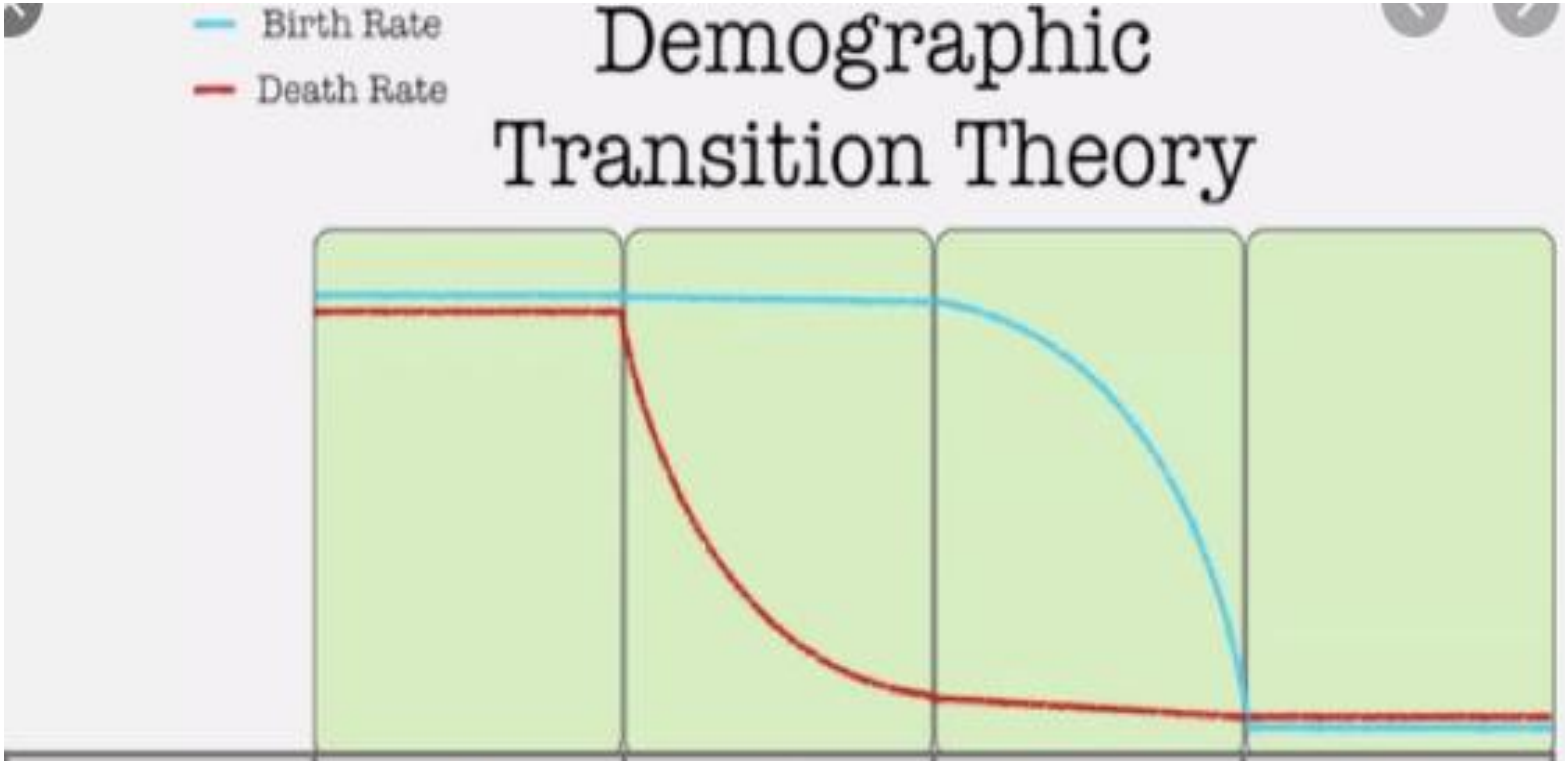
OPTIMUM POPULATION THEORY

By CANAN

Population must grow up to certain desired level after which further growth is harmful.



Demographic Transition theory



Technology	Pre-Industrial	Early Industrial	Mature Industrial	Post-Industrial
Rate	Slow	Rapid	Slowing	Slow

What is Human Development?

- *Human development is the process of "widening people's choice & the level of well being they achieved are at the core of the notion of human development…."*

United Nations Development Programme,

Human Development Report (1997),pp.13-14.

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Why Human Development?

- According to Paul Streeten…

1. Human development is an end while economic growth is only a means to this end.
2. Human development is a means to higher productivity.
3. It helps in lowering the family size by lowering human reproduction.
4. It is good for physical environment.
5. It leads to healthy civic society, increased democracy & greater social stability.

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For What Human Development?

