

Methodological Notes

Human Development

Human development is about what people can do and be. It is formally defined as the process of improving people's well-being and expanding their freedoms and opportunities. The human development approach emphasizes the everyday experiences of ordinary people, encompassing the range of factors that shape their opportunities and enable them to live lives of value and choice. People with high levels of human development can invest in themselves and their families and live to their full potential; those without find many doors shut and many choices and opportunities out of reach. The human development concept was developed by the late economist Mahbub ul Haq. In his work at the World Bank in the 1970s, and later as minister of finance in his own country of Pakistan, Dr. Haq argued that existing measures of human progress failed to account for the true purpose of development—to improve people's lives. In particular, he believed that the commonly used measure of Gross Domestic Product failed to adequately measure well-being. Working with Nobel laureate Amartya Sen and other gifted economists Dr. Haq published the first *Human Development Report*, commissioned by the United Nations Development Programme, in 1990.

The American Human Development Index

The human development approach is extremely broad, encompassing the wide range of economic, social, political, psychological, environmental, and cultural factors that expand or restrict people's opportunities and freedoms. But the American Human Development (HD) Index is comparatively narrow, a composite measure that combines a limited number of indicators into a single number. The HD Index is an easily understood numerical measure that reflects what most people believe are the very basic ingredients of human well-being: health, education, and income. The value of the HD Index varies between 0 and 10, with a score close to 0 indicating a greater distance from the maximum possible that can be achieved on the aggregate factors that make up the Index.

Data Sources

The American Human Development Index for California was calculated using two main datasets, mortality data from the California Department of Public Health and education, earnings, and population data from the U.S. Census Bureau. The American Community Survey (ACS), a product of the U.S. Census Bureau, is an ongoing survey that samples a representative percentage of the population every year using standard sampling methods. Between

2010 and 2012, the time period of data used in this report, a sample of 1,601,288 people participated in the ACS, about 4 percent of all California residents. In California overall response rates were at least 97.5 percent for the population in housing units and at or above 93.8 percent for the group quarters population each year of the survey. For larger geographies, such as states, the Census Bureau publishes one-year population estimates; hence all figures for California and the Five Californias contained in this report are calculated using the most recent available data, 2012. However, for smaller geographies, such as counties and Neighborhood Clusters (PUMAs), one-year estimates are often either not available or are unreliable due to small population sizes. In this report, all data for metro areas, counties, and Neighborhood Clusters from the American Community Survey are from 2010–2012.

As with any data drawn from surveys, there is some degree of sampling and nonsampling error inherent in data from the ACS. Thus, not all differences between estimates for two places or groups may reflect a true difference between those places or groups. Comparisons between similar values on any indicator should be made with caution since these differences may not be statistically significant. Direct comparisons between estimates that are not statistically significant at a 90 percent confidence level have been noted in the text.

Health

A long and healthy life is measured using life expectancy at birth.

Life expectancy at birth was calculated by Measure of America using data from the California Department of Public Health, Health Information and Research Section, Death Statistical Master File from 2010–2012, and population data from the U.S. Census Bureau. Life expectancy at birth for counties and metro areas for 2008 was calculated using data from the Death Statistical Master file for 2006–2008 and population data from the U.S. Census Bureau.¹⁸⁰ Life expectancy is calculated using abridged life tables based on the Chiang methodology.¹⁸¹

Education

Access to education is measured using two indicators: net school enrollment for the population ages 3 to 24 and degree attainment for the population 25 years and older (based on the proportions of the adult population that have earned a high school diploma, a bachelor's degree, and a graduate or professional degree). All educational attainment and enrollment figures come from Measure of America analysis of data from the U.S. Census Bureau, American Community Survey. Three-year estimates spanning 2010–2012 were used for metro areas, counties, and Census

Neighborhood Clusters and single-year 2012 estimates were used for the state overall and for the Five Californias. County and metro area attainment and enrollment figures for 2008 are three-year estimates from the American Community Survey spanning 2006–2008.

