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California Water Institute

# Socioeconomic and Demographic Trends of the California San Joaquin Valley, 1970—2017

Amber R. Crowell, PhD
California State University, Fresno

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# Table of Contents

# List of Figures

# List of Figures con't

## Overview

The San Joaquin Valley is comprised of eight counties located in the central region of California: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern. It is home to both urban centers of population such as the cities of Fresno, Bakersfield, Modesto, Stockton, and Visalia as well as dozens more rural areas of population. This region is distinct in both its economic profile and its demographic transformations, characterized by its reliance on agricultural output, its lower levels of income and educational attainment, and its rapid shift from a predominately non-Hispanic White population to in some cases having county-level populations that are less than half non-Hispanic White. The population of the San Joaquin Valley has seen positive, albeit fluctuating, growth that has generally been at a higher rate than the state overall. While basic characteristics of the SJV are widely known, how the valley has transformed over the past several decades and the way in which these changes are shaped by policy implementations at the state and federal levels are given less attention. This report provides an overview and descriptive analysis of socioeconomic and demographic trends observed in the San Joaquin Valley from 1970 to 2017.

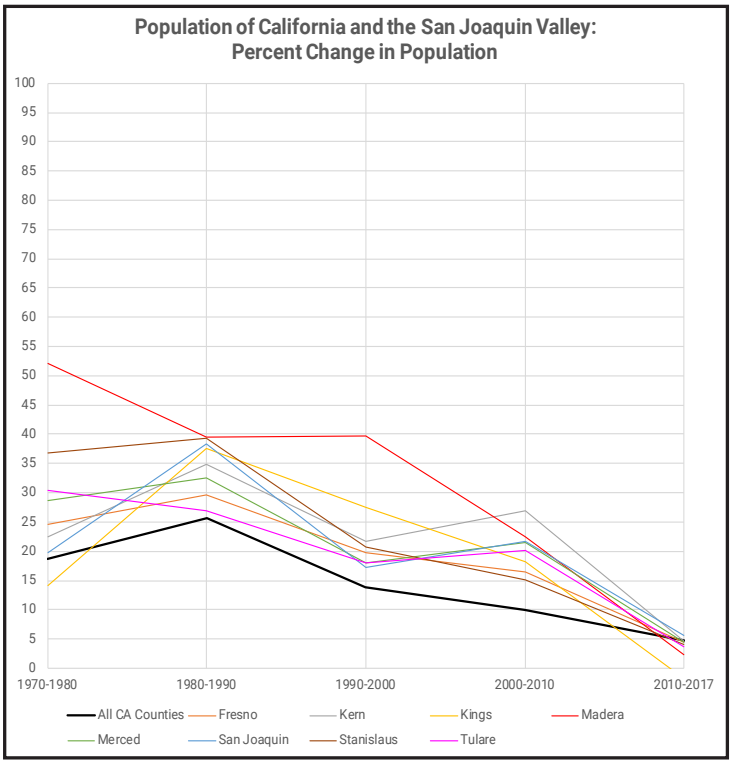



*Figure 1. Percent Change in Population*

The ultimate purpose of this report is to serve as a reference when considering how policy changes might impact the economic and social well-being of the population of the SJV. Evidence is provided at both the county level and, when possible, the census tract level using decennial census and survey data from the U.S. Census Bureau extracted from the IPUMS-NHGIS data portal[1]. Major areas of focus will be trends in age and sex, race and nativity, educational attainment, poverty, unemployment, industry of occupation, household income, and home ownership. This report will conclude with suggestions on issues that should be prioritized for consideration when debating new policy implementations. Reference maps and additional data and graphics are provided in the appendices. All analysis data can be made available upon request[2].

## Demographic Trends: Age and Sex

In comparison to the state overall, the population of the San Joaquin Valley is younger with a larger share of individuals under the age of 18. However, over time the SJV has mirrored trends in the state with the population gradually aging and the under 18 population declining in percentage share of the total population. While the youth population is declining in share, the over-65 population has been rising as the generation known as "baby boomers" reach retirement age.

This is of particular concern on a national level and this concern also holds true for the SJV, as the elderly share of the population grows while the youthful share of the population declines, thereby increasing the age-dependent ratio, or the ratio of elderly adults

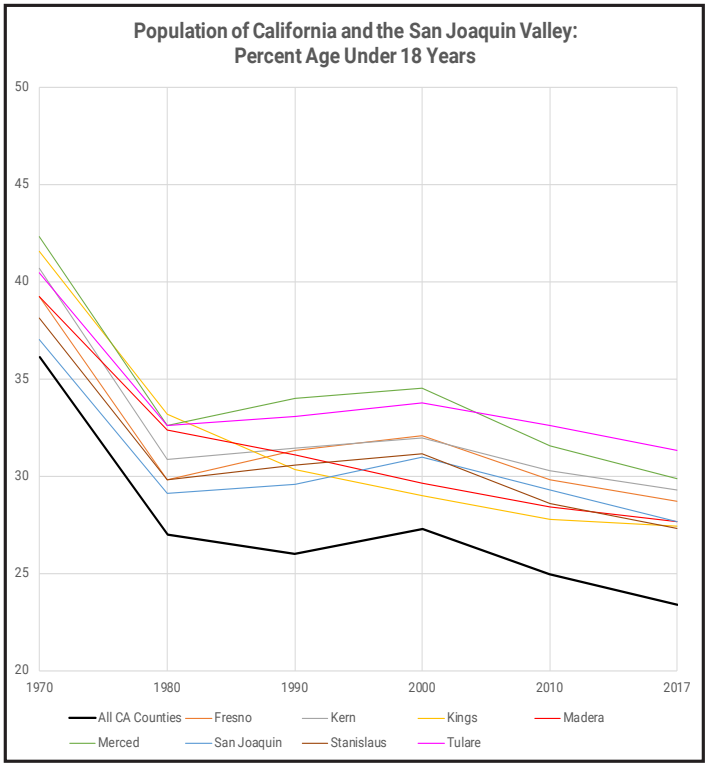



*Figure 2. Percent of the Population Under 18 Years*

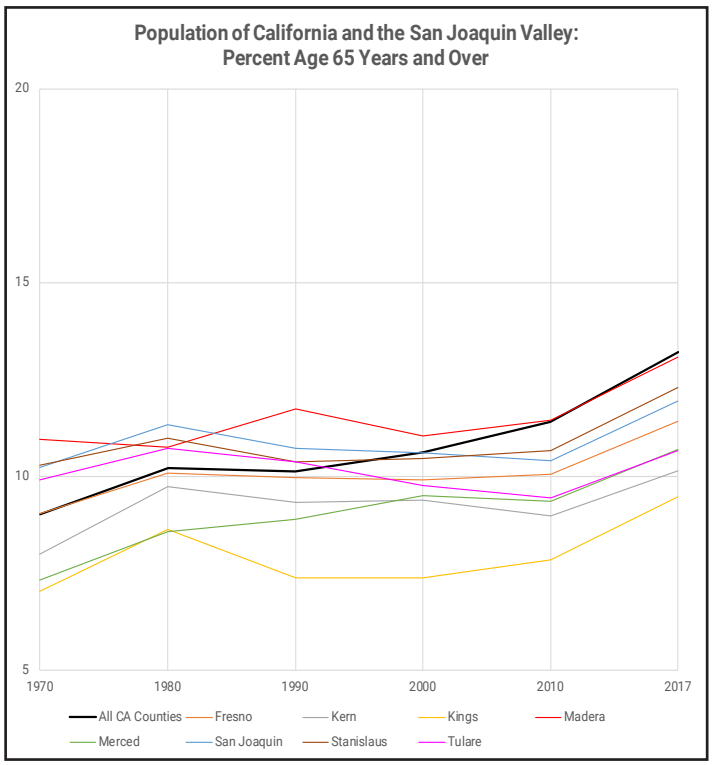



*Figure 3. Percent of the Population Over 65 Years*

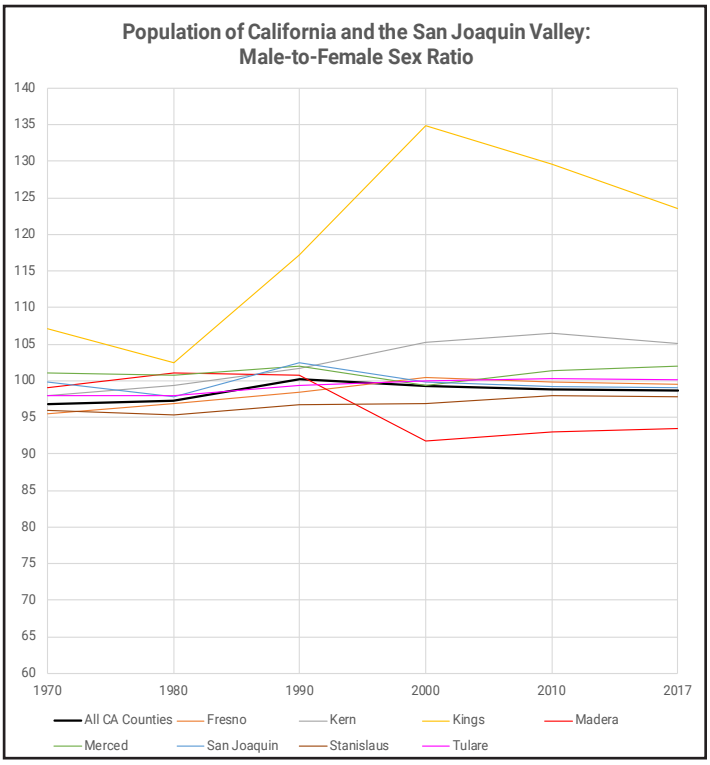



*Figure 4. Male-to-Female Sex Ratio*

to working age adults. The SJV faces the challenge of sustaining support for those who have aged out of the labor force, although the issue is less urgent in this region where the population is still relatively young.

The male-to-female sex ratio of the San Joaquin Valley has for the most part remained stable and balanced with the exception of Kings County which has a disproportionate percentage of males relative to females, reaching as high as 134 males for every 100 females in 2000 and remaining high in 2017 at a sex ratio of 123. This imbalance could be attributed to a disproportionately larger institutionalized population given that two male-only correctional facilities are located in Kings County. Indeed, when the sex ratio is broken down by race in 2000, it is found to be 296 for African-Americans and 139 for Latinos, which is reflective of the overrepresentation of racial minorities in the prison population.

## Demographic Trends: Race and Nativity

Over time the San Joaquin Valley has shifted from a majority non-Hispanic White region in 1980[3] to one where

non-Hispanic Whites now comprise an estimated 25 to 45 percent of the population as of 2017. This change in racial and ethnic composition is mostly driven by the growth of the Hispanic/Latino population which also tracks the growth of the foreign-born population.

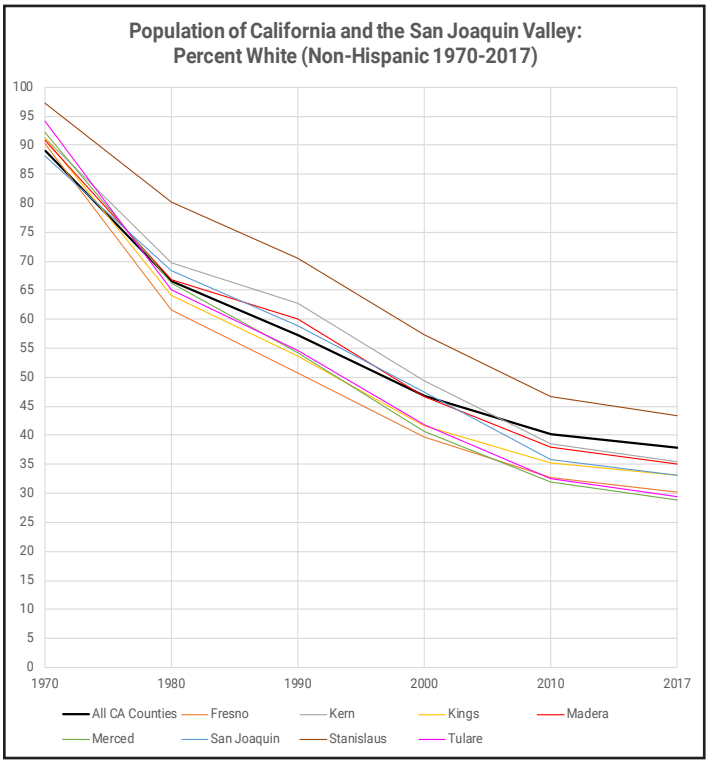



*Figure 5. Percent White (Note: Hispanic Whites included in 1970)*

The SJV has received a steady increase of immigrants in the latter half of the 20th century with the foreign-born population rising from less than 10 percent in 1970 to 20 percent by 2017. Over the past decade the growth of the foreign-born population has leveled off which reflects stagnating and at times declining levels of immigration to the United States. The largest share of the foreign-born are from Mexico, but the SJV has also received immigrants from Southeast Asia and more recently the Middle East with Fresno in particular being one of the major destinations in the U.S. for refugee populations. The decline in the share of the non-Hispanic White population over the past 4 decades is consistent with changes in California overall and closely tracks the state-level percentages with the exception of Stanislaus County where the percentage of non-Hispanic Whites has remained higher than other SJV counties and the state overall. The percentage of U.S.-born in the population has remained higher in the San Joaquin Valley than it is in the state overall but has otherwise reflected state-level changes.

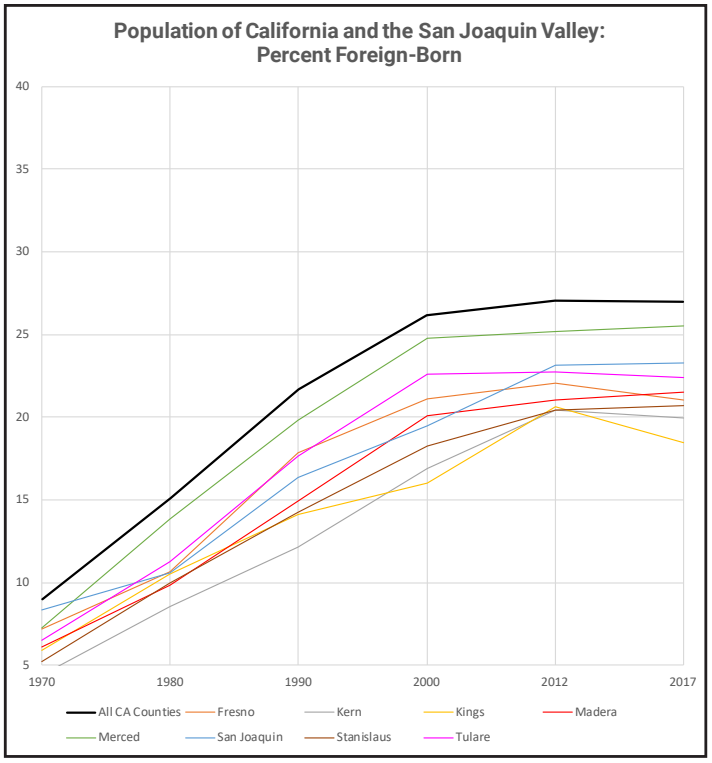



*Figure 6. Percent Foreign-Born*

When the state is broken down by county, the growth of the foreign-born population in the San Joaquin Valley is notable, but not as high as is observed in the major coastal metropolitan areas of Northern and Southern California. Additionally, while the San Joaquin Valley has been one of the more racially diverse regions of the state since 1980, it has experienced a more rapidly growing non-White population over the next five decades in comparison to counties that had similar racial compositions in 1980.

When considering racial and ethnic composition in any area, it is important to examine population distributions across smaller levels of geography given that residential segregation is common and can have implications for certain social outcomes such as economic well-being, education, and health. In every urban area of the San Joaquin Valley, distinct patterns of segregation emerge. In Fresno, for example, a geographic divide is apparent

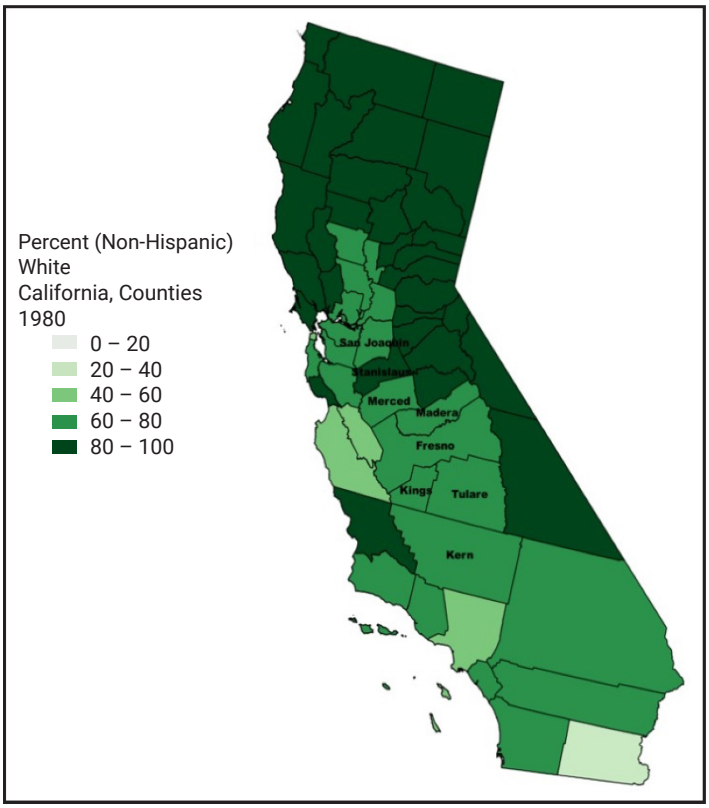



*Figure 7. Percent Non-Hispanic White, 1980, Counties*

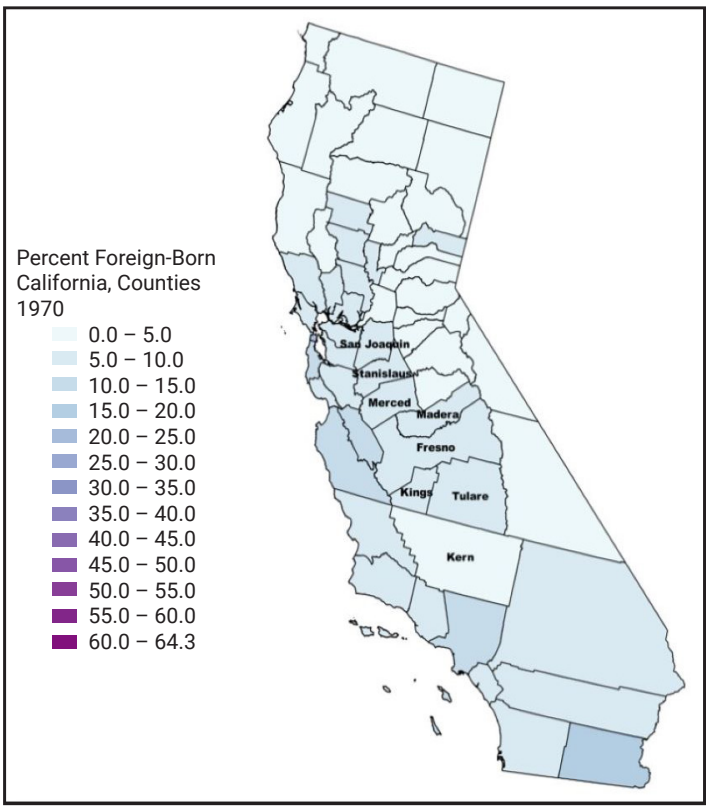



*Figure 9. Percent Foreign-Born, 1970, Counties*

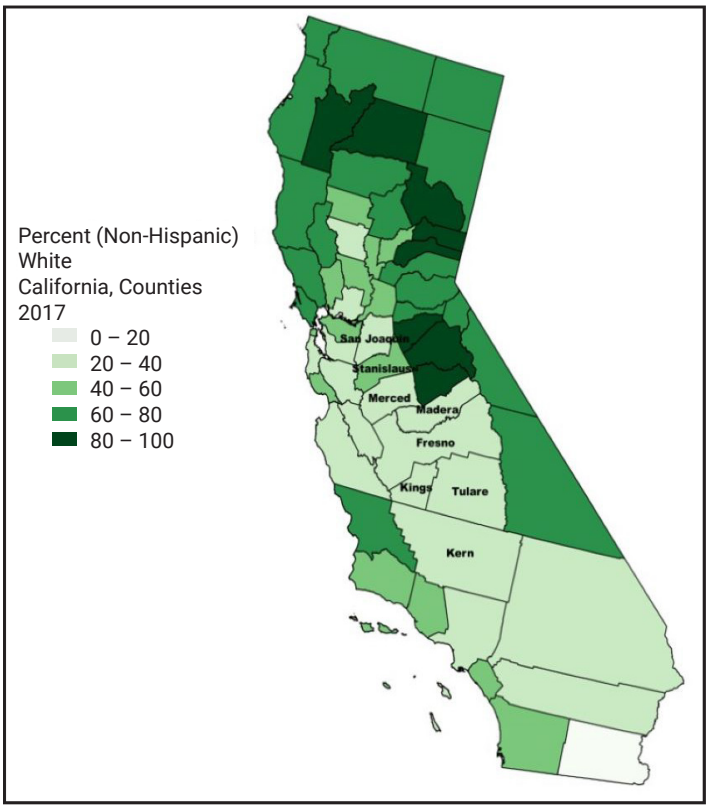



*Figure 8. Percent Non-Hispanic White, 2017, Counties*

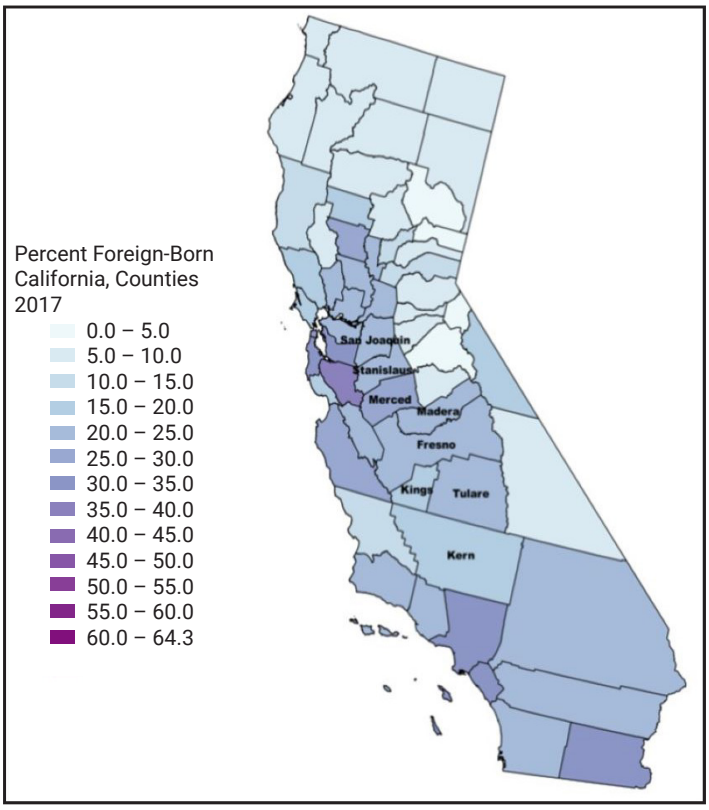



*Figure 10. Percent Foreign-Born, 2017, Counties*

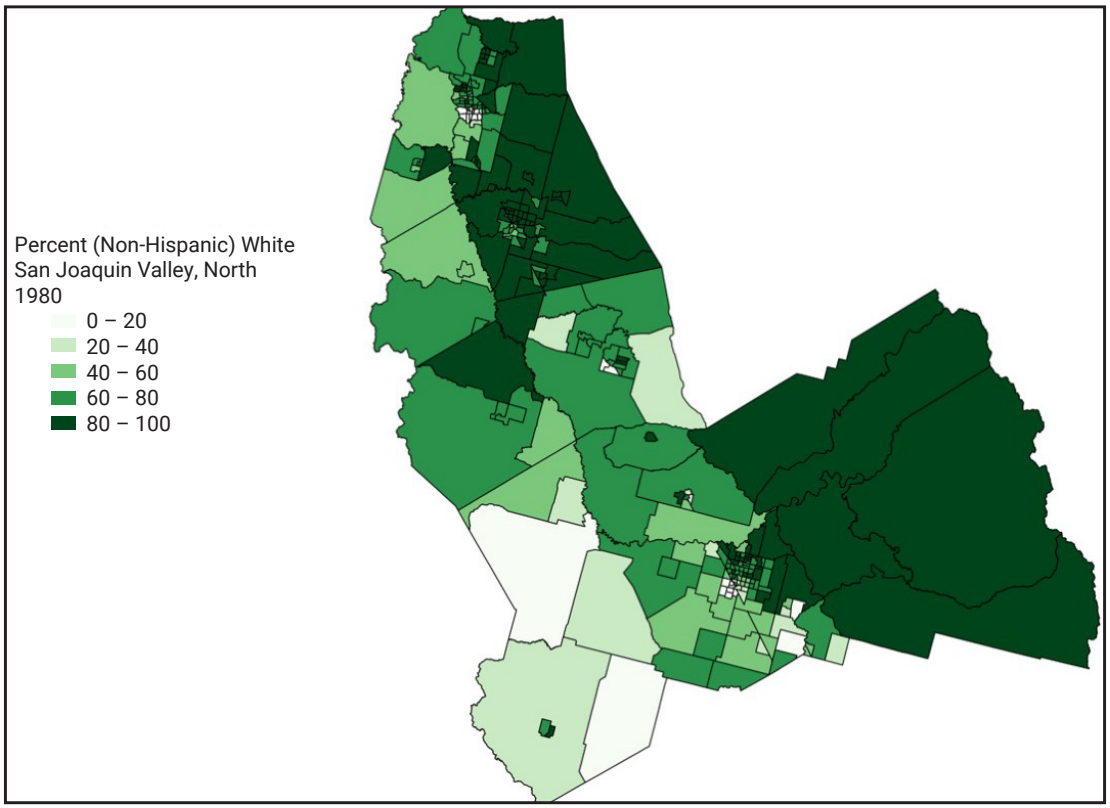



*Figure 11. Percent Non-Hispanic White, 1980, North SJV, Census Tracts*

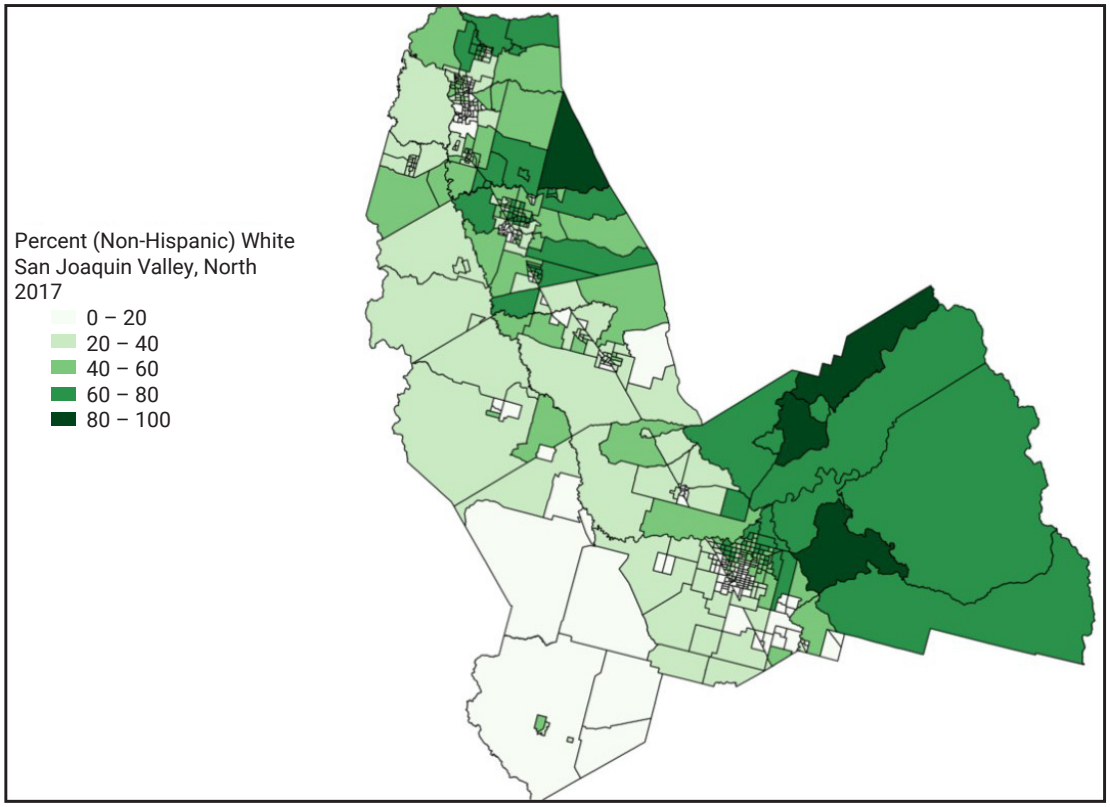



*Figure 12. Percent Non-Hispanic White, 2017, North SJV, Census Tracts*

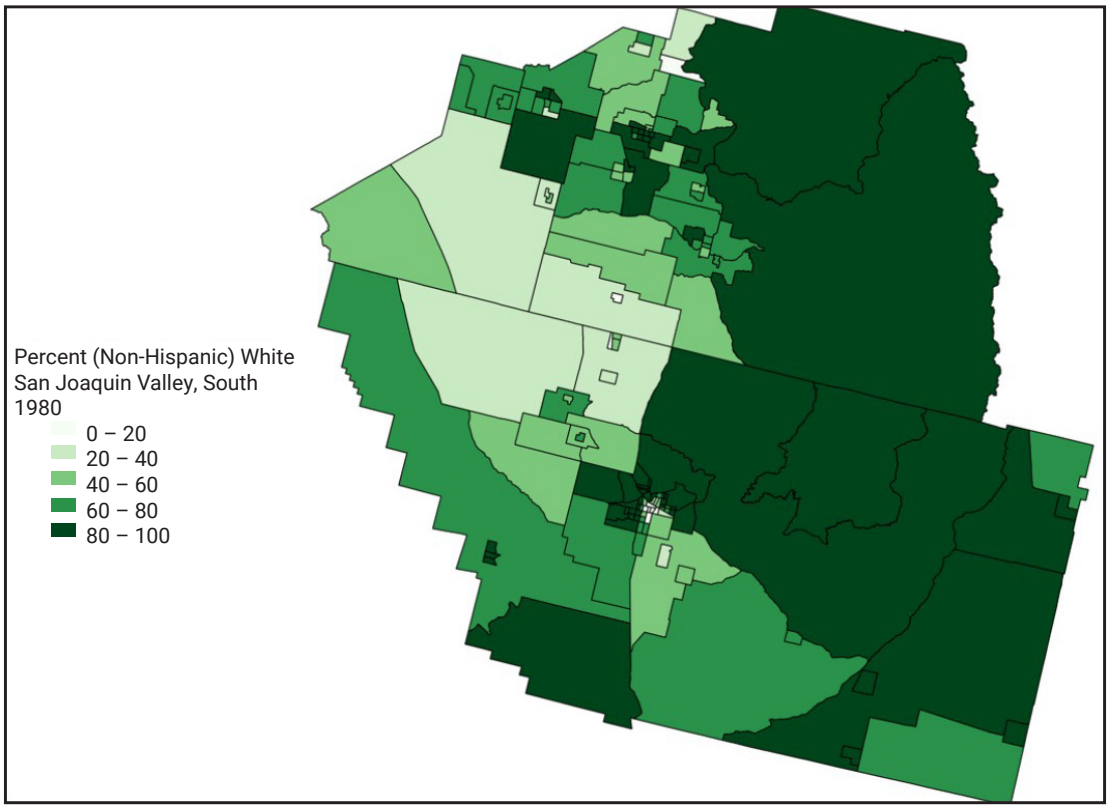



*Figure 13. Percent Non-Hispanic White, 1980, South SJV, Census Tracts*

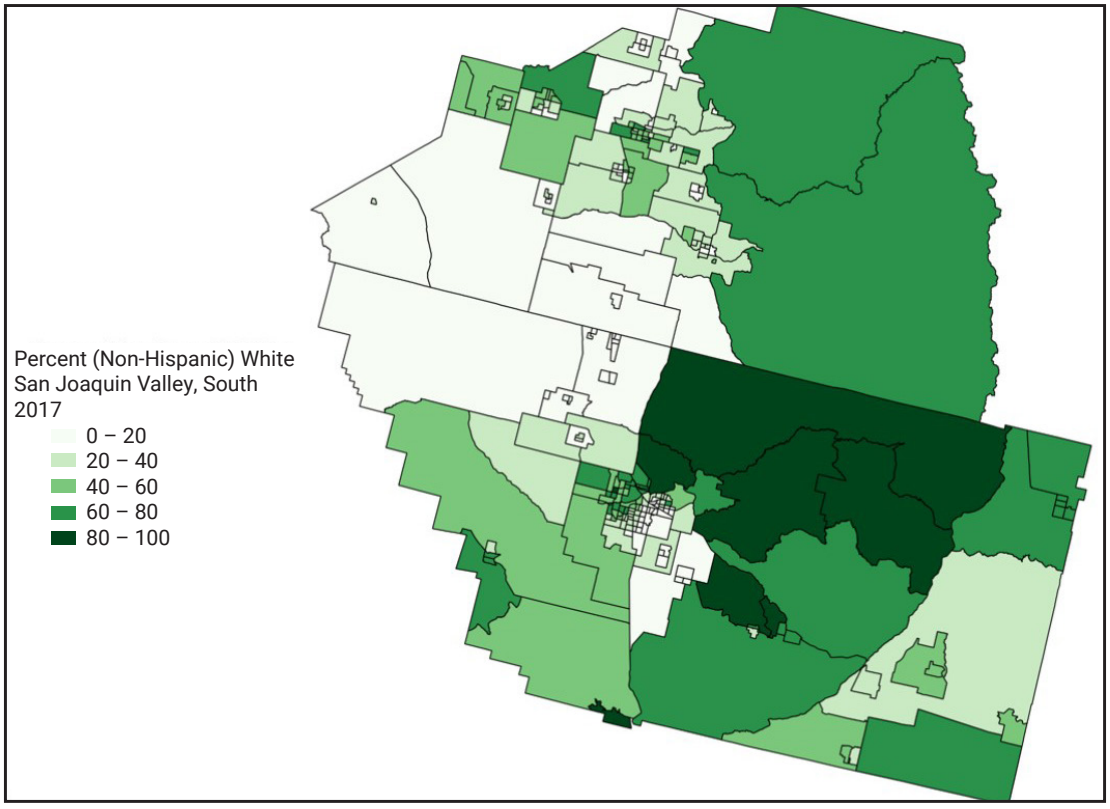



*Figure 14. Percent Non-Hispanic White, 2017, South SJV, Census Tracts*

Table 1. Index of Dissimilarity, White—Non-White Segregation, San Joaquin Valley, 1980—2017

| County | 1980 | 1990 | 2000 | 2010 | 2017 |
|---|---|---|---|---|---|
| Fresno | 43.3 | 44.5 | 42.3 | 41.6 | 42.4 |
| Kern | 49.2 | 50.4 | 48.1 | 48.3 | 47.0 |
| Kings | 32.1 | 35.6 | 33.2 | 32.9 | 32.3 |
| Madera | 39.1 | 42.8 | 45.9 | 45.9 | 43.8 |
| Merced | 32.7 | 30.1 | 28.3 | 27.9 | 29.3 |
| San Joaquin | 39.4 | 40.3 | 37.6 | 34.7 | 32.3 |
| Stanislaus | 28.9 | 30.7 | 30.1 | 30.0 | 30.8 |
| Tulare | 34.7 | 36.5 | 37.5 | 34.9 | 35.6 |

with the southwest portion having a very low percentage of non-Hispanic Whites while the opposite is true in the northeastern area. Other urban centers of the San Joaquin Valley show similar divides, such as Bakersfield where the northwestern area has a disproportionate percentage of non-Hispanic Whites in contrast to the southeastern part of the city. These patterns of segregation have remained stable in the San Joaquin Valley at the same time that the region has experienced rising racial diversity. Table 1 displays the index of dissimilarity over time for the SJV counties, a measure of how unevenly distributed two groups are. This is calculated by essentially comparing each tract-level racial distribution to the area-level racial distribution[4]. The index of dissimilarity can be interpreted as the percentage of one group that would have to be redistributed in order for each tract to have the same racial composition as the county overall. In this case, the index of dissimilarity measures the uneven distribution of Whites and non-Whites. For reference, the index of dissimilarity ranges from 0 to 100 where 100 would be interpreted as complete segregation. Scores between 30 and 50 indicate moderate levels of segregation. In every county, segregation is moderate and persistent, staying stable in most counties and rising in some. The highest levels of segregation are observed in the counties with the largest urban areas, specifically Fresno and Kern (with Madera reaching similar levels).

