

The State of Latino Economic Well-Being in California

Methodology Appendix

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The California Civic Engagement Project (CCEP) produced this research study and methodology appendix.

I. California Latino Economic Institute Study Overview

This study examines the economic well-being of Latinos in California. It provides an overview and analysis of Latinos' current economic conditions, addressing issues such as employment, education, housing, and technology-related entrepreneurship. The study establishes a baseline of data that can be used to measure Latino economic progress over time. We have organized these indicators into four research domains: employment and income, education, housing, and technology and entrepreneurship. We have identified these domains as being key components of economic opportunity through a review of current literature on economic development and well-being, and with the understanding that economic well-being is informed not only by financial circumstances, but also by factors such as educational attainment and opportunities, access to safe and affordable shelter, and the ability to own a home or a business.

The study provides clear and objective data that will assist policymakers and key stakeholders in developing effective strategies and policies to promote economic growth and foster a sustainable Latino middle class in communities across California. The complete results of the study include an online toolkit of resources that can be accessed through the CLEI website.

We calculated descriptive statistics for 23 different variables, at multiple geographic scales, primarily at the state, county and census tract levels. We also aggregated county data in order to analyze economic well-being for seven regions: The Bay Area, Central Coast, Los Angeles Region, North State, Sacramento Region, San Diego County and San Joaquin Valley. Unless explicitly stated otherwise, data was collected for the Hispanic or Latino population, and for the following race/ethnic groups: White alone, non-Hispanic or Latino; Black alone; Asian alone; and also for the total population. Exceptions are noted in this document. The reliability of the data is assessed and uncertain estimates are indicated in the data tables. Data that are considered unstable were removed from the index calculation. For variables sourced from the American Community Survey (ACS), the data are considered unreliable when the relative margin of error (RMOE) is 40% or greater.

In addition to the descriptive statistics, we conducted a disparity analysis to highlight geographic and thematic areas in which Latinos face the greatest disparity in outcomes. For the disparity analysis, which is described in more detail in section IV, we created absolute and relative disparity metrics by comparing outcomes of Latinos to the highest-achieving race/ethnic groups at the state, regional and county level.

The toolkit also includes the development of a composite index that provides a visual data snapshot of Latino economic well-being at the community level (measured at census tract level) in California. This index will help policymakers identify and perhaps prioritize communities for needed investment and resource allocation. For more information about the LEI, see section V below as well as the LEI Methodology and Technical Documentation.

II. Overview of the Data and Selection of Indicators

There are four thematic domains for which we collected data that represent economic well-being: employment and income, education, housing, and technology and entrepreneurship. The selection of indicators for each domain depended on data quality and availability, and the theoretical importance of that indicator to capturing different aspects of economic well-being for Latinos in California. The indicators that compose each domain are listed below, along with the data sources and calculation methods. Data was collected at the state, county and census tract level, for all race/ethnic groups and by gender, unless otherwise stated.

How race and ethnicity are defined in this study varies by data source:

1. American Community Survey 1/5-Year Estimates and the 2000 Decennial Census:
Race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino”, which does not include Latinos who also identify as White.

2. American Community Survey Public Use Microdata Sample (PUMS):
Race and ethnicity categories are mutually exclusive; Latinos are not included in other race groups, and other race groups (e.g. African American) cannot also be Latino.
3. California Department of Education:
Race and ethnicity categories are mutually exclusive; Latinos are not included in other race groups, and other race groups (e.g. African American) cannot also be Latino.
4. U.S. Department of Housing and Urban Development CHAS:
Race and ethnicity categories are mutually exclusive; Latinos are not included in other race groups, and other race groups (e.g. African American) cannot also be Latino.
5. Census LEHD LODES:
Race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latinos. Note that there is no category for White non-Latino.
6. Census Survey of Business Owners (SBO):
Race and ethnicity categories are not mutually exclusive; Latinos can be of any race, as can non-Latinos.

III. Indicator Sources and Calculations

A. Employment and Income

1. Employed Population

Definition: The percentage of employed civilians over 16 years old, for males, females and the total population.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: C23002A—I, Sex by Age by Employment Status for the Population 16 Years and Older.

Calculation: Total count of civilians in the labor force who are employed, divided by the total civilian population age 16 and over in the labor force, by race/ethnicity. This includes summing the employment totals for civilians ages 16-64 and those over 65 years of age. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino”, which does not include Latinos who also identify as White.

