Technical note. Multidimensional Poverty Index

The global Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household level in health, education and standard of living. It uses micro data from household surveys, and—unlike the Inequality-adjusted Human Development Index—all the indicators needed to construct the measure must come from the same survey. More details about the general methodology can be found in Alkire and Jahan (2018). Programs (Stata do-files) for computing the MPI and its components for a large selection of countries with appropriate data are available at https://hdr.undp.org/mpi-statistical-programmes.[1]

Data sources

- ICF Macro Demographic and Health Surveys.
- United Nations Children's Fund Multiple Indicator Cluster Surveys.
- For several countries, national household surveys with the same or similar content and questionnaires: Bhutan, 2022 Bhutan Living Standards Survey; Plurinational State of Bolivia, 2023 Encuesta de Demografía y Salud; Botswana, 2015/2016 Multi-Topic Household Survey; Brazil, 2015 Pesquisa Nacional por Amostra de Domicílios; China, 2014 China Family Panel Studies; Ecuador, 2018 Encuesta Nacional de Salud y Nutrición; Jamaica, 2018 Jamaica Survey of Living Conditions; Libya, 2014 Pan Arab Population and Family Health Survey; Mexico, 2023 Encuesta Nacional de Salud y Nutricion; Morocco, 2017/2018 Pan Arab Population and Family Health Survey; Niger, 2021 Enquête Nationale sur la Fécondité et la Mortalité des Enfants de Moins de Cinq Ans; Peru, 2023 Encuesta Demográfica y de Salud Familiar; Seychelles, 2019 Quarterly Labor Force Survey; and Sri Lanka, 2016 Demographic and Health Survey.

Methodology

The 2025 global MPI has the same functional form and indicators as in 2018. It continues to use 10 indicators in three dimensions—health, education and standard of living—following the same dimensions and weights as the Human Development Index.

Each person is assigned a deprivation score according to his or her household's deprivations in each of the 10 indicators. The maximum deprivation score is 100 percent, with each dimension equally weighted; thus, the maximum deprivation score in each dimension is 33.3 percent or, more accurately, ⅓. The health and education dimensions have two indicators each, so each indicator is weighted as ⅙. The standard of living dimension has six indicators, so each indicator is weighted as 1/18.

To identify multidimensionally poor people, the deprivation scores for each indicator are summed to obtain the household deprivation score. A cutoff of ⅓ is used to distinguish between poor and nonpoor people. If the deprivation score is ⅓ or higher, that household (and everyone in it) is considered multidimensionally poor. People with a deprivation score of ⅕ or higher but less than ⅓ are considered to be vulnerable to multidimensional poverty. People with a deprivation score of ½ or higher are considered to be in severe multidimensional poverty.

The headcount ratio, H, or incidence of multidimensional poverty is the proportion of multidimensionally poor people in the population:

$$H = \frac{q}{n}$$

where q is the number of people who are multidimensionally poor and n is the total population.

The intensity of poverty, A, reflects the average proportion of the weighted component indicators in which multidimensionally poor people are deprived. For multidimensionally poor people only (those with a deprivation score s greater than or equal to 33.3 percent), the deprivation scores are summed and divided by the total number of multidimensionally poor people:

$$A = \frac{\sum_1^q s_i}{q}$$

where s_i is the deprivation score that the ith multidimensionally poor person experiences.

The deprivation score s_i of the ith multidimensionally poor person can be expressed as the

1 These global estimates are jointly produced by OPHI and HDRO based on 109 survey datasets. For harmonized time-series changes, see Table 2 in UNDP and OPHI (2025), which presents data for 88 countries across 156 time periods, produced by Alkire, Mishra, Selden, and Suppa (2025).

