

A new approach to measuring inequalities in development

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A new study by researchers from IIASA and Hong Kong University of Science and Technology for the first time systematically explored and compared the use of the Human Life Indicator as a viable alternative to the conventional Human Development Index as a means of measuring progress in development.

Reducing inequalities between and within countries is a core component of the Sustainable Development Goals, which is why it is important to have a reliable means of measuring the different degrees of development across any given territory. The Human Development Index (HDI) has been widely used to benchmark progress in terms of development for the past three decades, and has also been the core measure underpinning the United Nations Development Programme's Human Development Reports. It has however been widely criticized for a number of problems related to calculation and interpretation. In addition, sub-national HDIs are subject to the same criticisms as national level indices—potentially even more so. In response to this, IIASA researchers previously designed the Human Life Indicator (HLI) - a much simpler measure of development.

The HLI expresses wellbeing in terms of years of life, similar to life expectancy at birth. However, unlike any other conventional measure, it takes not only the mean value, but also the inequality in longevity into account. Compared to the HDI, HLIs are characterized by simpler calculation and interpretation, fewer data requirements, less measurement errors, more consistency over time, and no trade-offs between components. Due to the wide availability of mortality data, the HLI can also be used for reliable comparisons of wellbeing across countries, in the past as well as the present. In their new study published in the journal *PLOS ONE*, the authors for the first time systematically explored and compared HLI and HDI over time at the sub-national level.

"We wanted to determine whether the HLI could operate as a simpler and more transparent substitute for the HDI when looking at development at the sub-national level. Using life tables for the United States, we calculated HLIs for each state for the period 1959 to 2016. We also calculated the extent to which mortality is distributed across the life course as a further measure of inequality and the role of the social determinants of health," explains study author Stuart Gietel-Basten, a

researcher at Hong Kong University of Science and Technology.

The authors opted to use the US as a [case study](#) due to the comparatively long run of available sub-national life tables. The HLI clearly shows how striking regional inequalities exist across the country and that HLI and HDI for the most recent time period are strongly correlated. According to the authors, a current challenge of producing sub-national HLIs is the general lack of comprehensive civil registration and vital statistics systems in many parts of the world—especially in the Global South—from which sub-national life tables can be generated. However, as more and more countries develop these systems the potential to produce HLIs will inevitably increase.

"The HLI is much easier to calculate and interpret. We have shown that it can operate as a good substitute to HDI. By using the HLI rather than the HDI, we can not only better communicate human development more generally, but also the inequalities that exist between regions. This can give a better and clearer idea for policymakers to design means of bridging these gaps," concludes study author Sergei Scherbov, a researcher in the IIASA World Population program.

More information: Scherbov S & Gietel-Basten S (2020). Measuring inequalities of development at the sub-national level: From the Human Development Index to the Human Life Indicator. *PLOS ONE*, [DOI: 10.1371/journal.pone.0232014](https://doi.org/10.1371/journal.pone.0232014)

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