2. Per Capita Income

Definition: The estimated per capita income.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: B19301A—I, Per Capita Income in the Past 12 Months (in 2017 Inflation-Adjusted Dollars), by race/ethnicity. This data is not available by gender. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino,” which does not include Latinos who also identify as White.

3. Median Household Income

Definition: The estimated median household income.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: B19013A—I, Median Household Income in the Past 12 Months (in 2017 Inflation-Adjusted Dollars), by race/ethnicity. This data is not available by gender. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino”, which does not include Latinos who also identify as White.

4. Population in Poverty

Definition: The percentage of the population living in poverty, for males, females and the total population.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: B17001A—I, Poverty Status in the Past 12 Months by Sex by Age.

Calculation: The count of people with income below the poverty level divided by the total population for whom poverty status is determined, by race/ethnicity. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino”, which does not include Latinos who also identify as White.

5. Occupational Type

Definition: The percentage of people who work in the following occupational categories: management, business, science, and the arts; natural resources, construction and maintenance; production, transportation and materials moving; sales and office occupations; and service occupations.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: C24010A—I, Sex by Occupation for the Civilian Employed Population 16 Years and Over.

Calculation: The total count of people working in each of the five occupational categories, divided by the employed population age 16-64 years, by race/ethnicity. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino”, which does not include Latinos who also identify as White.

6. Job Quality

Definition: The percentage of jobs that are of high quality, where high-quality jobs are defined as those paying more than \$3,333 per month.

Data source: U.S. Census, Longitudinal Employer-Household Dynamics (LEHD), LEHD Origin-Destination Employment Statistics (LODES), Workplace Area Characteristics (2011-2015).*

Calculation: We obtained data for the number of high-paying jobs (jobs that earn over \$3,333 per month) and the total number of jobs for 2011-2015 at the block level, by race/ethnicity. The year 2015 is the most recent one available. The blocks were aggregated to the tract level to acquire a count of high-paying jobs and total jobs per tract; then the 5-year averages were calculated for each tract. We calculated a 5-year average to smooth out any anomalies in the data that might occur in 1-year only. The percentage of high-paying jobs was calculated for all jobs within a 5-mile radius of the tract center, which was identified using the U.S. Census’s Centers of Population for 2010. All tract centers that are within 5 miles were included in the calculation. We included job counts within 5 miles to provide a realistic view of local employment opportunities, as employment is not constrained by census tract. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino.

* The 2011-2015 was the most recent data available as of the February 2019 updates.

7. Job Growth

Definition: The 1-year percentage change in the number of jobs, within a 5-mile radius.

Data source: U.S. Census, Longitudinal Employer-Household Dynamics (LEHD), LEHD Origin-Destination Employment Statistics (LODES), Workplace Area Characteristics (2014-2015).*

Calculation: Within a 5-mile radius, the number of jobs in 2014 minus the number of jobs in 2015 divided by the number of jobs in 2014, by race/ethnicity. As in the calculations for job quality, tract centers were identified using the U.S. Census’s Centers of Population for 2010, and the growth rate was calculated by aggregating job counts for all tract centers within 5 miles of the tract of interest. We included job counts within 5 miles to provide a realistic view of local employment opportunities, as employment is not constrained by census tract. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino.

* 2014-2015 was the most recent data available as of the February 2019 updates.

8. Bank Accessibility

Definition: The number of banks and credit unions per 1,000 people within a 5-mile radius.

Data source: FDIC Bank Data & Statistics, Institutions & Locations, downloaded October 16, 2017; U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: B03002, Hispanic or Latino Origin by Race.

Calculation: The number of full service banks within 5 miles of a census tract center, identified with the U.S. Census's Centers of Population for 2010, divided by the tract population divided by 1,000, by race/ethnicity. This indicator was not calculated by gender. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race.

B. Education

1. Adults with Higher Education

Definition: Percentage of adults who have entered institutions of higher learning and/or have attained degrees from institutions of higher learning.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: C15002A—I, Sex by Educational Attainment for the Population 25 Years and Over.

Calculation: The number of people who have attained a Bachelor's degree, or higher, divided by the population 25 years and older, by race/ethnicity (in previous research we've defined "higher education" as having "some college or more"). For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category "White non-Latino," which does not include Latinos who also identify as White.