Dimension	Indicator	Deprived if...	Weight
Health	Nutrition	Any adult under age 70 years or any child for whom nutritional information is available is undernourished. Adults ages 19–70 years (229–840 months) are considered undernourished if their body mass index (BMI) is below 18.5 kg/m^2. Individuals ages 5–19 years (61–228 months) are considered undernourished if their age-specific BMI values are below minus two standard deviations from the median of the reference population (https://www.who.int/growthref/en/). In the majority of countries, BMI-for-age covered individuals ages 15–19 years, as anthropometric data were available only for this age group; if other data were available, BMI-for-age was applied for all individuals ages 5–19 years. Children under age 5 years (under 60 months) are considered undernourished if their *z*-score for either height-for-age (stunting) or weight-for-age (underweight) is below minus two standard deviations from the median of the reference population (https://www.who.int/childgrowth/software/en/). Nutritional information is not provided for households without members eligible for measurement; these households are assumed to be nondeprived in this indicator.	1/6
	Child mortality	Any child under age 18 has died in the five years preceding the survey. When a survey lacks information about the date of child deaths, deaths that occurred at any time are taken into account.[a]	1/6
Education	Years of schooling	No household member of "school entrance age + six years" or older has completed at least six years of schooling.[b]	1/6
	School attendance	Any school-age child[c] is not attending school up to the age at which he or she would complete class 8.	1/6
Standard of living	Electricity	The household has no electricity.[d]	1/18
	Sanitation	The household does not have access to improved sanitation (according to Sustainable Development Goal guidelines), or it is improved but shared with other households. A household is considered to have access to improved sanitation if it has some type of flush toilet or latrine or ventilated improved pit or composting toilet that is not shared. When a survey uses a different definition of adequate sanitation, the survey report is followed.	1/18
	Drinking water	The household does not have access to an improved source of drinking water (according to Sustainable Development Goal guidelines), or an improved source of drinking water is at least a 30-minute walk from home, roundtrip. A household is considered to have access to an improved source of drinking water if the source is piped water, a public tap, a borehole or pump, a protected well, a protected spring or rainwater. When a survey uses a different definition of improved source of drinking water, the survey report is followed.	1/18
	Housing	At least one of the household's three dwelling elements—floor, walls or roof—is made of inadequate materials—that is, the floor is made of natural materials and/or the walls and/or the roof are made of natural or rudimentary materials. The floor is made of natural materials such as mud, clay, earth, sand or dung; the dwelling has no roof or walls; the roof or walls are constructed using natural materials such as cane, palm, trunks, sod, mud, dirt, grass, reeds, thatch, bamboo or sticks or rudimentary materials such as carton, plastic or polythene sheeting, bamboo or stone with mud, loosely packed stones, uncovered adobe, raw or reused wood, plywood, cardboard, unburnt brick, or canvas or tent.	1/18
	Cooking fuel	The household cooks with dung, wood, charcoal or coal.	1/18
	Assets	The household does not own a car or truck and does not own more than one of the following assets: radio, television, telephone, computer, animal cart, bicycle, motorbike or refrigerator.[e]	1/18

a. Information about child deaths is typically reported by women ages 15–49. When information from an eligible woman was not available, information from a man was used when the man reported no death in the household, and information was coded as missing when the man reported a death (because the date of the death was unknown).
b. The cutoff was previously age 10, but this did not account for the fact that children do not normally complete six years of schooling by age 10. However, if a child starts school at age 6 and has completed six years of schooling by age 10, this is counted as an achievement. If not, this is not counted as a deprivation.
c. Official school entrance age is from UIS.Stat (http://data.uis.unesco.org).
d. For the few countries that do not collect data on electricity because of 100 percent coverage, all households in the country as identified as nondeprived in electricity.
e. Televisions include smart televisions and black and white televisions, telephones include cell phones, computers include tablets and laptops, and refrigerators include freezers.

sum of the weights associated with each indicator j (j = 1, 2, ..., 10) in which person i is deprived, $s_i = c_{i1} + c_{i2} + ... + c_{i10}$.

The MPI value is the product of two measures: the incidence of multidimensional poverty and the intensity of poverty:

$$MPI = H \cdot A$$

The contribution of dimension d to multidimensional poverty can be expressed as

$$Contrib_d = \frac{\sum_{j \in d} \sum_1^q c_{ij}}{n} / MPI$$

where d is health, education or standard of living.

The MPI can also be expressed as the weighted sum of the censored headcount rates h_j of each indicator j. The censored headcount rate of indicator j refers to the proportion of people who are multidimensionally poor and deprived in this indicator.

$$MPI = \sum_{j=1}^{10} c_j \cdot h_j$$

where c_j is the weight associated with indicator j (either 1/6 or 1/18), and the weights sum to 1.