## Socioeconomic Trends: Educational Attainment

The San Joaquin Valley has experienced significant improvements in overall educational attainment, demonstrating a steady rise in both high school completion rates and a notable increase in college completion rates from 1970 to 2017 for the age 25 and over population. This is a positive indicator for the SJV, although one issue that is apparent over this time frame is that the SJV continues to lag in comparison to the state of California overall. In fact, while the counties of the San Joaquin Valley have been gradually closing the high school completion gap that exists between the SJV and the state, the college completion gap has actually grown.

College completion rates in the state have soared from 14 percent to 33 percent over the past 5 decades, but this is not the case for the counties of the SJV where completion rates have only risen from an average of 8 percent to an average of 16 percent. It is important to note that, as discussed in the previous section, the foreign-born population has also grown over this time period and are less likely to have completed a college degree. Therefore the college completion rates are likely correlating with other demographic changes in the region. Nevertheless, educational attainment in the San Joaquin Valley is on a

positive trajectory and is most likely benefitting from the improvements in access to higher education in the region.

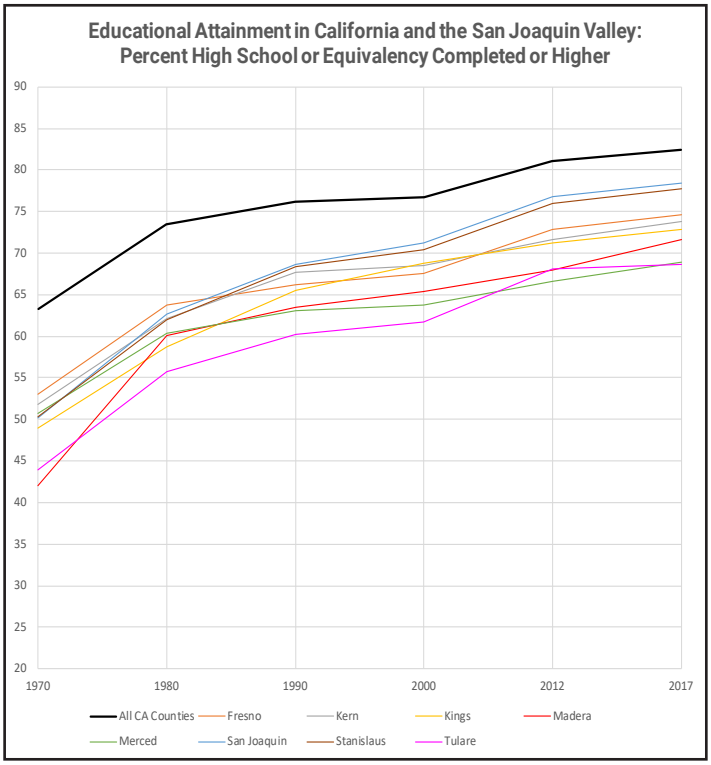



*Figure 15. Percent of Adults 25 and Over with High School Diploma/Equivalency or Higher Completed*

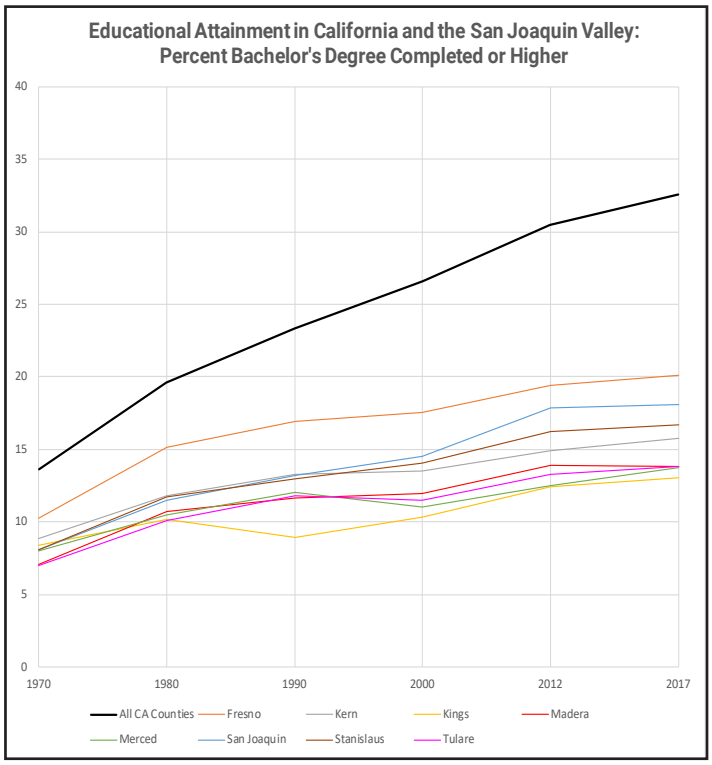



*Figure 16. Percent of Adults 25 and Over with Bachelor's Degree or Higher Completed*

At the tract-level, the racial distribution patterns that were observed previously are mirrored by educational attainment distributions. College-educated adults are more likely to live in the neighborhoods that were identified as having a higher percentage of non-Hispanic Whites, reflecting racial and ethnic disparities in educational attainment. Additionally, there are clear rural-to-urban differences in educational attainment outcomes particularly in terms of college completion. College completion rates remain quite low in many of the rural tracts in the western areas of the San Joaquin Valley while portions of the urban areas such as Fresno and Bakersfield exhibit fairly high levels of college completion, as well as in areas in the more mountainous regions on the eastern side which also attract more affluent residents. This may indicate a rural-urban disparity in access to higher education but is also likely indicating a migration effect, with college-educated adults being drawn to the urban areas for high-skilled labor opportunities.

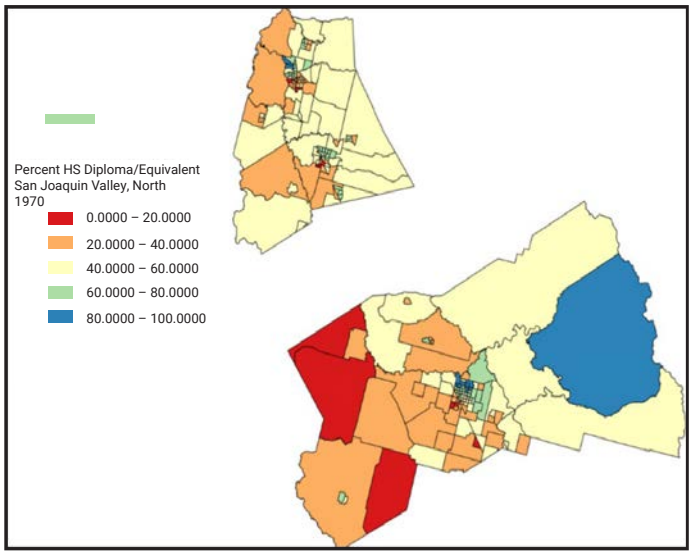



*Figure 17. Percent of Adults 25 and Over with High School Diploma/Equivalency or Higher Completed, 1970, North SJV, Census Tracts*

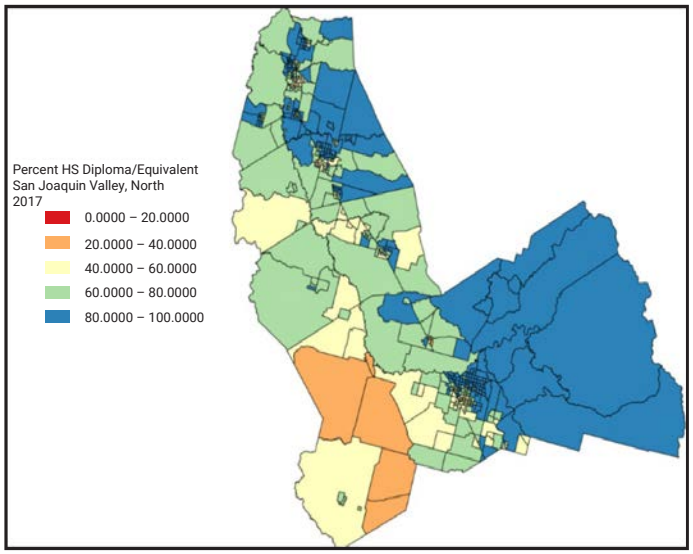



*Figure 18. Percent of Adults 25 and Over with High School Diploma/ Equivalency or Higher Completed, 2017, North SJV, Census Tracts*

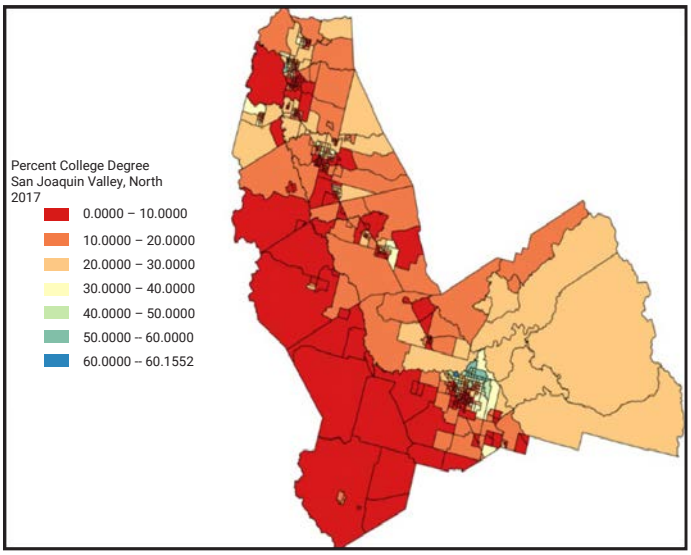



*Figure 20. Percent of Adults 25 and Over with College Degree or Higher Completed, 2017, North SJV, Census Tracts*

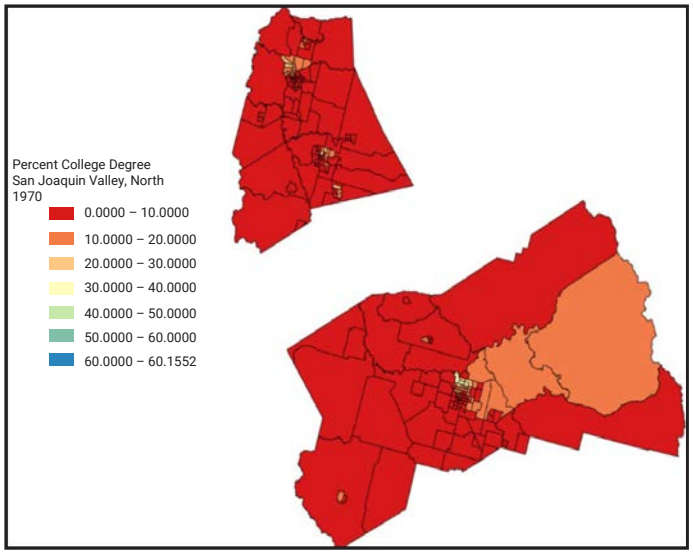



*Figure 19. Percent of Adults 25 and Over with College Degree or Higher Completed, 1970, North SJV, Census Tracts*

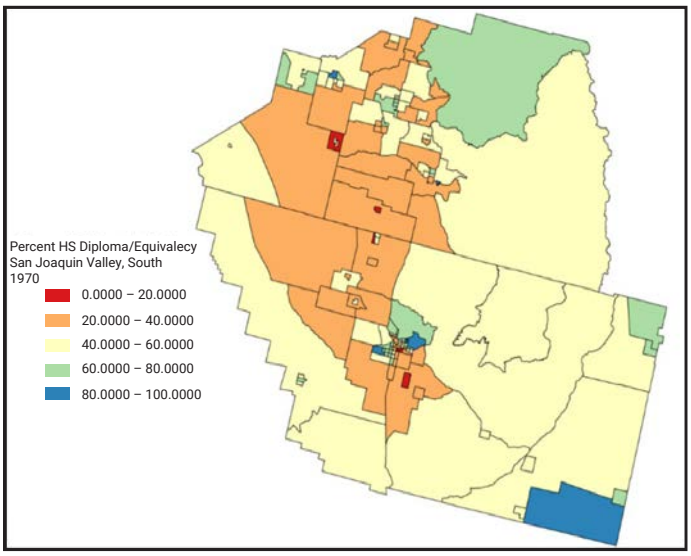



*Figure 21. Percent of Adults 25 and Over with High School Diploma/ Equivalency or Higher Completed, 1970, South SJV, Census Tracts*

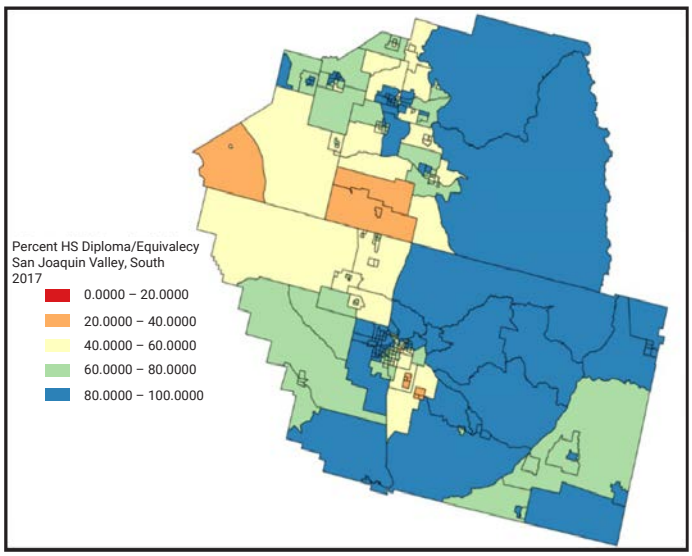



*Figure 22. Percent of Adults 25 and Over with High School Diploma/ Equivalency or Higher Completed, 2017, South SJV, Census Tracts*

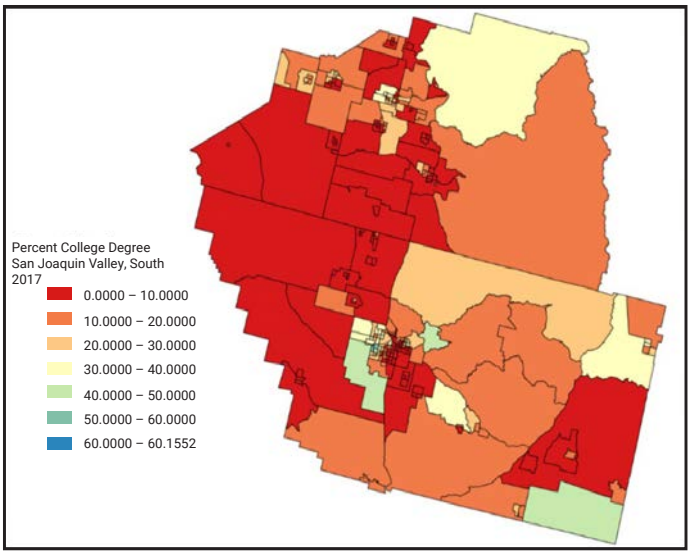



*Figure 24. Percent of Adults 25 and Over with College Degree or Higher Completed, 2017, South SJV, Census Tracts*

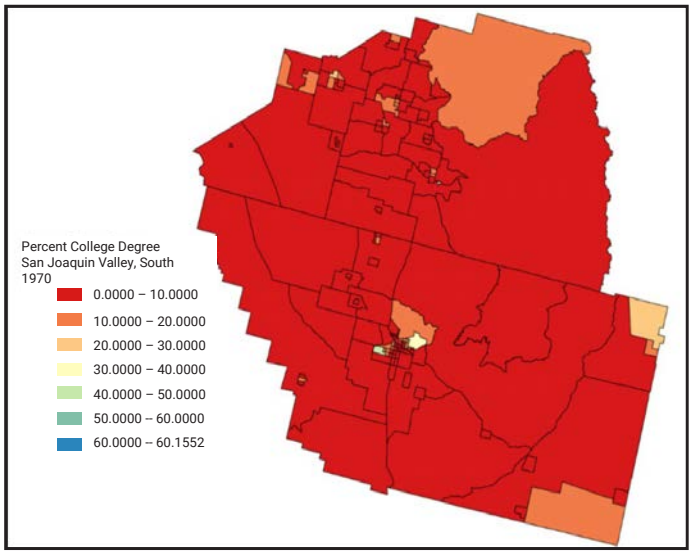



*Figure 23. Percent of Adults 25 and Over with College Degree or Higher Completed, 1970, South SJV, Census Tracts*

## Socioeconomic Trends: Poverty and Unemployment

Poverty for family households in the San Joaquin Valley has remained consistently higher than in the state overall, with the state averaging at a rate of 10 percent from 1970 to 2017 while the counties of the San Joaquin Valley have fluctuated from lows of 12 percent to highs of 20 percent. The poverty rate has largely increased in the SJV, seeming to peak for some counties following the 2008 economic recession. In 2017, the highest rates of poverty were observed in Tulare County (23 percent), Fresno County (21 percent), and Merced County (20 percent). The lowest poverty rates observed were in San Joaquin County and Stanislaus County, each at 14 percent. In contrast, the state of California overall had a poverty rate of 11 percent. The extraordinarily high levels of family poverty in the San Joaquin Valley are of particular concern given that family poverty can have serious implications for well-being and social mobility. At the tract-level, family poverty appears to be concentrated in the same urban neighborhoods where non-Whites are overrepresented and educational attainment is relatively lower. However, high rates of family poverty are also observed in many

of the rural tracts of the SJV. Poverty in rural areas can present a unique set of challenges because rural families are likely to have greater difficulty accessing resources and services. A key point is that while poverty rates are higher in the San Joaquin Valley as compared to the rest of California, it is not equally prevalent in all parts of the SJV. Certain areas stand out as having very low levels of poverty, and these are also the areas where educational attainment is higher and the population is predominately non-Hispanic White.

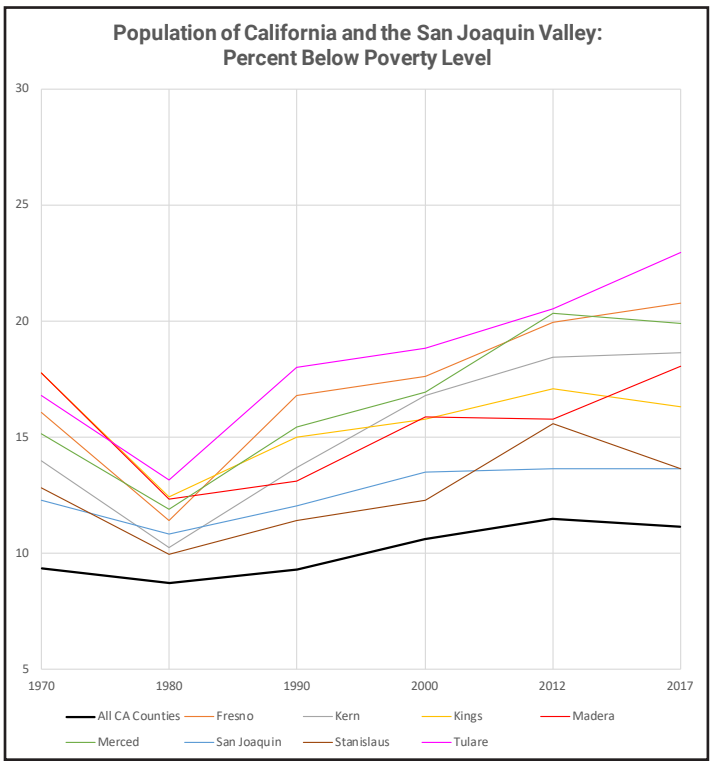



*Figure 25. Percent of Families Below Poverty Level*

Similar patterns emerge for the unemployment rate. Since 1970 the counties of the San Joaquin Valley have experienced higher rates of unemployment than the state overall. The economic recession of 2008 had a striking effect on the unemployment rate, causing it to spike as high as 16 percent in Merced County in 2012.

Like the state overall, the San Joaquin Valley has shown signs of recovery with the unemployment rate dropping down to pre-recession levels, but this is still a considerably higher rate than other parts of the state with the lowest rate observed in Madera County at 8.25 percent and the highest rate observed in Merced County at 14.63 in 2017 (by comparison, the unemployment rate for the state of California in 2017 was 7.65 percent). Regarding the geographic distribution of unemployment, the census tracts with the highest levels of unemployment are also those that are observed to have the highest levels of family poverty. More recent economic progress has likely improved the unemployment rate in the San Joaquin Valley, but questions regarding why the region tends to lag in economic outcomes should continue to receive attention.

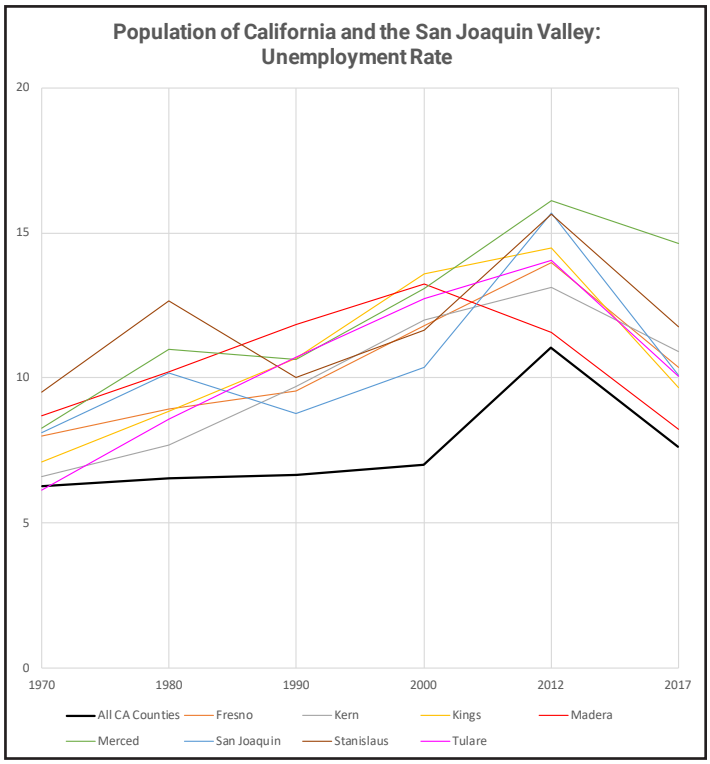



*Figure 26. Unemployment Rate*

## Socioeconomic Trends: Household Income and Homeownership

More direct measures of the economic well-being of households in the San Joaquin Valley receive attention here, specifically household income and homeownership. Household income will be in part dependent on rates of inflation from year to year, so relative household income by decade will be considered instead. Homeownership is one of the most common ways for most American families to build wealth, so


*Figure 27. Percent of Families Below Poverty Level, 1970, North SJV, Census Tracts*

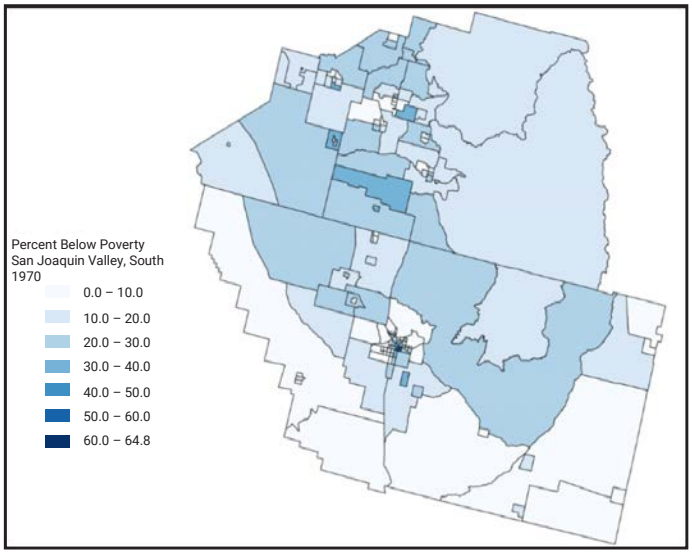



*Figure 29. Percent of Families Below Poverty Level, 1970, South SJV, Census Tracts*

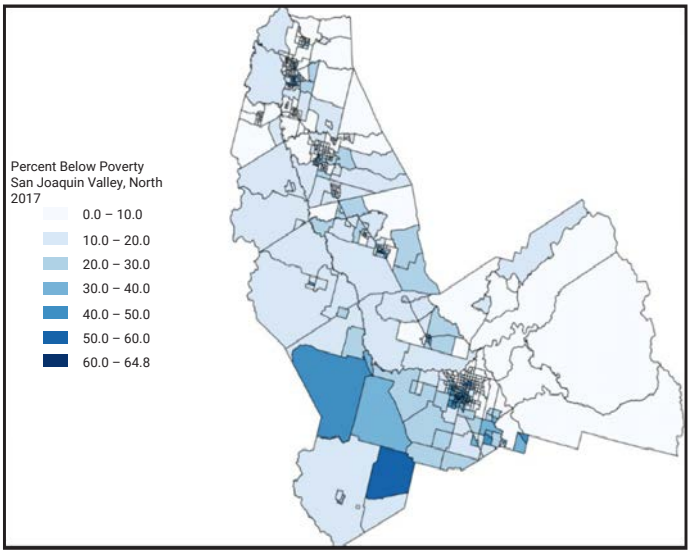



*Figure 28. Percent of Families Below Poverty Level, 2017, North SJV, Census Tracts*

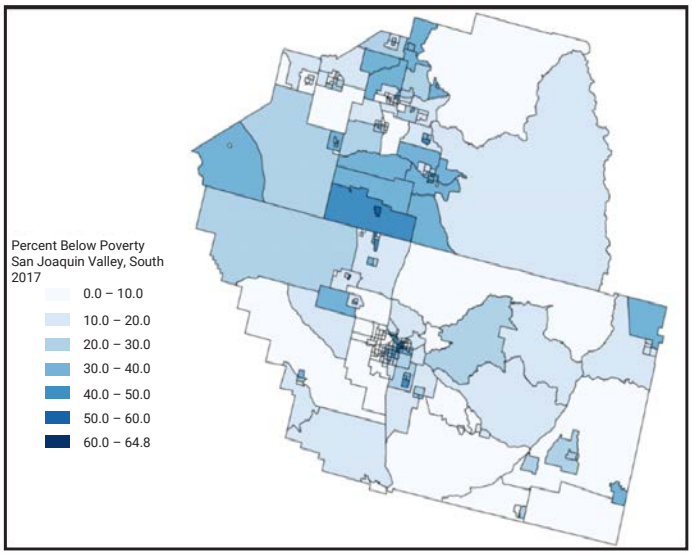



*Figure 30. Percent of Families Below Poverty Level, 2017, South SJV, Census Tracts*

this indicator is critical for understanding the long-term financial stability of households in the San Joaquin Valley.

In 1980, the eight counties of the San Joaquin Valley placed in the 1st-4th quintiles of the overall distribution of median income for counties in California.[5] Kern County had a median income in the 4th quintile, four counties – San Joaquin, Stanislaus, Madera, and Fresno – had median incomes in the 3rd quintile, while only one county – Tulare – had a median income in the 1st quintile. Thus, while the San Joaquin Valley had lower levels of household income relative to some other counties in the state, the disparities were fairly small in 1980. By 2017, the income disparities between the SJV and the rest of the state had grown with only two of the counties, San Joaquin and Stanislaus, placing in the 3rd quintile while the remainder were either in the 1st or 2nd quintile. One indicator of this growing disparity is the percentage change in median income from 1980 to 2017. Median income in the state of California rose by 269 percent over the four decades while median income in the San Joaquin Valley specifically rose by an average of 226 with

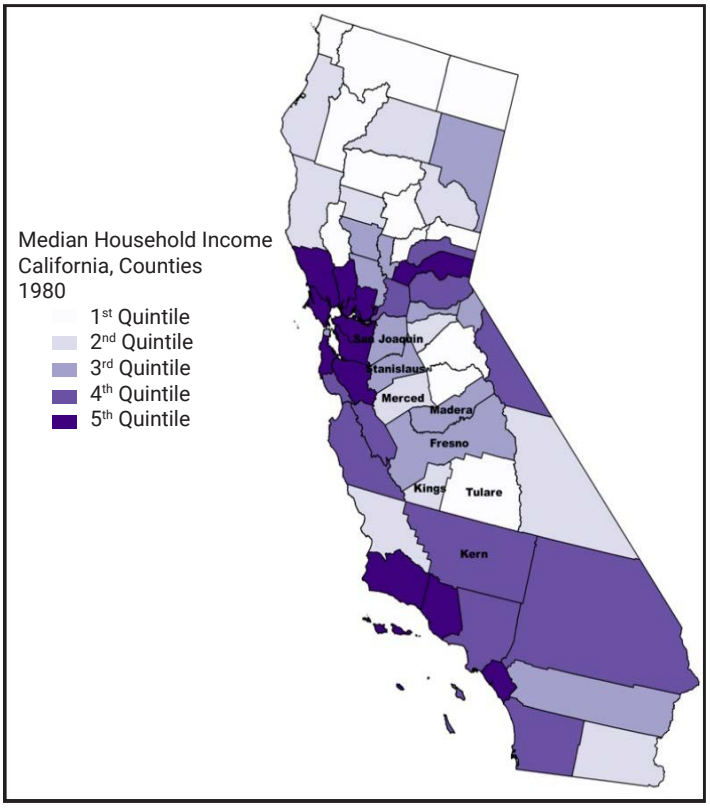



*Figure 31. Median Household Income, Quintiles, 1980, Counties*

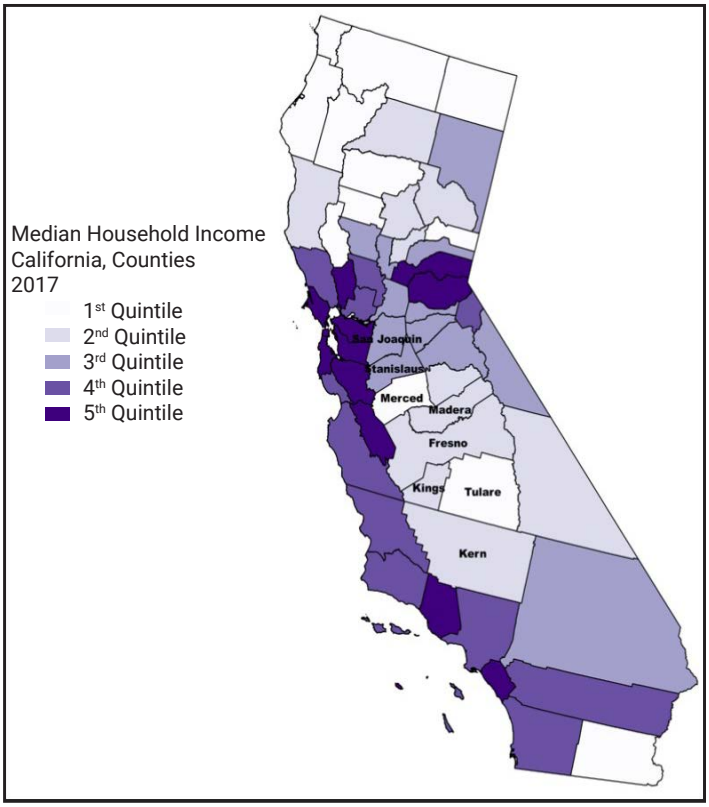



*Figure 32. Median Household Income, Quintiles, 2017, Counties*

the two previously mentioned counties, San Joaquin and Stanislaus, experiencing the highest increases in income at 260 and 253 percent, respectively. Fresno and Kern counties had the lowest percentage increase in median household income at 210 and 211 percent, respectively. This is reflected in the change in relative position for these two counties, with Fresno County dropping from the 3rd to the 2nd quintile and Kern County dropping from the 4th to 2nd quintile from 1980 to 2017. One possible explanation for why San Joaquin and Stanislaus have stood out on socioeconomic indicators in recent decades is that these counties have become attractive places of residence for Bay Area employees seeking out more affordable housing. Indeed, in 2017 these two counties, in addition to Merced County, had the highest percentages of workers who commute more than 60 minutes to their place of work and/or work outside of their county of residence. The average percentage of workers who commute 60 minutes or more in the San Joaquin Valley was 9.62 percent in 2017, compared to 18.52 percent in San Joaquin County and 12.1 percent in Stanislaus County. Additionally, 28 percent of workers

in San Joaquin County reported that their place of work was in a different county from their place of residence, while 24 percent said the same in Stanislaus County.

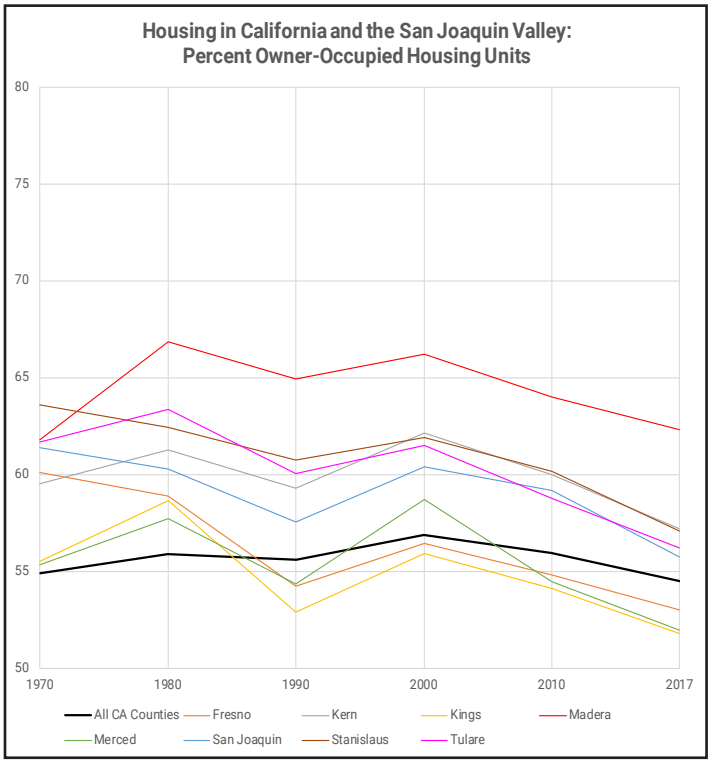



*Figure 33. Percent of Owner-Occupied Housing Units*

By most socioeconomic indicators, households in the San Joaquin Valley tend to be more disadvantaged as compared to the rest of the state. Homeownership, however, is unique in this regard. Several counties in the SJV exhibit homeownership rates that are either higher than or equal to the rate for the state overall, with the highest rate observed in Madera County where the homeownership rate has stayed consistently above 60 percent since 1970. By comparison, the homeownership rate for the state of California has remained stable around 55 percent over this same time period. Trends in homeownership over this time period should be observed with caution given the housing crisis that began in 2007. Indeed, rates of homeownership declined significantly from 2000 to 2012 and continued to decline as of 2017. Some counties appear to have been more heavily affected than others. Nevertheless, the San Joaquin Valley is not notably different from the overall state with regards to homeownership and does at times exhibit higher levels of homeownership. Housing costs in the coastal urban areas of California are notoriously high and rising, making homeownership in the San Joaquin Valley relatively more feasible for families.

