

Human Development Indices and Indicators: 2018 statistical update

Human Development Index (HDI)

Frequently Asked Questions

What does the Human Development Index tell us?

The Human Development Index (HDI) was created to emphasize that expanding human choices should be the ultimate criteria for assessing development results. Economic growth is a means to that process but is not an end in itself. The HDI can also be used to question national policy choices, asking how two countries with the same level of Gross National Income (GNI) per capita can end up with different human development outcomes.

For example, Turkey has GNI per capita higher than Chile, but in Turkey, life expectancy at birth is almost four years shorter, mean years of schooling is 2.3 years than in Chile, resulting in Chile having a higher HDI value than Turkey. These contrasts can stimulate debate about government policy priorities.

How many countries are included in the 2017 HDI?

The 2017 HDI covers 189 countries. A new addition is the Republic of the Marshall Islands. The wide coverage is the result of efforts by the Human Development Report Office (HDRO) to work with UN agencies and the World Bank, which provide internationally standardized data, and with national statistical agencies to obtain required development indicators for the HDI. For a full explanation of the results and methodology of the 2017 HDI and other composite indices, please see Technical Notes 1-6 at http://hdr.undp.org/sites/default/files/hdr2018_technical_notes.pdf.

What are the criteria for a country to be included in the HDI?

The Human Development Report Office strives to include as many UN Member States as possible in the HDI. To include a country in the HDI we need recent, reliable and comparable data for all three dimensions of the Index. For a country to be included, statistics should ideally be available from the national statistical authority through mandated relevant international data agencies.

What is an “imputed” indicator – and for which countries were these imputed statistics used?

For countries for which only one HDI indicator is missing, the HDRO estimates the missing value using an alternative source or a cross-country regression model. For example, mean years of schooling (MYS) for Liechtenstein is based on MYS of neighbouring Austria. For 11 countries—Antigua and Barbuda, Cabo Verde, Dominica, Eritrea, Guinea Bissau, Grenada, Kiribati, Seychelles, St. Kitts and Nevis, St. Vincent and the Grenadines, and Turkmenistan — mean years of schooling was estimated by a cross-country regression model. Expected years of schooling was estimated by cross-country regression for ten countries—Bahamas, Dominica, Equatorial Guinea, Haiti, Libya, Papua New Guinea, South Sudan, Tonga, Trinidad and Tobago, and Vanuatu. For three countries—Saint Kitts and Nevis, Eritrea and Grenada — mean years of schooling was estimated by a cross-country regression model.

Did the HDI rankings change for many countries in 2017?

In general, the rankings change a little between two successive years because of the nature of the HDI component indicators. With the exception of gross national income per capita, other indicators change very slowly year to year.

Based on the consistent data series that were available on the cut-off date for downloading data for the computation of composite indices for the 2017 Statistical update, there are several countries with ranks that changed between 2016 and 2017. The HDI values for 2016 and 2017 are given in Table 2 of Statistical Annex, the corresponding ranks are given in Table 1. In Table 2 we also provide the change in ranks between 2012 and 2017.

The consistent data are based on the latest updates and data revisions and are obtained using the same methodology. The effect of change in achievements (improvement or decline) in human development indicators in terms of health, education and living standards is captured by comparing the HDIs obtained from such a consistent data series.

The difference between HDI values (and ranks) published in HDRs for different years represents a combined effect of data revision, change in methodology, and the real change in achievements in indicators.

We advise users of the HDI not to compare the estimates from Reports published in different years, but to use the consistent data given in Table 2 of the latest report or to use data series available in the on-line database <http://hdr.undp.org/en/data>.

Were there any significant data revisions of the component indicators for the 2017 HDI?

The major data revision was made by the United Nations Population Division for demographic indicators, including population size and life expectancy. New data were released by the United Nations Population Division as 'The World Population Prospect, 2017 Revision' on 21 July 2017.

This revision has had impacts on HDI values and ranking because of revised life expectancy, but also because of the revised population size which is the denominator in Gross national income per capita and in education indicators. The effects were non-uniform across countries - some got life expectancy revised upwards and some downwards. The same happened with other indicators.