According to Mahbub-ul-Haq there are four essential components of human development namely,

I. Equity.
II. Sustainability.
III. Productivity.
IV. Empowerment.

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Measurement of Human Development

- Human Development Index (H.D.I.)
- Gender Related Development Index (G.D.I.)
- Gender Empowerment Measure (G.E.M.)
- Gender Inequality Index (G.I.I.)
- Human Poverty Index (H.P.I)
- Multidimensional Poverty Index (MPI)

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Human Development Index (HDI)

- HDI is a composite average achievement in three basic dimensions viz.,

1. Longetivity- Life Expectancy at Birth (Xi),
2. Knowledge- Gross Enrolment Ratio at all levels & adult literacy rate (Xii)and
3. Decent Standard of Living- GDP per capita (in PPP USD) (Xiii).

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HDI (Old Methodology)

- Before calculating HDI an index for the three dimensions is created. For this purpose the Maximum & Minimum values are chosen for each indicator.

Indicators	Maximum Value	Minimum Value
Life expectancy at Birth(In Yrs)	85	25
Adult Literacy Rate (In %)	100	0
Gross Enrolment Ratio (In %)	100	0
GDP Per Capita (In PPP US$)	40,000	100

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Dimensional Index

- Dimensional Index = $\frac{\text{Actual Value- Min. Value}}{\text{Max. Value – Min .Value}}$

After calculating the dimensional index of three indicators i.e., longetivity(Xi), knowledge(Xii) & decent standard of living(Xiii) we can calculate HDI with the following formula-

$$HDI = \frac{Xi + Xii + Xiii}{3}$$

HDI is a simple average of dimensional indices.

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Categories of HDI

- HDI have been grouped under three categories:

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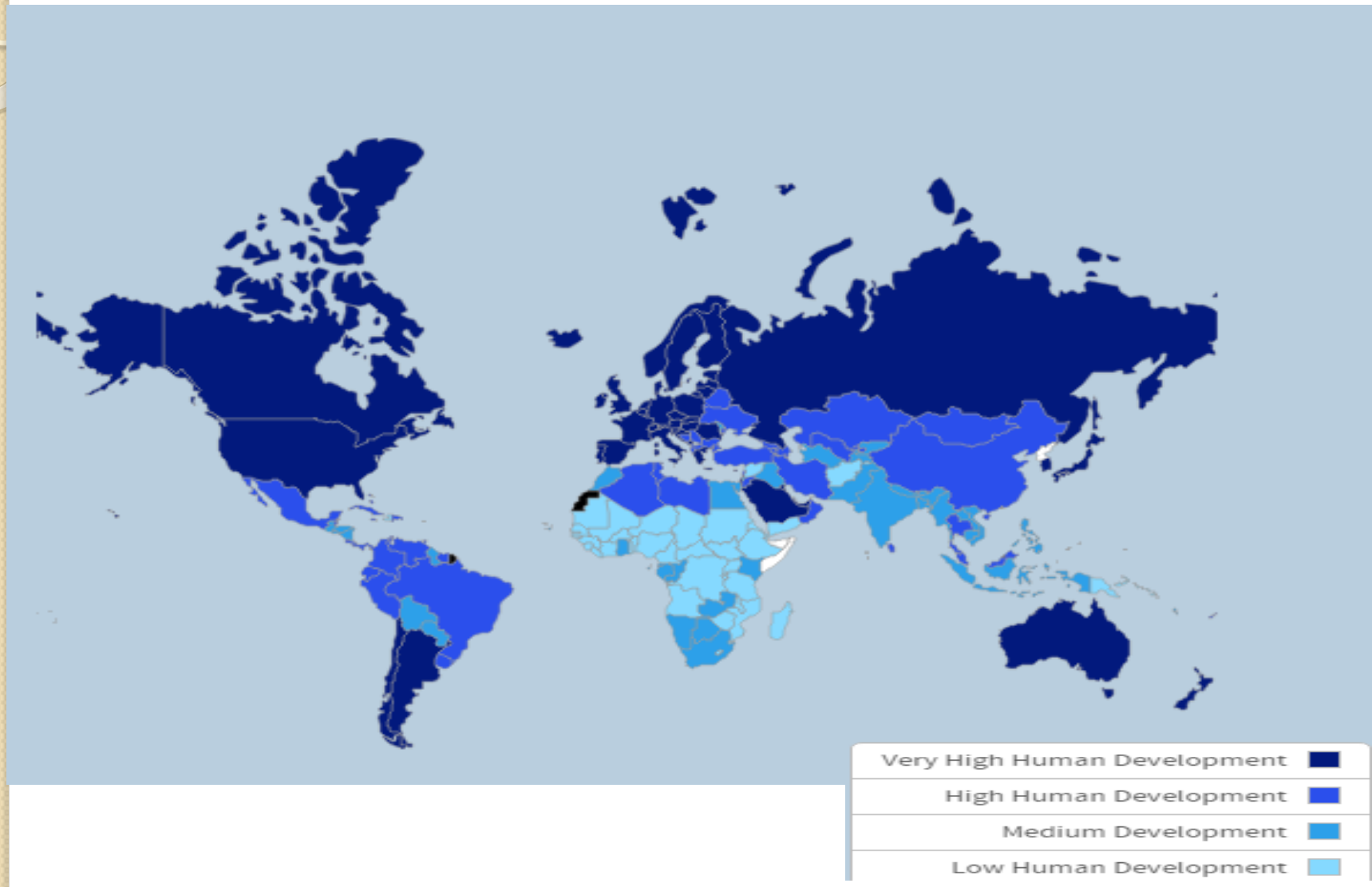
Mapping of Human Development