Income segregation is apparent in the San Joaquin Valley and correlates with racial segregation. The tracts in the highest quintiles of the median household income distribution tend to be located in the urban neighborhoods where poverty and unemployment rates are lowest and percent non-Hispanic White is highest. Mirroring patterns of income segregation, homeownership is also highest in the areas that are identified as otherwise socioeconomically advantaged. Some cities have a long history of disparities in homeownership and home value dating back to the National Housing Act of 1934, and these disparities have held over time with newer housing development largely emerging in areas where home ownership is already high. In the urban areas, income and wealth segregation has persisted and holds implications for social disparities that intersect with race and poverty.

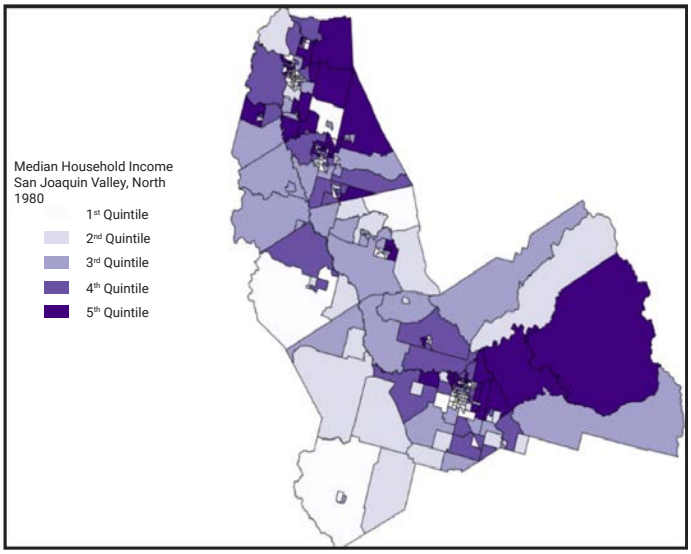



*Figure 34. Median Household Income, Quintiles, 1980, North SJV, Census Tracts*

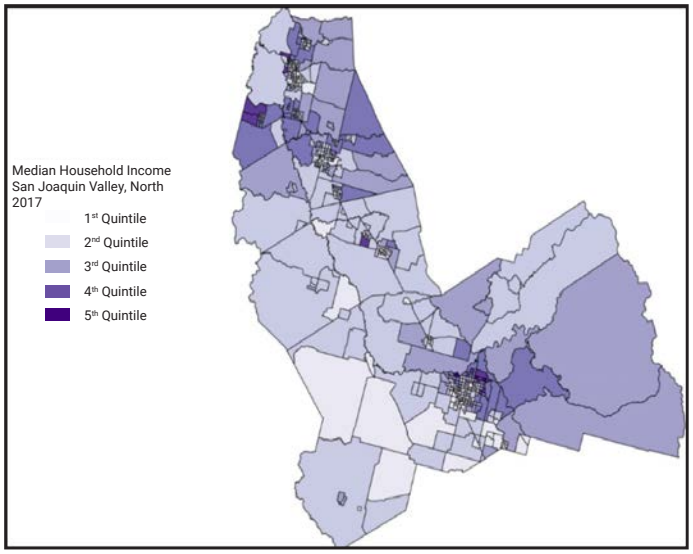



*Figure 35. Median Household Income, Quintiles, 2017, North SJV, Census Tracts*

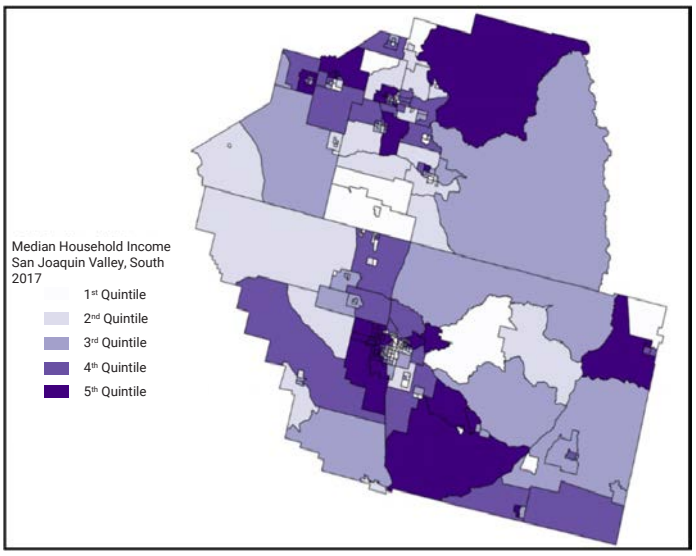



*Figure 37. Median Household Income, Quintiles, 2017, South SJV, Census Tracts*

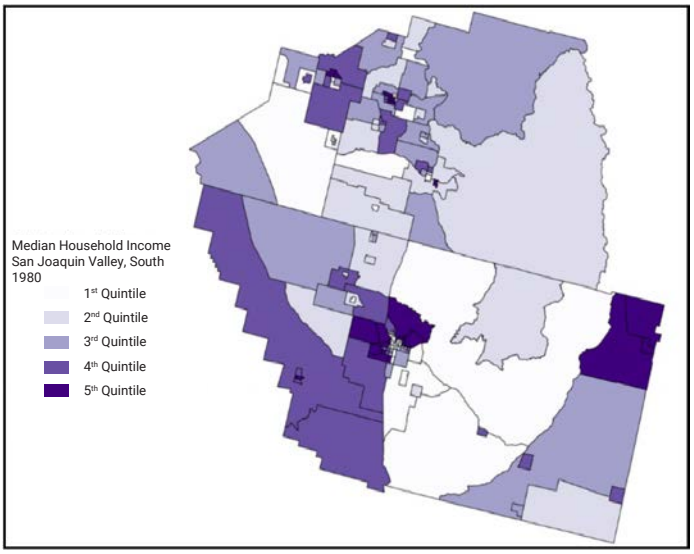



*Figure 36. Median Household Income, Quintiles, 1980, South SJV, Census Tracts*

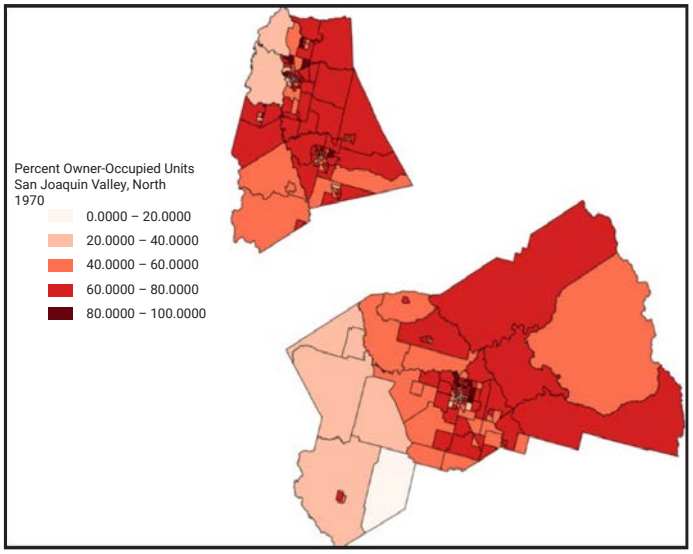



*Figure 38. Percent of Owner-Occupied Housing Units, 1970, North SJV, Census Tracts*

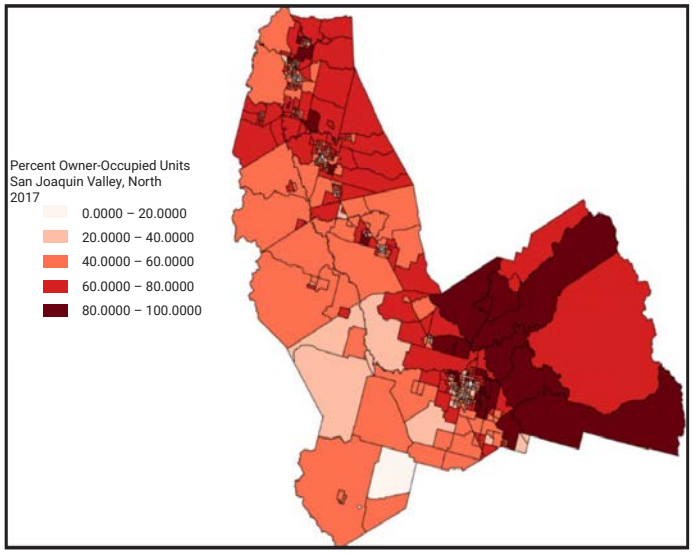



*Figure 39. Percent of Owner-Occupied Housing Units, 2017, North SJV, Census Tracts*

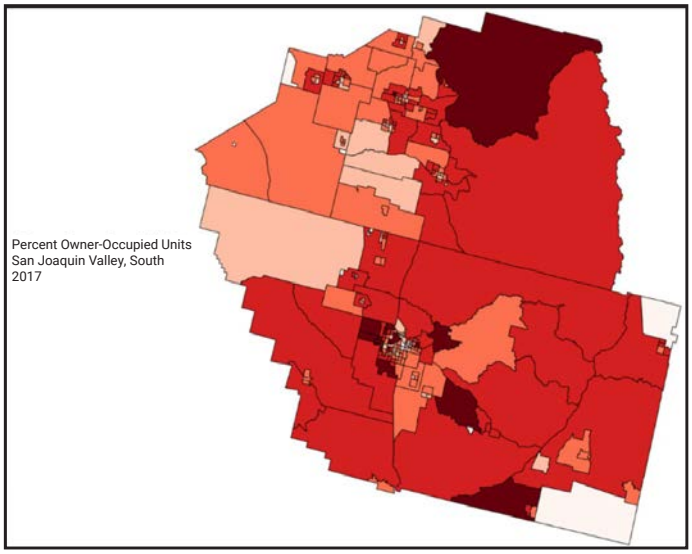



*Figure 41. Percent of Owner-Occupied Housing Units, 2017, South SJV, Census Tracts*

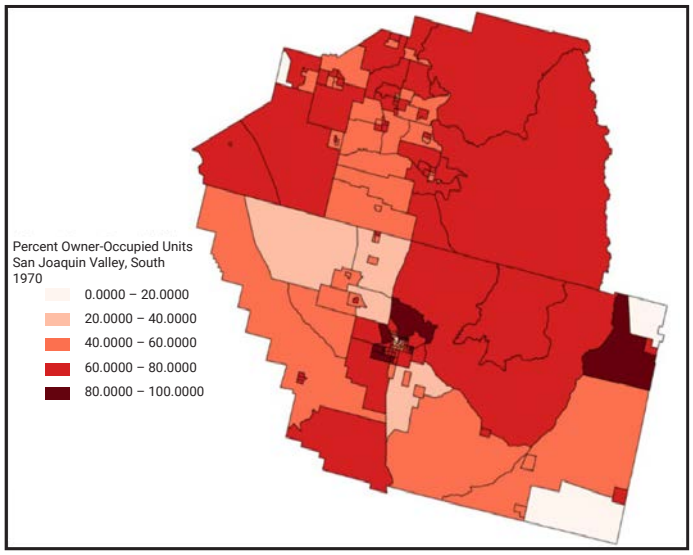



*Figure 40. Percent of Owner-Occupied Housing Units, 1970, South SJV, Census Tracts*

## Labor: Industry of Occupation

The economy of the San Joaquin Valley is heavily dependent on agriculture, with the region being one of the largest producers of food in the world. The region overall depends on agriculture for economic stability and the population depends on this industry for employment. When compared to the state overall, the counties of the San Joaquin Valley have consistently relied more on agriculture for employment from 1970 to 2017. Over these five decades, only an average of 3 percent of the labor force statewide has been employed in agriculture while this percentage has averaged as high as 19 percent in Tulare county and only as low as 8 percent in Stanislaus County. Most of the counties of the San Joaquin Valley have had at least 10 percent of their labor force in agriculture. However, dependence on this industry for employment has declined over time – slightly for some and significantly for others. Nevertheless, the SJV's reliance on agriculture has implications for changing state policies concerning water and other environmental issues as well as federal and state budgetary decisions.

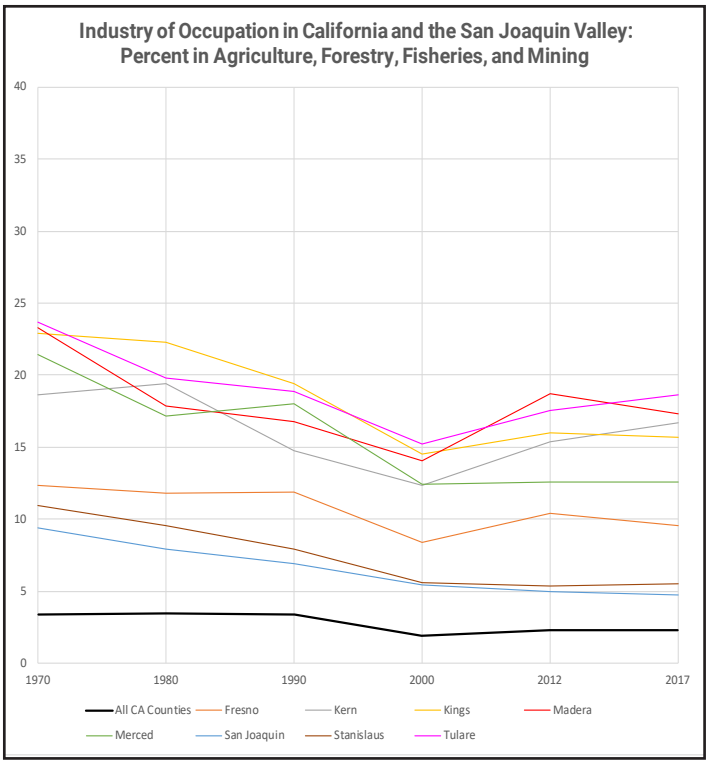



*Figure 42. Percent in Agriculture, Forestry, Fisheries, and Mining*

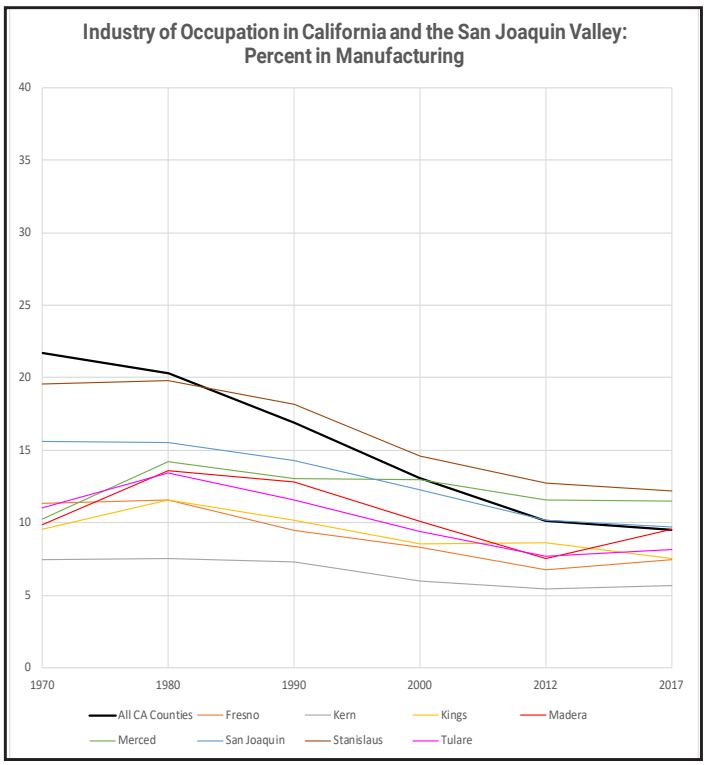



*Figure 43. Percent in Manufacturing*

In all other major industries of occupation, the San Joaquin Valley is comparable to the state overall. One trend worth noting however, is that for the SJV as well as the state, occupations in manufacturing have been in decline. While the percent of workers in manufacturing was over 10 percent in several counties in 1970, only two counties remained above 10 percent in 2017. In contrast, occupations in the service industry have been on the rise from an average of 5 percent in 1970 to an average of 8.5 percent in 2017. This is part of a larger decline in the United States in what are known as "blue-collar" jobs.

The final section of this report will conclude with a summary of potential issues to remain aware of as future decisions are made with relevant for the San Joaquin Valley. Particular focus will be given to socioeconomic disparities and preparing for a changing economy.

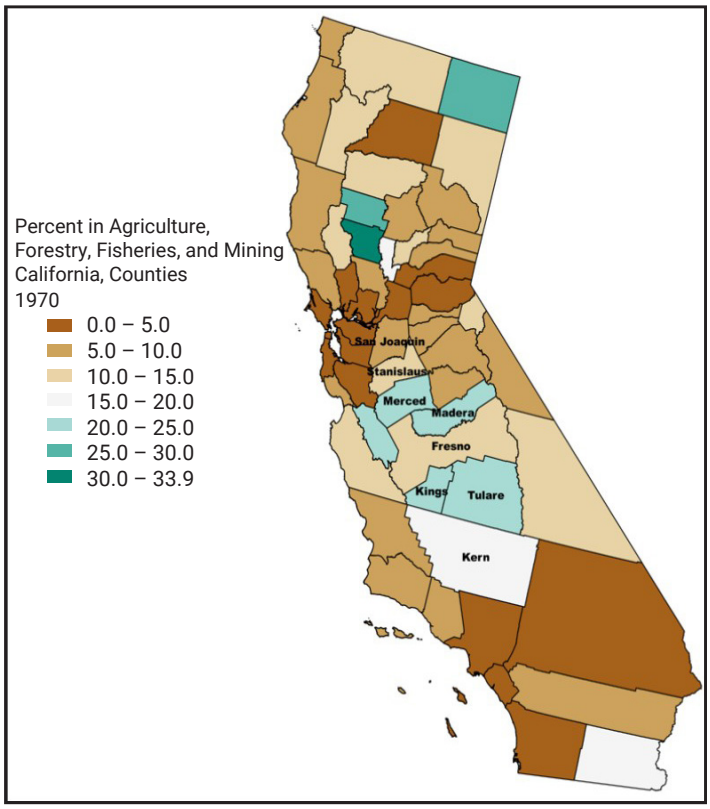



*Figure 44. Percent in Agriculture, Forestry, Fisheries, and Mining, 1970, Counties*

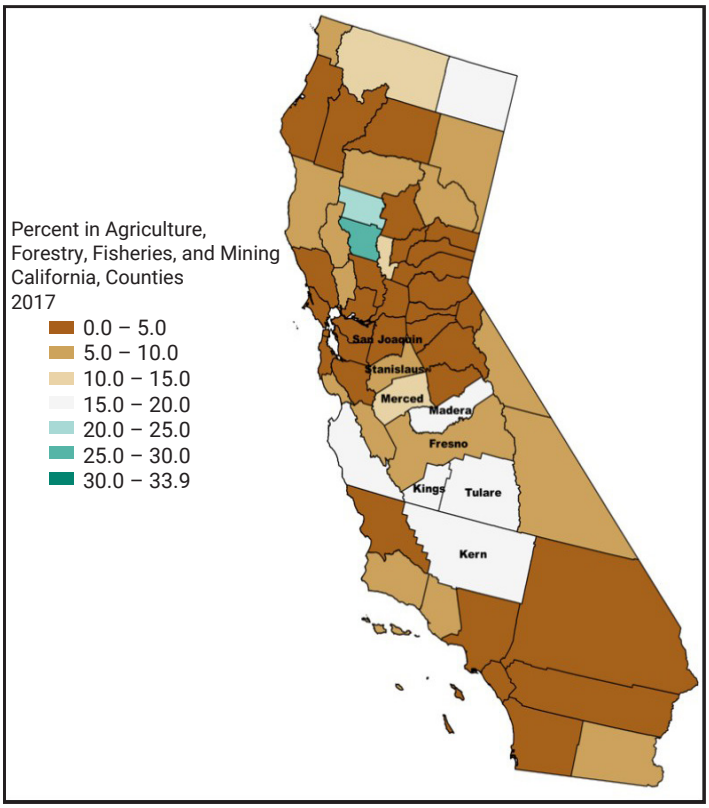



*Figure 45. Percent in Agriculture, Forestry, Fisheries, and Mining, 2017, Counties*

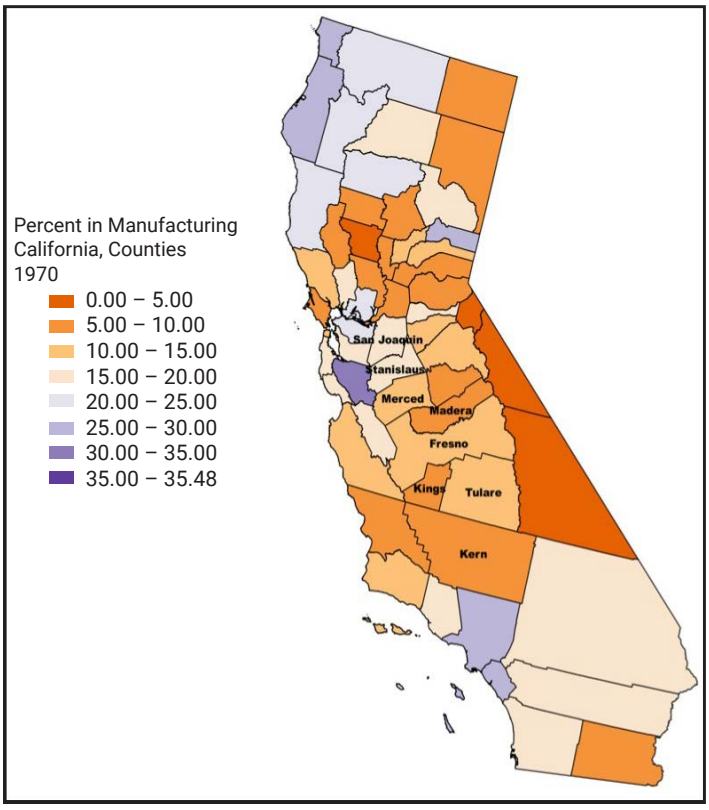



*Figure 46. Percent in Manufacturing, 1970, Counties*

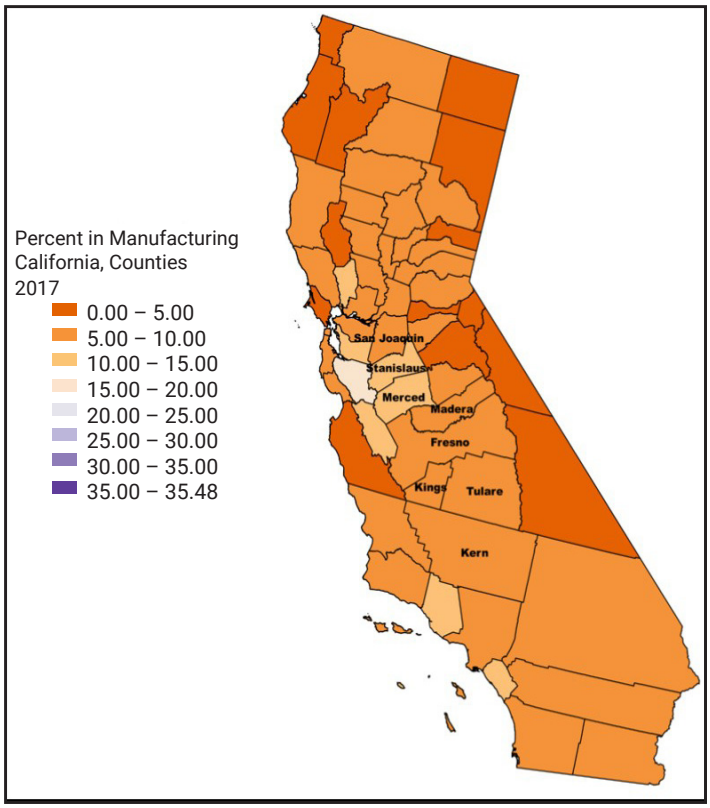



*Figure 47. Percent in Manufacturing, 2017, Counties*

## Conclusion: Suggested Areas to Prioritize

In this section, three general topics are highlighted as recommended priorities for improving the social and economic well-being and long-term stability of the San Joaquin Valley. The urban areas of the SJV are known for long-standing inequalities in regards to home ownership and housing access. Additionally, while the SJV has made notable gains in educational attainment, it continues to lag behind the rest of the state at a time when the region should be diversifying its economy and workforce. Finally, health and environmental issues continue to be a major topic of concern for the region, particularly in regards to access to healthcare and exposure to hazards. These issues will be discussed further here, referencing data provided in this report as well as studies conducted by other agencies.

### Housing Inequality

Housing in the San Joaquin Valley presents a variety of concerns, but urban housing in particular is rooted in a

history of segregation and what is known as "redlining," or the process by which the Federal Housing Administration (FHA) determined which areas of a city were preferable for granting low-interest home mortgages during the New Deal Era. As was pointed out previously in this report, patterns of homeownership rates throughout the census tracts of the San Joaquin Valley overlap with patterns of income, poverty, and racial segregation. Homeownership rates tend to be remarkably higher for non-Hispanic Whites than for Blacks and Latinos. In the San Joaquin Valley in 2017, an estimated 66 percent of non-Hispanic White households owned their homes as compared to only 47 percent of Latino households and 30 percent of Black households. This is a symptom of a larger racial wealth gap that exists in the United States and much of it can be traced back to the practice of "redlining" and other forms of discrimination in the housing market.

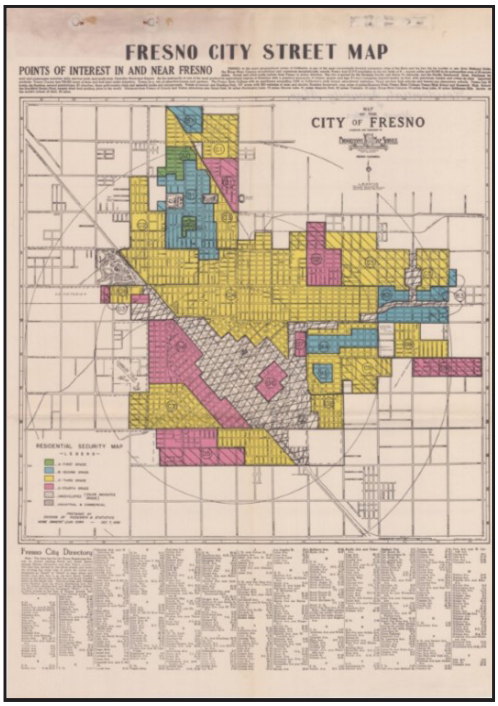



*Figure 48. Redlining in Fresno, CA*[6]

For example, in the city of Fresno, maps and related reports drawn up by the Homeowners Loan Corporation (HOLC) in the 1930s and 1940s outlined and ranked neighborhoods from "Hazardous" to "Best," with "Hazardous" neighborhoods color-coded red and accompanied by documents describing the population of each neighborhood. These documents were provided to the FHA and advised the FHA to avoid the "Hazardous" neighborhoods when granting low-interest home loans. These practices were problematic and eventually outlawed because the documents often alluded to the racial composition of the neighborhood as part of the justification for the given rating, and neighborhoods that were predominately non-White were most likely to be marked as either "Hazardous" or "Declining."[7] The long-term impact of these practices is that the spatial distribution of race and resources in these urban areas observed today echoes the redlining maps that were drawn many decades ago, demonstrating that policy decisions made in past generations have shaped the social inequalities that now exist. A proactive and corrective strategy is needed to alleviate the severe housing disparities in the San Joaquin Valley, one that will directly address past housing policy approaches that exacerbated race and class inequality.

## Education and Diversifying the Workforce

There are two critical points to be reiterated with regards to education in the San Joaquin Valley. The first is that while the SJV has made gains in closing the high school completion gap that existed between the counties of the region and the state overall, the college completion gap has grown. Several dynamics could be contributing to this, including a highly educated in-migration stream to the coastal urban areas of the state. However, the San Joaquin Valley must improve access to higher education to compete in an increasingly high-skilled labor market. This relates to the second point, which is that the San Joaquin Valley has long relied on agriculture for its economic productivity and employment.

A simple correlation analysis reveals that poverty rates in the San Joaquin Valley have both a significant and negative correlation with sales in agriculture, with poverty reducing as agriculture sales go up. There are several factors that could be changing the poverty rate in the San Joaquin Valley, but it would be difficult to deny that the region's economy is bolstered by its agricultural output. However, with changes in technology, shifts in the labor force, and pressures to suppress rising food costs as well as limit water usage, the region will need

to consider diversifying its economy. There is some evidence that these efforts are already underway, with the urban areas of the San Joaquin Valley attempting to attract the high-tech industry with its lower cost of living. In order for the SJV to ensure that its population plays a role in these shifts, high-skilled training needs greater emphasis through greater educational opportunities, whether it is through a four-year education or through a more vocational track.

There are four-year institutions operating in the San Joaquin Valley that have made major contributions to increasing access to higher education such as the California State University campuses (Bakersfield, Fresno, and Stanislaus) as well as the addition of a University of California campus in Merced. Additionally, there are several state community colleges in the region that can provide both job-related skills training and an affordable pathway to a four-year education. Nonetheless, more efforts need to be made to improve the pipeline to higher education, and in particular these efforts must address the racial and socioeconomic disparities in these pipelines. This means improving K-12 educational disparities, which are often tied to other locational-based inequalities and can impact both access to and success in higher education, and also growing and nurturing the network of institutions of higher education in the San Joaquin Valley. The region has seen many positive changes with regards to education and would benefit from more resources being committed to closing educational opportunity gaps, in part because it would prepare the San Joaquin Valley's workforce for changes in the labor market.

## Environment and Health

Finally, several studies using federal and state health data have brought attention to the factors that drive alarming health disparities in the San Joaquin Valley. The first is a neighborhood-level life expectancy database created by the National Center for Health Statistics and the Robert Wood Johnson Foundation, which found wide variations in life expectancy at birth by census tract. Urban areas in the San Joaquin Valley received local media attention as a result of this study as the data demonstrated that in some cities life expectancy could have a range as high as 15 years between low-income and high-income neighborhoods. There are various factors that contribute to these extraordinary differences including access to healthy food and recreation, healthcare access and quality, and exposure to environmental hazards.[8] In the San Joaquin Valley, air pollution is a uniquely troubling factor and is likely to be higher for areas located near highly trafficked routes, such as the neighborhoods located along the California Highway 99 corridor. But the previously mentioned issues such as healthcare and nutritious food access are also topics of concern. The USDA Food Atlas reveals neighborhoods located over a mile away from access to nutritious food, which are often located in the same areas that are poor in socioeconomic resources.[9] Low-income residents of these neighborhoods, as well as low-income residents of rural areas, also face reduced access to quality healthcare which can result in unaddressed acute health problems becoming chronic or otherwise causing long-term complications. Additionally, data from the California Department of Public Health shows that lead exposure is higher in low-income neighborhoods in the city of Fresno, which can be detrimental to child cognitive and physical development.[10] When this data is analyzed spatially, the areas that have the lowest life expectancy, are most likely to be food insecure, and most likely to be exposed to dangerous levels of lead also tend to be the areas with higher rates of family poverty and higher non-White representation. This again stresses the importance of taking into account the role of residential segregation. These health disparities are cause for serious concerns which can hinder the social and economic progress of the San Joaquin Valley and must be treated as an urgent issue. A healthy population is critical for reducing inequality and improving social and economic outcomes.

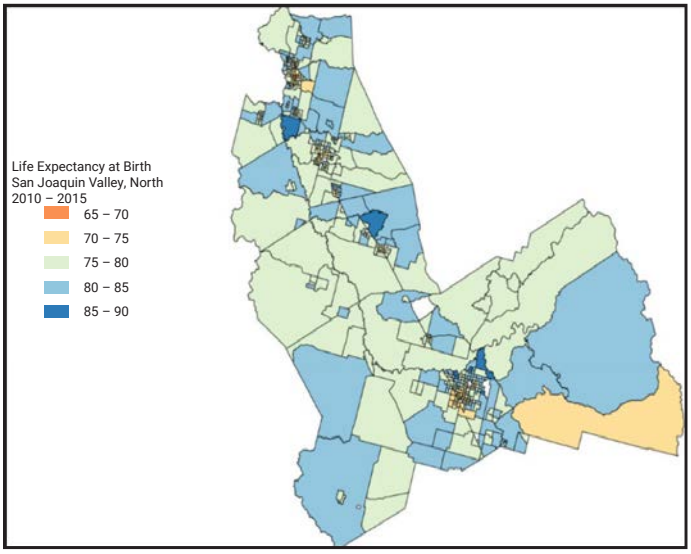



*Figure 49. Life Expectancy at Birth, 2010-2015, North SJV, Census Tracts*[11]

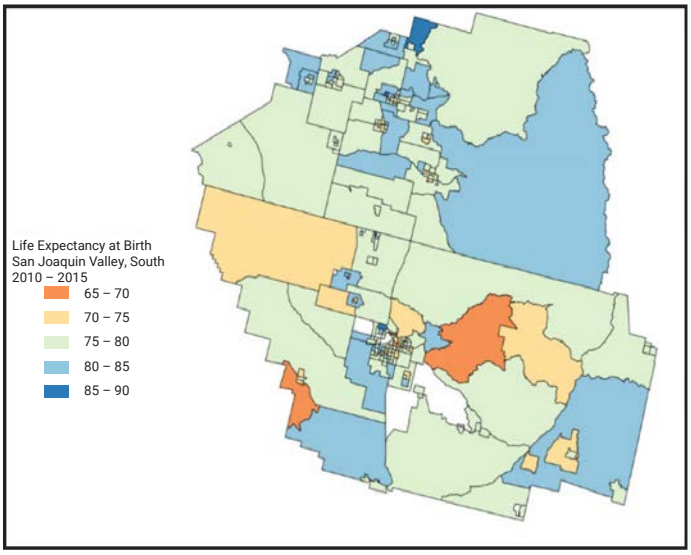



*Figure 50. Life Expectancy at Birth, 2010-2015, South SJV, Census Tracts*[12]

## Summary

While the conclusion of this report highlights some suggested priorities, the issues that the San Joaquin Valley faces are complex and require more consideration than could be given here. This report is meant to serve as a reference for that purpose and bring to the forefront some of the region's more pressing social and economic needs.