Are the ties in the HDI ranking of countries kept this year?

Although the HDI is calculated with the larger numbers of decimals, we report only the HDI rounded to three decimals. Often there are ties in the HDI values of countries, which is also reflected in ties in their ranks. The HDI values, by the very nature of the estimated components, are not significant beyond three decimal places.

Which data sources are used for HDI computation?

Life expectancy at birth is provided by the UN Population Division in the UN Department of Economic and Social Affairs (UNDESA); mean years of schooling (MYS) is based on UNESCO Institute for Statistics (UIS) educational attainment data, for countries for which UIS data are not available, Barro and Lee (2016) estimates were used; expected years of schooling (EYS) is provided by UIS; and GNI per capita (in 2011 \$PPP) by the World Bank and the International Monetary Fund. For several countries, mean years

of schooling and expected years of schooling are estimated from nationally representative household surveys and for some countries GNI was obtained from the UN Statistical Division's database – National Accounts Main Aggregates Database.

Are there discrepancies between national and international data used for calculation of the HDI and other human development indices?

Differences between national and international values of indicators exist for some countries. HDRO actively advocates for the improvement of the quality of human development data at all levels – national and international – and for an efficient communication and collaboration between national statistical authorities and the UN statistical entities. The Human Development Report Office does not take data directly from national statistical sources.

Why is it important to express GNI per capita in purchasing power parity (PPP) international dollars?

The HDI attempts to make an assessment of 189 diverse countries and territories, with very different price levels. To compare economic statistics across countries, the data must first be converted into a common currency. Unlike market exchange rates, PPP rates of exchange allow this conversion to take account of price differences between countries. In that way GNI per capita (PPP \$) better reflects people's living standards uniformly. In theory, 1 PPP dollar (or international dollar) has the same purchasing power in the domestic economy of a country as US\$1 has in the US economy.

The current PPP conversion rates have been introduced in May 2014. They were based on the 2011 International Comparison Programme (ICP) Surveys, which covered 199 economies from all geographical regions and from the OECD.

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

No. Income is a means to human development, not its end. GNI per capita only reflects average national income. It does not reveal how that income is spent, nor whether it translates to better health, education and other human development outcomes. In fact, comparing the GNI per capita rankings and the HDI rankings of countries can reveal much about the results of national policy choices. Gabon with the GNI per capita of \$16,431 (PPP\$) has a GNI rank of 70, but an HDI rank 110 –the same as that of Paraguay whose GNI per capita is only \$8,380 (PPP\$).

Can the HDI alone measure a country's level of human development?

No. The concept of human development is much broader than what can be captured by the HDI, or by any other composite index in the Human Development Report (Inequality-adjusted HDI, Gender development index, Gender Inequality Index or Multidimensional Poverty Index). The composite indices are focused measures of human development, zooming in on a few selected areas. A comprehensive assessment of human development requires analysis of other human development indicators and information presented in the statistical annex of the report (see the Reader's guide to the Report).

Can the HDI indicators be adapted to compute the HDI at the country level?

Yes, the HDI indicators can be adapted to country-specific indicators provided they meet other aspects of statistical quality. For example, some countries have used under-5 mortality rates at sub-national levels instead of life expectancies and some have used average disposable income per capita instead of GNI per capita. The HDI can also be disaggregated at sub-national level to compare levels and disparities among different subpopulations within a country, provided that appropriate data at the level of disaggregation are available or can be estimated using sound statistical methodology. The highlighting of internal disparities using HDI methodology has prompted constructive policy debates in many countries.

Why is the geometric mean used for the HDI rather than the arithmetic mean?

In 2010, the geometric mean was introduced to compute the HDI. Poor performance in any dimension is directly reflected in the geometric mean. In other words, a low achievement in one dimension is not linearly compensated for anymore by high achievement in another dimension. The geometric mean reduces the level of substitutability between dimensions and at the same time ensures that a 1 percent decline in the index of, say, life expectancy has the same impact on the HDI as a 1 percent decline in the education or income index. Thus, as a basis for comparisons of achievements, this method is also more respectful of the intrinsic differences across the dimensions than a simple average.