2. UC/CSU Eligibility

Definition: The percentage of high school graduates who are eligible for admission to the University of California or California State University (have successfully completed UC/CSU a-g course requirements).

Data source: California Department of Education, Graduates by Race and Gender (2015-2017).

Calculation: The number of high school graduates from traditional or charter schools who are UC or CSU-eligible, divided by the total number of high school graduates, by race/ethnicity. The CDE has Filipino and Asian students in two separate ethnic categories; we combine the two ethnic groups to create one single Asian American race/ethnic group that includes Filipinos. For this indicator, race and ethnicity categories are mutually exclusive; Latinos are not included in other race groups, and other race groups (e.g. African American) cannot also be counted as Latino. This calculation was repeated for the years 2015-2017, and the 3-year average was calculated. If data is missing for any one year, the average is calculated with the remaining years. For each census tract, we calculated the average UC/CSU eligibility rate for the three schools closest to the tract center, identified by the U.S. Census's Centers of Population for 2010 dataset.

3. Math Proficiency

Definition: The percentage of 4th grade students whose math test scores meet or exceed the proficiency standard.

Data source: California Department of Education, California Assessment of Student Performance and Progress (CAASPP), Research Files (2016-2018).

Calculation: The number of 4th grade students in a school who scored proficient or above on the math portion of the Smarter Balanced Assessment System (SBAC), divided by the total number of 4th grade students at that school, by race/ethnicity. The CDE has Filipino and Asian students in two separate ethnic categories; we combine the two ethnic groups to create one single Asian American race/ethnic group that includes Filipinos. For this indicator, race and ethnicity categories are mutually exclusive; Latinos are not included in other race groups, and other race groups (e.g. African American) cannot also be counted as Latino. Only traditional or charter schools were included in the calculation. We obtained this number for the years 2016-2018, and calculated a 3-year average. Note that the California Department of Education does not report scores if the student subgroup population (i.e. race/ethnic groups) is below 10. If data is missing for any one year, the average is calculated with the remaining years. For each census tract, we calculated the average percentage of math-proficient students for the three schools closest to the tract center, identified by the U.S. Census's Centers of Population for 2010 dataset. This data is not available by gender.

4. Language Arts Proficiency

Definition: The percentage of 4th grade students whose language arts test scores meet or exceed the proficiency standard.

Data source: California Department of Education California Assessment of Student Performance and Progress (CAASPP), Research Files (2016-2018).

Calculation: The number of 4th grade students in a school who scored proficient or above on the language arts portion of the Smarter Balanced Assessment System (SBAC), divided by the total number of 4th grade students at that school, by race/ethnicity. The CDE has Filipino and Asian students in two separate ethnic categories; we combine the two ethnic groups to create one single Asian American race/ethnic group that includes Filipinos. For this indicator, race and ethnicity categories are mutually exclusive; Latinos are not included in other race groups, and other race groups (e.g. African American) cannot also be counted as Latino. Only traditional or charter schools were included in the calculation. We obtained this number for the years 2016-2018, and calculated a 3-year average. Note that the California Department of Education does not report scores if the student subgroup population (i.e. race/ethnic groups) is below 10. If data is missing for any one year, the average is calculated with the remaining years. For each census tract, we calculated the average percentage of language arts-proficient students for the three schools closest to the tract center, identified by the U.S. Census's Centers of Population for 2010 dataset. This data is not available by gender.

5. High School Graduation Rate

Definition: The percentage of 9th grade cohorts who graduate high school four years later.

Data source: California Department of Education California Longitudinal Pupil Achievement Data System (CALPADS) Cohort Outcome Data (2014-2016*).

Calculation: The number of students in the cohort who graduated from high school within four years, divided by the total number of students in the cohort, by race/ethnicity. The CDE has Filipino and Asian students in two separate ethnic categories; we combine the two ethnic groups to create one single Asian American race/ethnic group that includes Filipinos. For this indicator, race and ethnicity categories are mutually exclusive; Latinos are not included in other race groups, and other race groups (e.g. African American) cannot also be counted as Latino. This calculation was repeated for years 2014 through 2016 and the 3-year average was calculated. If data is missing for any one year, the average is calculated with the remaining years. For each census tract, we calculated the average high school graduate rate for the three schools closest to the tract center, identified by the U.S. Census's Centers of Population for 2010 dataset.