## Endnotes

1. Steven Manson, Jonathan Schroeder, David Van Riper, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 13.0 [Database]. Minneapolis: University of Minnesota. 2018. http://doi.org/10.18128/D050.V13.0

2. For data inquiries, contact Dr. Amber Crowell: acrowell@csufresno.edu

3. Prior to 1980, the U.S. Census Bureau did not separately measure Hispanic/Latino identity. Thus, changes in the non-Hispanic White population observed over time begin in 1980.

4. $D = 1/2 * \Sigma|w_k/W - n_k/N|$ where *k* is the index for census tracts, $w_k$ is the count for Whites in area *k*, $n_k$ is the count for non-Whites in area *k*, and *W* and *N* are the county-level totals for Whites and non-Whites, respectively.

5. Median income quintiles are ranked lowest to highest, with the first quintile containing the lowest 20% of the median income distriution and the fifth quintile containing the top 20% of the distribution.

6. Image courtesy of T-RACES, University of Maryland

7. Robert K. Nelson, LaDale Winling, Richard Marciano, Nathan Connolly, et al., "Mapping Inequality," *American Panoroma*, ed. Robert K. Nelson and Edward L. Ayers, accessed June 20, 2019, https://dsl.richmond.edu/panorama/redlining/

8. Robert Wood Johnson Foundation, "Could Where You Live Influence How Long You Live?," accessed June 20, 2019, https://www.rwjf.org/en/library/interactives/whereyouliveaffectshowlongyoulive.html

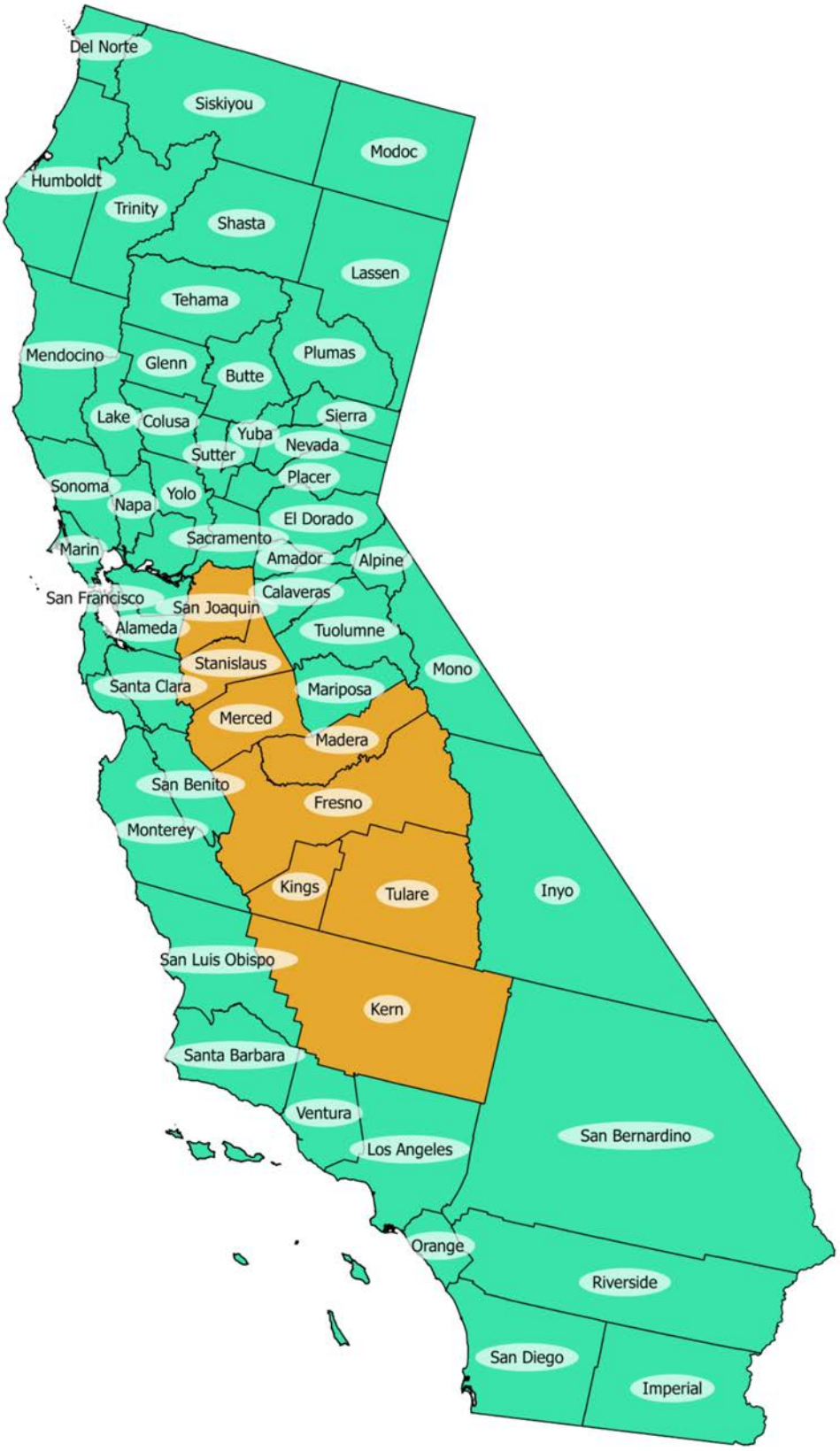
9. U.S. Department of Agriculture, "Food Environment Atlas," accessed June 20, 2019, https://www.ers.usda.gov/foodatlas/

10. M.B. Pell and Joshua Schneyer, December 19, 2016, "The Thousands of U.S. Locales Where Lead Poisoning is Worse than in Flint" *Reuters*, accessed June 20, 2019, https://www.reuters.com/investigates/special-report/usa-lead-testing/#interactive-lead

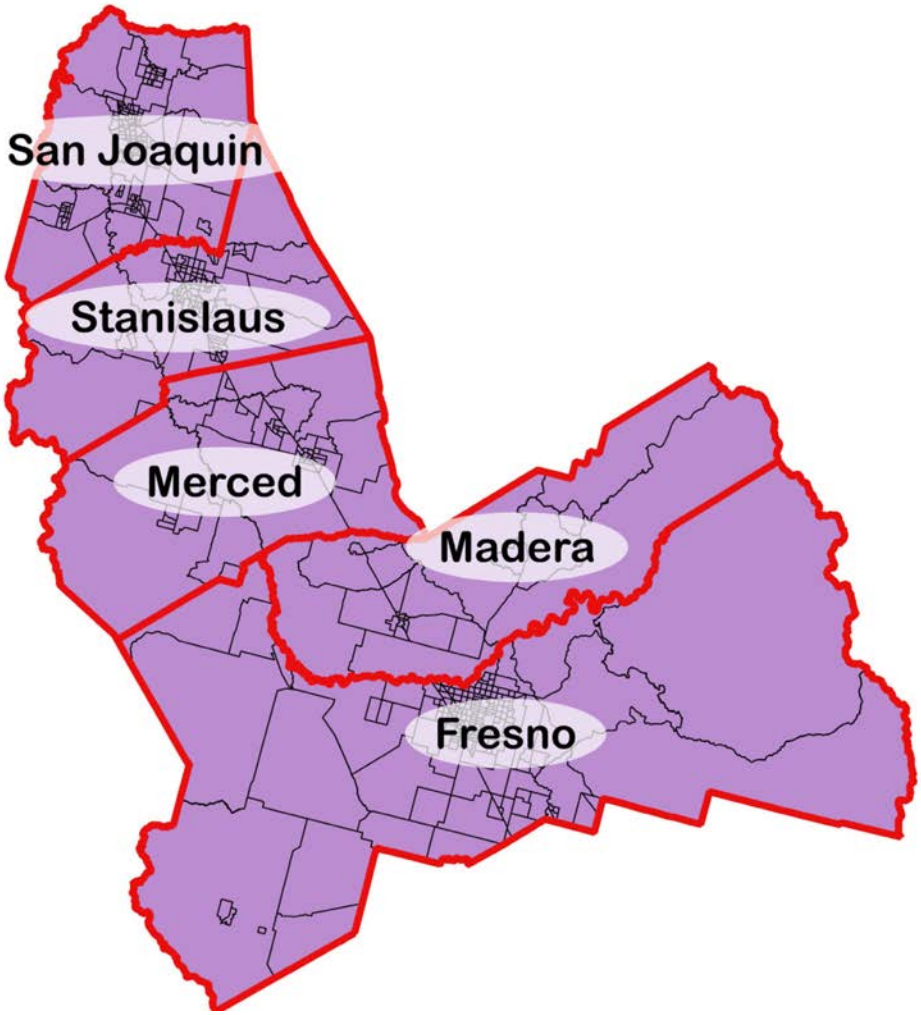
11. National Center for Health Statistics. U.S. Small-Area Life Expectancy Estimates Project (USALEEP): Life Expectancy Estimates File for {Jurisdiction}, 2010-2015]. National Center for Health Statistics. 2018. Available from: https://www.cdc.gov/nchs/nvss/usaleep/usaleep.html.

12. *See Note 11*

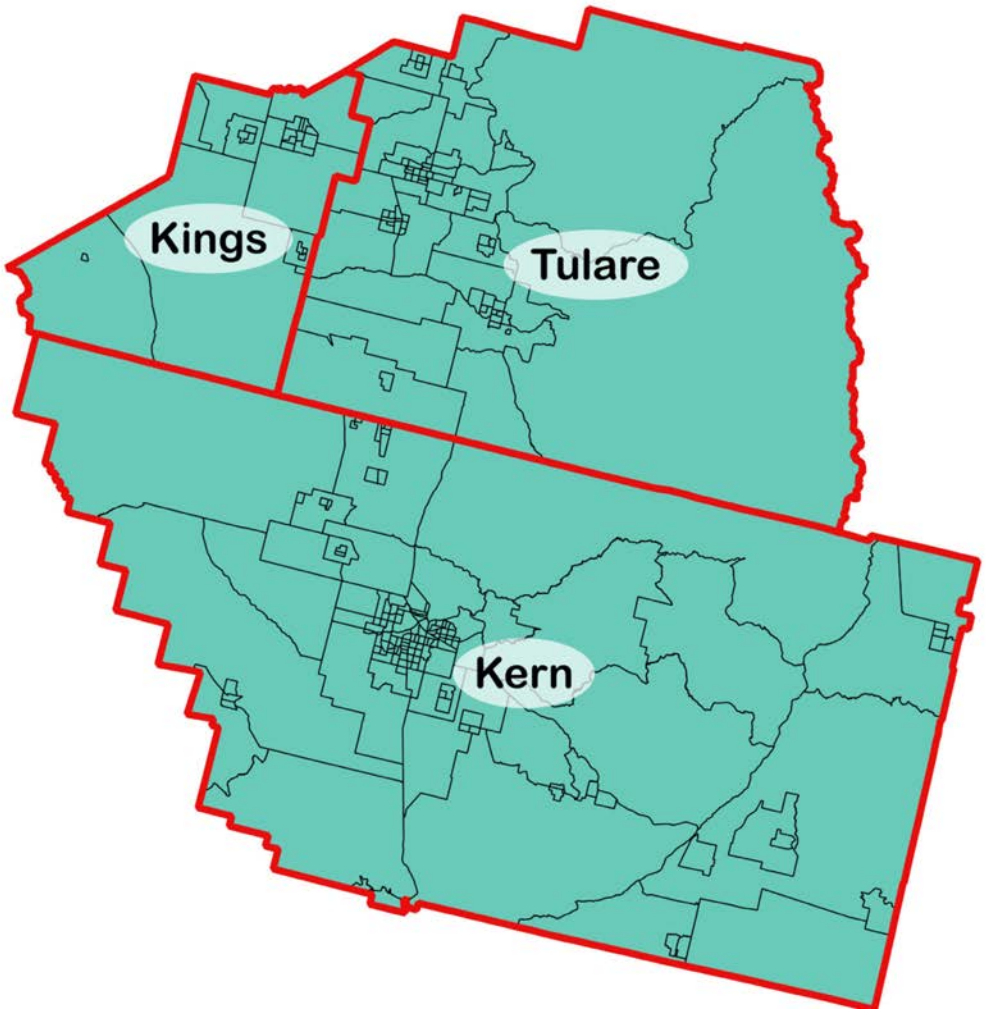
# Appendix A: Reference Maps




*Reference Map 1. Counties of California (orange indicates San Joaquin Valley region)*

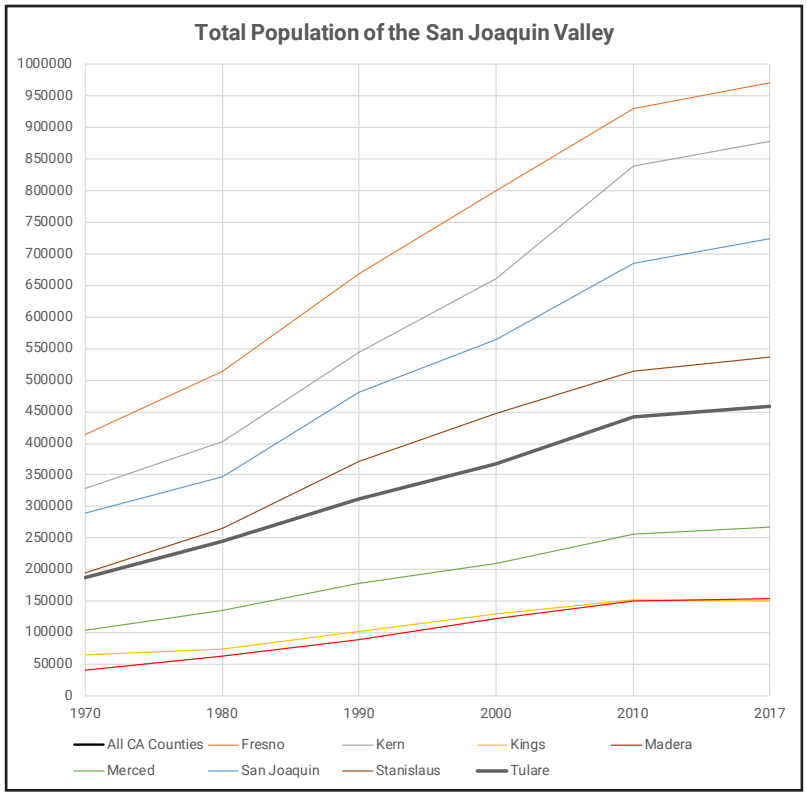


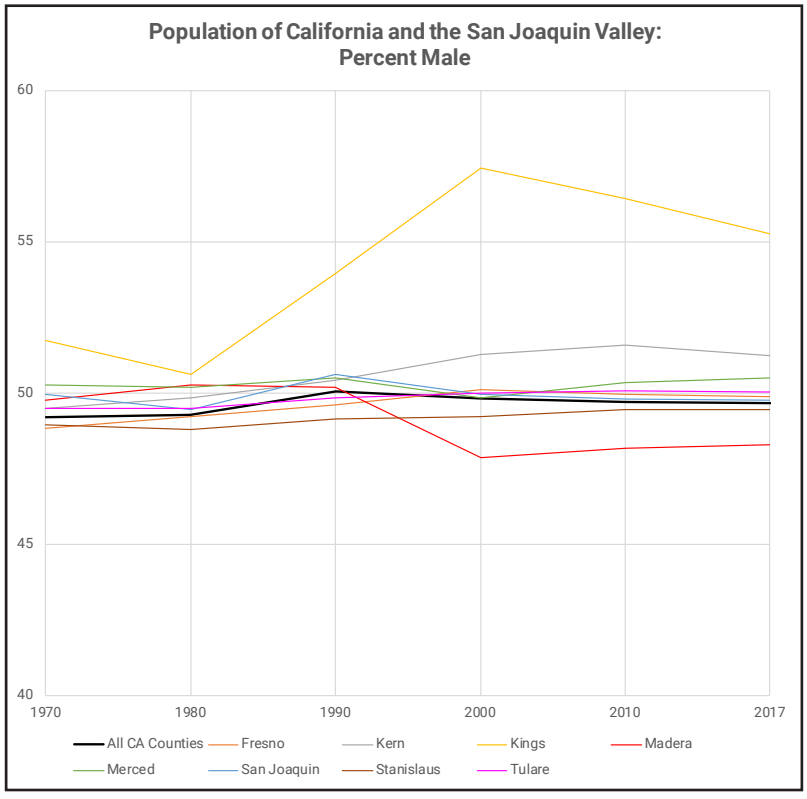

*Reference Map 2. North San Joaquin Valley with County and Census Tract Boundaries*

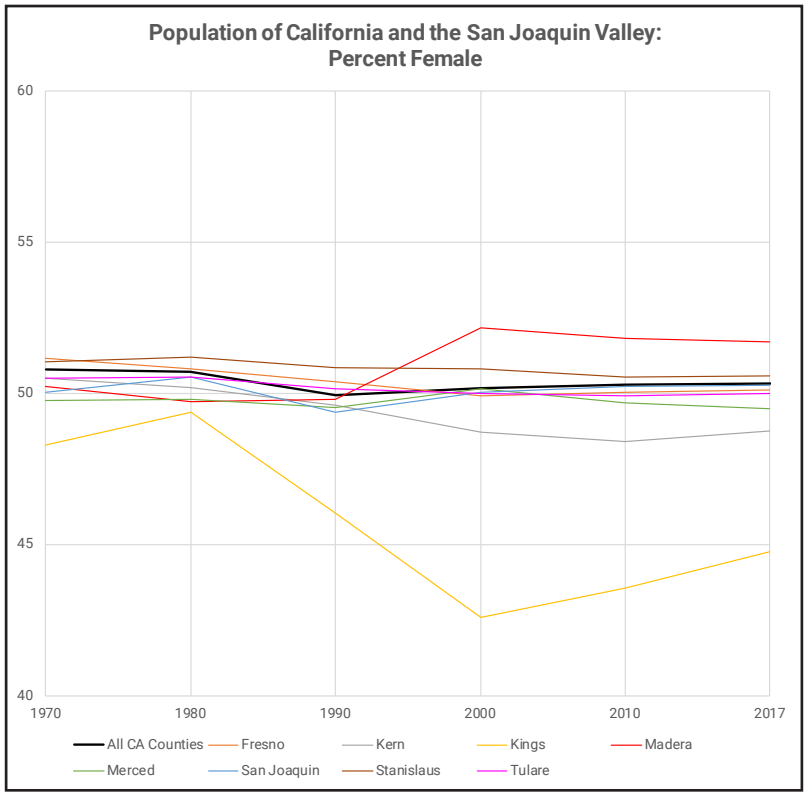


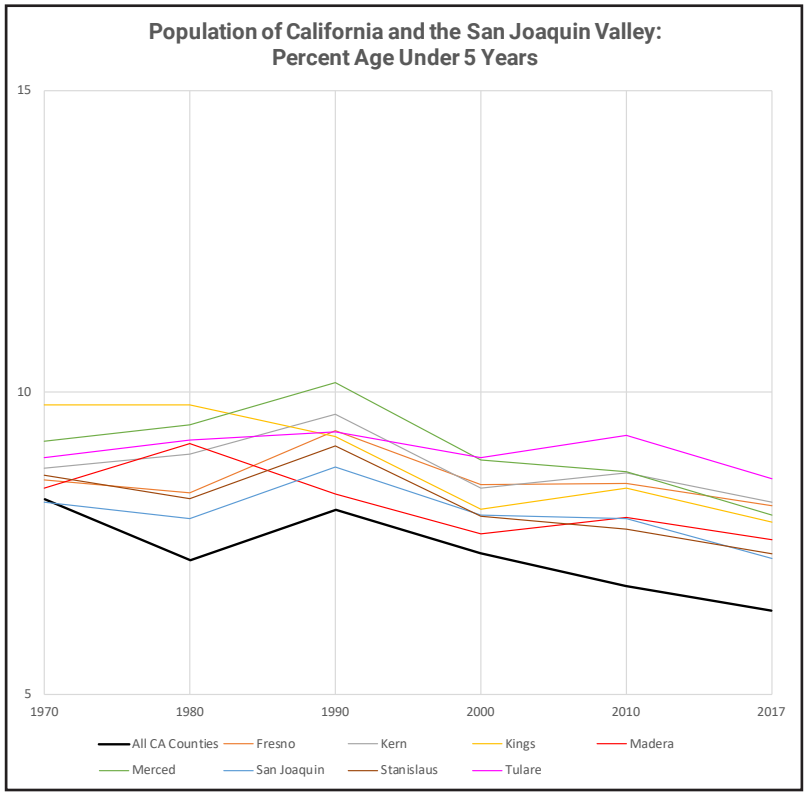

*Reference Map 3. South San Joaquin Valley with County and Census Tract Boundaries*

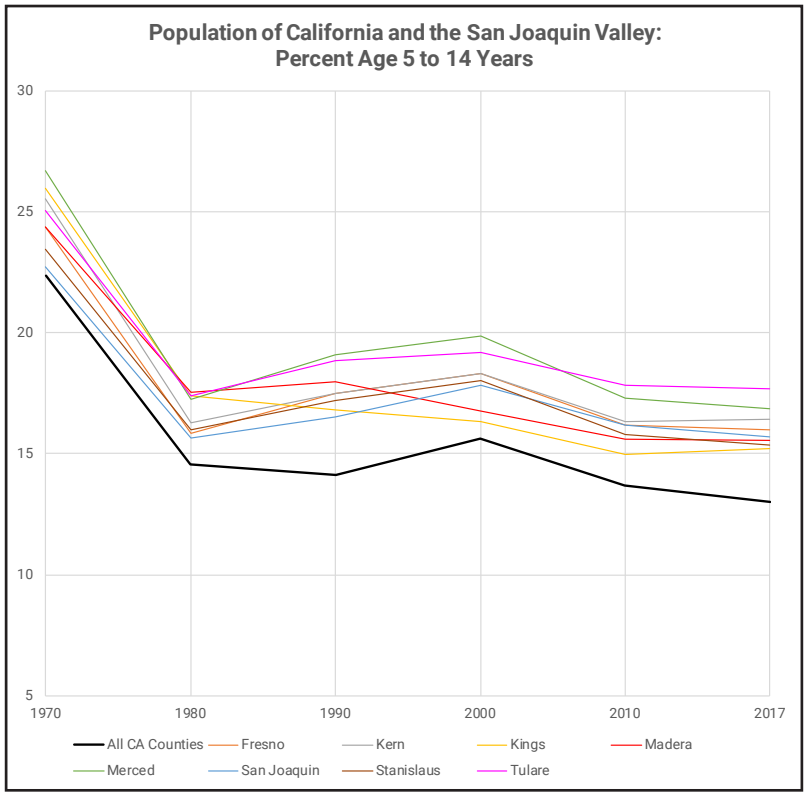
# Appendix B: Additional Figures

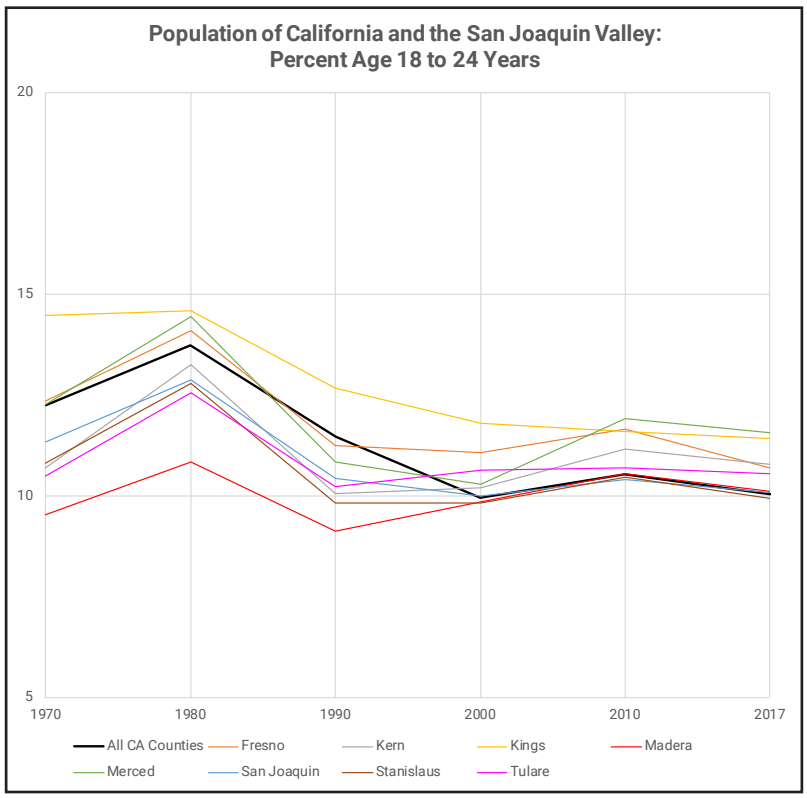

Total Population of the San Joaquin Valley
1000000
950000
900000
850000
800000
750000
700000
650000
600000
550000
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

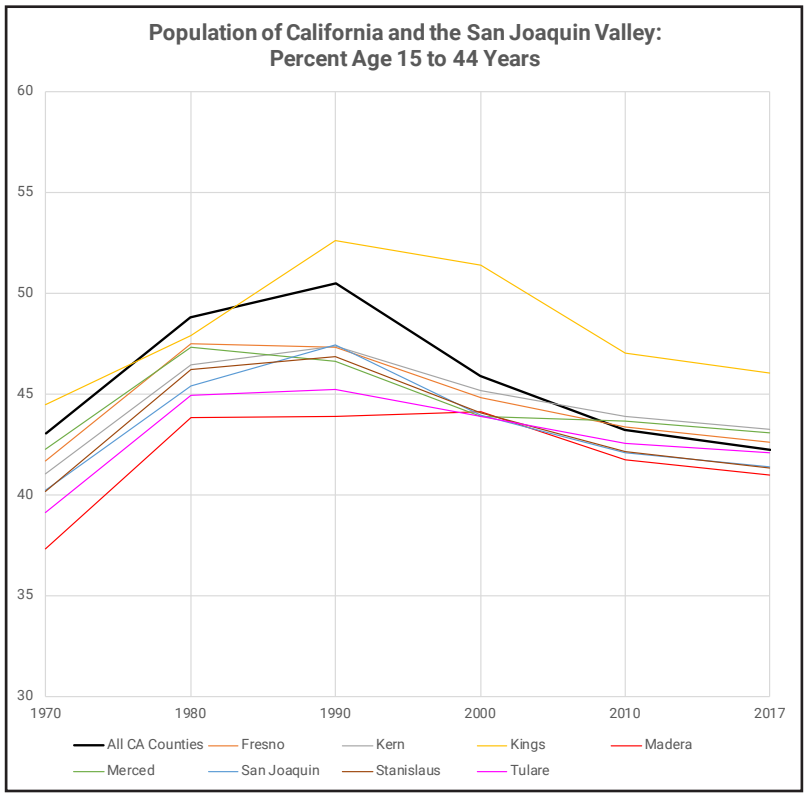

Population of California and the San Joaquin Valley:
Percent Male
60
55
50
45
40
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

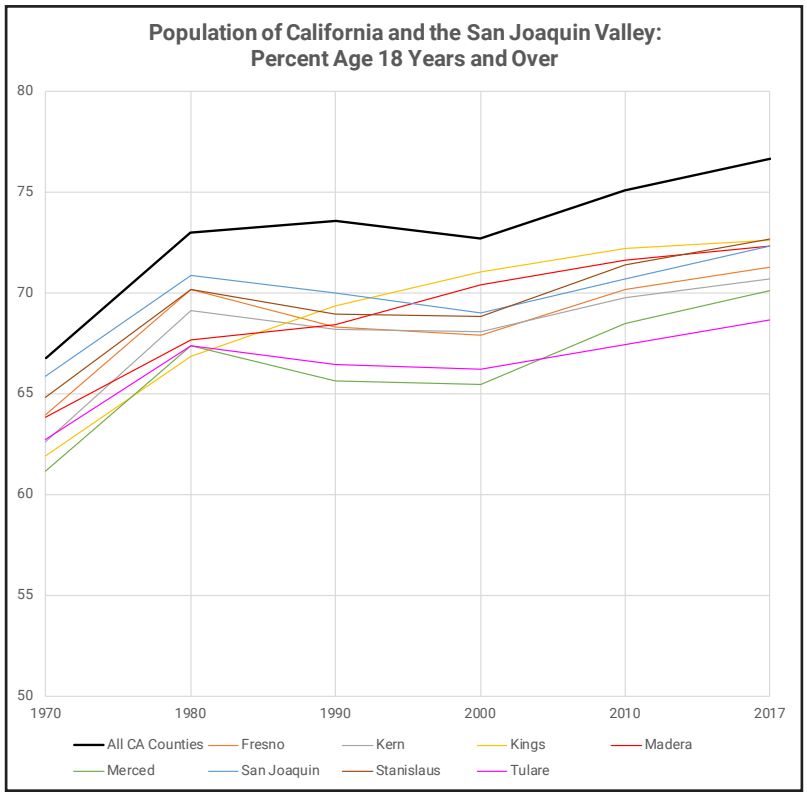

Population of California and the San Joaquin Valley:
Percent Female
60
55
50
45
40
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

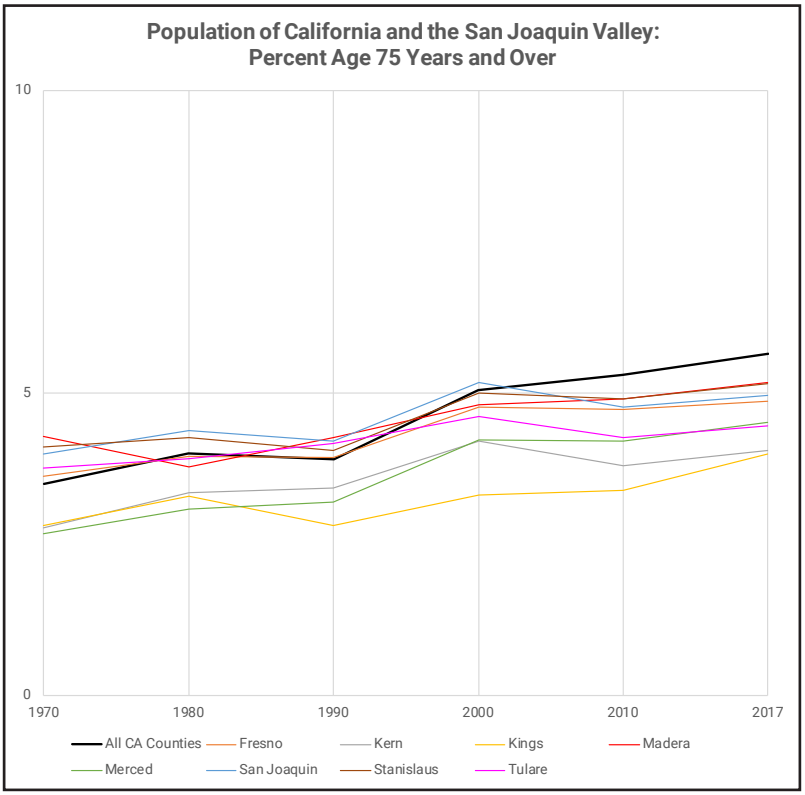

Population of California and the San Joaquin Valley:
Percent Age Under 5 Years
15
10
5
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

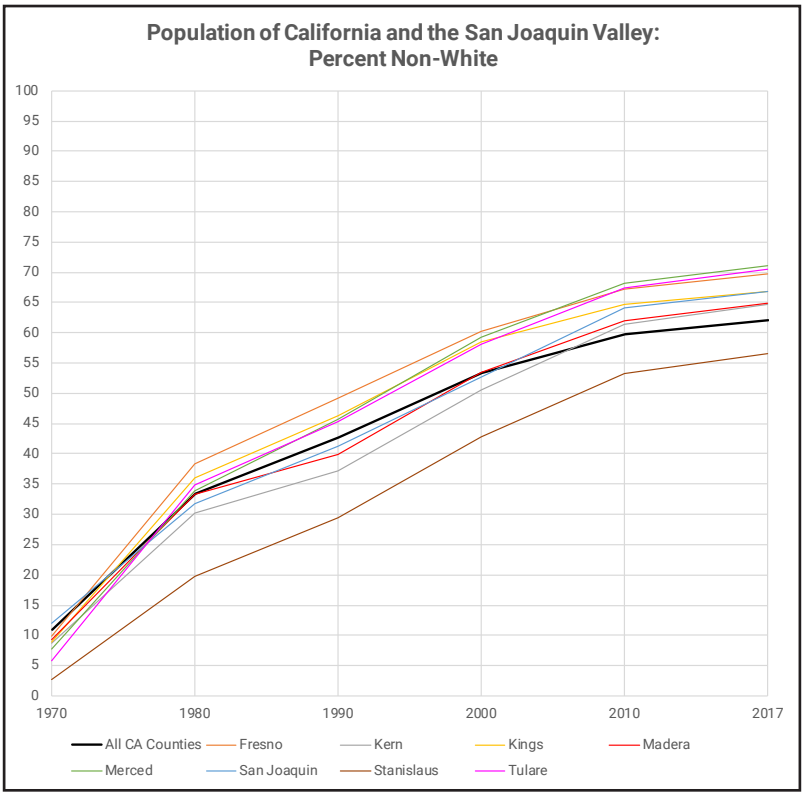

Population of California and the San Joaquin Valley:
Percent Age 5 to 14 Years
30
25
20
15
10
5
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

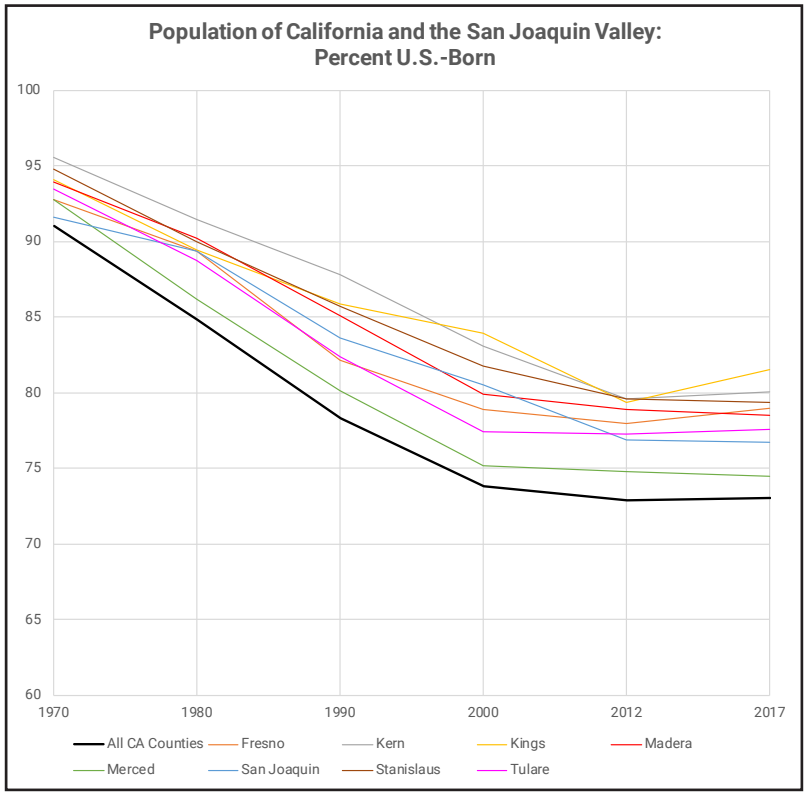

Population of California and the San Joaquin Valley:
Percent Age 18 to 24 Years
20
15
10
5
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