What is the effect of fixing the maximum of GNI per capita at \$75,000?

Income is instrumental to human development, but the contribution diminishes as incomes rise. Also, a high income without being translated into other human development outcomes is of less relevance for human development. Fixing the maximum at \$75,000 means that for countries with GNI per capita greater than \$75,000, only the first \$75,000 contributes to human development. In this way the higher income is prevented from dominating the HDI value. Currently we have only 5 countries with GNI pc above the cap – Brunei Darussalam, Liechtenstein, Kuwait, Qatar and Singapore. Projections based on fairly realistic growth rates have shown that by 2020 not more than seven countries will exceed the limit.

What is the rationale behind the minimum values for indicators?

Generally, the minimum values are set to the values that a society needs to survive over time. For life expectancy – 20 years is based on historical evidence (Maddison, 2010, and Riley, 2005), which indicates 20 years as the minimum. If a society or a subgroup of society has a life expectancy below the typical age of reproduction, that society would die out. Lower values have occurred during some crises, such as the Rwandan genocide, but these were exceptional cases that were not sustainable. See:

- Maddison, A. 2010. *Historical Statistics of World Economy: 1-2008 AD*. Paris: Organization for Economic Cooperation and Development.
- Riley, J.C. 2005. *Poverty and Life Expectancy*. Cambridge, UK: Cambridge University Press.
- Noorbakhsh (1998). The Human Development Index: Some Technical Issues and Alternative Indices. *Journal of International Development* 10, 589-605.

For both education indicators, the minimum is set to 0 since societies can subsist without formal education. For income, it is set at \$100 per capita GNI, which is lower than the lowest value attained by any country in recent history (Liberia, 1995). Should any country's per capita GNI fall close to or below \$100, the minimum will be changed accordingly.

Why is the HDI using the logarithm of income component?

In addition to capping, income enters the HDI as a logarithmically transformed variable. The idea is to emphasize the diminishing marginal utility of transforming income into human capabilities. This means that the concave logarithmic transformation makes clearer the notion that an increase of GNI per capita by \$100 in a country where the average income is only \$500 has a much greater impact on the standard of living than the same \$100 increase in a country where the average income is \$5,000 or \$50,000.

Why has the principle of “diminishing returns” not been applied to other indicators?

There are arguments for and against transforming the health and education variables to account for diminishing returns. It is true that health and education are not only of intrinsic value; they, like income, are instrumental to other dimensions of human development not included in the HDI (Sen, 1999). Thus, their ability to be converted into other ends may likewise incur diminishing returns. The approach is to value each year of age or education equally, and therefore the principle has been applied only to the income indicator.

Are the HDI dimensions weighted equally?

The HDI assigns equal weight to all three dimension indices; the two education sub-indices are also weighted equally. The choice of weights is based on the normative assumption that all human beings value three dimensions equally. The right choice of minima and maxima for the transformation of component indicators into indices gives more equal ranges of variation of dimension indices. Research papers that provide a statistical justification for this approach include:

- Noorkbakhsh (1998). The Human Development Index: Some Technical Issues and Alternative Indices. *Journal of International Development* 10, 589-605.
- Decancq, K. and Lugo, A. (2013). Weights in multidimensional indices of wellbeing: An overview. *Econometric Reviews*, 2013 - Taylor & Francis

Why does the HDI not include dimensions of participation, gender and equality?

As a simple summary index, the HDI is designed to reflect average achievements in three basic aspects of human development – leading a long and healthy life, being knowledgeable and enjoying a decent standard of living. Instead of bringing additional dimensions and indicators into the HDI, other composite indices were introduced – Inequality-adjusted HDI, Gender inequality index, and gender development index. Participation and other aspects of well-being are measured using a range of objective and subjective indicators and are regularly discussed in the Reports. Measurement issues related to these aspects of human development demonstrate the conceptual and methodological challenges that need to be further addressed.