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Transition of Human Development

Category	1960	1992	2004	2015	2019	2021	2023
Very High Human Developed Countries	-	-	-	51	66	66	74
High Human Developed Countries	16	40	56	54	55	50	50
Medium Human Developed Countries	22	32	85	42	34	45	43
Low Human Developed Countries	76	42	35	41	34	30	26
Total	114	114	176	188	189	191	193

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Redefining HDI (New Methodology)

- HDI has been an aggregate measure of progress in three dimension-health ,education & income. However, Human Development Report(HDR)- 2010 & 2011redefined HDI as the geometric mean of normalized indices measuring achievements in each dimensions.(Prior to HDR-2010 simple arithmetic mean of the three dimensions used to be taken for HDI)

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Redefining HDI (New Methodology)

- In HDR-2010, ability to enjoy a long & healthy life is defined in terms of life expectancy at birth which is as same as earlier Reports. However, changes in definition of the 'Knowledge dimension' & 'Standard of Living dimension' have been carried out.

Dimensions	Earlier Report (Before2010)	Recent Reports(After 2010)
Longetivity	Life Expectancy at Birth	No Change
Knowledge	Gross Enrolment Ratio & Adult literacy rate	Mean Yr of Schooling, Expected yr of Schooling & Combined educational Index
Decent Standard of Living	GDP Per capita (in PPP USD)	GNP Per Capita (in PPP USD)

Goalposts for HDI- HDR-2011

HDR 2011 takes the maximum values as the highest observed values in the time series(1980-2011) & minimum values as the subsistence values)

Dimension	Observed Maximum Value	Minimum Value	India (2018)
Life Expectancy at birth	83.4 (Japan,2011)	20	69.4
Mean Year of Schooling	13.1 (Czech Republic,2005)	0	12.3
Expected Years of Schooling	18 (Capped at)	0	6.5
Combined Educational Index	0.978 (New Zealand,2010)	0	-
Per Capita Income	1,07,721 (Qatar,2011)	100	6829

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Calculating HDI

HDR 2011 defines HDI as the geometric mean of three-dimensional indices-

Step-I : Find out Dimensional Index

$$\text{Dimensional Index} = \frac{\text{Actual Value- Min. Value}}{\text{Max. Value – Min .Value}}$$

Step-II: Find out HDI from dimensional index

$$(I_{1/3\text{Life}} \times II_{1/3\text{Education}} \times III_{1/3\text{Income}})$$

OR

$$\text{HDI} = \sqrt[3]{\text{Life} * \text{Education} * \text{Income}}$$

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HDI for India

- Dimensional Index are obtained as follows-

(I)Life Expectancy Index $= \frac{65.4 - 20}{83.2 - 20} = 0.716$

(ii. a)Mean Year of Schooling Index $= \frac{4.4 - 0}{13.1 - 0} = 0.336$

(ii. b)Expected Yrs of Schooling Index $= \frac{10.3 - 0}{18 - 0} = 0.572$

(II)Educational Index $= \frac{\sqrt{0.336 \times 0.572} - 0}{0.978 - 0} = 0.448$

(III) Income Index $= \frac{\log 3468 - \log 100}{\log 107721 - \log 100} = 0.508$

$HDI = \sqrt[3]{0.716 \times 0.448 \times 0.508} = 0.547$

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India's Position in the Global HDI,2018

Country	HDI 2018		HDI Rank 2017	GNI per capita 2018 $	Life expectancy at birth (years) 2018	Expected years of schooling (years) 2018 [a]	Mean years of school-ing (years) 2018[a]
	Value	Rank					
Norway	0.954	1	1	68059	82.3	18.1	12.6
United Kingdom	0.920	15	14	39507	81.2	17.4	13.0
United States	0.920	15	13	56140	78.9	16.3	13.4
Russian Federation	0.824	49	49	25036	72.4	15.5	12.0
Sri Lanka	0.780	71	76	11611	76.8	14.0	11.1
Brazil	0.761	79	79	14068	75.7	15.4	7.8
China	0.758	85	86	16127	76.7	13.9	7.9
Indonesia	0.707	111	116	11256	71.5	12.9	8.0
South Africa	0.705	113	113	11756	63.9	13.7	10.2
India	**0.647**	**129**	**130**	**6829**	**69.4**	**12.3**	**6.5**
Bangladesh	0.614	135	136	4057	72.3	11.2	6.1
Myanmar	0.584	145	148	5764	66.9	10.3	5.0
Pakistan	0.560	152	150	5190	67.1	8.5	5.2
World	**0.731**			**15745**	**72.6**	**12.7**	**8.4**

Source: Human Development Report (HDR), 2019

Note: a -Data refers to 2018 or the most recent year available, $-Gross National Income (GNI) is based on 2011 dollar purchasing power parity (PPP).