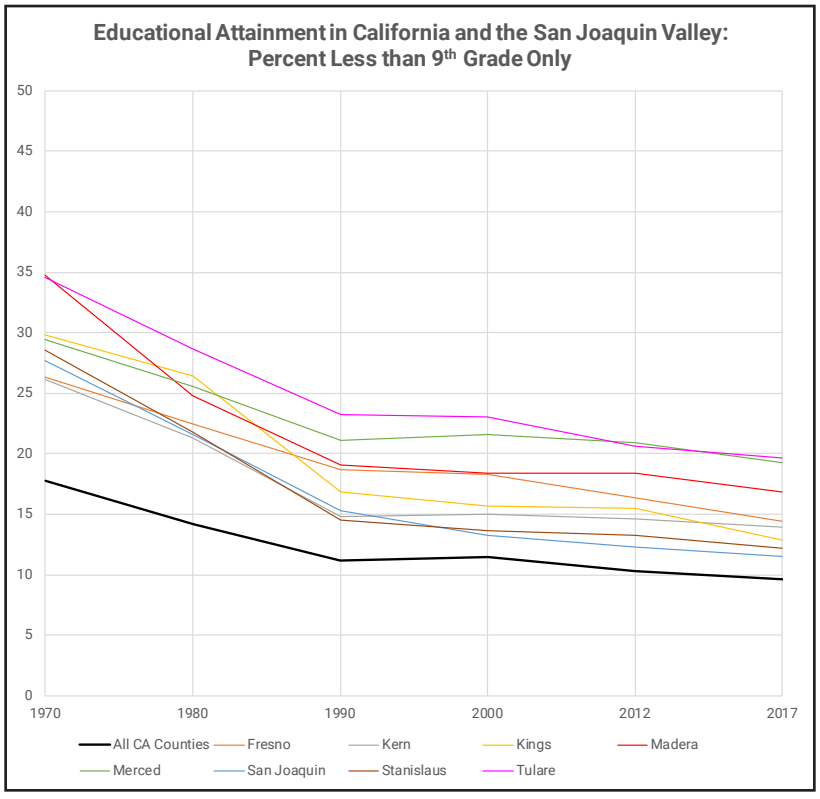

Population of California and the San Joaquin Valley:
Percent Age 15 to 44 Years
60
55
50
45
40
35
30
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

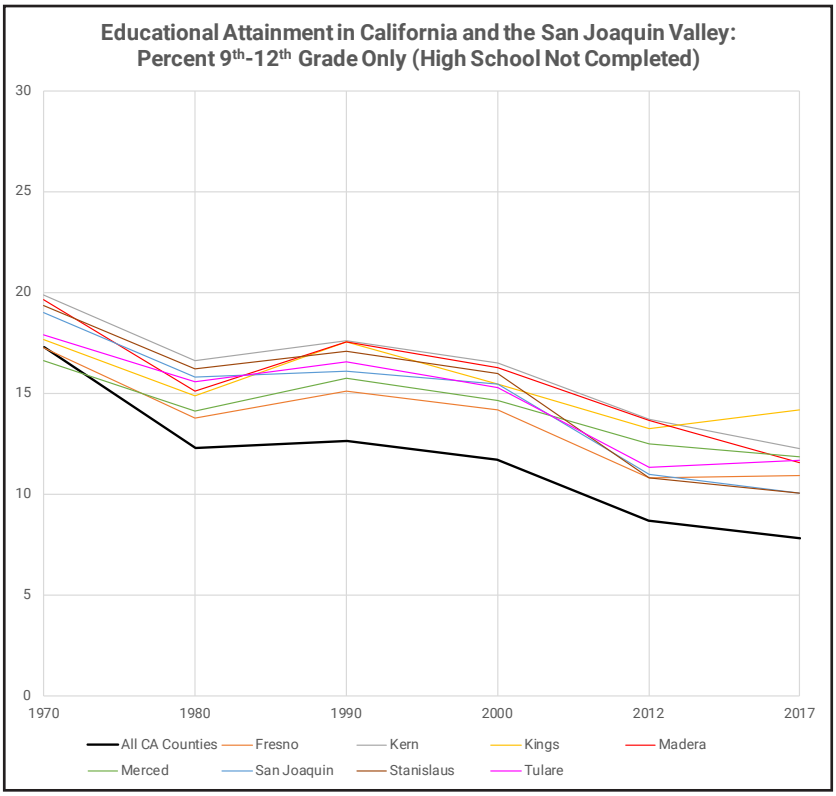

Population of California and the San Joaquin Valley:
Percent Age 18 Years and Over
80
75
70
65
60
55
50
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

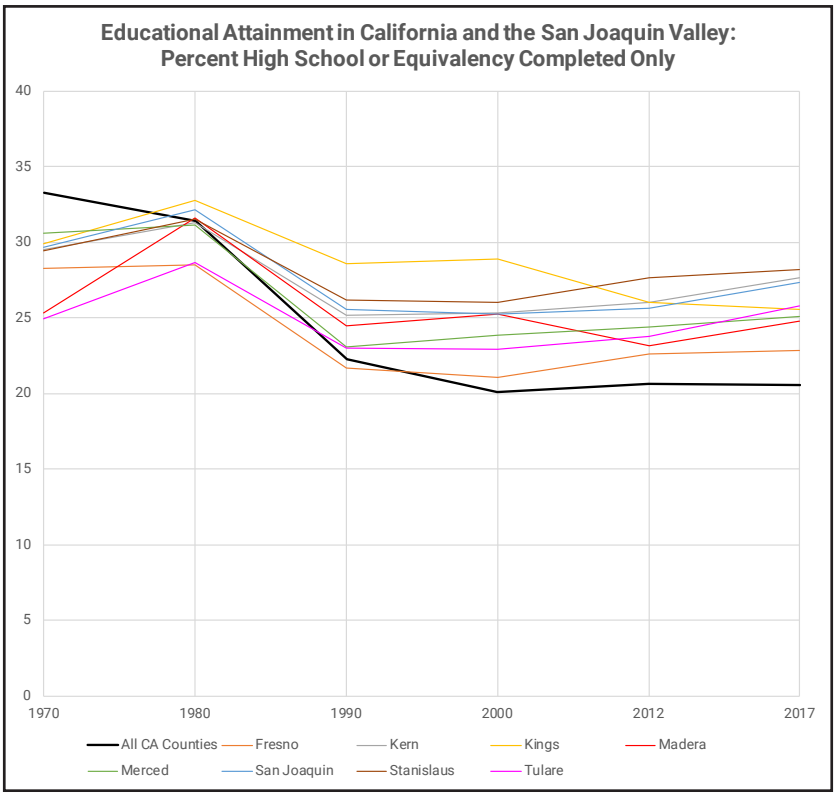

Population of California and the San Joaquin Valley:
Percent Age 75 Years and Over
10
5
0
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

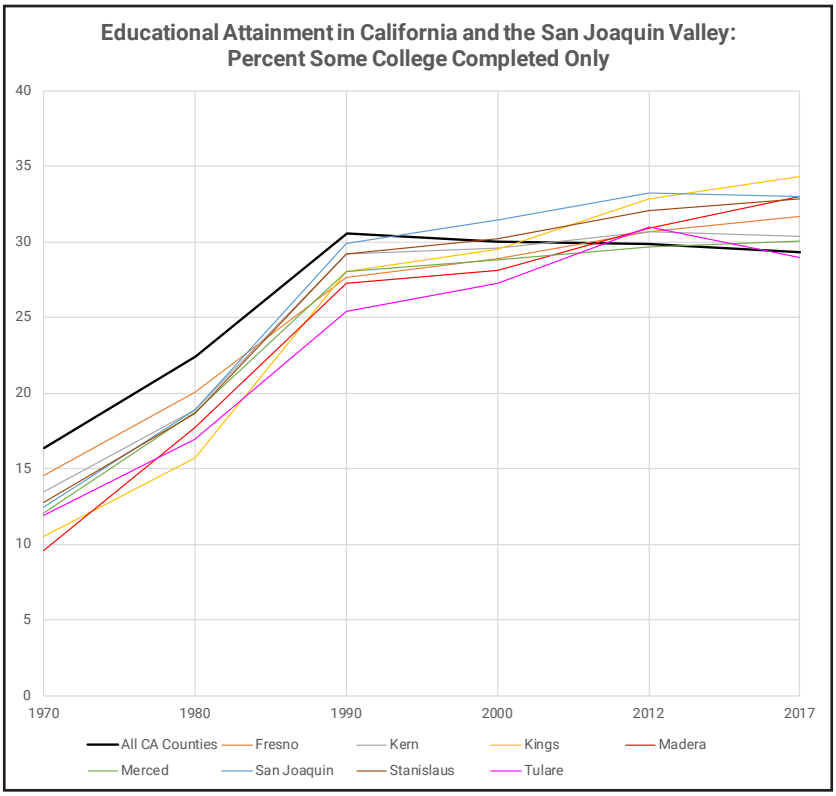

Population of California and the San Joaquin Valley:
Percent Non-White
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

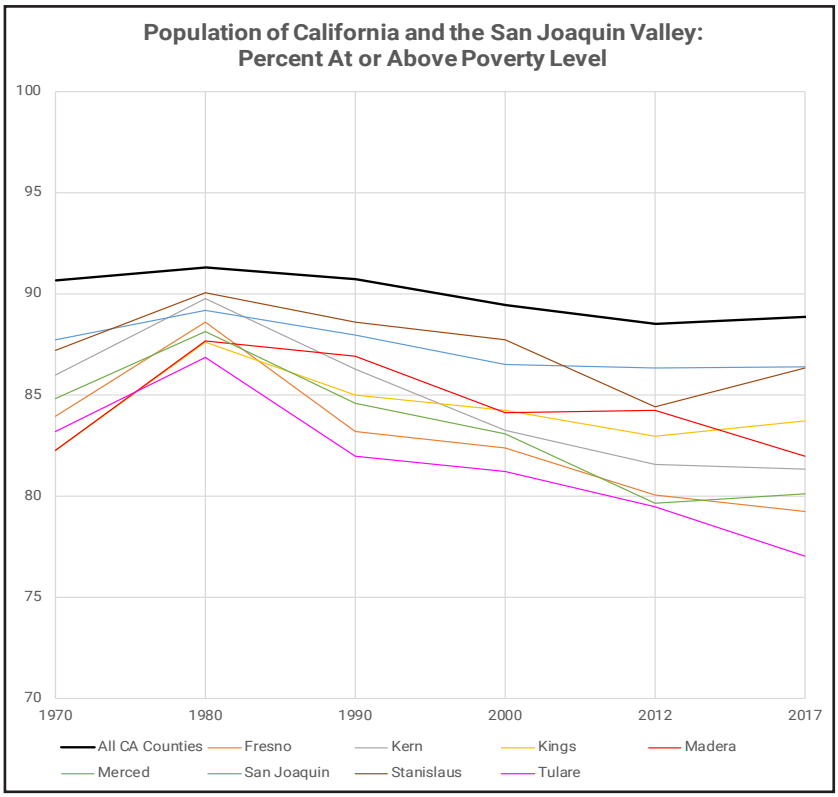

Population of California and the San Joaquin Valley:
Percent U.S.-Born
100
95
90
85
80
75
70
65
60
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

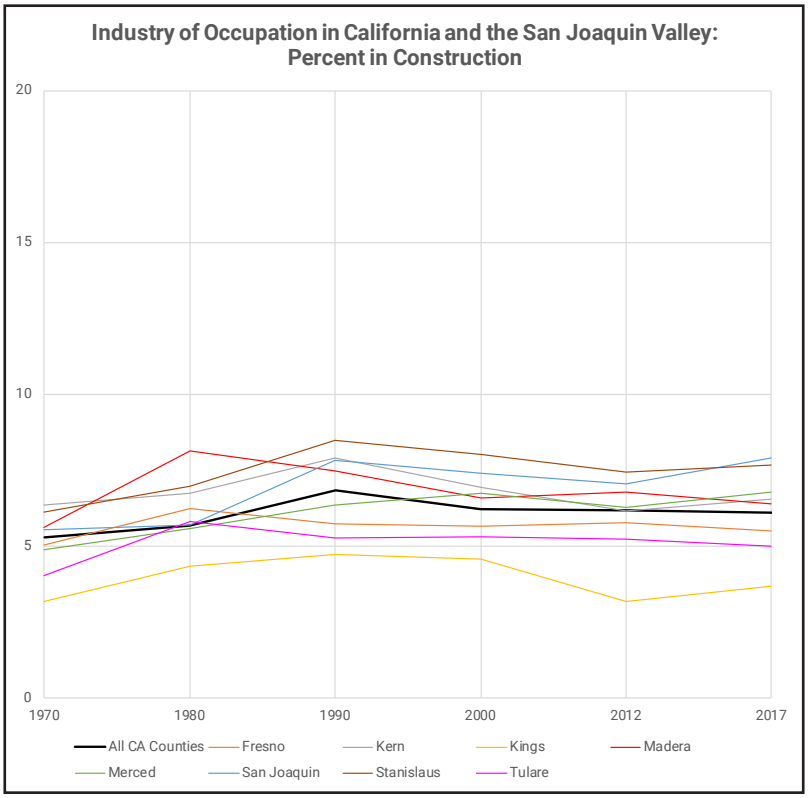

Educational Attainment in California and the San Joaquin Valley:
Percent Less than 9th Grade Only
50
45
40
35
30
25
20
15
10
5
0
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

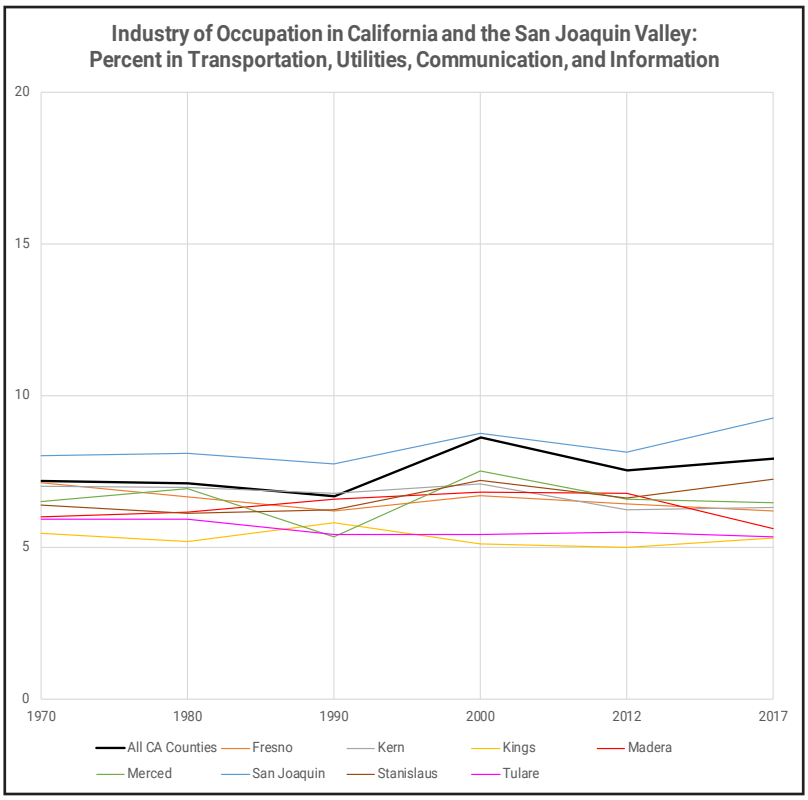

Educational Attainment in California and the San Joaquin Valley:
Percent 9th-12th Grade Only (High School Not Completed)
30
25
20
15
10
5
0
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

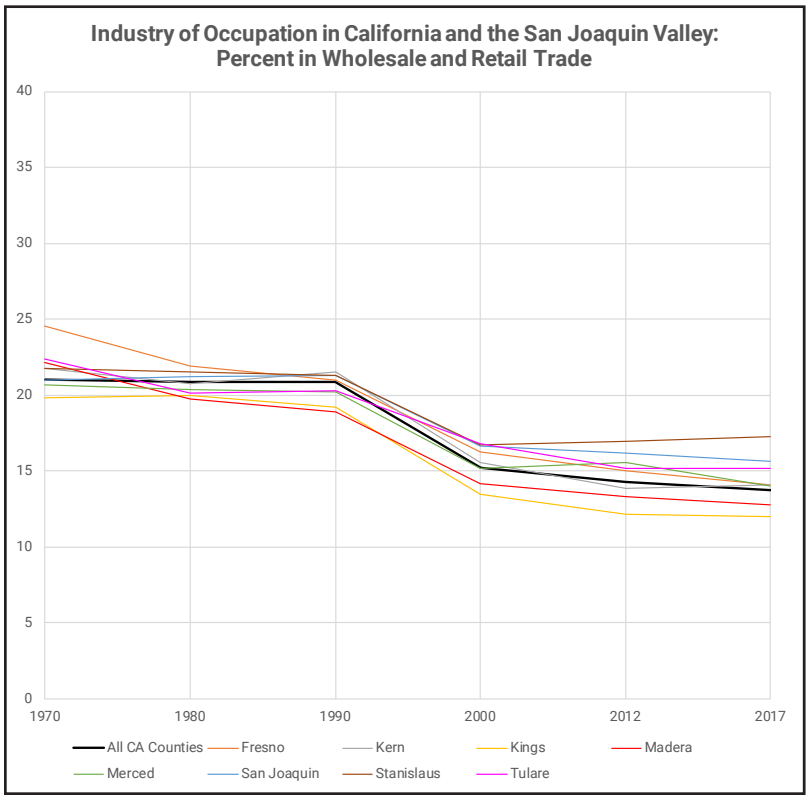

Educational Attainment in California and the San Joaquin Valley:
Percent High School or Equivalency Completed Only
40
35
30
25
20
15
10
5
0
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

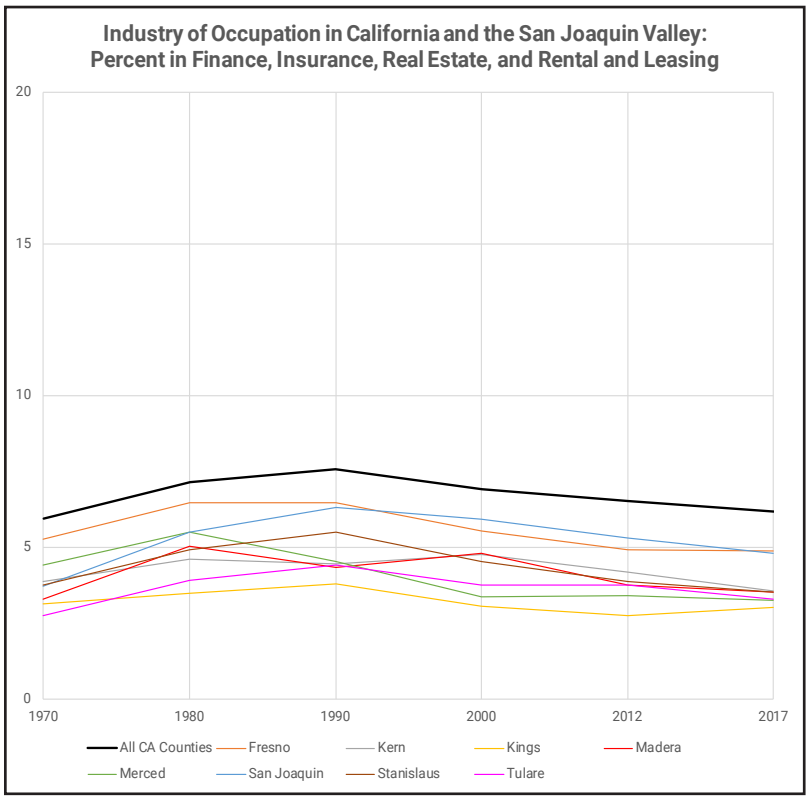

Educational Attainment in California and the San Joaquin Valley:
Percent Some College Completed Only
40
35
30
25
20
15
10
5
0
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

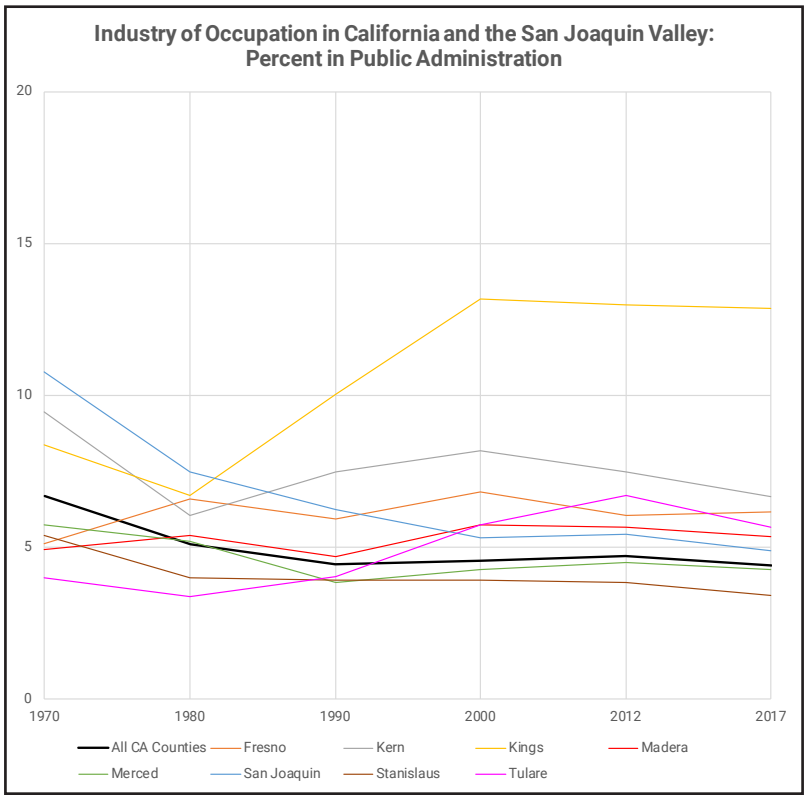

Population of California and the San Joaquin Valley:
Percent At or Above Poverty Level
100
95
90
85
80
75
70
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

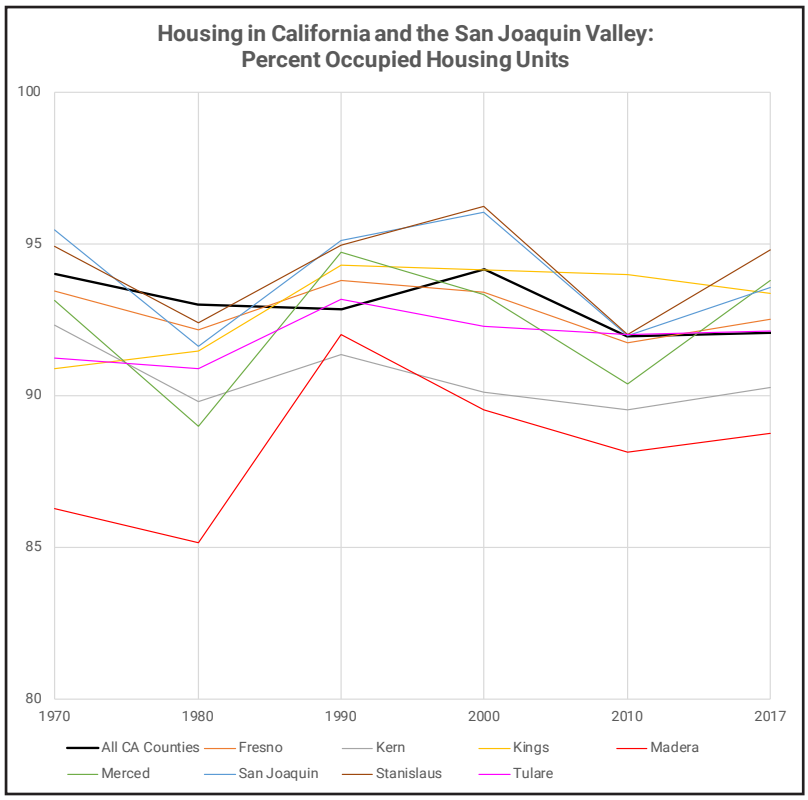

Industry of Occupation in California and the San Joaquin Valley:
Percent in Construction
20
15
10
5
0
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

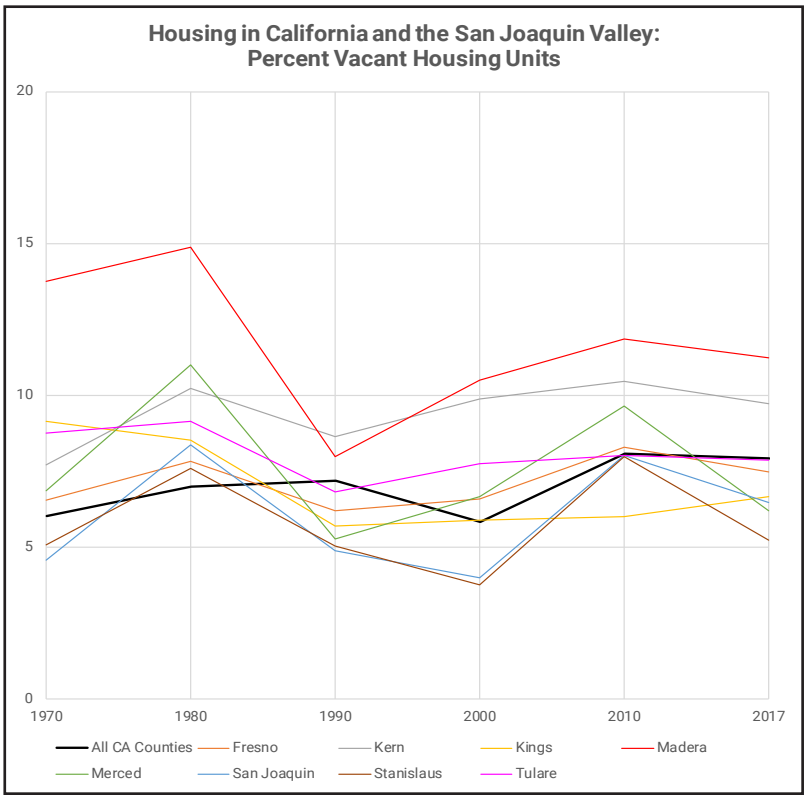

Industry of Occupation in California and the San Joaquin Valley:
Percent in Transportation, Utilities, Communication, and Information
20
15
10
5
0
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

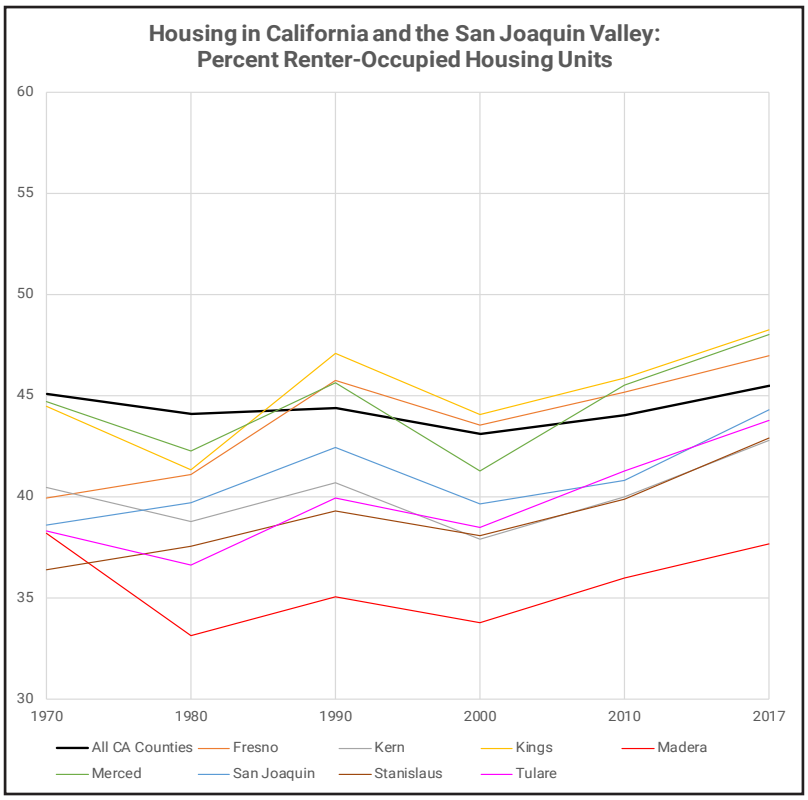

Industry of Occupation in California and the San Joaquin Valley:
Percent in Wholesale and Retail Trade
40
35
30
25
20
15
10
5
0
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare


Industry of Occupation in California and the San Joaquin Valley:
Percent in Finance, Insurance, Real Estate, and Rental and Leasing
20
15
10
5
0
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare


Industry of Occupation in California and the San Joaquin Valley:
Percent in Public Administration
20
15
10
5
0
1970
1980
1990
2000
2012
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare


Housing in California and the San Joaquin Valley:
Percent Occupied Housing Units
100
95
90
85
80
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare


Housing in California and the San Joaquin Valley:
Percent Vacant Housing Units
20
15
10
5
0
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare


Housing in California and the San Joaquin Valley:
Percent Renter-Occupied Housing Units
60
55
50
45
40
35
30
1970
1980
1990
2000
2010
2017
All CA Counties
Fresno
Kern
Kings
Madera
Merced
San Joaquin
Stanislaus
Tulare

Percent Below Poverty
California, Counties
1980

- 0.0 – 10.0
- 10.0 – 20.0
- 20.0 – 30.0
- 30.0 – 40.0
- 40.0 – 50.0
- 50.0 – 60.0
- 60.0 – 64.8


Percent Below Poverty
California, Counties
1990

- 0.0 – 10.0
- 10.0 – 20.0
- 20.0 – 30.0
- 30.0 – 40.0
- 40.0 – 50.0
- 50.0 – 60.0
- 60.0 – 64.8

Percent Below Poverty
California, Counties
2000

- 0.0 – 10.0
- 10.0 – 20.0
- 20.0 – 30.0
- 30.0 – 40.0
- 40.0 – 50.0
- 50.0 – 60.0
- 60.0 – 64.8


Percent Below Poverty
California, Counties
2012

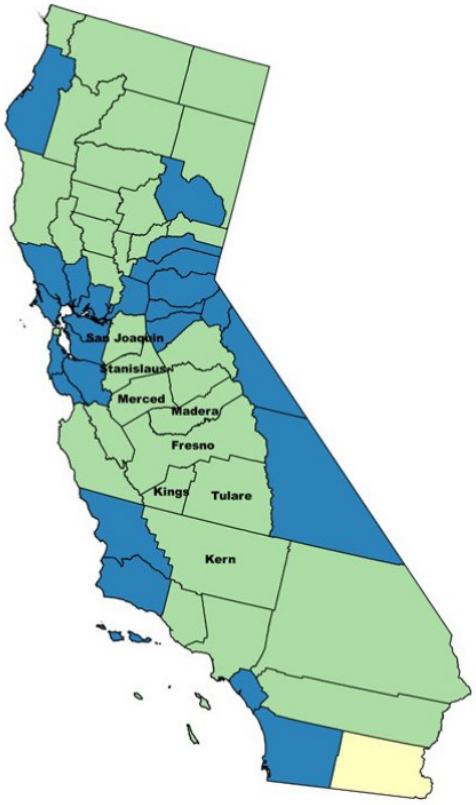
- 0.0 – 10.0
- 10.0 – 20.0
- 20.0 – 30.0
- 30.0 – 40.0
- 40.0 – 50.0
- 50.0 – 60.0
- 60.0 – 64.8

Percent HS Diploma/Equivalent
California, Counties
1980

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000


Percent HS Diploma/Equivalent
California, Counties
1990

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



Percent HS Diploma/Equivalent
California, Counties
2000

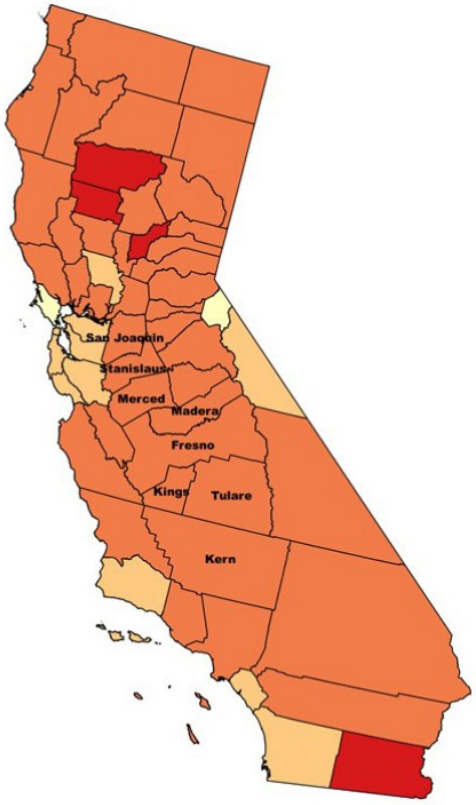
- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000


Percent HS Diploma/Equivalent
California, Counties
2012

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000

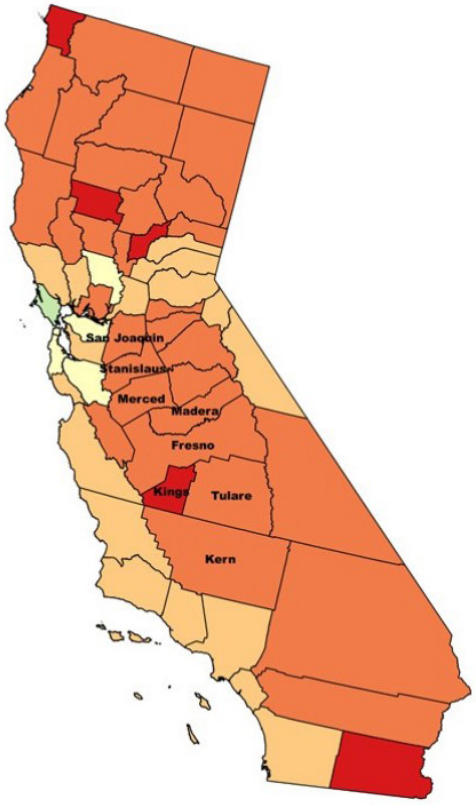
Percent College Degree
California, Counties
1980

- 0.0000 – 10.0000
- 10.0000 – 20.0000
- 20.0000 – 30.0000
- 30.0000 – 40.0000
- 40.0000 – 50.0000
- 50.0000 – 60.0000
- 60.0000 – 60.1552




Percent College Degree
California, Counties
1990

- 0.0000 – 10.0000
- 10.0000 – 20.0000
- 20.0000 – 30.0000
- 30.0000 – 40.0000
- 40.0000 – 50.0000
- 50.0000 – 60.0000
- 60.0000 – 60.1552