*2015-2016 was the most recent data available as of the June 2019 updates. The California Department of Education began using a different methodology for tracking high school cohorts in 2017, and advice against comparing CALPAD 2010-2016 to the new Adjusted Cohort Graduate Rate 2017. The more recent publications do not allow race/ethnic groups to be broken out by gender, thus we use the 2014-2016 data.

6. Limited English Language Proficiency by Nativity

Definition: The percentage of people who are not English language proficient who are foreign born and who are native born.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: B16005A—I, Nativity by Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over.

Calculation: The count of people who speak English 'less than very well', divided by the total population over 5 years of age, by nativity, by race/ethnicity. This percentage was provided for people who are foreign born and native born, i.e. the percentage of the foreign-born Latino population who have limited English proficiency. This data is not available by gender. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category "White non-Latino", which does not include Latinos who also identify as White.

7. English Language Proficiency for Latino Spanish Speakers

Definition: The percentage of Hispanics or Latinos who speak Spanish and are English language proficient.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: B16006, Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over (Hispanic or Latino).

Calculation: The count of Latinos who speak Spanish and speak English ‘very well’ or ‘well’, divided by the total Latino population over 5 years of age. This data is not available by gender. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino”, which does not include Latinos who also identify as White.

8. Presence of Experienced Teachers

Definition: The percentage of teachers with more than five years of teaching experience and at least one year of education beyond a Bachelor’s degree.

Data source: California Department of Education, Staff Demographic Data (2015-2017).

Calculation: The number of teachers with more than five years of teaching experience and at least one year of education beyond a Bachelor’s degree divided by the total number of teachers. This calculation was repeated for the years 2015-2017, and the 3-year average was calculated. If data is missing for any one year, the average is calculated with the remaining years. For each census tract, we calculated the average percentage of experienced teachers for the three schools closest to the tract center, identified by the U.S. Census’s Centers of Population for 2010 dataset.

C. Housing

1. Home Ownership

Definition: The percentage of housing units that are owner-occupied.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: B25003A—I, Tenure.

Calculation: The number of housing units that are owner-occupied, divided by the total number of occupied housing units, by race/ethnicity. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino”, which does not include Latinos who also identify as White.

2. Lack of Adequate Housing

Definition: The percent of households burdened by substandard housing. Substandard housing is defined as a unit that has one or more of four housing problems (lacks kitchen or plumbing, more than 1 person per room, or cost burden greater than 30%).

Data source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) 5-Year Estimates 2011-2015*, Table 1.

Calculation: The total number of households that have one or more of the four housing problems divided by the total number of households, by race/ethnicity. This is a ‘negative’ variable, where a higher number does not indicate a better outcome, and was inverted before it was included in the index calculation. This data is not available by gender. The race categories (Asian, White, Black) provided by this data source are exclusive of Hispanics or Latinos, and Latinos are categorized as Hispanic or Latino regardless of race.

*2011-2015 was the most recent data available as of the February 2019 updates.

3. Housing Cost Burden

Definition: The percent of households that experience a housing cost burden, defined as paying more than 30% of their income on housing costs. Cost burden is the ratio of housing costs to household income. For renters, housing cost is gross rent (contract rent plus utilities). For owners, housing cost is “select monthly owner costs”, which includes mortgage payment, utilities, association fees, insurance, and real estate taxes.

Data source: U.S. Department of Housing and Urban Development, Comprehensive Housing Affordability Strategy

(CHAS) 5-Year Estimates 2011-2015*, Table 9.

Calculation: The total number of households that have a housing cost burden, divided by the total number of households, by race/ethnicity. 2011-2015 is the most recent dataset available. The race categories (Asian, White, Black) provided by this data source are exclusive of Hispanics or Latinos, and Latinos are categorized as Hispanic or Latino regardless of race. This data is not available by gender.

*2011-2015 was the most recent data available as of the February 2019 updates.

D. Technology and Entrepreneurship

1. STEM Degrees Conferred

Definition: The percentage of people who obtained STEM degrees for their first major.

Data source: U.S. Census, 2013-2017 ACS 5-Year Estimates, Table: C15010A—I, Field of Bachelor’s Degree for First Major the Population 25 Years and Over.

Calculation: The number of people who obtained a degree in science and engineering or science and engineering related fields, divided by the total number of people with Bachelor’s degrees or higher, by race/ethnicity. This data is not available by gender. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino”, which does not include Latinos who also identify as White.

