Methodological Note

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. Measure of America's work is inspired by and rooted in this approach.

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 Index, like the UN Human Development Index (HDI) upon which it is based, is a comparatively narrow composite measure that combines a limited number of indicators into a single score. The HDI is an easily understood numerical gauge that reflects what most people believe are the basic ingredients of human well-being: good health, access to education, and sufficient income. The value of the HDI ranges from 0 to 10, with a score of 10 being the maximum possible that can be achieved on the aggregate factors that make up the index.

Data Sources

The analysis in this report includes well-being estimates for the entire state of California, metro and rural areas, public use microdata areas (PUMAs), and counties. The report is accompanied by special sections on Sonoma County, the Inland Empire, and the San Joaquin Valley, which include well-being estimates by census tract and PUMA

The American Human Development Index for *A Portrait of California 2021-2022,* was calculated using several datasets. Mortality data used to calculate life expectancy are from the Centers for Disease Control and Prevention (CDC) and the California Department of Public Health. The education, earnings, and population data all come from the American Community Survey (ACS), a product of the US Census Bureau. The ACS is an ongoing survey that collects data from a representative percentage of the population every year using standard sampling methods.

For populous groups and places, one year of data is often sufficient to obtain a statistically reliable estimate. For less populous groups and places, one-year estimates are often either unreliable due to small population sizes or simply not available. Therefore, multiyear life expectancy and ACS estimates are used for these smaller groups and geographical areas. Source notes below all tables in *A Portrait of California 2021-2022,* show the exact year or years of data presented.

HEALTH: A long and healthy life is measured using life expectancy at birth. Life expectancy at birth was calculated by Measure of America using mortality data obtained by special agreement from the California Department of Public Health and population data from the US Census Bureau American Community Survey. Estimates for the statewide overall population use 2019 data. Estimates for all groups divided by gender, race and ethnicity, and nativity use 2015–2019 data. Estimates for Asian and Latino subgroups use 2014–2019 data. Estimates at the metro and rural area, county, and PUMA levels use 2014–2019 data. Population data from the CDC WONDER Bridged-Race Population Estimates was used to calculate life expectancy for El Dorado, Humboldt, Imperial, Kings, Madera, Napa, Shasta, and Yolo Counties. The US Census Bureau American Community Survey population data was used to calculate the other counties. There was not enough mortality data to calculate life expectancy for the following counties: Alpine, Del Norte, Lake, Lassen, Mariposa, Mono, Plumas, Sierra, and Sutter.

Due to insufficient mortality data, in some cases adjacent PUMAs were combined to obtain a reliable estimate. If unreliable PUMAs were adjacent to each other, they were combined and the resulting life expectancy estimate was applied to each. If an unreliable PUMA had no other adjacent unreliable PUMAs, the unreliable PUMA was combined with a reliable adjacent PUMA and the combined estimate was applied to the unreliable PUMA only. The PUMAs adjusted in this manner are: Berkeley & Albany; Piedmont & East Oakland; Glendora, Claremont, San Dimas & La Verne; Burbank; City of LA: Van Nuys & North Sherman Oaks; City of LA: Westwood & West Los Angeles; East Long Beach; Novato & North San Rafael; Carlsbad; San Diego: Central Coastal; San Diego: Del Mar Mesa; Richmond District; North Beach & Chinatown; South of Market & Potrero; Inner Mission & Castro; and North Sunset District.

Life expectancy was calculated using abridged life tables using the Chiang II methodology. These abridged life tables aggregate death numerators and population denominators into age groups, rather than using single years of age as in complete life tables. The aggregated groups are ages under 1, 1–4, 5–9, 10–14...80–84, and 85 and older. The upper age band is capped at 85 and over. Age-specific mortality rates are used within the life table to calculate the

probability of a death event at each age interval. These probabilities are then applied to a hypothetical population cohort of newborns. Life expectancy at birth in a geographic area can be defined as an estimate of the average number of years a newborn baby would live if they experienced the particular area's age-specific mortality rates for that time period throughout their life.

HDI estimates by census tract in the regional supplements use life expectancy estimates from the US Small-area Life Expectancy Estimates Project (USALEEP) of the National Center for Health Statistics. They use 2010–2015 data and the methodology is explained in detail here: https://www.cdc.gov/nchs/nvss/usaleep/usaleep.html.