Percent College Degree
California, Counties
2000

- 0.0000 – 10.0000
- 10.0000 – 20.0000
- 20.0000 – 30.0000
- 30.0000 – 40.0000
- 40.0000 – 50.0000
- 50.0000 – 60.0000
- 60.0000 – 60.1552


Percent College Degree
California, Counties
2012

- 0.0000 – 10.0000
- 10.0000 – 20.0000
- 20.0000 – 30.0000
- 30.0000 – 40.0000
- 40.0000 – 50.0000
- 50.0000 – 60.0000
- 60.0000 – 60.1552

Percent Foreign-Born
California, Counties
1980

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3


Percent Foreign-Born
California, Counties
1990

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3

Percent Foreign-Born
California, Counties
2000

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3


Percent Foreign-Born
California, Counties
2012

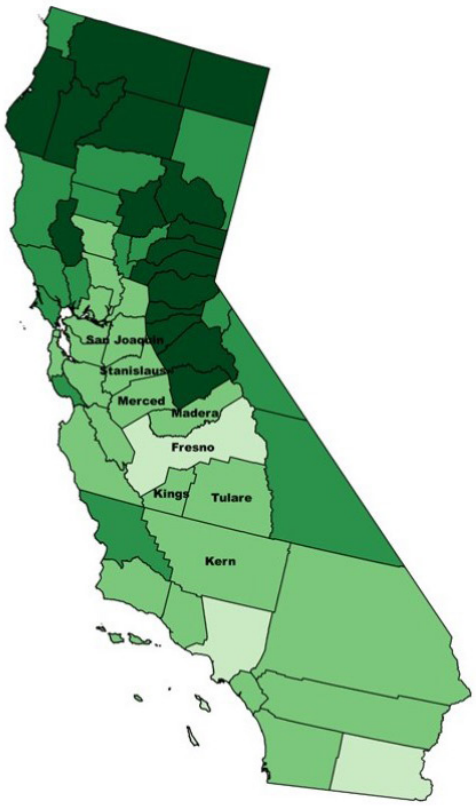
- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3

Percent (Non-Hispanic) White
California, Counties
1990

- 0 – 20
- 20 – 40
- 40 – 60
- 60 – 80
- 80 – 100

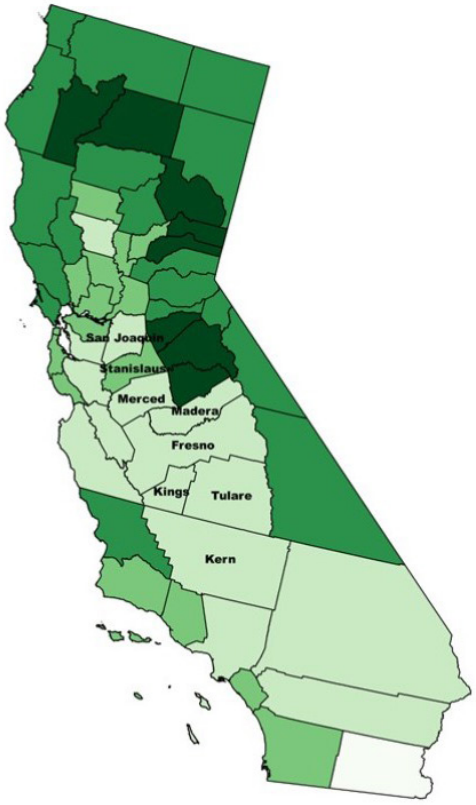

Percent (Non-Hispanic) White
California, Counties
2000

- 0 – 20
- 20 – 40
- 40 – 60
- 60 – 80
- 80 – 100



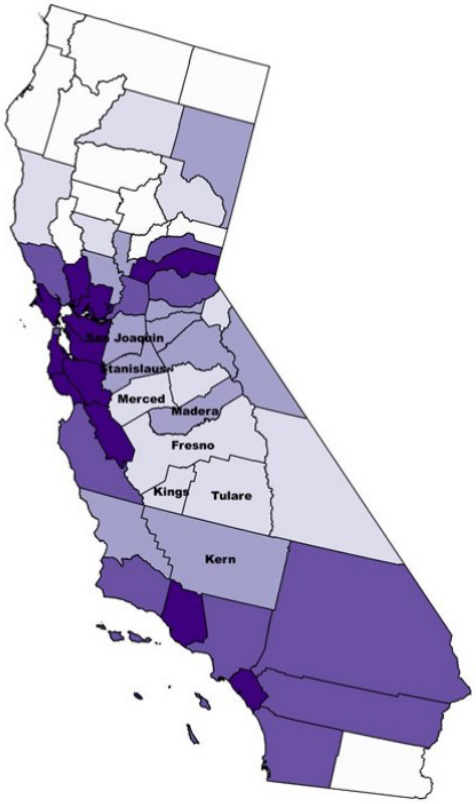
Percent (Non-Hispanic) White
California, Counties
2010

- 0 – 20
- 20 – 40
- 40 – 60
- 60 – 80
- 80 – 100



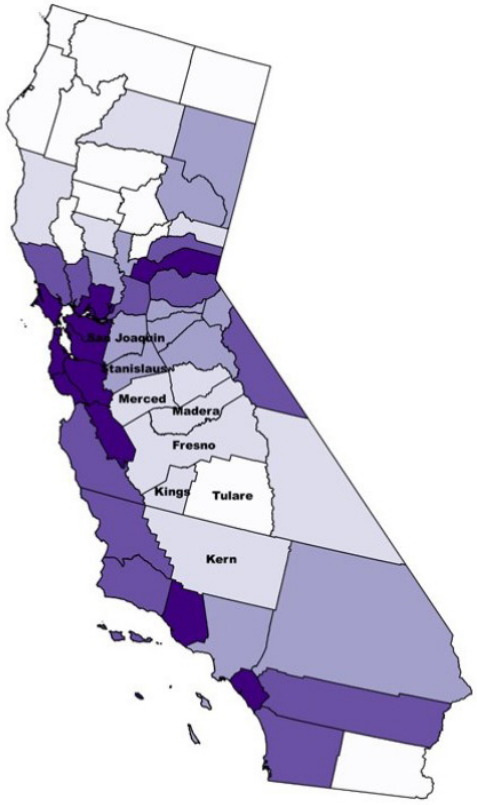

Median Household Income
California, Counties
1990

- 1st Quintile
- 2nd Quintile
- 3rd Quintile
- 4th Quintile
- 5th Quintile



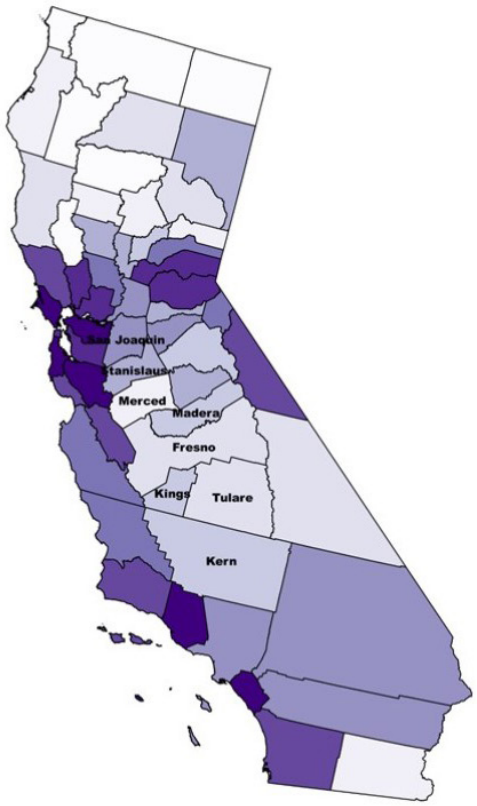
Median Household Income
California, Counties
2000

- 1st Quintile
- 2nd Quintile
- 3rd Quintile
- 4th Quintile
- 5th Quintile




Median Household Income
California, Counties
2012

- 1st Quintile
- 2nd Quintile
- 3rd Quintile
- 4th Quintile
- 5th Quintile



Unemployment Rate
California, Counties
1970

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100


Unemployment Rate
California, Counties
1980

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100

Unemployment Rate
California, Counties
1990

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100


Unemployment Rate
California, Counties
2000

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100

Unemployment Rate
California, Counties
2012

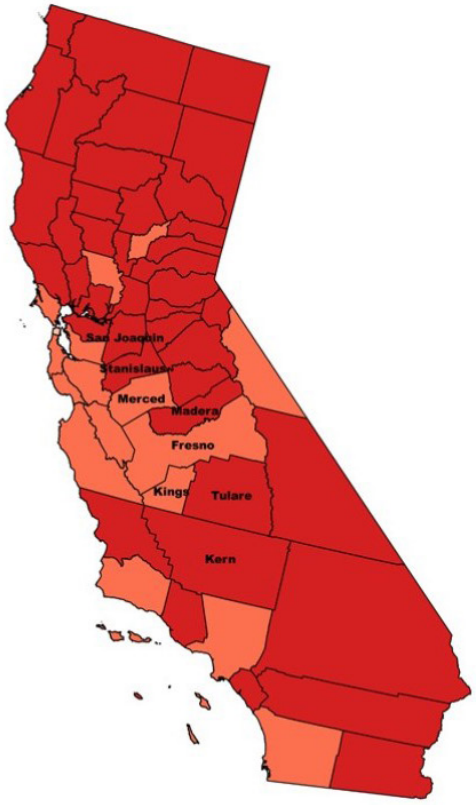
- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100


Unemployment Rate
California, Counties
2017

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100

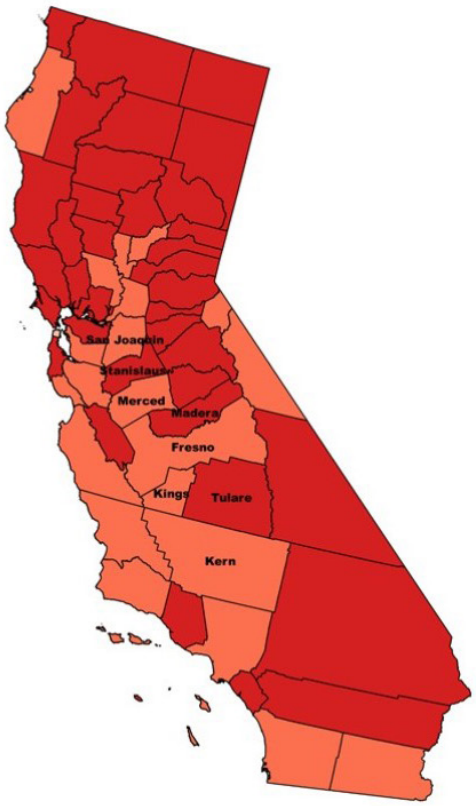
Percent Owner-Occupied Homes
California, Counties
1980

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



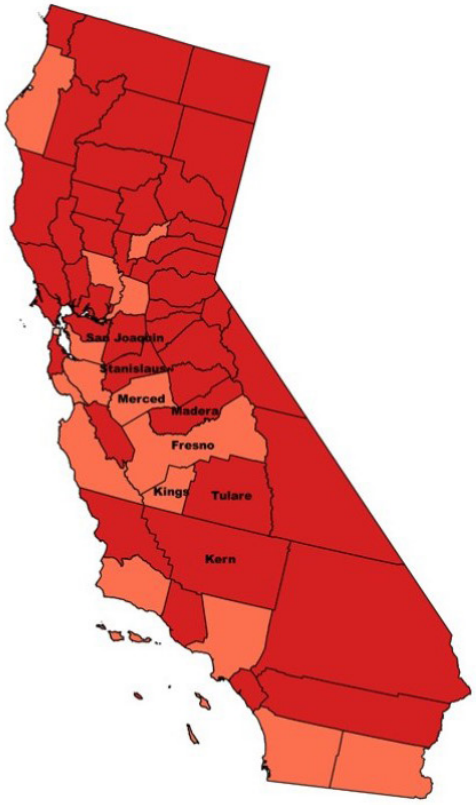

Percent Owner-Occupied Homes
California, Counties
1990

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



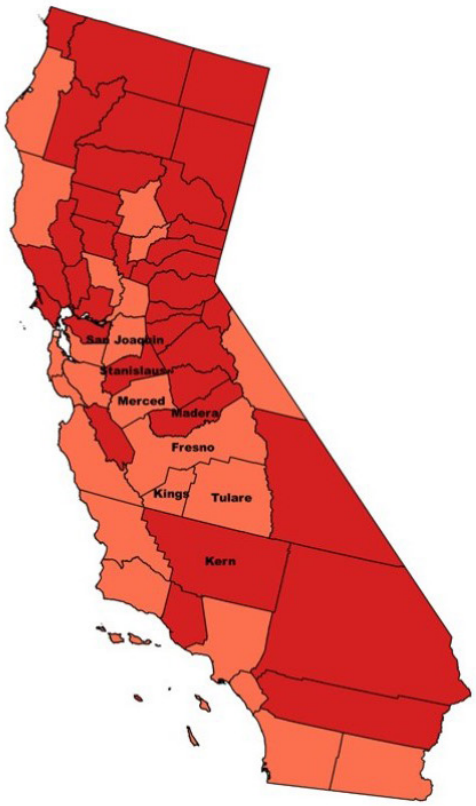
Percent Owner-Occupied Homes
California, Counties
2000

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000




Percent Owner-Occupied Homes
California, Counties
2010

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



Percent in Agriculture, Forestry, Fisheries, and Mining
California, Counties
1980

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 33.9


Percent in Agriculture, Forestry, Fisheries, and Mining
California, Counties
1990

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 33.9

Percent in Agriculture, Forestry, Fisheries, and Mining
California, Counties
2000

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 33.9


Percent in Agriculture, Forestry, Fisheries, and Mining
California, Counties
2012

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 33.9

Percent in Manufacturing
California, Counties
1980

- 0.00 – 5.00
- 5.00 – 10.00
- 10.00 – 15.00
- 15.00 – 20.00
- 20.00 – 25.00
- 25.00 – 30.00
- 30.00 – 35.00
- 35.00 – 35.48


Percent in Manufacturing
California, Counties
1990

- 0.00 – 5.00
- 5.00 – 10.00
- 10.00 – 15.00
- 15.00 – 20.00
- 20.00 – 25.00
- 25.00 – 30.00
- 30.00 – 35.00
- 35.00 – 35.48

Percent in Manufacturing
California, Counties
2000

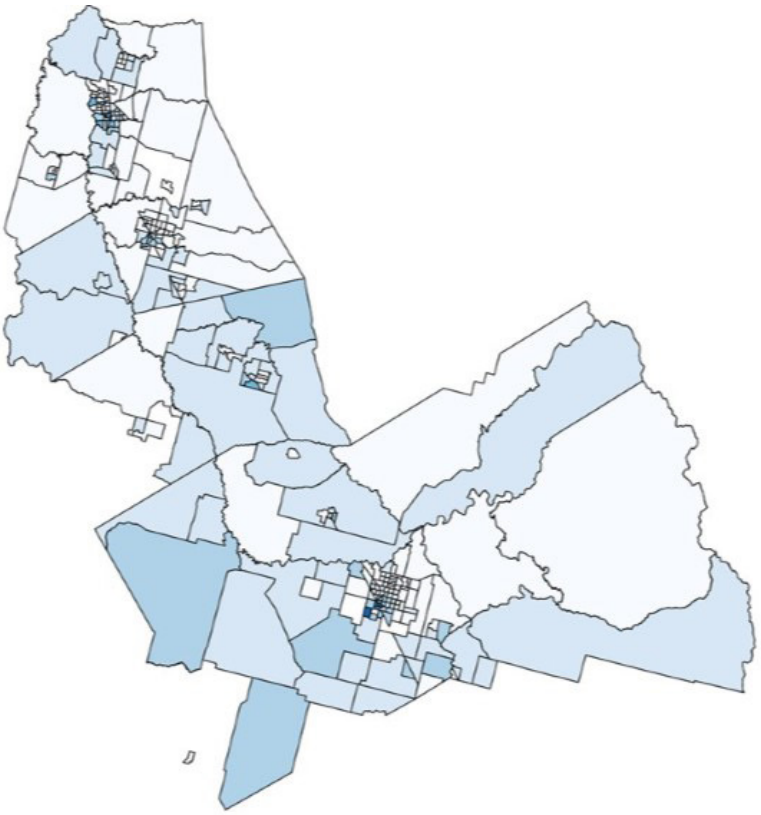
- 0.00 – 5.00
- 5.00 – 10.00
- 10.00 – 15.00
- 15.00 – 20.00
- 20.00 – 25.00
- 25.00 – 30.00
- 30.00 – 35.00
- 35.00 – 35.48


Percent in Manufacturing
California, Counties
2012

- 0.00 – 5.00
- 5.00 – 10.00
- 10.00 – 15.00
- 15.00 – 20.00
- 20.00 – 25.00
- 25.00 – 30.00
- 30.00 – 35.00
- 35.00 – 35.48

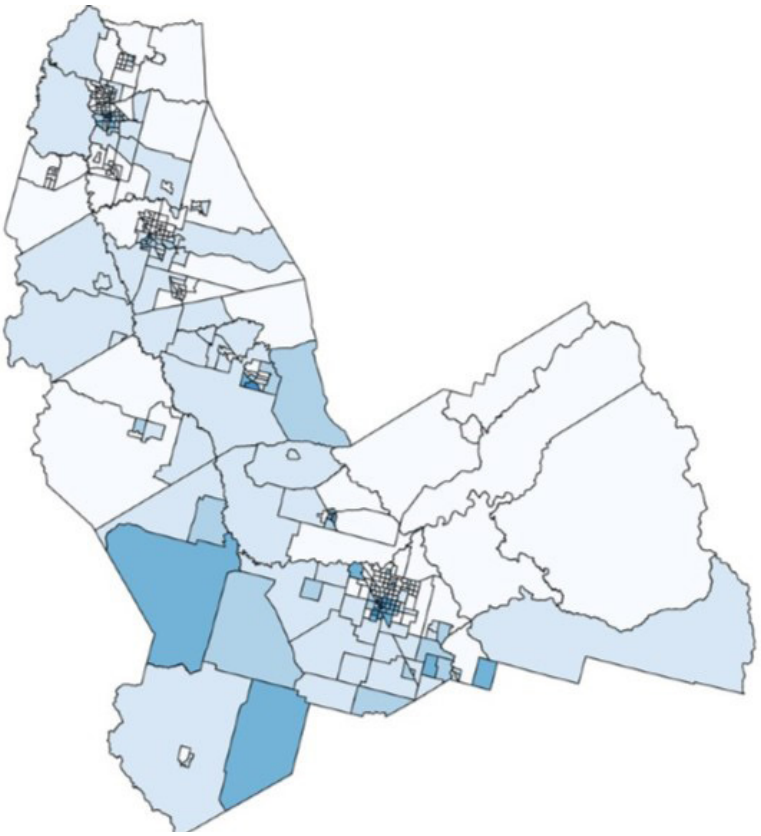
Percent Below Poverty
San Joaquin Valley, North
1980

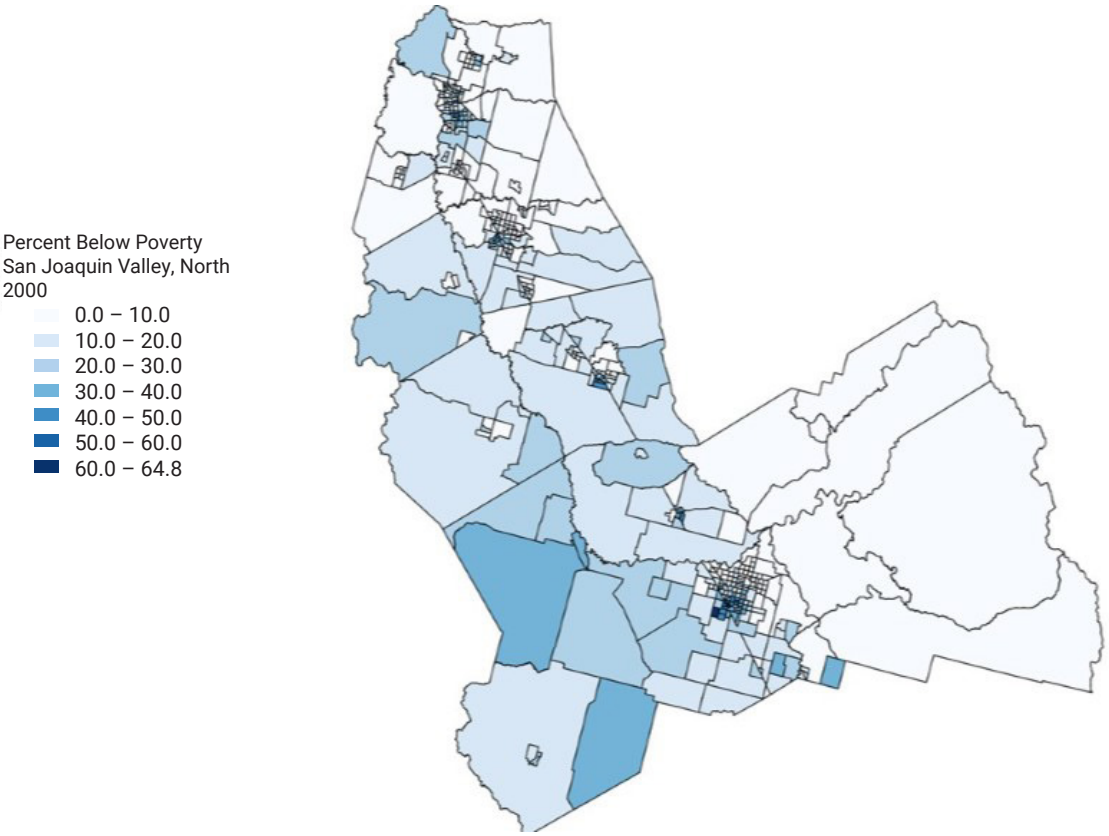
- 0.0 – 10.0
- 10.0 – 20.0
- 20.0 – 30.0
- 30.0 – 40.0
- 40.0 – 50.0
- 50.0 – 60.0
- 60.0 – 64.8

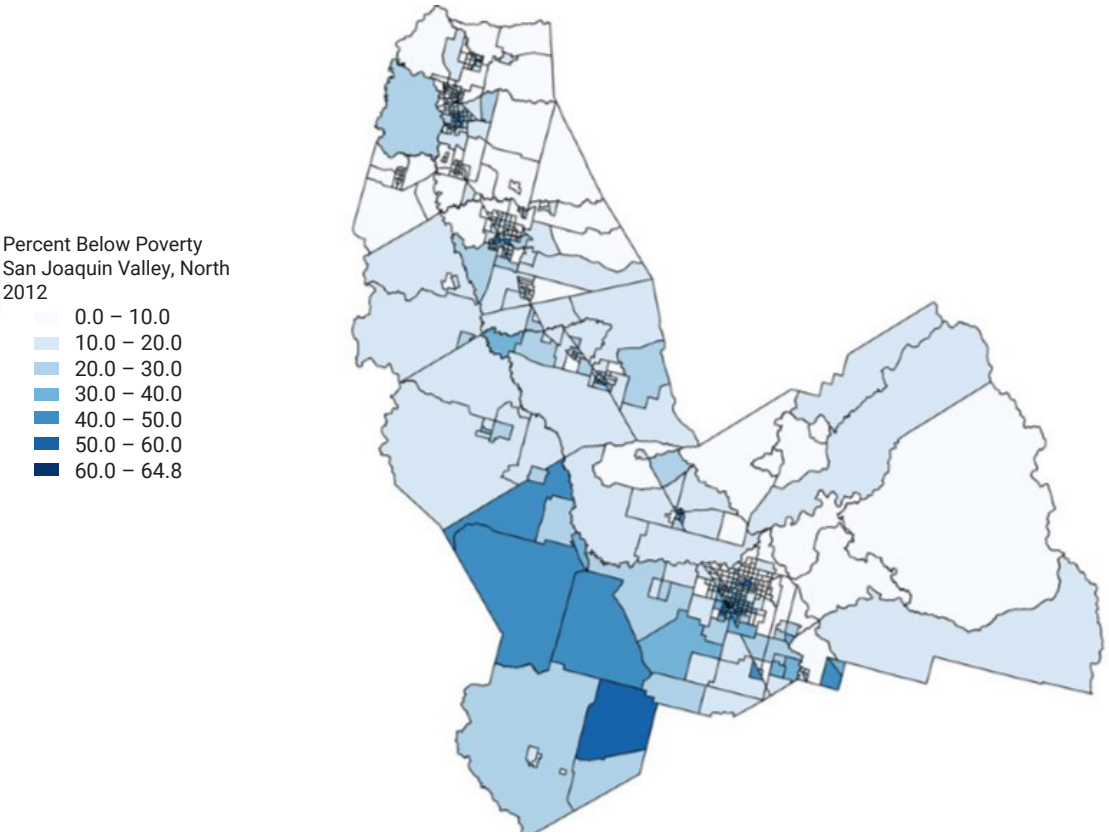


Percent Below Poverty
San Joaquin Valley, North
1990

- 0.0 – 10.0
- 10.0 – 20.0
- 20.0 – 30.0
- 30.0 – 40.0
- 40.0 – 50.0
- 50.0 – 60.0
- 60.0 – 64.8

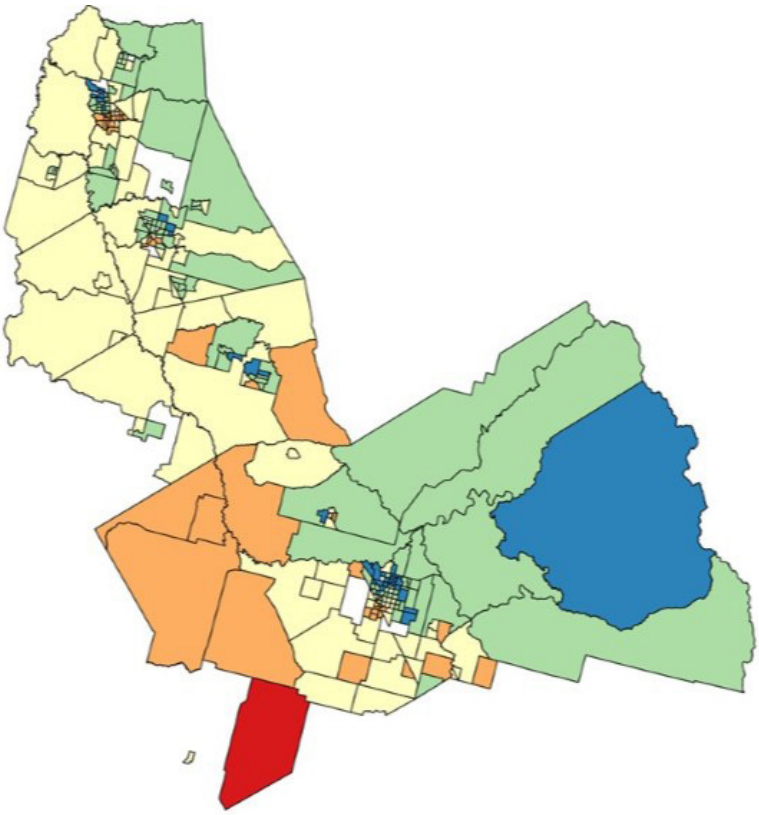



Percent Below Poverty
San Joaquin Valley, North
2000
0.0 – 10.0
10.0 – 20.0
20.0 – 30.0
30.0 – 40.0
40.0 – 50.0
50.0 – 60.0
60.0 – 64.8


Percent Below Poverty
San Joaquin Valley, North
2012
0.0 – 10.0
10.0 – 20.0
20.0 – 30.0
30.0 – 40.0
40.0 – 50.0
50.0 – 60.0
60.0 – 64.8

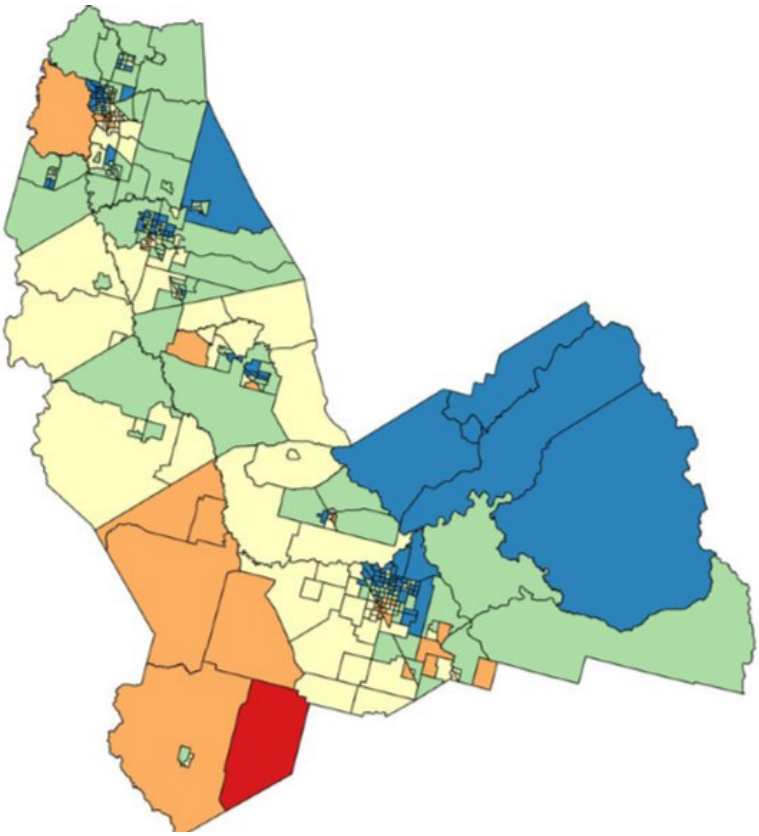
Percent HS Diploma/Equivalent
San Joaquin Valley, North
1980

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



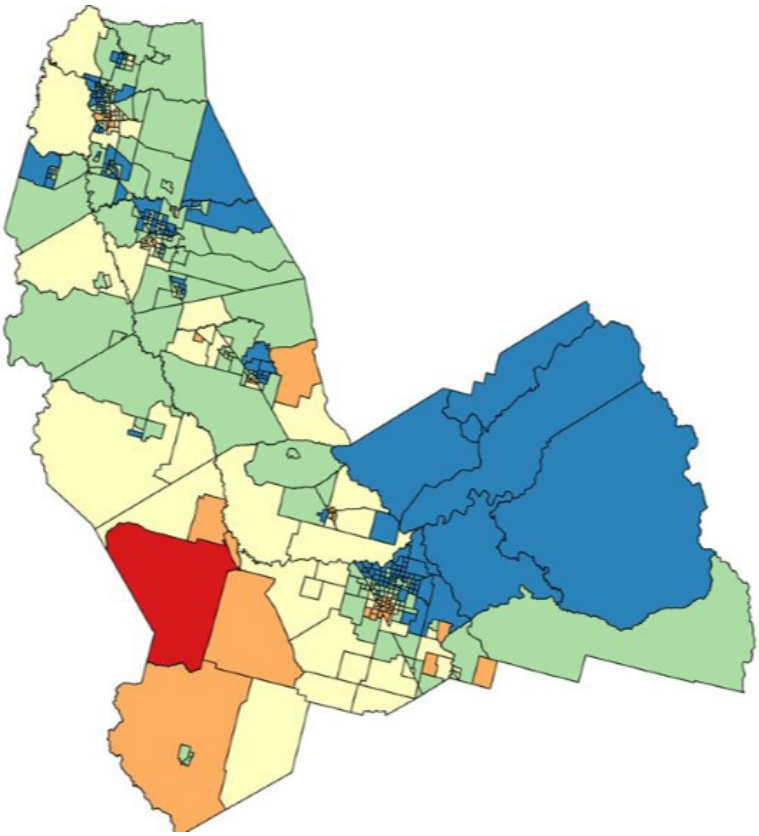
Percent HS Diploma/Equivalent
San Joaquin Valley, North
1990

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



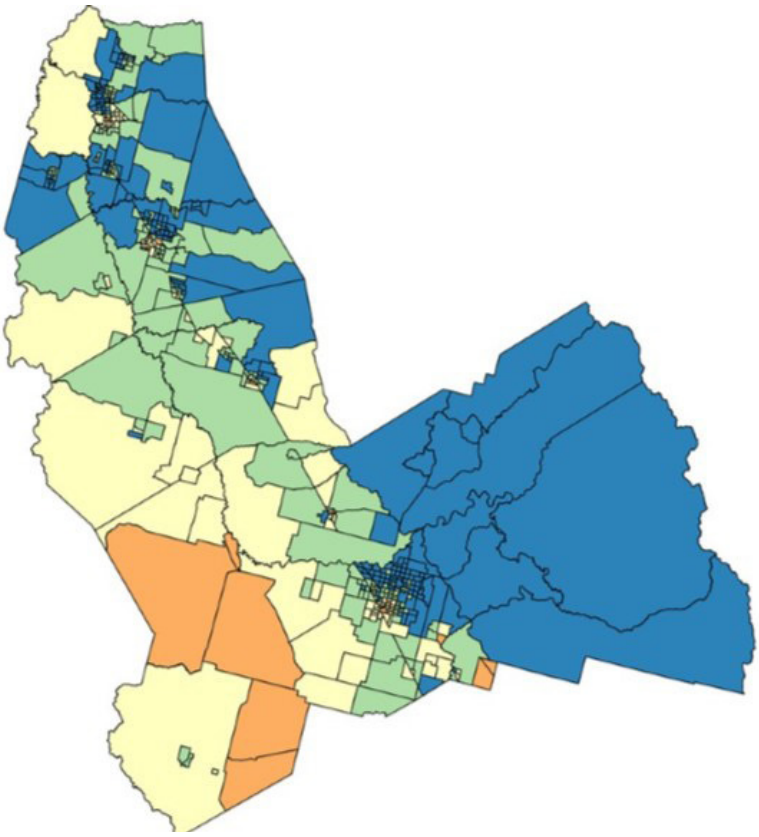
Percent HS Diploma/Equivalent
San Joaquin Valley, North
2000

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



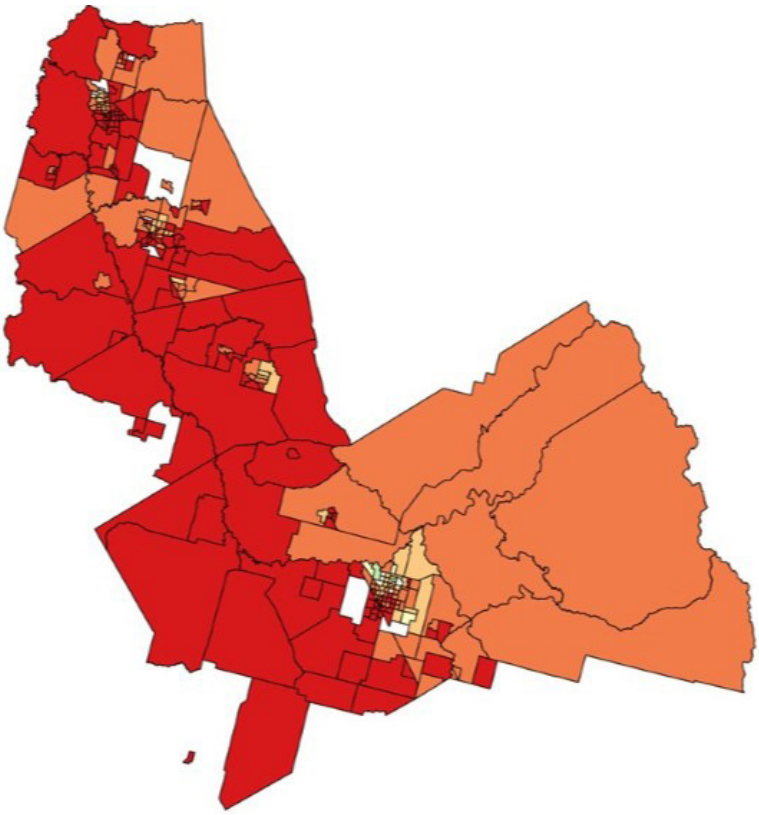
Percent HS Diploma/Equivalent
San Joaquin Valley, North
2012