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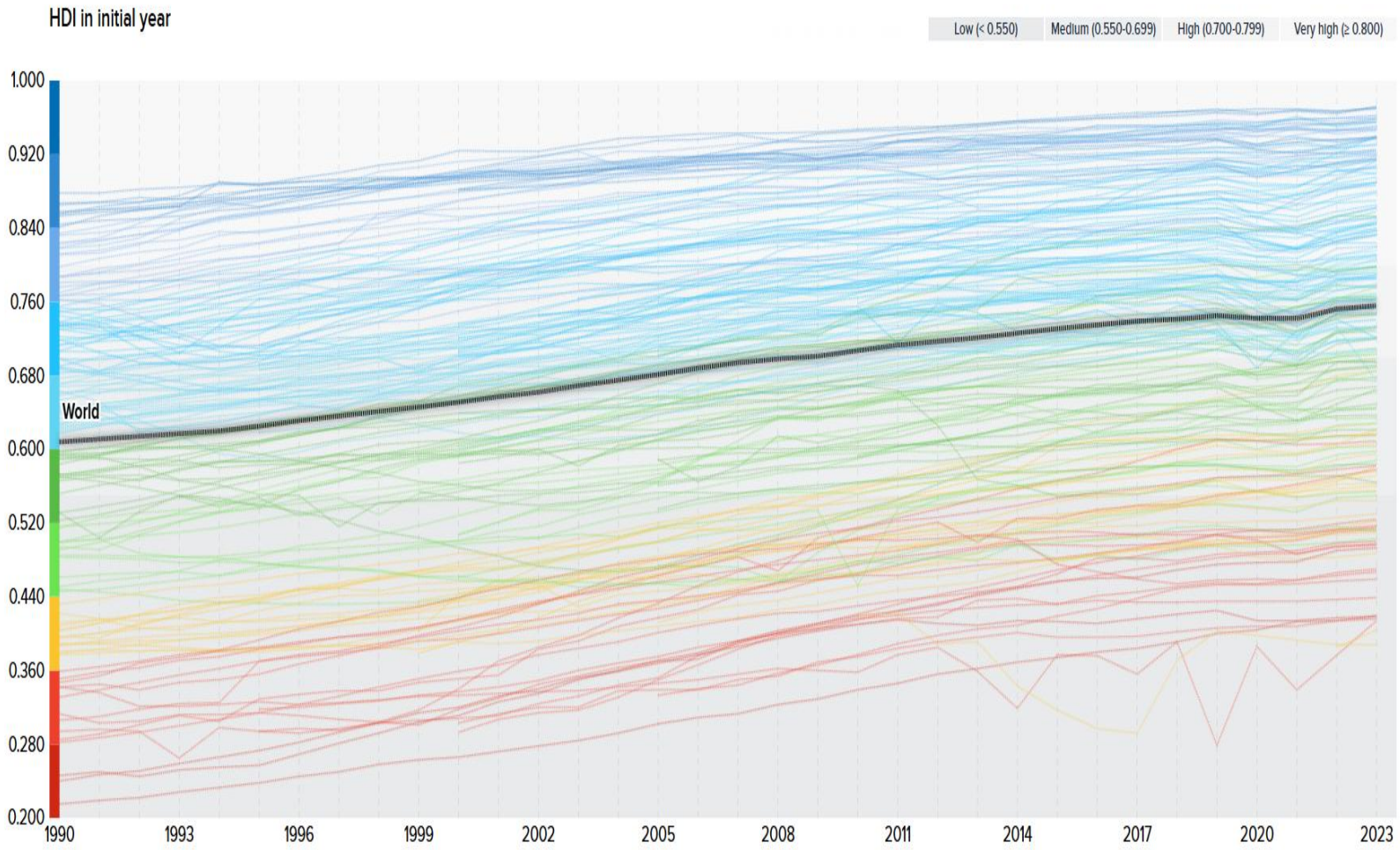
Human Development Index values, by country grouping, 1990–2023



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Trends of HDI in India (1975-2023)

Years	HDI Value
1975	0.416
1980	0.443
1985	0.481
1990	0.519
1995	0.553
2001	0.590
2010 (Modified)	0.519
2011	0.547
2014	0.5
2017	0.640 (130/189)
2018	0.647 (129/189)
2019	0.645 (131/189)
2021	0.633 (130/191)
2022	0.644 (134/193)
2023	0.685 (130/193)

Here it is worth noting that Prof. A. K. Sen, Prof. Sudhir Anand & Lord Meghnadh Desai Contribution in Human Development of India is noteworthy.

