

Frequently Asked Questions: Inequality-adjusted Human Development Index (IHDI)

What is the purpose of an inequality-adjusted HDI (IHDI)? The HDI represents a national average of human development achievements in the three basic dimensions making up the HDI: health, education and income. Like all averages, it conceals disparities in human development across the population within the same country. Two countries with different distributions of achievements can have the same average HDI value. The IHDI takes into account not only the average achievements of a country on health, education and income, but also how those achievements are distributed among its citizens by “discounting” each dimension’s average value according to its level of inequality.

What are the most important results of the IHDI regarding HDI achievements globally and regionally? Which countries and regions are the least equal and most equal? The average world loss in HDI due to inequality is about 22 percent – ranging from 6 percent (Czech Republic) to 45 percent (Mozambique). People in sub-Saharan Africa suffer the largest losses due to inequality in all three dimensions, followed by South Asia and the Arab States. South Asia suffers high inequality in health and education, while considerable losses in the Arab States can generally be traced to unequal distribution of education. Latin America and the Caribbean suffers the largest loss of any region due to inequality in income (38 percent). Generally countries with less human development also have more multidimensional inequality and thus larger losses in human development due to inequality, while people in developed countries experience the least inequality in human development. East Asia and the Pacific performs well on the IHDI, particularly in access to healthcare and education, and formerly socialist countries in Europe and Central Asia have relatively egalitarian distributions across all three dimensions.

Does the IHDI show if inequality is getting better or worse? No, because the IHDI is calculated for just one data point—2010. While we calculate HDI trends based on consistent time series data we are unable to do so for the IHDI due to lack of time series distribution data for most of the dimension indicators. Future versions of the IHDI will allow for comparisons over time.

How is the IHDI measured? The approach is based on a distribution-sensitive class of composite indices proposed by Foster, Lopez-Calva, and Székely (2005), which draws on the Atkinson (1970) family of inequality measures. It is computed as the geometric mean of dimension indices adjusted for inequality. The inequality in each dimension is estimated by the Atkinson inequality measure, which is based on the assumption that a society has a certain level of aversion to inequality. (For details see Alkire and Foster (2010) and Technical Note 2 in HDR 2010)

What are the sources of data used for calculating the IHDI? The IHDI relies on data on income/ consumption and years of schooling from major publicly available databases, which contain national household surveys harmonized to common international standards: Eurostat’s EU Survey on Income and Living Conditions, Luxembourg Income Study, World Bank’s International Income Distribution Database, United Nations Children’s Fund’s Multiple Indicators Cluster Survey, US Agency for International Development’s Demographic and Health Survey, World Health Organization’s World Health Survey, and United Nations University’s World Income Inequality Database. For inequality in the health dimension, we used the abridged life tables from the United Nations Population Division.

What is the reference year for the IHDI? IHDI uses the HDI indicators that refer to 2010 and measures of inequality that are based on household surveys from 2000 to 2007 and life tables that refer to the 2005-2010 period. So, the logic was to use the year to which the HDI indicators refer to, especially because we report the inequality-adjusted indicators/indices in tables.

How should the IHDI be interpreted? While the HDI can be viewed as an index of “potential” human development that could be obtained if achievements were distributed equally, the IHDI is the actual level of human development (accounting for inequality in the distribution of

achievements across people in a society). The IHDI will be equal to the HDI when there is no inequality in the distribution of achievement across people in society, but falls below the HDI as inequality rises. The loss in potential human development due to inequality is the difference between the HDI and IHDI, expressed as a percentage.

What are the limitations of the IHDI? The IHDI captures the inequality in distribution of the HDI dimensions. However, it is not association sensitive, i.e., it does not account for overlapping inequalities -whether the same people experience multiple deprivations. Also, the individual values of indicators such as income can be zero or even negative they have been adjusted to non-negative non-zero values uniformly across countries. The estimated inequality is sensitive to the approach we have taken.