EDUCATION: Access to knowledge is measured using two indicators: net school enrollment for the population ages 3 through 24 and degree attainment for the population ages 25 and older (based on the proportions of the adult population that has earned at least a high school diploma, at least 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 US Census Bureau ACS. Single-year 2019 ACS estimates were used for statewide, metro and rural area, and PUMA HDI calculations. Multiyear 2015–2019 estimates were used county and tract calculations.

INCOME: A decent standard of living is measured using the median personal earnings of all workers ages 16 and older. Median personal earnings data come from the US Census Bureau ACS. Single-year 2019 ACS estimates were used for statewide, metro and rural area, and PUMA HDI calculations, and multiyear 2015–2019 estimates were used for county and tract calculations.

Calculating the American Human Development Index

The first step in calculating the HDI is to calculate a subindex for each of the three dimensions separately. This is done in order to put indicators that use different scales—years, dollars, etc.—onto 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:

FORMULA

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

Since all three components range from 0 to 10, the HDI, 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 in all possible groupings in the United States, taking into account possible increases and decreases in 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 HDI 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 using the CPI-U-RS from the Bureau of Labor Statistics. 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. In cases where an estimate for a population group or geographic area falls above or below the set goalpost for that indicator, a maximum value of 10 or a minimum value of 0 is imputed for the purposes of calculating the HD Index.

INDICATOR	Maximum value	Minimum value
Life expectancy at birth	90 years	66 years
Educational attainment score	2.0	0.5
Combined net enrollment ratio	95%	60%
Median personal earnings*	$72,597	$17,159

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

There is a degree of sampling and nonsampling error inherent in data from the Census Bureau's annual ACS. 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.

EXAMPLE

Calculating the HDI for California

HEALTH Index

Life expectancy at birth for California is 81.0 years. The Health Index is then:

$$\text{Health Index} = \frac{81.0-66}{90-66} \times 10 = \mathbf{6.25}$$

EDUCATION Index

In 2019, 84.1 percent of California's residents 25 years and older had at least a high school diploma, 35.0 percent had at least a bachelor's degree, and 13.1 percent had a graduate or professional degree. Therefore, the Educational Attainment score is 0.841+0.350+0.131 = 1.32. The Educational Attainment Index is then:

$$\text{Educational Attainment Index} = \frac{1.32-0.5}{2.0-0.5} \times 10 = \mathbf{5.48}$$

School enrollment (net enrollment ratio) was 79.5 percent, so the Enrollment Index is:

$$\text{Enrollment Index} = \frac{79.5-60}{95-60} \times 10 = \mathbf{5.57}$$

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):

$$\text{Education Index} = \frac{2}{3}\mathbf{5.48} + \frac{1}{3}\mathbf{5.57} = \mathbf{5.51}$$

INCOME Index

Median personal earnings for the typical worker in California in 2019 were $39,528. The Income Index is then:

$$\text{Income Index} = \frac{\log(39{,}528) - \log(17{,}159)}{\log(72{,}597) - \log(17{,}159)} \times 10 = \mathbf{5.79}$$

HUMAN DEVELOPMENT Index

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

$$\text{HD Index} = \frac{\mathbf{6.25} + \mathbf{5.51} + \mathbf{5.79}}{3} = \mathbf{5.85}$$

Geographic and Population Groups Used in This Report

Public use microdata areas or PUMAs are substate geographic units designated by the US Census Bureau. PUMAs have populations of at least 100,000 and generally less than 200,000. PUMAs used in this report were delineated for the 2010 census and were named by the local State Census Data Center. These PUMAs are the same as those used in *A Portrait of California 2014–2015*, but they are different from those used in *A Portrait of California 2011*, which were delineated for the 2000 Census. PUMAs are primarily referred to as neighborhood clusters throughout this report.

Metro and rural areas iare a geographic unit created for this report. This geography combines the state's 26 metropolitan statistical areas with the six PUMAs that fall outside of any metro area, creating one geographic level that covers the whole state.

The White House Office of Management and Budget (OMB) has defined the metropolitan statistical areas (MSAs) in California. They are counties or collections of counties; see the table below for a complete list of the counties contained in each MSA.

The education and earnings components of HDI were calculated for this geography from the American Community Survey Public Use Microdata Sample, which provides data by PUMA. These PUMAs can be combined to form the state's 26 metro areas in all but one case. The San Jose-Sunnyvale-Santa Clara MSA officially includes Santa Clara and San Benito Counties. The PUMA that contains San Benito County, however, also contains more than half of Monterey County so it has been allocated to the Salinas MSA. Thus, in this analysis, San Benito County is included in the Salinas MSA rather than the San Jose-Sunnyvale-Santa Clara MSA.