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Human Development in Indian Context : State wise : 2022

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High Human Developed States

Rank	State	HDI Value
1	Goa	0.760
2	Kerala	0.758
3	Chandigarh	0.751
4	Puducherry	0.741
5	Delhi	0.734
6	Jammu and Kashmir	0.720
7	Lakshadweep	0.719
8	Himachal Pradesh	0.715
9	Sikkim	0.712
10	Mizoram	0.709
11	Andaman and Nicobar	0.706

Human Development in Indian Context : State wise : 2022

Medium Human Developed States

Rank	States	HDI Value
12	Punjab	0.698
13	Haryana	0.696
14	Maharashtra	0.695
15	Tamil Nadu	0.692
16	Arunachal Pradesh	0.683
17	Manipur	0.683
18	Uttarakhand	0.681
19	Nagaland	0.679
20	Daman and Diu	0.674
21	Karnataka	0.673
22	Telangana	0.660
23	Rajasthan	0.652
24	Meghalaya	0.650
25	Gujarat	0.646

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Human Development in Indian Context : State wise : 2022

Low Human Developed States		
Rank	**States**	**HDI Value**
26	Andhra Pradesh	0.642
27	West Bengal	0.635
28	Chhattisgarh	0.625
29	Dadra and Nagar Haveli	0.624
30	Tripura	0.624
31	Assam	0.615
32	Madhya Pradesh	0.611
33	Orissa	0.610
34	Uttar Pradesh	0.609
35	Jharkhand	0.600
36	Bihar	0.577
India		0.644

Source: "*Subnational HDI*" *Global Data Lab, United Nations Development Programme Retrieved 1 May 2025.*

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Global Positioning (2023)

Position	HDI	GDI	GII
Level	Country	Country	Country
Highest	Iceland (0.972)	Iceland (0.983)	Denmark (0.003)
Lowest	South Sudan (0.388)	Yemen (0.456)	Yemen (0.838)
World	(0.756)	(0.951)	(0.455)

Note: Figures in the bracket show the HDI value.

Source: HDR(2025), UNDP

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Limitations of HDI

1. It ignores gender issue.
2. It omits empowerment measure.
3. It fails to take into account factors like race, religion & caste.
4. Absolute & relative values can not be taken together for calculation of dimensional index.
5. Faulty Government Policy.

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Gender Related Development Index(GDI)

- The Human Development Report 1995 launched two global gender indices Gender related Development Index (GDI) & Gender Empowerment Measure (GEM).

- HDI measures average achievement while GDI measures the average achievement to reflect the inequalities between men & women.

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GDI

- The GDI attempts to capture achievements through the same set of basic capabilities as included in HDI i.e., life expectancy, educational attainments- but adjusted the HDI for gender inequality.
- The greater the gender disparities in human development, the lower was a country's GDI compare to HDI.
- The three components used for measuring GDI are,

I. female life expectancy,

II. female gross enrolment & adult literacy &

III. female per capita income.

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Gender Development Index

- UNDP categorized countries into five groups by absolute deviation from gender parity in HDI values.

- The GDI value for India is 0.874 & ranks at 5th position group for the year 2023.

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Gender Empowerment Measure(GEM)

- The Gender Empowerment Measure indicates whether women are able to actively participate in economic & political life.
- It focused on Political participation

(measured by women's share in parliamentary seats), economic participation (share of high level & professional positions) & power over economic resources(income gaps).

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Gender Inequality Index(G.I.I.)

- HDR 2010 introduced a new measure GII.
- GII includes three critical dimensions for female viz.,

  I. Reproductive health,

  II. Empowerment &

  III. Labour Market Participation.
- This index shows the loss in human development due to inequality between female & male achievements in these dimensions.
- The GII value for India is 0.403 & its rank is 102nd out of 193 countries of the World (HDR, UNDP, 2023).

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Human Poverty Index (HPI-I)

- Human Development Report 1997 coined the concept of Human Poverty Index (HPI) to bring together in a composite index the different features of deprivation in inequality of life to arrive at an extent of poverty in society.

Deprivations	Indicator/ vulnerability
First Deprivation	Probability at birth of not surviving at the age of 40 .
Second Deprivation	Percentage of adults who are illiterate.
Third Deprivation	It is a composite of three variables-
(a)	Percentage of people access to health services
(b)	Percentage of people access with safe drinking water.
(c)	Percentage of children malnourished under five (underweight).

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Human Poverty Index-II (HPI-II)

- As the extent of deprivation is not same across the countries in the world so for some selected OECD counties HPI-II was calculated with other four variables they are-

1. Probability at birth not surviving to age 60.
2. Percentage of adults lacking functional literacy.
3. Percentage of people living BPL at 11US $ per day.
4. Long term unemployment rate more then 12 months or the determinants of social exclusion.

- HPI-II is the average of these four variables.
- HPI-II for India 28 & 41.6% of people is living Below International Poverty line.