What is the policy relevance of the IHDI? The IHDI allows a direct link to inequalities in dimensions of the HDI to the resulting loss in human development, and thus it can help inform policies towards inequality reduction and to evaluate the impact of various policy options aimed at inequality reduction.

Is the IHDI approach useful to UNDP at the country level? The IHDI and its components can be useful as a guide to helping governments better understand the inequalities across populations and their contribution to the overall loss of inequality.

Can the indicators be adapted at the country level? The IHDI in its current form was inspired by a similar index produced by Mexico's national HDR. The IHDI can be adapted to compare the inequalities in different subpopulations within a country, providing that the appropriate data are available. National teams can use proxy distributions for indicators, which may make more sense in their particular case.

Will the IHDI become a permanent feature of UNDP's global HDR? The IHDI is one of three experimental indices introduced in 2010, alongside the Gender Inequality Index and the Multidimensional Poverty Index. It will be revised and improved in light of feedback and data availability.

How do you assess inequality in the distribution of life expectancy at birth? This is the most difficult aspect as life expectancy data are aggregate indicators. However, between-groups inequality can be estimated from the abridged life table (usually five-year age cohort) data; this is what we have used. Undoubtedly, the quality of these estimates is no better than the data in the life table itself.

What important properties does this methodology have? One of the key properties of the approach is that it is "subgroup consistent". This means that if inequality declines in one subgroup and remains unchanged in the rest of population, then the overall inequality declines. The second important property is that the IHDI can be obtained by first computing inequality for each dimension and then across dimensions, which further implies that it can be computed by combining data from different sources.

Is the Gini coefficient not a sufficient measure of inequality? What is the difference between the Gini and Atkinson measures of inequality? The Gini index is commonly used as a measure of inequality of income/consumption or wealth. There was an attempt to apply the Gini index to measure multidimensional inequality (Hicks, 1998). However, the resulting index was not consistent for all subgroups. Moreover, the Gini index does not emphasize the lower part of the distribution, but instead places the same weight throughout the distribution.

Does the IHDI capture all inequalities in the HDI dimensions? No. Due to data limitations, the IHDI does not capture all overlapping inequalities—whether the same person experiences one or multiple deprivations.

For some countries the assessment of inequality in the income dimension is based on household consumption, and for others it is based on income distribution. Are these inequalities comparable? By their very nature, income and consumption yield different levels of inequalities, with income inequality being higher than inequality in consumption. Income seems to correspond more naturally to the notion of “command over resources”. Consumption data are arguably more accurate in developing countries, less skewed by high values, and directly reflect the conversion of resources. Income data also pose technical challenges because of the greater presence of zero and negative values. In an ideal world, one would be consistent in the use of either income or consumption data to estimate inequality. However, to obtain sufficient country coverage, it was necessary to use both. The final estimates are lightly influenced by whether the data are income or consumption.

How is inequality in education calculated? Inequality in the education dimension is approximated only by inequality in years of schooling of the adult population. For simplicity, the estimate of inequality in education is based only on the distribution of years of schooling across the population, drawn from nationally representative household surveys.

Would inclusion of expected years of schooling for children change the results? Expected years of schooling is an aggregate measure and inequality in its distribution would be reflected in current school enrolment ratios. Certainly, there is a difference in inequalities in the two distributions, with the distribution of expected years of schooling across the school age population being lower. Thus, one can speculate that overall inequality in the HDI distribution would be reduced if expected years of schooling were used.

Are the estimated inequalities in distribution of years of schooling for the adult population comparable across countries given the differences in school systems? Years of schooling of adults is mostly derived from the highest level of schooling achieved. Using UNESCO’s country information on the duration of schooling needed for each level, the highest level of schooling is converted into years. While the duration of primary, secondary and most of post-secondary education is more or less standardized, the very high levels – masters and doctoral studies – vary across countries. However, the Atkinson measure of inequality which is used to assess inequality in HDI education components is less sensitive to differences at the upper end of a distribution.