2. Technical Employment

Definition: The percentage of people who are employed in computer, science or engineering occupations.

Data source: U.S. Census, 2017 ACS 1-Year Estimates, Table: B24010A—I, Sex by Occupation for The Civilian Employed Population 16 Years and Over.

Calculations: The count of people employed in computer, engineering, and science occupations, divided by the total number of people 16 years and older, by race/ethnicity. This includes computer and math occupations; architecture and engineering occupations; and life, physical and social science occupations. This estimate is not available at the tract level. These estimates should not be used at the county or regional level, as there is a lot of missing data at the county level and high margins of error. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race, and other race groups (e.g. African American) can also be Latino—except for the category “White non-Latino”, which does not include Latinos who also identify as White.

3. Latino-led Businesses

Definition: The percent of businesses in the county that are Hispanic or Latino-owned and non- Hispanic or Latino-owned (with or without paid employees), for male-led, female-led and all firms.

Data source: U.S. Census 2012 Survey of Business Owners, Table: SB1200CSA01, Statistics for All U.S. Firms by Industry, Gender, Ethnicity, and Race for the U.S., States, Metro Areas, Counties, and Places: 2012.

Calculation: The count of firms with or without paid employees that are Hispanic or Latino-owned divided by the total number of firms with or without paid employees. This calculation is repeated for the firms that are owned by non-Hispanics or non-Latinos. For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race. This estimate is only available at the state or county level. For this indicator we use the county estimate as a proxy for tract level estimates because these data are not available at the tract level and because a county-level perspective is a more realistic reflection of the local business environment.

4. Types of Latino-led Businesses

Definition: The percent of businesses in the county that are Hispanic or Latino-owned and non-Hispanic or Latino-owned (with or without paid employees), for male-led, female-led and all firms, in the following sectors:

- Accommodation and food services
- Administrative and support and waste management and remediation services
- Agriculture, forestry, fishing and hunting
- Arts, entertainment, and recreation
- Construction
- Educational services
- Finance and insurance
- Health care and social assistance
- Industries not classified
- Information
- Management of companies and enterprises
- Manufacturing
- Mining, quarrying, and oil and gas extraction
- Other services (except public administration)
- Professional, scientific, and technical services
- Real estate and rental and leasing
- Retail trade
- Transportation and warehousing
- Utilities
- Wholesale trade

Data source: U.S. Census 2012 Survey of Business Owners, Table: SB1200CSA01, Statistics for All U.S. Firms by Industry, Gender, Ethnicity, and Race for the U.S., States, Metro Areas, Counties, and Places: 2012.

Calculation: The count of firms with or without paid employees that are Hispanic or Latino-owned divided by the total number of firms with or without paid employees, by sector. For example, the count of all Hispanic or Latino-owned firms that are in the manufacturing sector, etc. This calculation was repeated for firms that are not owned by Hispanics or Latinos (non-Hispanic and non-Latino as defined by the Census). For this indicator, race and ethnicity categories are not mutually exclusive; Latinos can be of any race. This estimate is only available at the state or county level. We also calculated the percent of each sector that is Hispanic or Latino-owned, for example, the percent of all firms in the retail trade that are Hispanic or Latino-owned.

IV. Historical Data

For all indicators included in this analysis, we provide historical data for comparison across time. For all indicators where possible, we provide data for the year 2000, 2010 and 2017. We provide data for the year 2010 as a point in time after the U.S. recession had officially ended, but when many people across the country were still feeling its effects—even in 2012 the Bureau of Labor Statistics reported that the U.S. economy had yet to return to its pre-recession state (Bureau of Labor Statistics 2012). Historical comparisons used 1-year estimates where possible, i.e. the 2000 Census was compared to the 2010 and 2017 American Community Survey 1-Year Estimates.

Historical U.S. Census data from the year 2000 was provided by the 2000 Decennial Census, where data was available and comparable to the 2017 American Community Survey 1-Year Estimates. Data from the 2010 American Community Survey 1-Year Estimates was used for the year 2010, again, where data was comparable. If the 2000 Decennial Census was not comparable to the 2017 ACS 1-Year Estimates, then the next year with available and comparable data was used.

Historical data from the U.S. Department of Housing and Urban Development CHAS was available and comparable as a 2005-2009 5-year estimate. The HUD CHAS data were only available as 5-year estimates.