Income

A decent standard of living is measured using the median personal earnings of all workers with earnings ages 16 and older. Median personal earnings data come from the U.S. Census Bureau, American Community Survey. Three-year estimates spanning 2010–2012 were used for metro areas, counties, and Census Neighborhood Clusters, and single-year 2012 estimates were used for the state overall and for the Five Californias. County and metro area earnings figures for 2008 are three-year estimates from the American Community Survey spanning 2006–2008.

Calculating the American Human Development Index

Before the composite HD Index itself is created, an index is created for each of the three dimensions. This is done in order to transform indicators on different scales—dollars, years, etc.—into a common scale from 0 to 10. In order to calculate these indices—the health, education, and income indices—minimum and maximum values (goalposts) must be chosen for each underlying indicator. Performance in each dimension is expressed as a value between 0 and 10 by applying the following general formula:

$$\text{Dimension Index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}} \times 10$$

Since all three components range from 0 to 10, the HD Index, in which all three indices are weighted equally, also varies from 0 to 10, with 10 representing the highest level of human development.

The goalposts were determined based on the range of the indicator observed on all possible groupings in the United States, taking into account possible increases and decreases for years to come. The goalposts for the four principal indicators that make up the American Human Development Index are shown in the table below. To ensure that the HD Index is comparable over time, the health and education indicator goalposts do not change from year to year while the income goalposts are only adjusted for inflation. Because earnings data and the earnings goalposts are presented in dollars of the same year, these goalposts reflect a constant amount of purchasing power regardless of the year, making income index results comparable over time.

	MAXIMUM VALUE	MINIMUM VALUE
Life expectancy at birth (years)	90 years	66 years
Educational attainment score	2.0	0.5
Combined net enrollment ratio (%)	95	60
Median personal earnings (2012 dollars)*	\$64,687.83	\$15,289.85

* Earnings goalposts were originally set at \$55,000 and \$13,000 in 2005 dollars.

EXAMPLE:

Calculating the HD Index for California



HEALTH Index

Life expectancy at birth for California is 81.25 years. The Health Index is given by:

$$\text{Health Index} = \frac{81.25 - 66}{90 - 66} \times 10 = \mathbf{6.35}$$



EDUCATION Index

In 2012, 81.5 percent of California residents 25 years and older had at least a high school diploma, 30.9 percent had at least a bachelor's degree, and 11.3 percent had a graduate or professional degree. Therefore, the Educational Attainment Score is $0.815 + 0.309 + 0.113 = 1.237$. The Educational Attainment Index is then:

$$\text{Educational Attainment Index} = \frac{1.237 - 0.5}{2.0 - 0.5} \times 10 = \mathbf{4.91}$$

School enrollment (combined gross enrollment ratio) was 78.5 percent, so the Enrollment Index is:

$$\text{Enrollment Index} = \frac{78.5 - 60}{95 - 60} \times 10 = \mathbf{5.29}$$

The Educational Attainment Index and the Enrollment Index are then combined to obtain the Education Index. The Education Index gives a 2/3 weight to the Educational Attainment Index and a 1/3 weight to the Enrollment Index to reflect the relative ease of enrolling students in school as compared with the relative difficulty of completing a meaningful course of education (signified by the attainment of degrees):

$$\text{Education Index} = \frac{2}{3} \mathbf{4.91} + \frac{1}{3} \mathbf{5.29} = \mathbf{5.04}$$



INCOME Index

Median personal earnings in 2012 were \$30,502. The Income Index is then:

$$\text{Income Index} = \frac{\log(30,502) - \log(15,289.85)}{\log(64,687.83) - \log(15,289.85)} \times 10 = \mathbf{4.79}$$



HUMAN DEVELOPMENT Index

Once these indices have been calculated, the HD Index is obtained by taking the average of the three indices:

$$\text{HD Index} = \frac{\mathbf{6.35} + \mathbf{5.04} + \mathbf{4.79}}{3} = \mathbf{5.39}$$