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



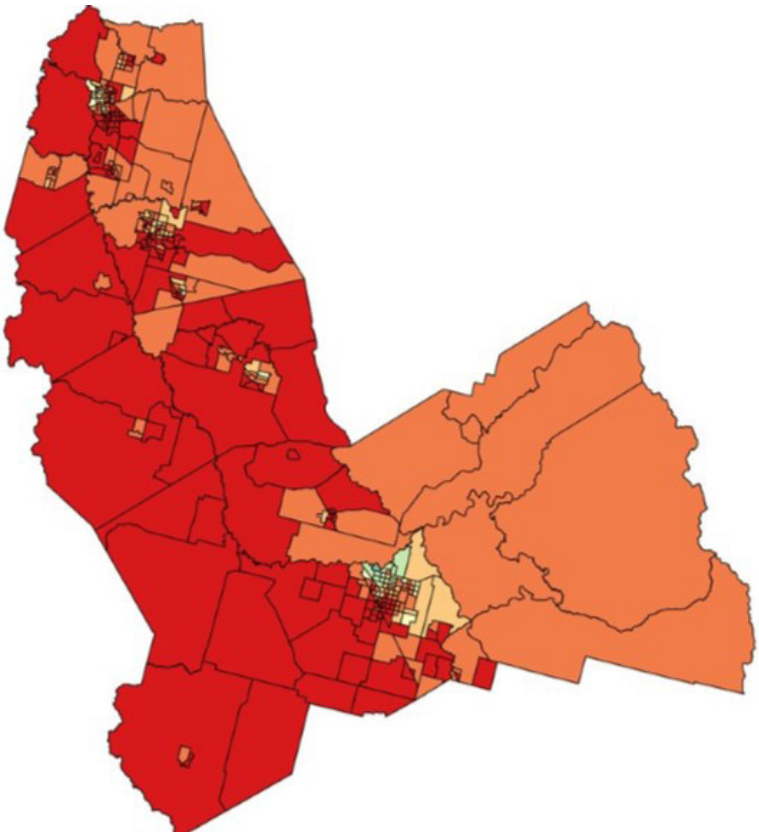
Percent College Degree
San Joaquin Valley, North
1980

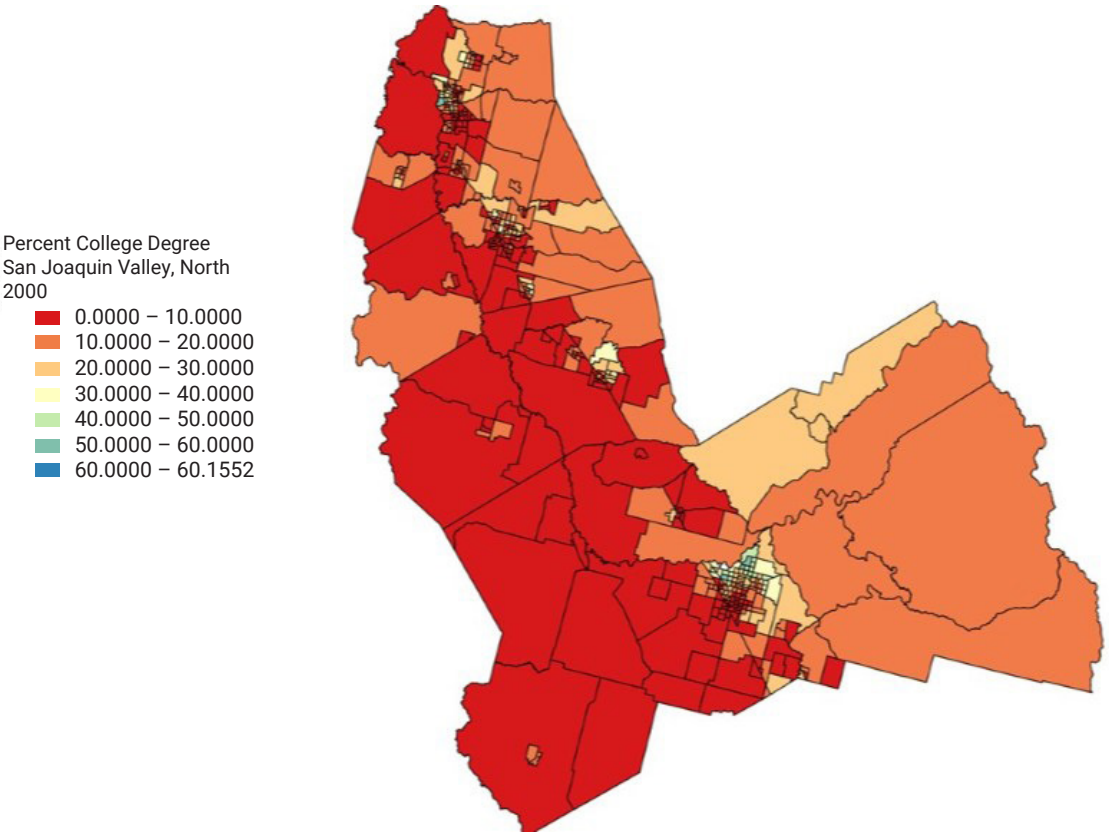
- 0.0000 – 10.0000
- 10.0000 – 20.0000
- 20.0000 – 30.0000
- 30.0000 – 40.0000
- 40.0000 – 50.0000
- 50.0000 – 60.0000
- 60.0000 – 60.1552

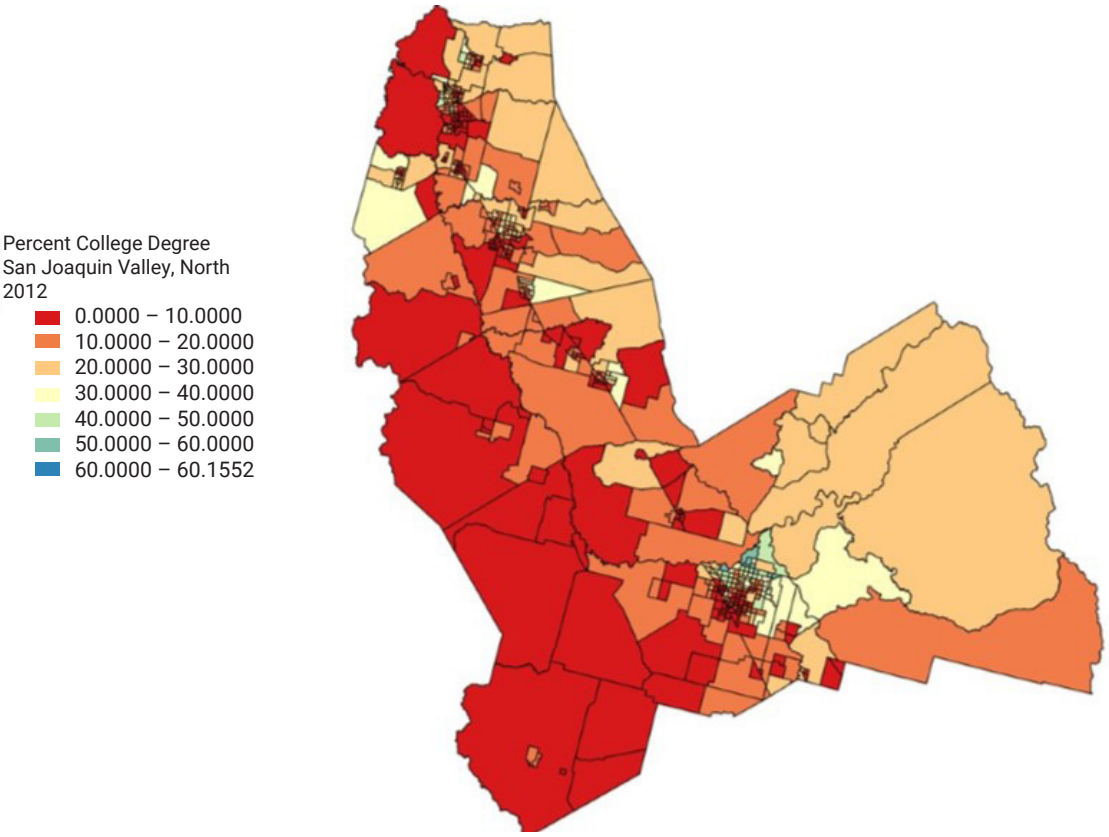


Percent College Degree
San Joaquin Valley, North
1990

- 0.0000 – 10.0000
- 10.0000 – 20.0000
- 20.0000 – 30.0000
- 30.0000 – 40.0000
- 40.0000 – 50.0000
- 50.0000 – 60.0000
- 60.0000 – 60.1552

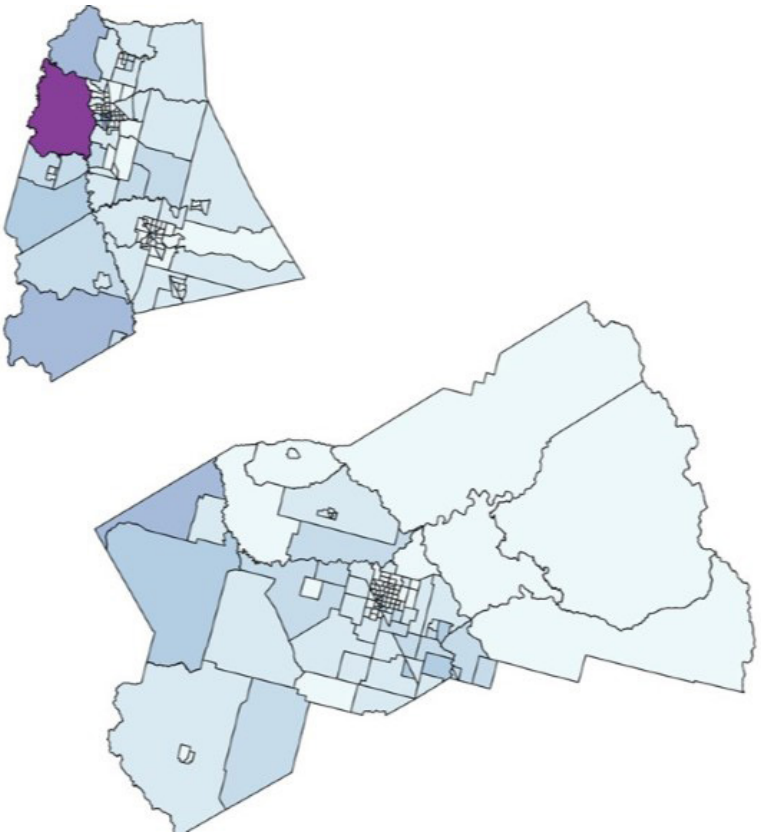



Percent College Degree
San Joaquin Valley, North
2000
0.0000 – 10.0000
10.0000 – 20.0000
20.0000 – 30.0000
30.0000 – 40.0000
40.0000 – 50.0000
50.0000 – 60.0000
60.0000 – 60.1552


Percent College Degree
San Joaquin Valley, North
2012
0.0000 – 10.0000
10.0000 – 20.0000
20.0000 – 30.0000
30.0000 – 40.0000
40.0000 – 50.0000
50.0000 – 60.0000
60.0000 – 60.1552

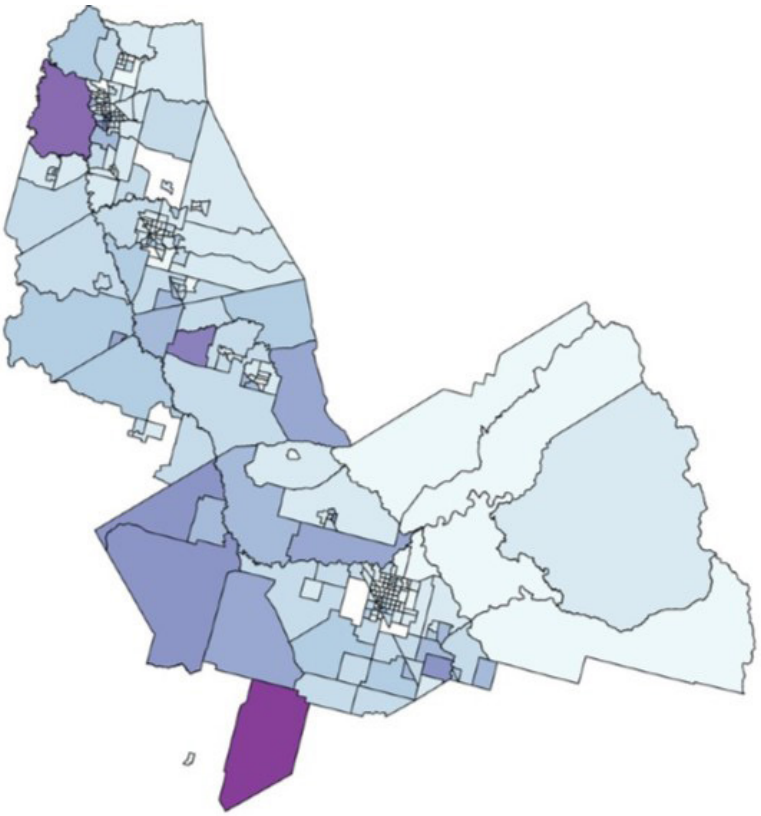
Percent Foreign-Born
San Joaquin Valley, North
1970

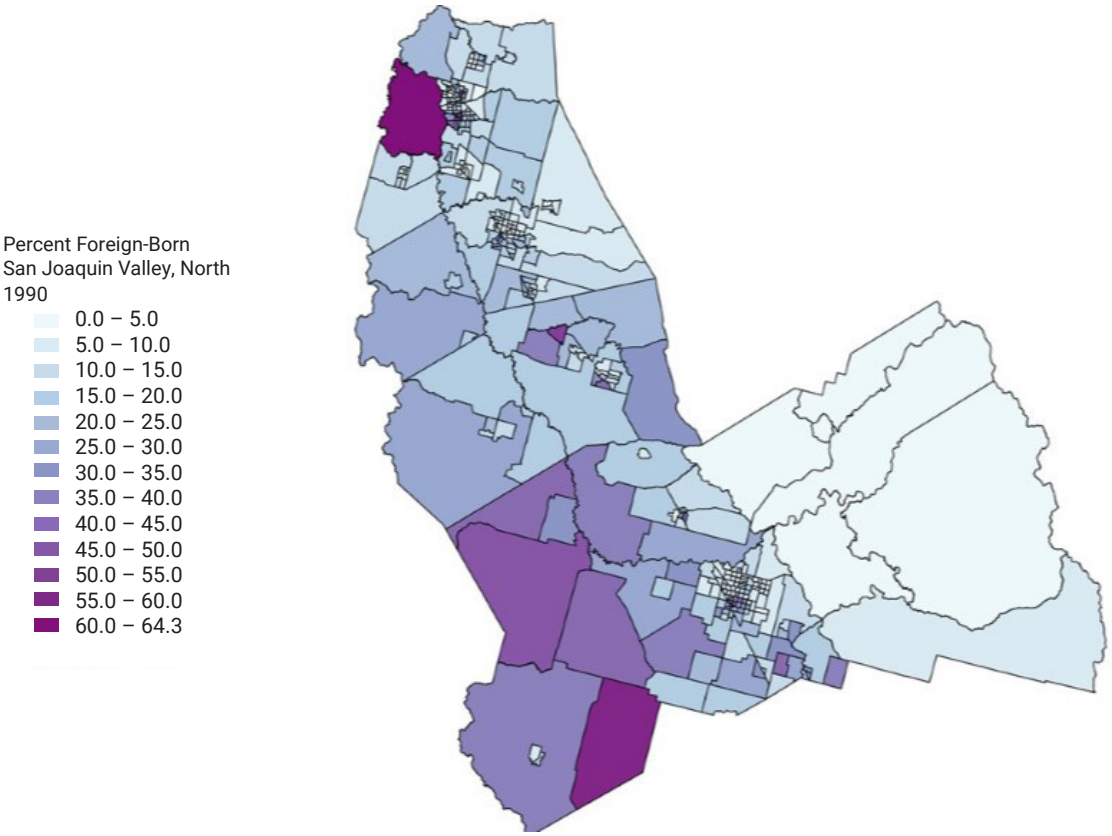
- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3

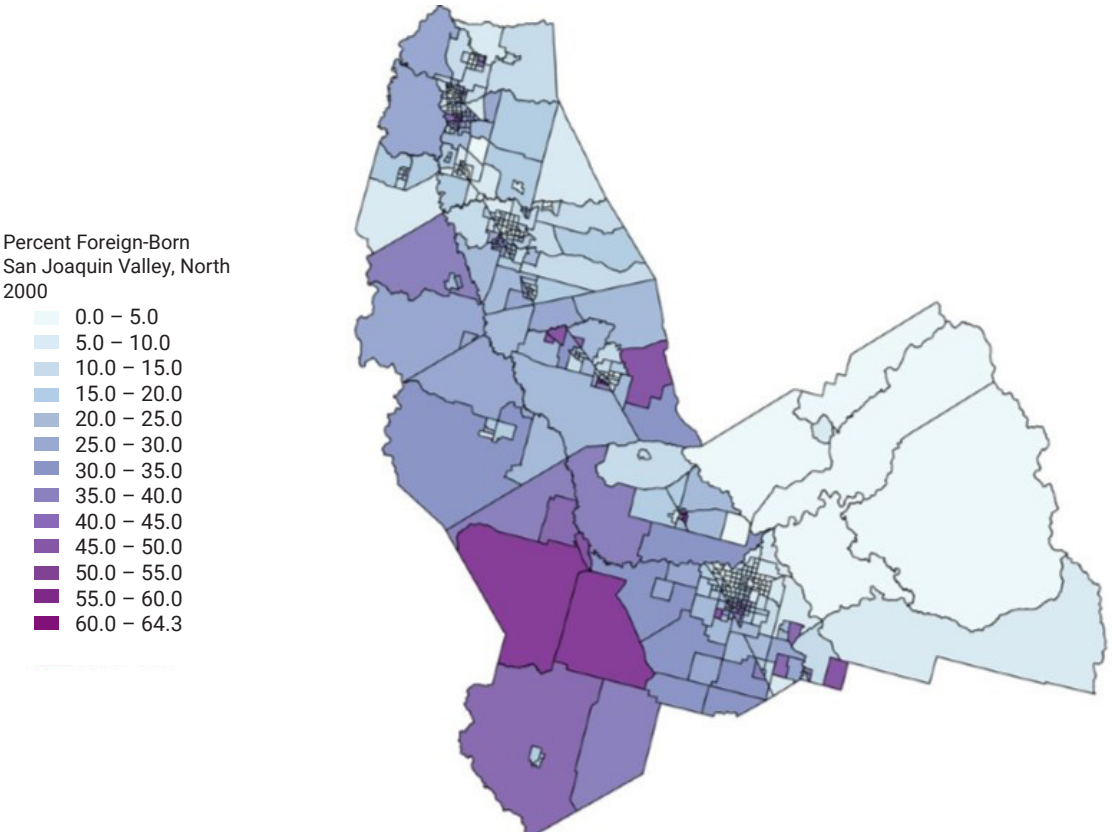


Percent Foreign-Born
San Joaquin Valley, North
1980

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3

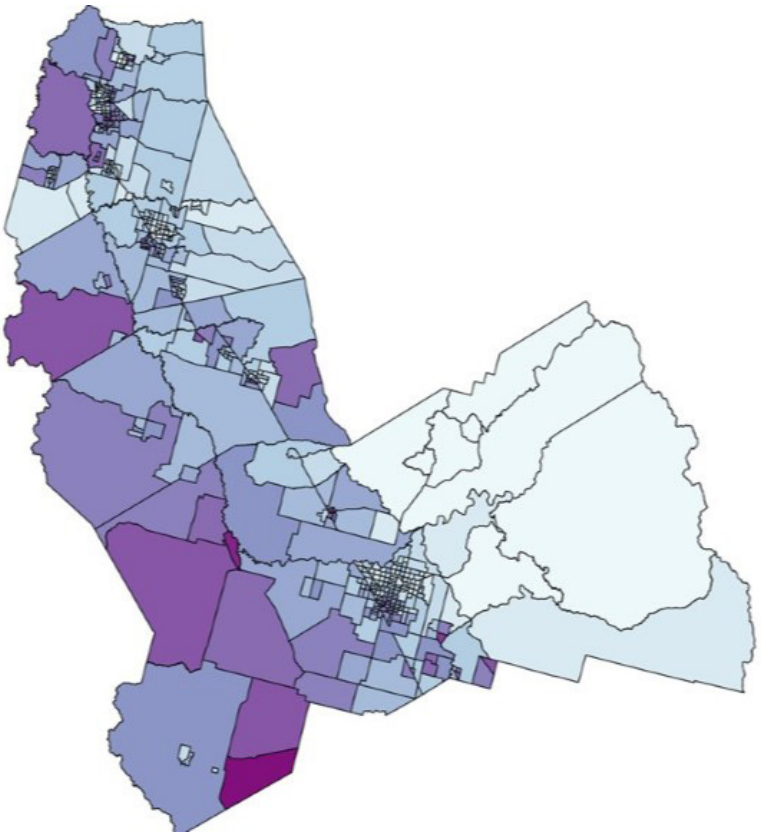



Percent Foreign-Born
San Joaquin Valley, North
1990
0.0 – 5.0
5.0 – 10.0
10.0 – 15.0
15.0 – 20.0
20.0 – 25.0
25.0 – 30.0
30.0 – 35.0
35.0 – 40.0
40.0 – 45.0
45.0 – 50.0
50.0 – 55.0
55.0 – 60.0
60.0 – 64.3


Percent Foreign-Born
San Joaquin Valley, North
2000
0.0 – 5.0
5.0 – 10.0
10.0 – 15.0
15.0 – 20.0
20.0 – 25.0
25.0 – 30.0
30.0 – 35.0
35.0 – 40.0
40.0 – 45.0
45.0 – 50.0
50.0 – 55.0
55.0 – 60.0
60.0 – 64.3

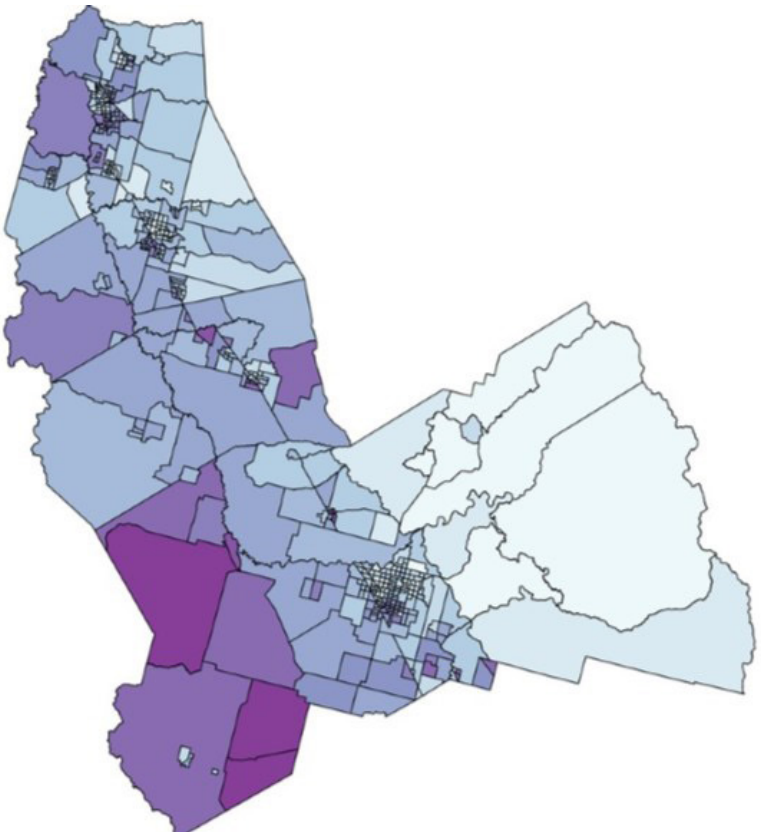
Percent Foreign-Born
San Joaquin Valley, North
2012

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3



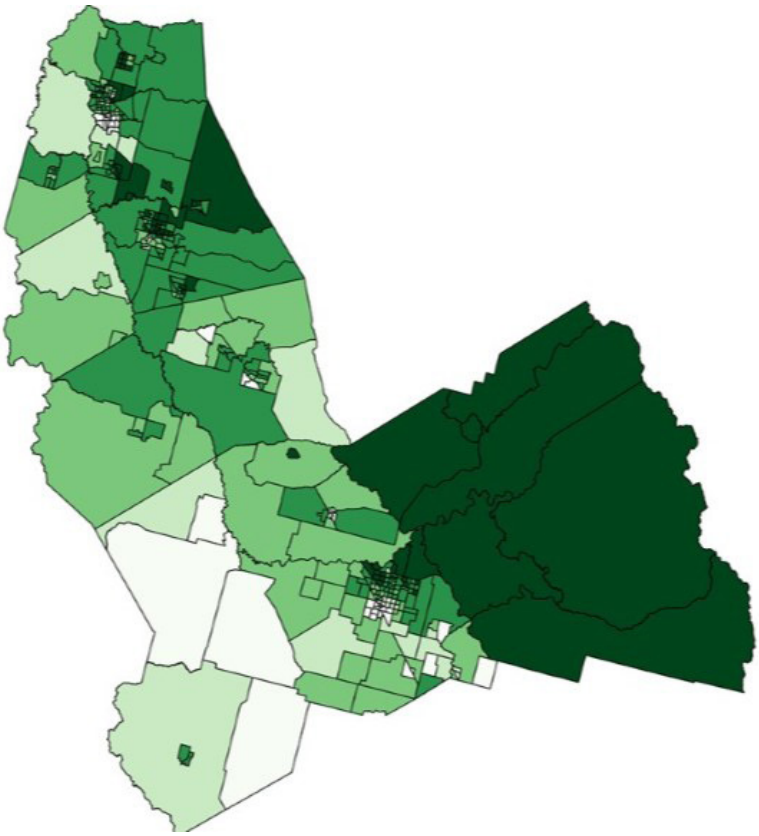
Percent Foreign-Born
San Joaquin Valley, North
2017

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3



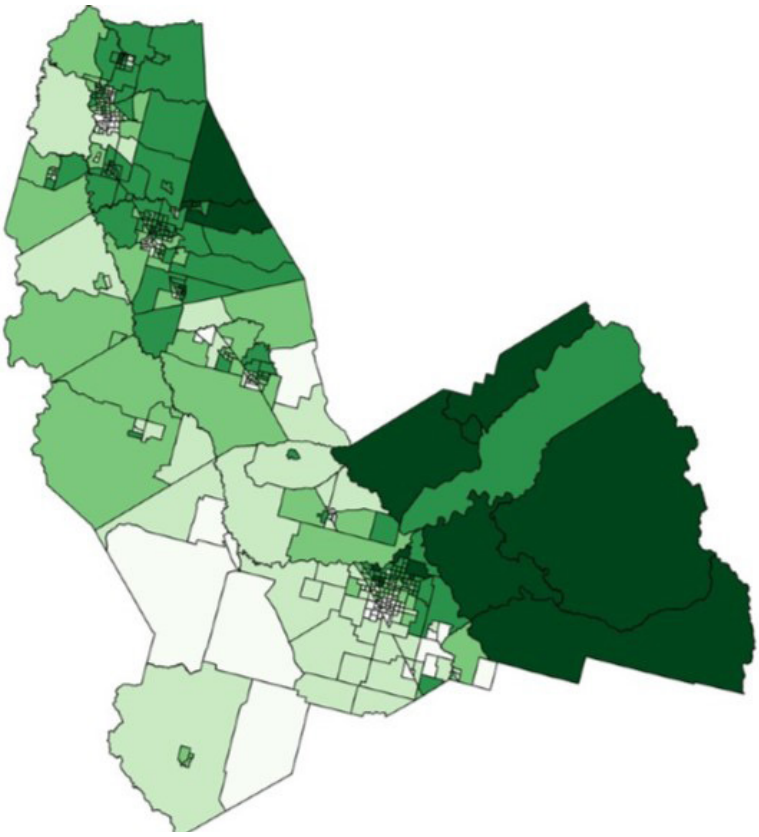
Percent (Non-Hispanic) White
San Joaquin Valley, North
1990

- 0 – 20
- 20 – 40
- 40 – 60
- 60 – 80
- 80 – 100



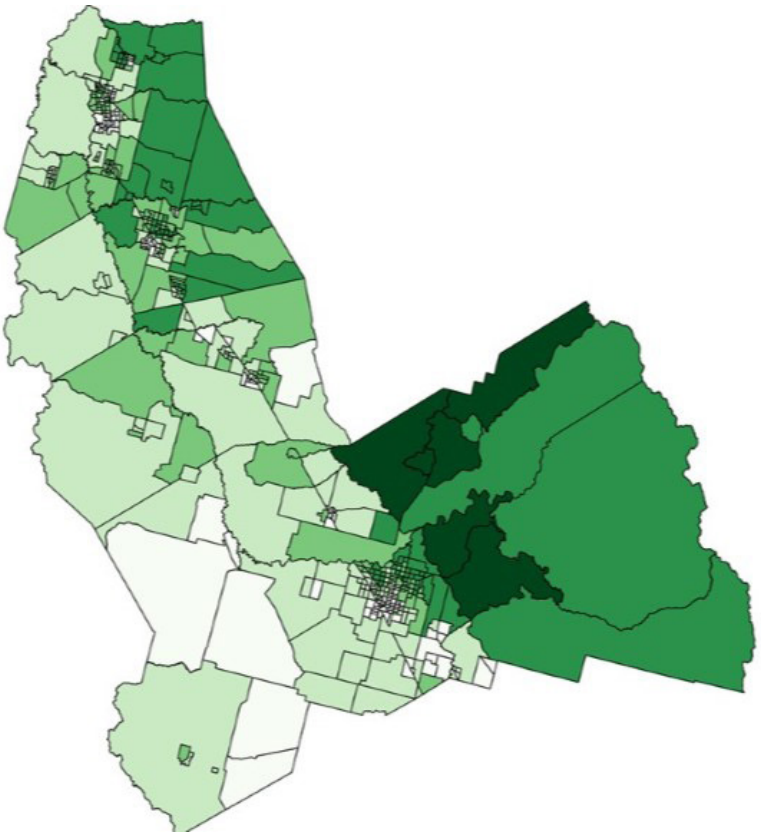
Percent (Non-Hispanic) White
San Joaquin Valley, North
2000

- 0 – 20
- 20 – 40
- 40 – 60
- 60 – 80
- 80 – 100



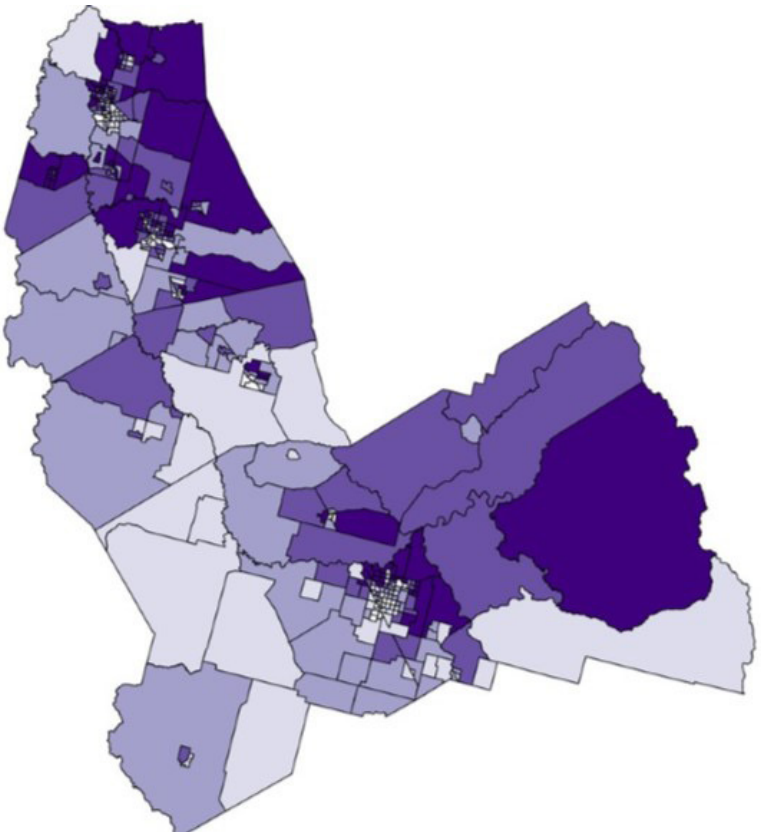
Percent (Non-Hispanic) White
San Joaquin Valley, North
2010

- 0 – 20
- 20 – 40
- 40 – 60
- 60 – 80
- 80 – 100



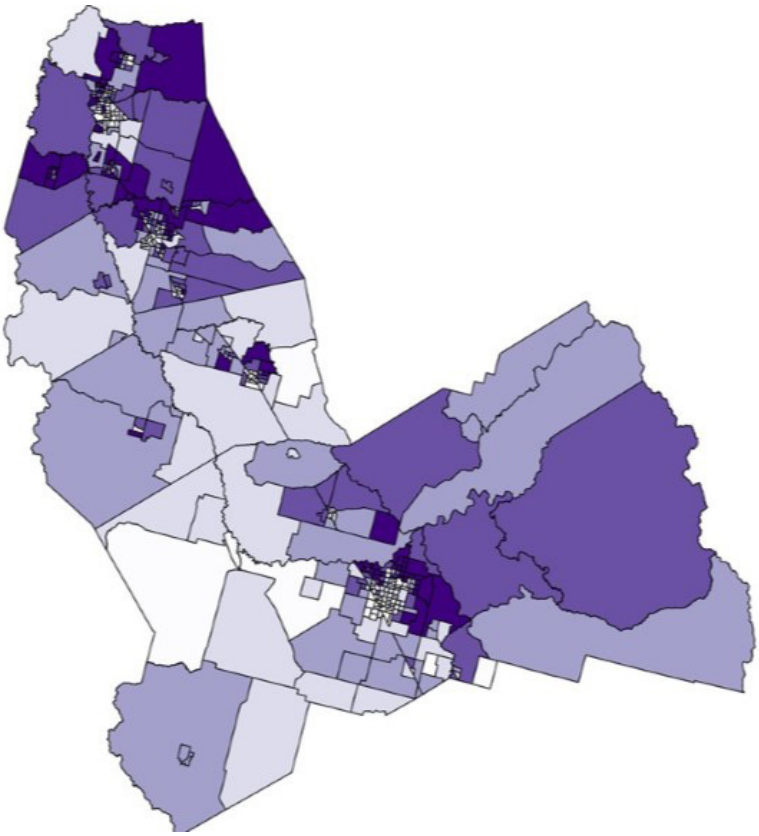
Median Household Income
San Joaquin Valley, North
1990