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Same Components Different Measurement

Index	Longetivity	Knowledge	Decent Standard of Living
HDI (Old Methodology)	Life expectancy at birth	Gross Enrolment Ratio & adult literacy	GDP per capita
HDI (New Methodology)	Life expectancy at birth	Mean yr. of school + Expected yr. of school & educational Index	GNP per capita
GDI	Female & male life expectancy	Female & male gross enrolment ratio & female adult literacy	Estimated female & male income
HPI-I	Probability at birth not surviving to age 40	Adult Illiteracy rate	Deprivations :Percentage of people access to health services + Percentage of people access with safe drinking water + Percentage of children malnourished under five (underweight)
HPI-II	Probability at birth not surviving to age 60	Percentage of adults lacking functional literacy	a) Percentage of people living BPL at 11US $ per day. b) Long term unemployment rate more then 12 months

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Multidimensional Poverty Index (MPI)

- HPI used averages to reflect aggregate deprivations in health, education & standard of living. It could not identify specific individuals , households or people at large as jointly deprived.
- To tackle this problem, HDR-2010 introduced a new measure called Multidimensional Poverty Index (MPI) to replace HPI.
- MPI has three dimensions mirroring HDI – health, education & living standards- which are reflected in 10 indicators.

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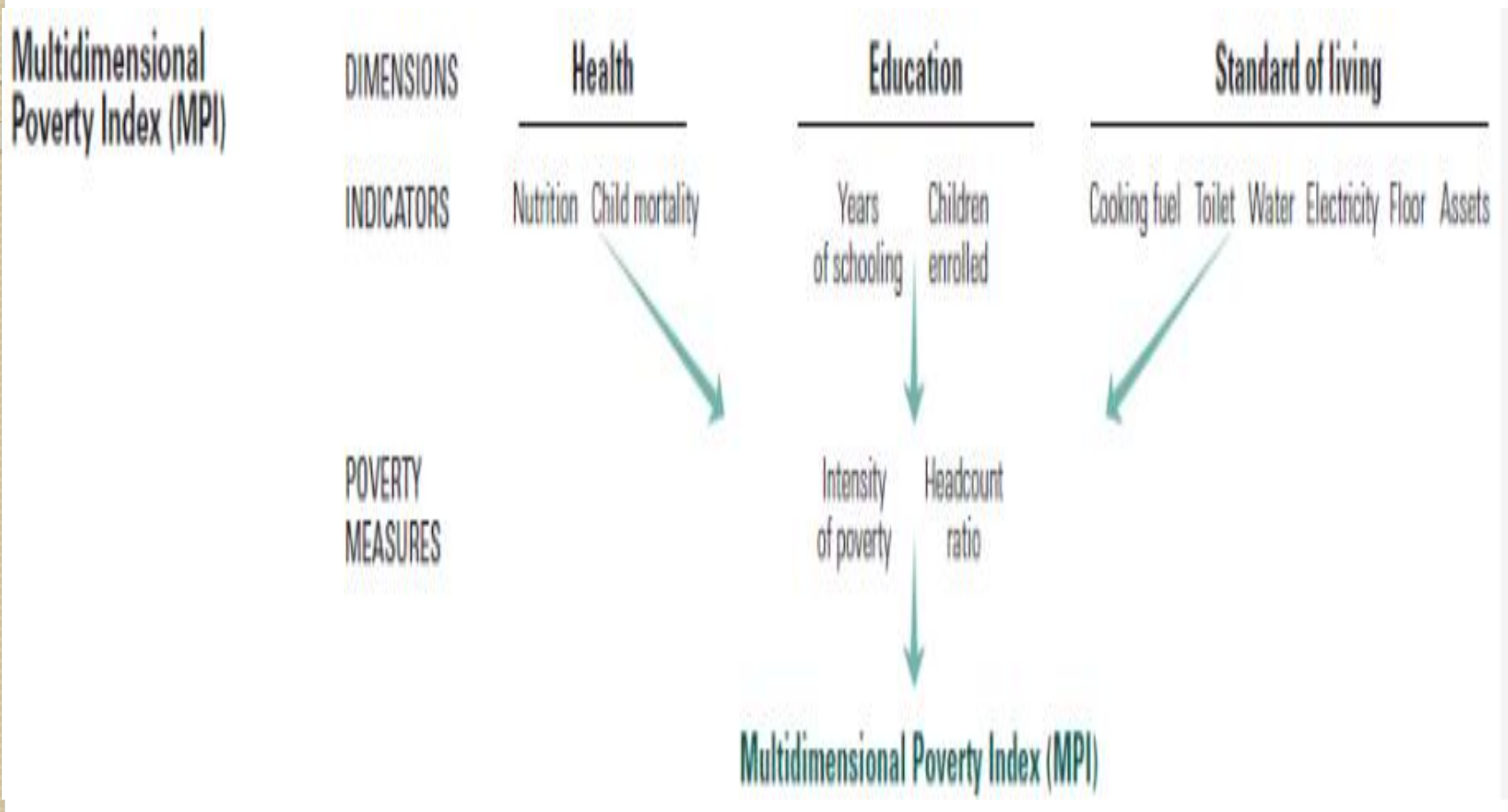
Indicators of M.P.I



Source: http://hdr.undp.org/en/content/multidimensional-poverty-index-mpi

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MPI Indicators

S.No.	Indicators
	Education
1.	No one has completed 5 years of schooling.
2.	At least one school - age child (up to grade 8) who is not enrolled in school.
	Health
3.	At least one member should be malnourished.
4.	One or more children have died.
	Standard of Living
5	No electricity.
6	No access to clean drinking water.
7	No access to adequate sanitation.
8	House has dirty floor.
9	Households uses dirty cooking fuels(dung, wood or charcoal).
10	Households have no car or motorized vehicles & own at most one of these assets- Bicycle, motorcycle, radio, refrigerator, telephone or television.