Geographic and Population Groups Used in This Report

Census Neighborhood Clusters are Public Use Microdata Areas (PUMAs), sub-state geographic units designated by the U.S. Census Bureau. PUMAs have populations of at least 100,000 and generally less than 200,000. California has a total of 265 PUMAs. Each PUMA encompasses either two or more counties with small populations or breaks densely populated counties up into smaller units. For example, sparsely populated Del Norte, Lassen, Modoc, Plumas, and Siskiyou Counties are combined into one PUMA whereas populous Los Angeles County is divided into 69 PUMAs. PUMAs used in this report were delineated for the 2010 Census and were named by the California State Census Data Center. These PUMAs are different from and cannot be compared with calculations for the PUMAs used in *A Portrait of California: California Human Development Report 2011*, which were delineated for the 2000 Census.

Counties in California range tremendously in their populations, from nearly 10 million in Los Angeles County to 1,100 in Alpine County. The HD Index is presented for 48 of the larger of California's 58 counties for which reliable three-year estimates from the ACS were available.

Metro Areas are Metropolitan Statistical Areas, which consist of urban centers and their outlying counties as defined by the White House Office of Management and Budget (OMB). Metro Areas comprise counties and include principal cities as well as their outlying suburban and exurban areas with strong economic and social ties to the central city. See [page 145](#) for a full list of counties by metro area. Metropolitan Statistical Area definitions are revised periodically by the OMB. Contemporary MSA definitions have been applied to historical data from the U.S. Census Bureau and California Department of Public Health to ensure that these areas are consistently defined and comparable over time.

Racial and ethnic groups in this report are based on definitions established by the OMB and used by the Census Bureau and other government entities. Since 1997 the OMB has recognized five racial groups and two ethnic categories. The racial groups include Native Americans, Asian Americans, African Americans, Native Hawaiians and Other Pacific Islanders, and whites. The ethnic categories are Latino and not Latino. People of Latino ethnicity may be of any race. In this report, these racial groups include only non-Latino members of these groups who self-identify with that race group alone and no other.

Accounting for Cost-of-Living Differences

The cost of essential goods and services varies across the nation and within distinct regions. However, these costs are often higher in areas with more community assets and amenities that are conducive to higher levels of well-being and expanding human development. For example, neighborhoods with higher housing costs—the major portion of cost of living—are often places with higher-quality public services such as schools, recreation facilities, and transport systems, and safer and cleaner neighborhoods. Thus, to adjust for cost of living would be to explain away some of the factors that the HD Index is measuring.

There is also currently no suitable nationwide measure, official or not, of the cost of living that could be used as a basis for adjusting for differences in costs of living. The Consumer Price Index (CPI), calculated by the U.S. Bureau of Labor Statistics (BLS), helps in understanding changes in the purchasing power of the dollar over time. The CPI is sometimes mistaken for a cost-of-living index, but in fact it is best used as a measure of the change in the cost of a set of goods and services over time in a given place. Measuring differences across region and place is far more complicated. For example, the percentage of a budget spent on particular items can vary significantly (e.g., air conditioning in Texas versus Alaska). Regional Price Parities and the Personal Consumption Expenditure price index produced by the Bureau of Economic Analysis are new official statistics that can be used to adjust personal income for regional variations in the cost of living. Bureau of Economic Affairs cost-of-living adjustments are possible for all fifty states and Washington, DC, as well as metropolitan areas. However, cost-of-living variations within compact regions, such as states or cities or between neighborhoods in the same urban area, are often more pronounced than variations between states and regions. Even the Bureau of Economic Affairs figures do not permit analysis of these localized differences in living costs.

Unofficial measures such as the American Chamber of Commerce Research Association (ACCRA) Cost of Living Index are regularly updated and widely cited. However, this index suffers from several serious drawbacks, chiefly that it only takes into consideration the living costs incurred by urban households in the wealthiest fifth of the income distribution. The ACCRA index thus leaves out the middle class, the poor, and residents of rural areas.