The variance of deprivation scores of multidimensionally poor people is used to measure inequality among those people:

$$V = \sum_1^q (s_i - A)^2 / (q - 1)$$

All parameters defined above are estimated using survey data and sampling weights according to the rules of the sampling theory (Lohr 2010).

Weighted deprivations:

- Household 1: (1 · 16.67) + (1 · 5.56) = 22.2 percent.
- Household 2: 72.2 percent.
- Household 3: 38.9 percent.
- Household 4: 50.0 percent.

Based on this hypothetical population of four households:

Incidence of multidimensional poverty (H) =

$$\left(\frac{0+7+5+4}{4+7+5+4}\right) = 0.80$$

(80 percent of people are multidimensionally poor).

Intensity of poverty (A) =

$$\frac{(72.2 \cdot 7) + (38.9 \cdot 5) + (50.0 \cdot 4)}{(7+5+4)} = 56.3 \text{ percent}$$

(the average multidimensionally poor person is deprived in 56.3 percent of the weighted indicators).

MPI = $H \cdot A = 0.8 \cdot 0.563 = 0.450$.

Contribution of deprivations in:

Health:

$$contrib_1 = \frac{16.67 \cdot 5 + 16.67 \cdot (7+4)}{4+7+5+4} \Big/ 0.450 = 29.6\%$$

Education:

$$contrib_2 = \frac{16.67 \cdot (7+4) + 16.67 \cdot 7}{4+7+5+4} \Big/ 0.450 = 33.3\%$$

Standard of living:

$$contrib_3 = \frac{5.56 \cdot (7 \cdot 4 + 5 \cdot 4 + 4 \cdot 3)}{4+7+5+4} \Big/ 0.450 = 37.1\%.$$

Calculating the contribution of each dimension to multidimensional poverty provides information that can be useful for revealing a country's deprivation structure and can help with policy targeting.

Variance of deprivation scores among the poor (V) =

$$\frac{(0.722-0.563)^2 \cdot 7 + (0.389-0.563)^2 \cdot 5 + (0.500-0.563)^2 \cdot 4}{16-1} = 0.023$$

Example using hypothetical data

Indicator	Indicator weight	Household 1	2	3	4
Household size		4	7	5	4
Health					
At least one member is undernourished	(⅓) ÷ 2 = 16.7%	0	0	1	0
One or more children have died	(⅓) ÷ 2 = 16.7%	1	1	0	1
Education					
No one has completed at least six years of schooling	(⅓) ÷ 2 = 16.7%	0	1	0	1
At least one school-age child not enrolled in school	(⅓) ÷ 2 = 16.7%	0	1	0	0
Standard of living					
No electricity	(⅓) ÷ 6 = 5.6%	0	1	1	1
No access to improved sanitation	(⅓) ÷ 6 = 5.6%	0	0	1	0
No access to an improved source of drinking water	(⅓) ÷ 6 = 5.6%	0	1	1	0
House built with inadequate materials	(⅓) ÷ 6 = 5.6%	0	0	0	0
Household cooks with dung, wood, charcoal or coal	(⅓) ÷ 6 = 5.6%	1	1	1	1
Household does not own a car or truck and does not own more than one of the following assets: radio, television, telephone, computer, animal cart, bicycle, motorbike or refrigerator.	(⅓) ÷ 6 = 5.6%	0	1	0	1
Results					
Individual deprivation score, c (sum of each deprivation multiplied by its weight) for each household member		22.2%	72.2%	38.9%	50.0%
Is the household multidimensionally poor (c ≥ ⅓)?		No	Yes	Yes	Yes

Note: 1 indicates deprivation in the indicator; 0 indicates nondeprivation.

Censored headcount rates for each indicator

	People who are multidimensionally poor and deprived in each indicator	Proportion of people who are multidimensionally poor and deprived in each indicator	Proportion of people who are multidimensionally poor and deprived in each indicator multiplied by the indicator weight
Nutrition	5	0.250	0.042
Child mortality	11	0.550	0.092
Years of schooling	11	0.550	0.092
School attendance	7	0.350	0.058
Electricity	16	0.800	0.044
Sanitation	5	0.250	0.014
Drinking water	12	0.600	0.033
Housing	0	0.000	0.000
Cooking fuel	16	0.800	0.044
Assets	11	0.550	0.031
Sum			0.450

References

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