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M.P.I.

- About 1.5 billion people in the 102 developing countries currently covered by the MPI—about 29 percent of their population — live in multidimensional poverty — that is, with at least 33 percent of the indicators reflecting acute deprivation in health, education and standard of living. And close to 900 million people are at risk (vulnerable) to fall into poverty if setbacks occur – financial, natural or otherwise.

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M.P.I.

- The MPI is the product of the multidimensional poverty head-count (the share of people who are multidimensionally poor) and the average number of deprivations each multidimensionally poor households experiences (the intensity of their poverty).

- It has three dimensions mirroring the H.D.I. viz., health, education & living standards which are reflected in 10 indicators. The maximum score is 100 percent, which each dimension equally weighted (thus the maximum score in each dimension is 33.3 per cent).

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Calculation of MPI

- M.P.I. is a product of two measures: the multidimensional head-count ratio (H) & the intensity of poverty (A), i.e.,

$$M.P.I. = H * A$$

- Head-count Ratio (H): is the proportion of the population who are multidimensional poor-

$$H = q / n$$

Where, q= no. of people who are multidimensional poor. & n= total population.

- The intensity of Poverty (A): reflects the proportion of the weighted component indicator in which, on average, poor people are deprived.

$$A = \Sigma c / q$$

Where, c is the deprivation score that the poor experience.

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Multidimensional Poverty Index (MPI)- India

- HDR 2020 presented MPI estimates for 107 countries.
- In India, 27.9 percent of population i.e., as many as 421 Mn. people suffer from multidimensional poverty(2018).Not only this ,8.8 percent in 2018 of the population lives under conditions of severe poverty.

MPI	Head count	Intensity of Deprivation	National Poverty Line
India (2023)	16.4%	42.0%	21.9%

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Key Findings of M.P.I. 2023

- It compiles data from 110 developing countries covering 6.1 billion people, accounting for 92 percent of the population in developing countries.
- **534 million:** of the 1.1 billion poor people live in Sub-Saharan Africa.
- **485 million:** poor people live in severe poverty, experiencing 50–100% of weighted deprivations.
- **566 million:** of the 1.1 billion poor people are children under 18 years of age.

Current Status of Human Development Indicators for India

Indicators	Value& Rank 2015	Value & Rank 2017	Value & Rank 2018	Value & Rank 2019	Value & Rank 2021	Value & Rank 2022
Human Development Index (H.D.I.)	0.624 131/188	0.640 130/189	0.647 129/189	0.645 131/189	0.633 130/191	0.644 134/193
Gender Development Index (G.D.I.)	0.819 M : 0.671 F: 0.549 5/5	0.841 M: 0.683 F:0.575 5/5	0.829 M: 0.692 F:0.574 5/5	0.820 M: 0.699 F:0.573 5/5	0.849 M:0.668 F:0.567 5/5	0.852 M:0.684 F:0.582 5/5
Gender Inequality Index (G.I.I.)	0.530 125/188	0.524 127/189	0.501 122/189	0.488 123/189	0.490 132/191	0.437 108/193
Multidimensional Poverty Index (M.P.I.)	Intensity- (55.3)	0.121	0.123	0.123 (27.9)	0.123 (43.9) (Y-2016)	0.069