The years in which historical data were available from the California Department of Education varied. While we were able to compare data from 2000 to 2017 for the UC/CSU eligibility rate, due to changes in data collection methodology, a comparison between 2010 and 2016 high school graduation rates was the only available historical comparison. Due to changes in the type of standardized test used in California schools, we were not able to provide a historical comparison for math and language arts proficiency rates.

V. Disparity Analysis

In addition to the descriptive statistics presented in this study, we also analyzed the data to search for disparities in outcomes between Latinos and other race/ethnic groups in California. For this analysis we calculated two types of inequality measures: absolute and relative. In academic literature on socioeconomic disparities, it is noted that there is no one type of measure that is best, as both absolute and relative measures serve a particular purpose, and should be used with care (Kunst et al. 2004; Houweling et al. 2007; Masseria, Hernández-Quevedo, and Allin 2010).

Absolute inequalities describe the differences in various indicators across population groups (Masseria, Hernández-Quevedo, and Allin 2010). While it is advised to report both relative and absolute measures of inequalities, some “prefer to report absolute differences because they are easier to interpret for policy interventions, and because absolute measures can indicate how large a proportion of the disadvantaged group is affected” (Masseria, Hernández-Quevedo, and Allin 2010, 180). For example, in the San Joaquin Valley the UC/CSU eligibility rate for the Latino population is 29.9% and the UC/CSU eligibility rate for the Asian-American population is 57%, so the absolute difference of 27 percentage points says that Asian-American students experience a UC/CSU eligibility rate that is about 27 percentage points higher than Latino students. Relative inequalities compare a characteristic of one group to another, often better-off, group. Some recent studies have stated that “relative inequalities are more strongly associated with historical circumstances, the social context, and the country’s public health (Masseria, Hernández-Quevedo, and Allin 2010, 180). Returning to the example of UC/CSU eligibility rates in the San Joaquin Valley, the ratio calculation is $0.57/0.299 = 1.9$, indicating that the outcome for the comparison group is nearly twice that of Latinos. This relative inequality measure says that Asian Americans in the San Joaquin Valley are UC/CSU eligible at a rate that is nearly twice (1.9) that of Latinos. It should be noted, however, that ratios do not always “capture the scale of human suffering” (Bonneux 2010) and should therefore be reported along with absolute measures. We calculated the absolute and relative inequality measures for all race/ethnic groups as compared to Latinos, but ultimately only included absolute inequality measures in the final report.

VI. Overview of the Latino Economic Index

We created a composite index, called the Latino Economic Index (LEI), in order to identify communities in the state that experience lower socioeconomic outcomes. The goal is to identify these areas for policy makers to direct investment towards communities with lower outcomes, and possibly to learn lessons from areas with higher outcomes. We used a subset of CLEI study indicators to calculate the index; the selection was based on data quality and availability at the tract level, as well as indicators that are theoretically important to identifying economic opportunity and well-being. The following indicators were used to represent each domain in the index:

- A. Employment and Income: percentage of the Latino population that is employed; per capita income of Latinos; percentage of the Latino employed population with occupations in management, business, science or the arts; percentage of high-quality jobs held by Latinos; and job growth rate for Latinos.
- B. Education: percentage of the Latino population that has entered and/or attained higher education; UC/CSU eligibility rate of Latino high school graduates; Latino high school graduation rate; percentage of Latino 4th graders proficient in math; and the percentage of experienced teachers.
- C. Housing: percentage of Latino household units that are owner-occupied; and percentage of Latino households without adequate housing (including those who experience a housing cost burden).

- D. Technology and Entrepreneurship: percentage of Latino college graduates with a degree in a STEM field; and the percentage of businesses in the county that are Latino-owned.

For a comprehensive explanation of the LEI, please see the document LEI Methods and Technical Documentation.

VII. Data Reliability

We calculated the relative margin of error (RMOE) for each estimate (where applicable), which was calculated by dividing the estimate margin of error by 1.645, which reflects a 90% confidence interval, and dividing that by the estimate itself. In many cases where we used variables derived from ACS estimates (e.g. summing the count of males and females with Bachelor's degrees or calculating percentages) we first recalculated the margin of error for the derived estimates. Estimates with RMOEs over 40% were excluded from all index calculations. We used a higher threshold for the RMOE to indicate reliability because of the smaller sample size inherent in our data. Tracts with a Latino population under 100 were also excluded from the index calculation.

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