Please also note that the box on rural areas in the What the Human Development Index Reveals chapter uses a broader definition of rural areas. There are many PUMAs that, while contained within counties that are part of a metro area, are in fact quite rural. This box identifies the 30 least-densely populated PUMAs in the state, as measured by the average tract density calculated by IPUMS USA. You can read more about this measure here: https://usa.ipums.org/usa-action/variables/DENSITY#description_section.

METRO OR RURAL AREA	COUNTIES
BAKERSFIELD	Kern
CHICO	Butte
EL CENTRO	Imperial
FRESNO	Fresno
HANFORD-CORCORAN	Kings
LOS ANGELES-LONG BEACH-ANAHEIM	Los Angeles, Orange
MADERA	Madera
MERCED	Merced
MODESTO	Stanislaus
NAPA	Napa
OXNARD-THOUSAND OAKS-VENTURA	Ventura
REDDING	Shasta
RIVERSIDE-SAN BERNARDINO-ONTARIO	Riverside, San Bernardino
SACRAMENTO-ROSEVILLE-FOLSOM	El Dorado, Placer, Sacramento, Yolo
SALINAS	Monterey, San Benito
SAN DIEGO-CHULA VISTA-CARLSBAD	San Diego
SAN FRANCISCO-OAKLAND-BERKELEY	Alameda, Contra Costa, Marin, San Francisco, San Mateo
SAN JOSE-SUNNYVALE-SANTA CLARA	Santa Clara
SAN LUIS OBISPO-PASO ROBLES	San Luis Obispo
SANTA CRUZ-WATSONVILLE	Santa Cruz
SANTA MARIA-SANTA BARBARA	Santa Barbara
SANTA ROSA-PETALUMA	Sonoma
STOCKTON	San Joaquin
VALLEJO	Solano
VISALIA	Tulare
YUBA CITY	Sutter, Yuba
PUMA 300	Alpine, Amador, Calaveras, Inyo, Mariposa, Mono, Tuolumne
PUMA 1100	Colusa, Glenn, Tehama, Trinity
PUMA 1500	Del Norte, Lassen, Modoc, Plumas, Siskiyou
PUMA 2300	Humboldt
PUMA 3300	Lake, Mendocino
PUMA 5700	Nevada, Sierra

The Five Californias framing is a way to compare different areas within the state that share similar HDI scores. For this report, Measure of America sorted all the PUMAs in the state into one of the Five Californias using the following thresholds:

One Percent California:
HDI scores equal to or greater than 9.00

Elite Enclave California:
HDI scores equal to or greater 7.00 and less than 9.00

Main Street California:
HDI scores equal to or greater than 5.00 and less than 7.00

Struggling California:
HDI scores equal to or greater than 3.00 and less than 5.00

Disenfranchised California:
HDI scores less than 3.00

The Five Californias are also presented as five separate units of analysis in order to permit some exploration of the broad demographic and socioeconomic disparities between people living in communities with different human development outcomes. For this analysis Measure of America aggregated PUMAs based on their HDI scores. The Five Californias represent the average score for that group of PUMAs; there will always be individuals who are doing better or worse than the HDI score for that geography—no place is homogeneous. In this year's report, no PUMAs score below 3.00 and thus none fall into the Disenfranchised California category.

Racial and ethnic groups in this report are based on definitions established by the White House Office of Management and Budget (OMB) and used by the US 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, Blacks, Asians, Native Hawaiian 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. Census data also include some detail on the specific ancestries of the resident population. Detailed race and ancestry data were used to identify members of the largest Asian subgroups and all Latino/Hispanic subgroups in California for the purposes of this report.

Accounting for Cost-of-Living Differences

Cost of living varies across California and the country. There is currently no suitable nationwide measure, official or not, of the cost of living that could be used as a basis for adjusting for differences across regions. The Consumer Price Index (CPI), calculated by the US Bureau of Labor Statistics, 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. Additionally, 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. Further, while costs vary across the nation, they are often higher in areas with more community assets that are conducive to higher levels of well-being. For example, neighborhoods with higher housing costs are often places with higher-quality public services such as schools, recreation facilities, and transport systems and safer neighborhoods. Thus, to adjust for cost of living would be to explain away some of the factors that the HDI is measuring.