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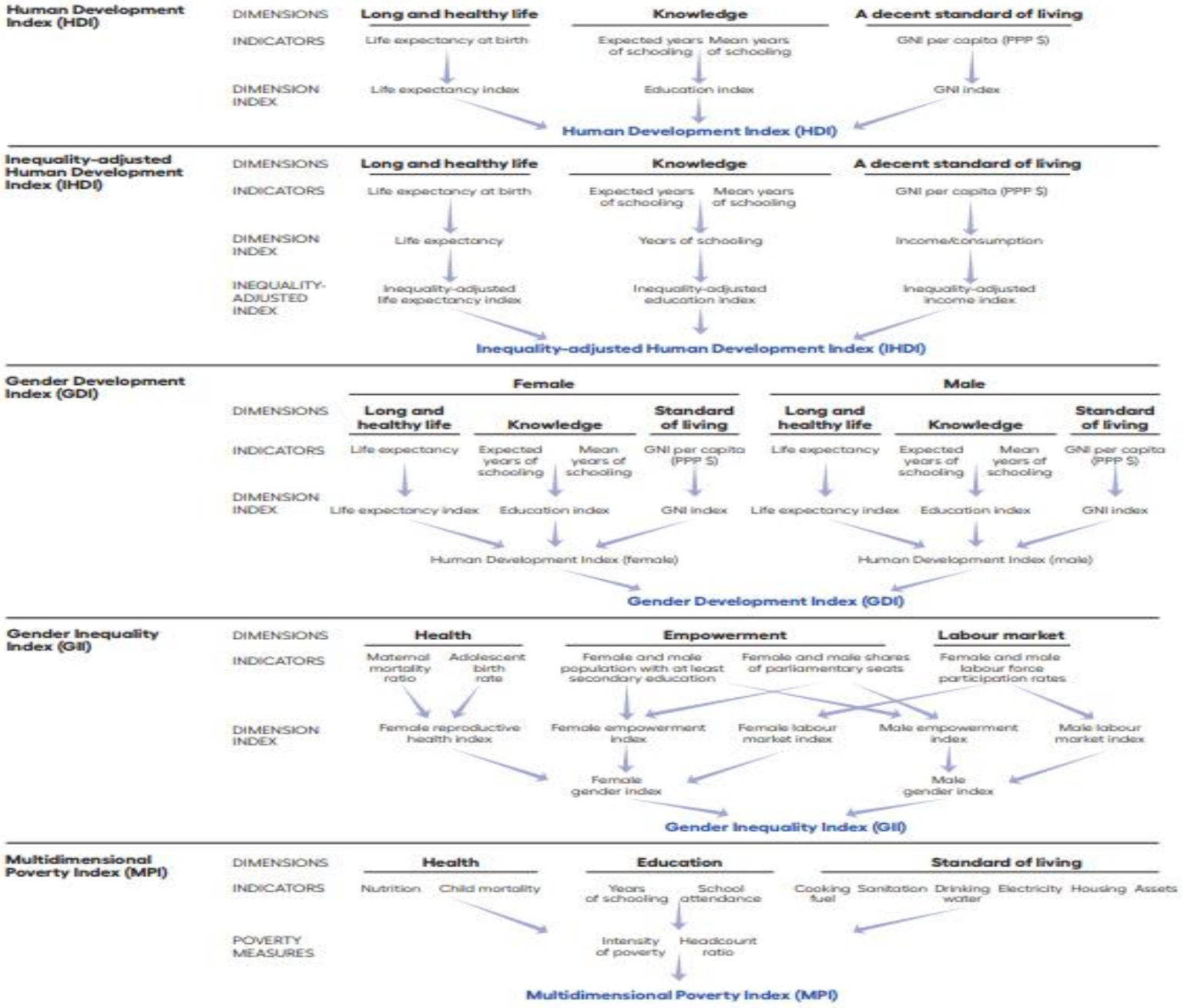
Technical notes

Calculating the human development indices—graphical presentation



Human Happiness Index

- United Nations Sustainable Development Solutions Network (U.N.S.D.S.N.) publishes the World Happiness Report which was initially established in 2012.

- The World Happiness Report 2020 had for the first time ranked the cities by their subjective well-being and measured how the social, urban and natural environments combine to affect happiness. The report used 2017-2019 data.

- Recently, the 10th edition of the World Happiness Report 2022 was released by the U.N.S.D.S.N. The report placed a total of 146 countries on its list. For the fifth year in a row, Finland has been ranked highest in the 2022 World Happiness Report. Afghanistan is the unhappiest country in the world, coming in at number 146.

- India moved up three ranks from 139th in the 2021 report to 136th in the 2022 edition.

- According to the Happiness Report, India was one of the nations where people's assessments of their quality of life declined by more than one full point on a scale of 0 to 10 over the previous ten years.

Top 10 Happiest Country in World

Rank	Country
1	Finland
2	Denmark
3	Iceland
4	Switzerland
5	Netherlands
6	Luxembourg
7	Sweden
8	Norway
9	Israel
10	New Zealand

Global Hunger Index

- The Global Hunger Index is a peer-reviewed annual report, jointly published by Concern Worldwide and Welthungerhilfe, designed to comprehensively measure and track hunger at the global, regional, and country levels. The aim of the GHI is to trigger action to reduce hunger around the world.

- According to the Global Hunger Index -2021, India ranks 101 out of 117 developing nations which is behind Nepal(76) , China , Sri Lanka, Pakistan (76) & Bangladesh(92).

- India's Huger index Score for 2021 was 27.5which indicates a very serious situation as against 7.7 for China & 25.5 for Sri Lanka & 21.9 for Nepal.

- Proportion of undernourished in the population of India was 25.7 percent (i.e. one out of six persons) during 2018-20.

- As many as 34.7 percent of children under 5 were under weight during 2019-20. (i.e., one out of every third child).

- In 2019, under 5 mortality rate was 3.4 % higher than Bangladesh & Nepal where it was 3.3 % & Sri Lanka where it was 0.7 %.

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Any Questions ???
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