- 1st Quintile
- 2nd Quintile
- 3rd Quintile
- 4th Quintile
- 5th Quintile



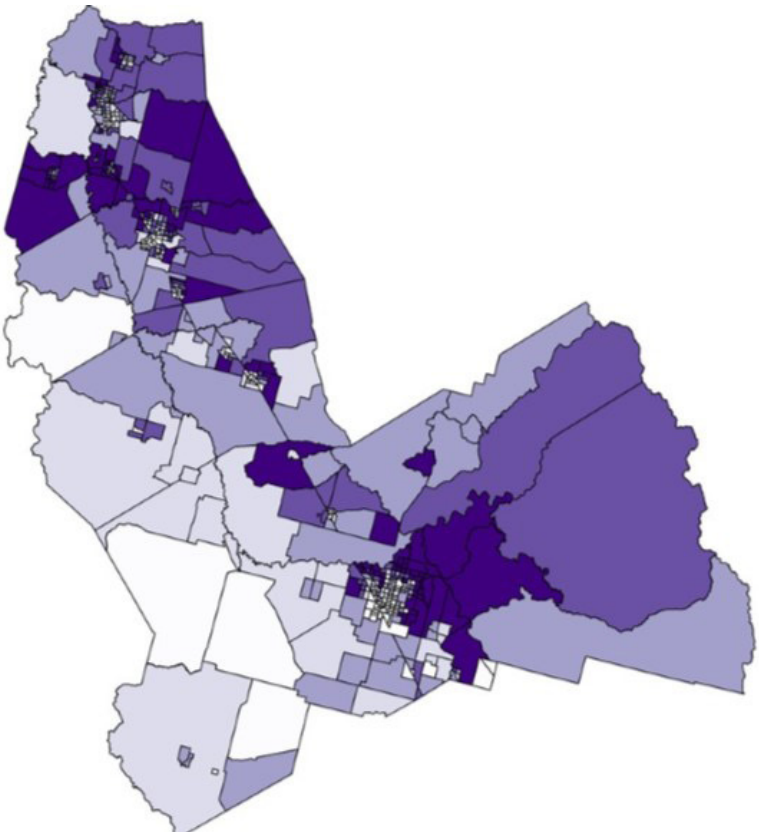
Median Household Income
San Joaquin Valley, North
2000

- 1st Quintile
- 2nd Quintile
- 3rd Quintile
- 4th Quintile
- 5th Quintile



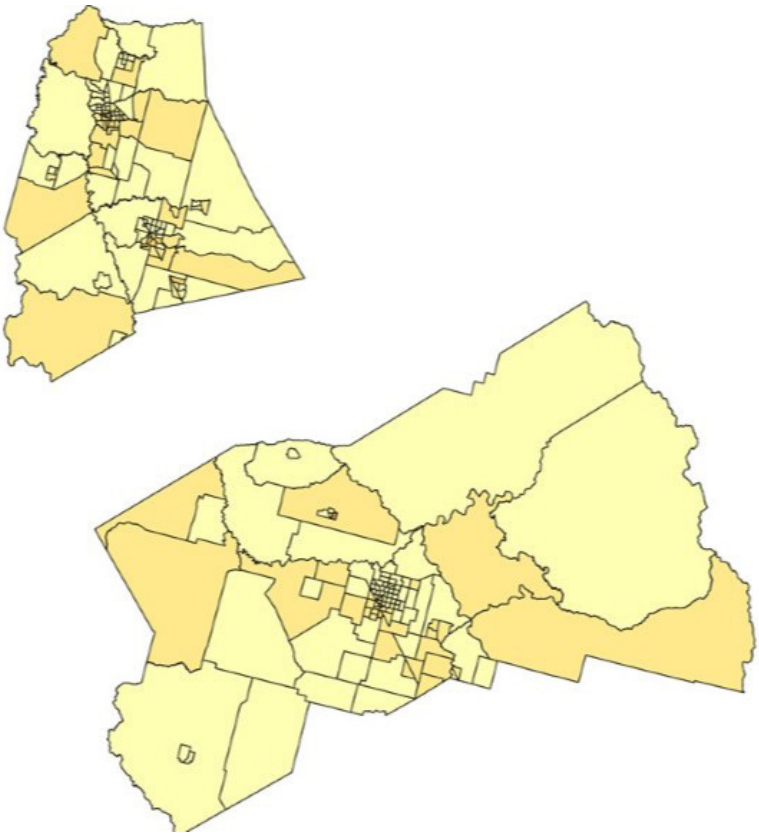
Median Household Income
San Joaquin Valley, North
2012

- 1st Quintile
- 2nd Quintile
- 3rd Quintile
- 4th Quintile
- 5th Quintile



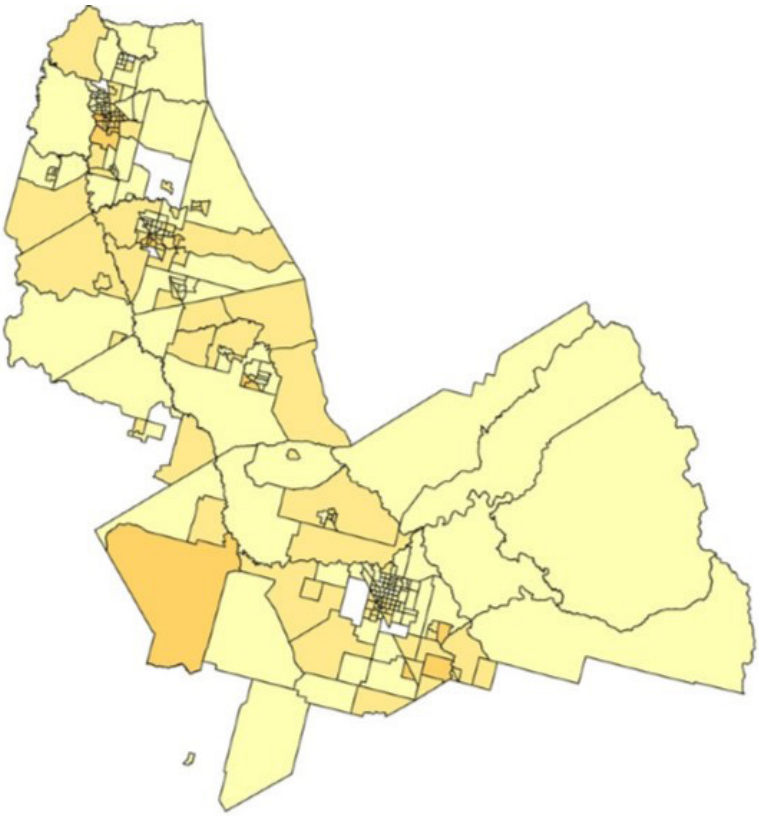
Unemployment Rate
San Joaquin Valley, North
1970

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100



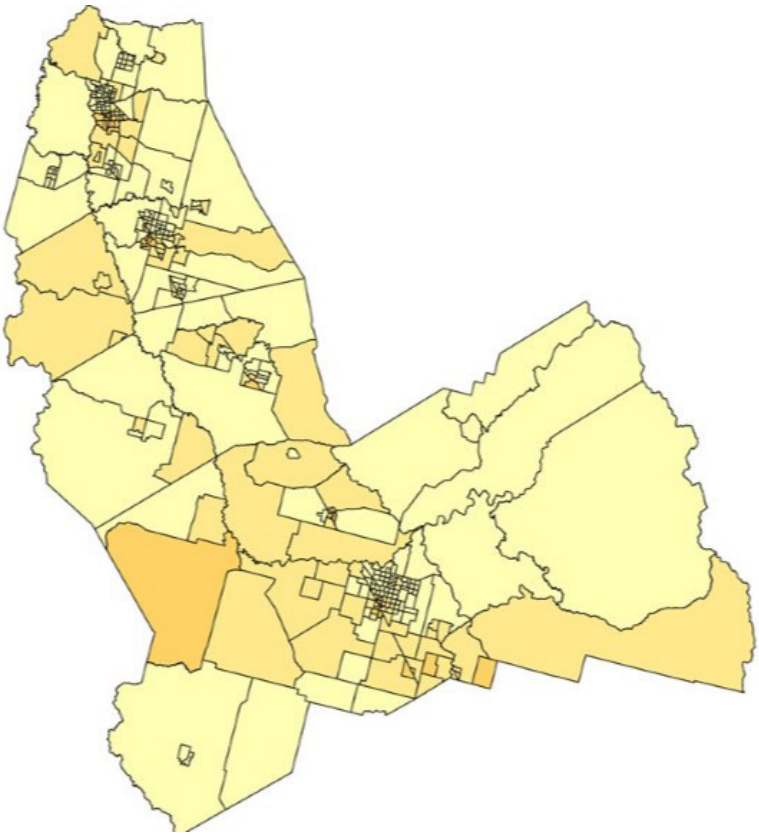
Unemployment Rate
San Joaquin Valley, North
1980

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100



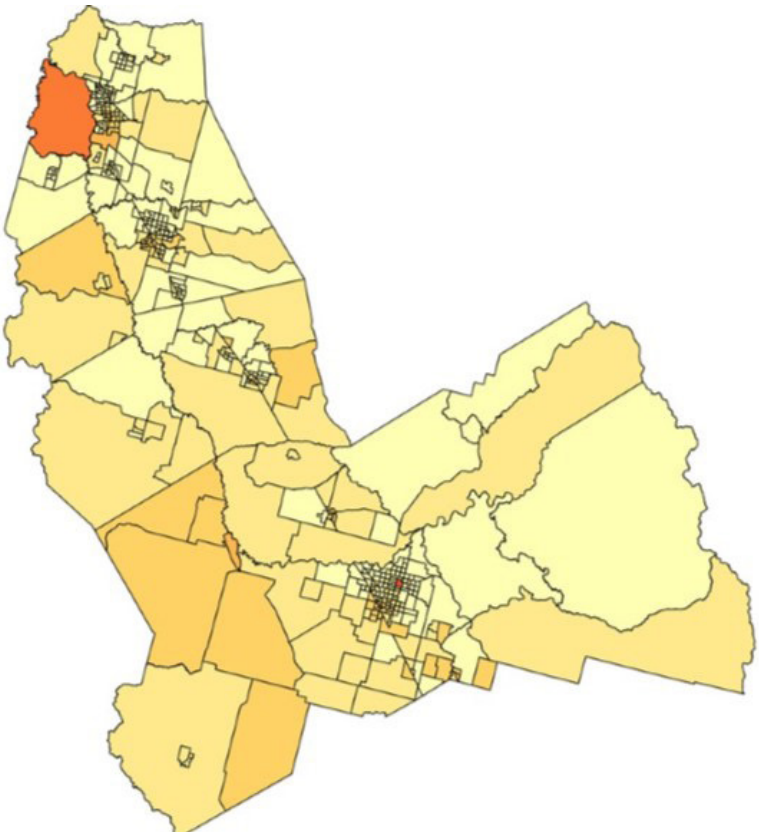
Unemployment Rate
San Joaquin Valley, North
1990

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100



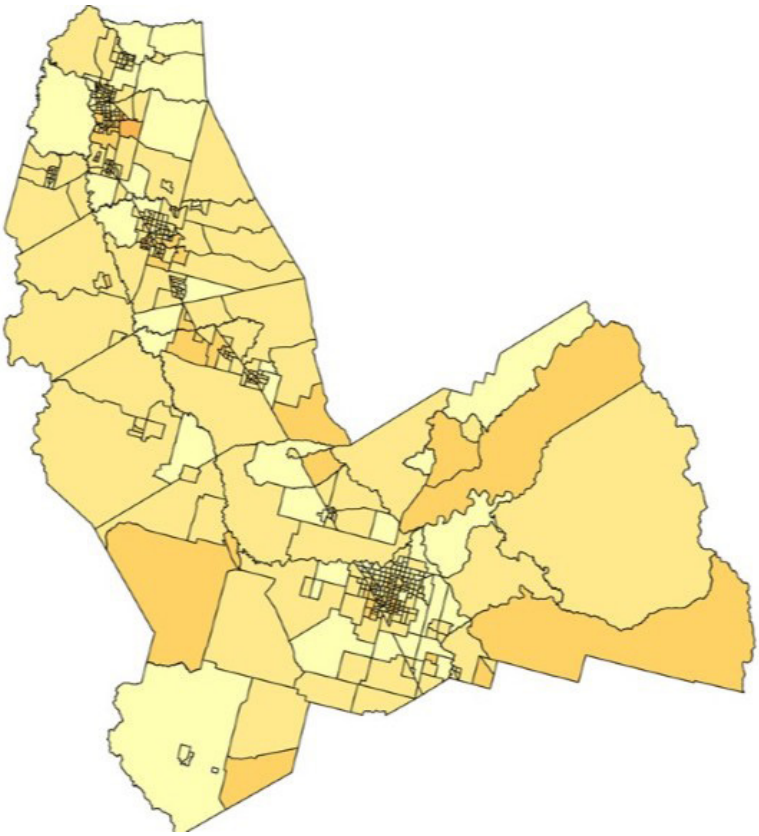
Unemployment Rate
San Joaquin Valley, North
2000

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100



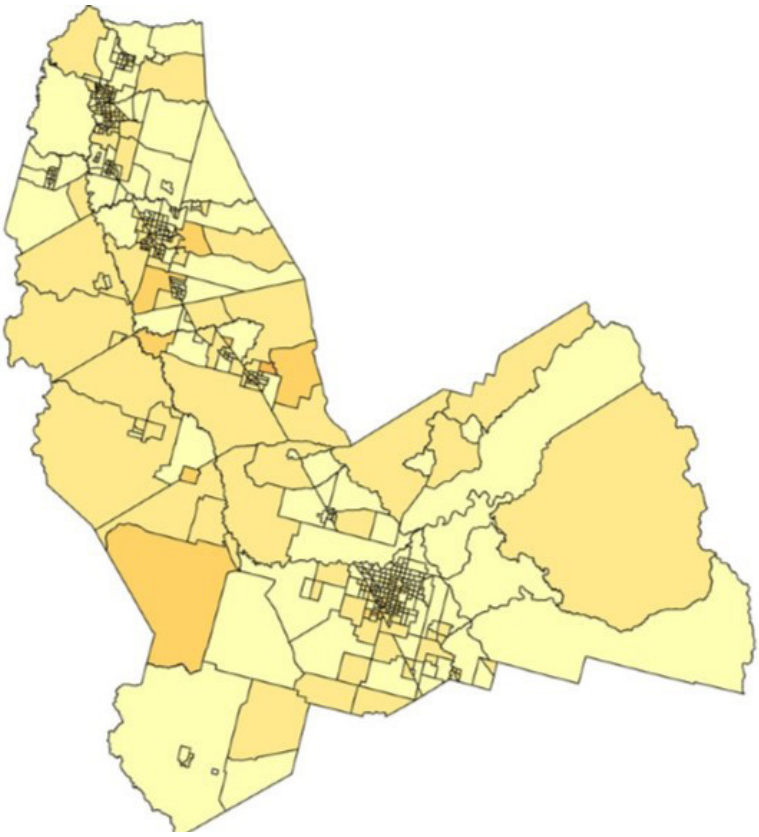
Unemployment Rate
San Joaquin Valley, North
2012

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100



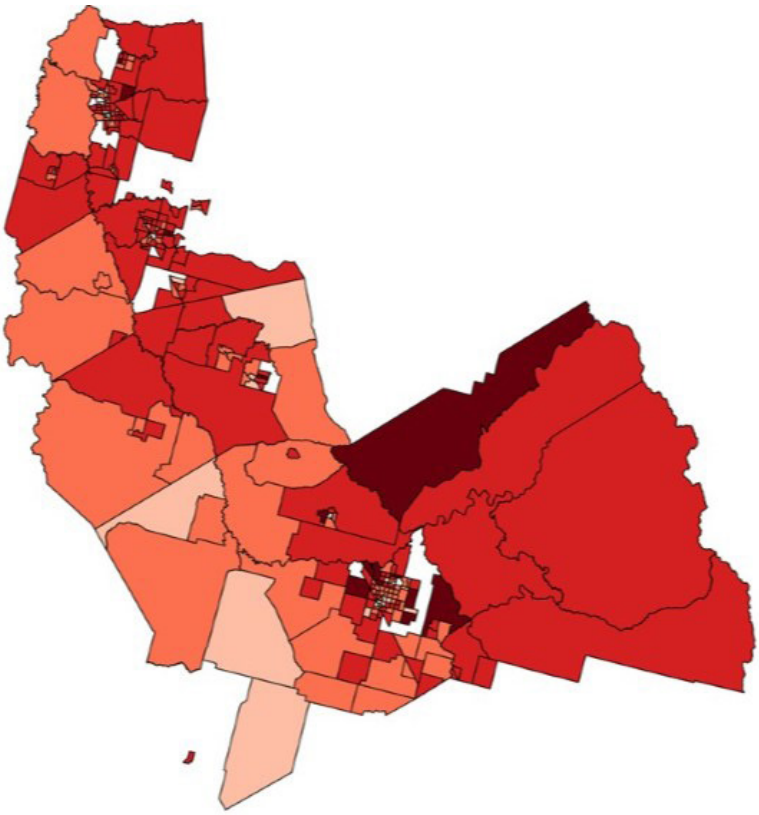
Unemployment Rate
San Joaquin Valley, North
2017

- 0 – 10
- 10 – 20
- 20 – 30
- 30 – 40
- 40 – 50
- 50 – 60
- 60 – 70
- 70 – 80
- 80 – 90
- 90 – 100



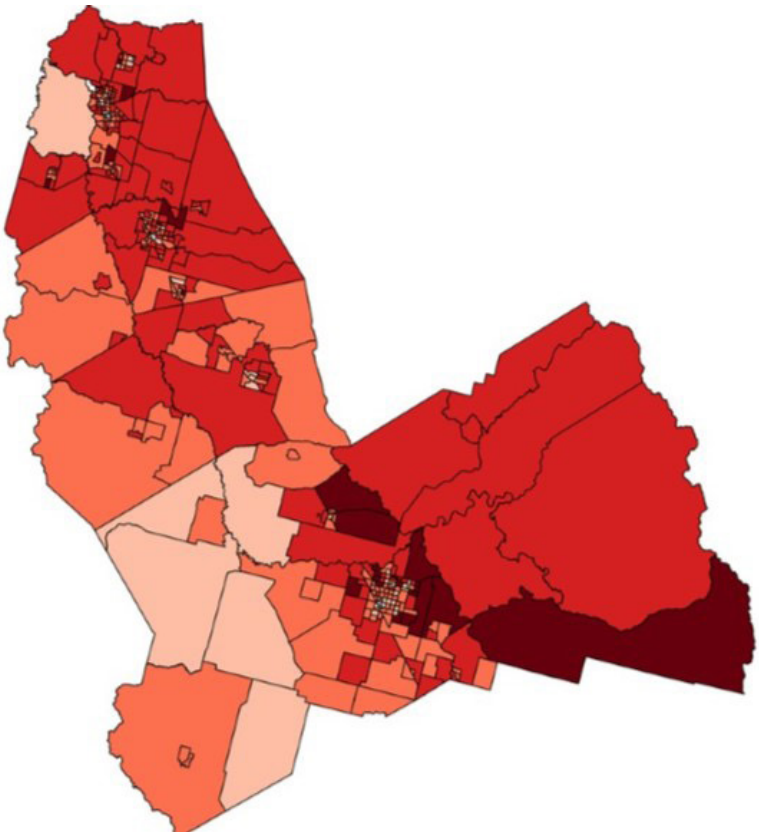
Percent Owner-Occupied Homes
San Joaquin Valley, North
1980

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



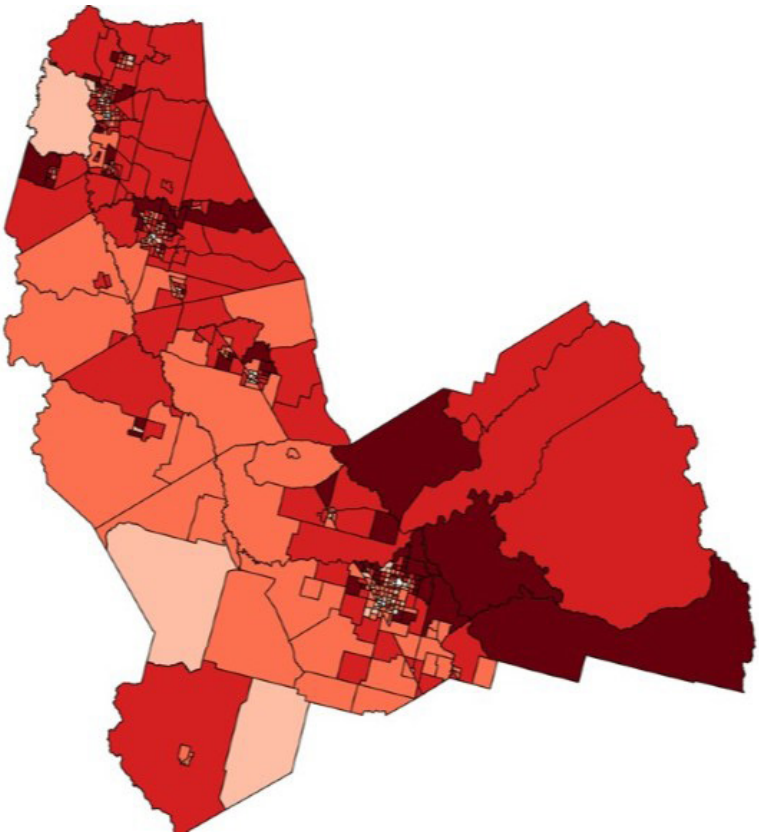
Percent Owner-Occupied Homes
San Joaquin Valley, North
1990

- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000



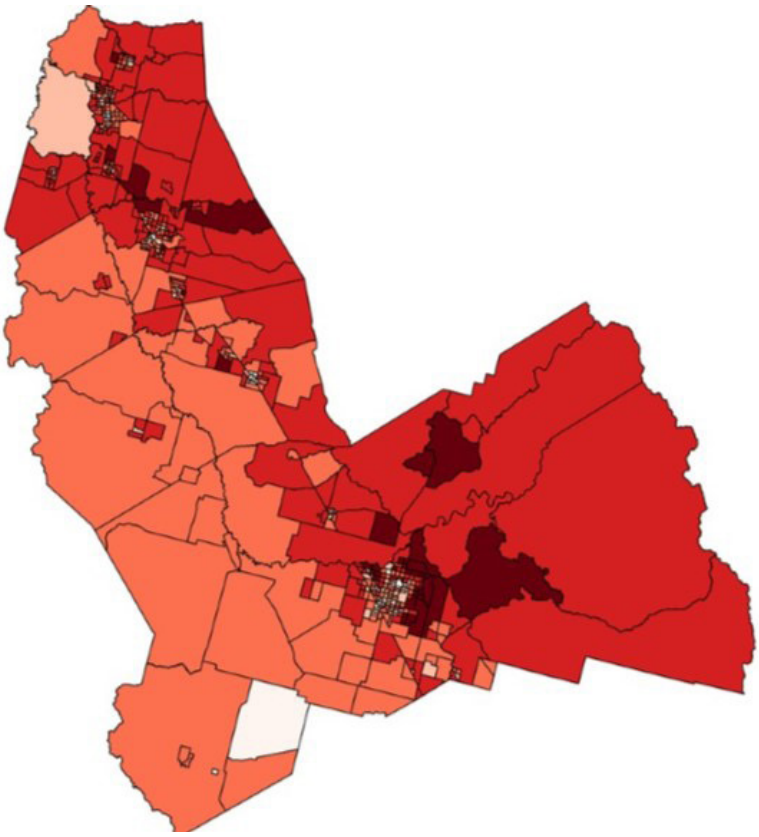
Percent Owner-Occupied Homes
San Joaquin Valley, North
2000

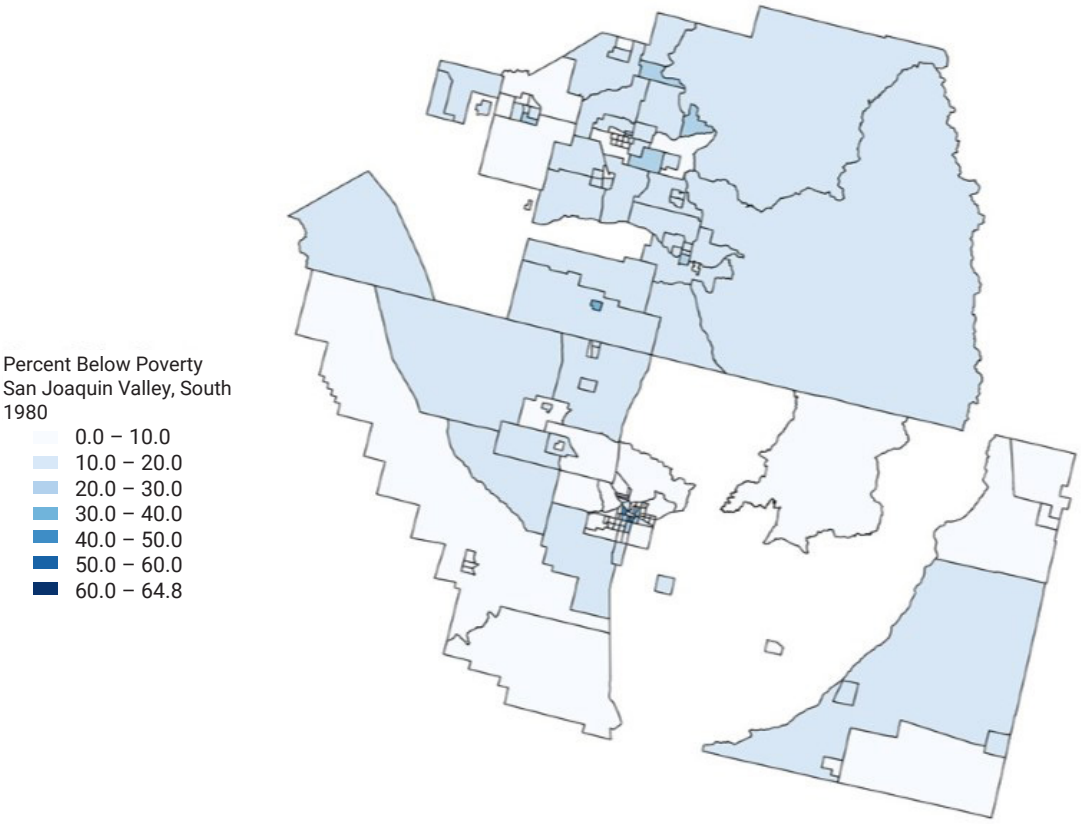
- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000

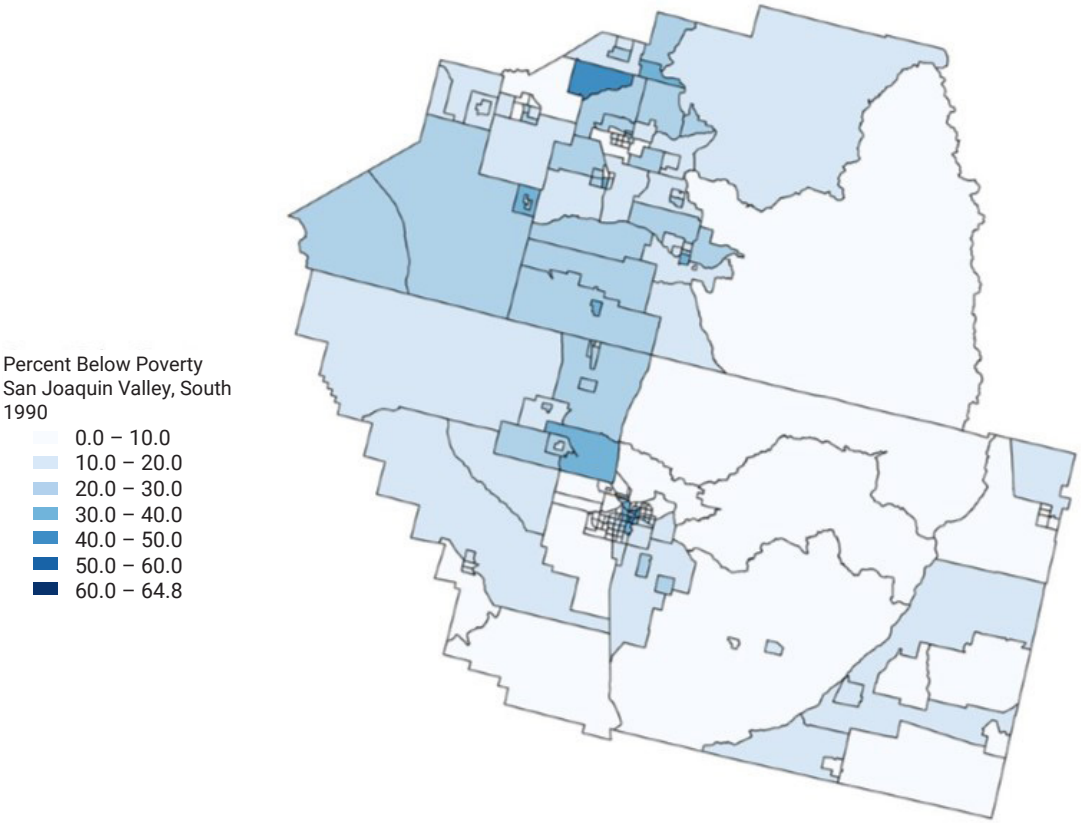


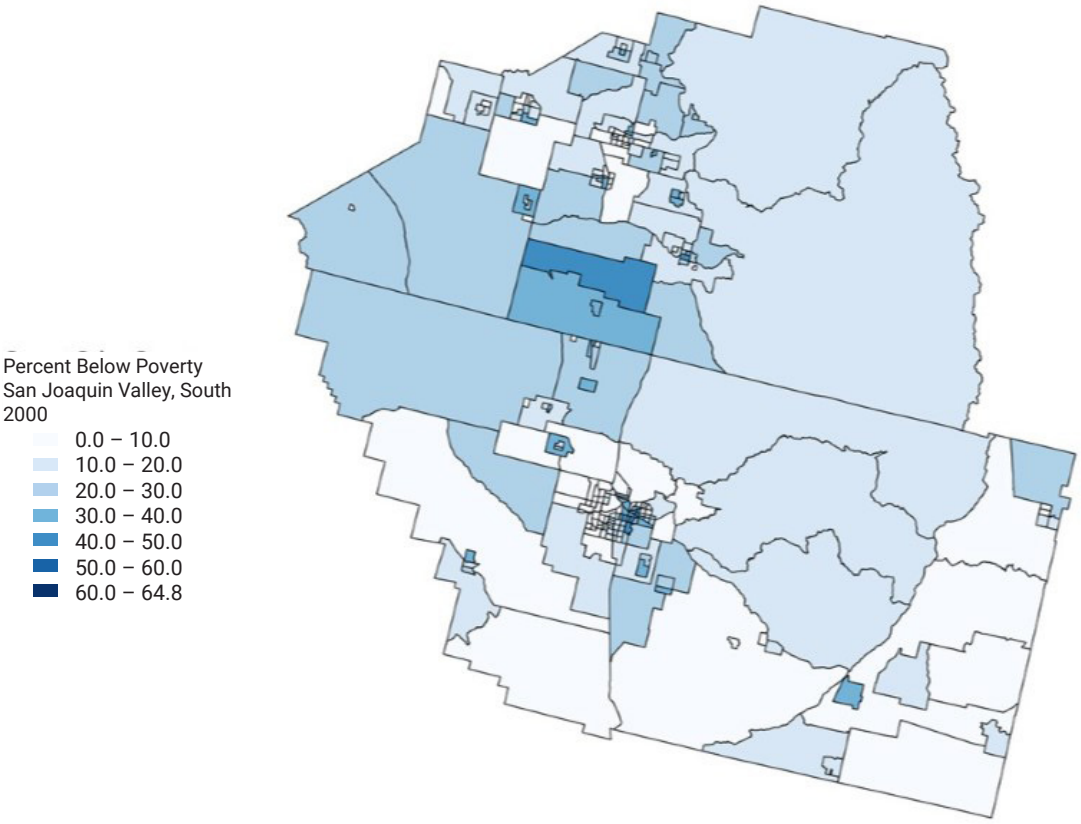
Percent Owner-Occupied Homes
San Joaquin Valley, North
2010

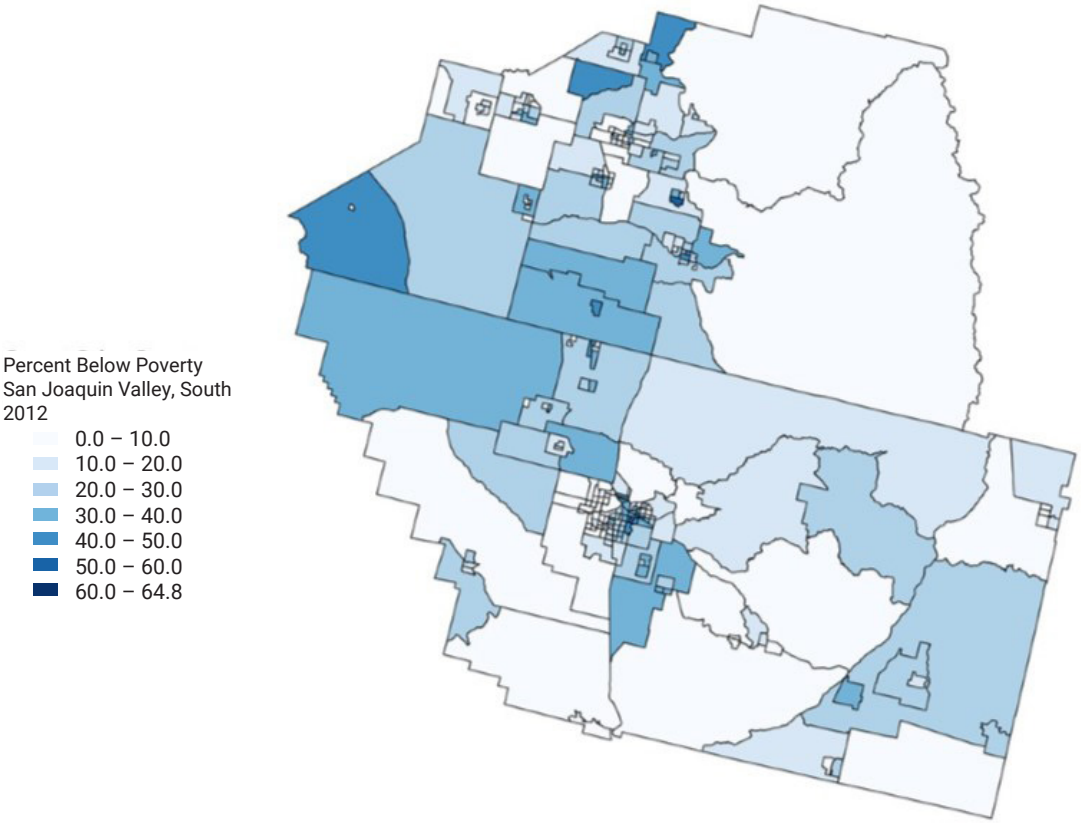
- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000

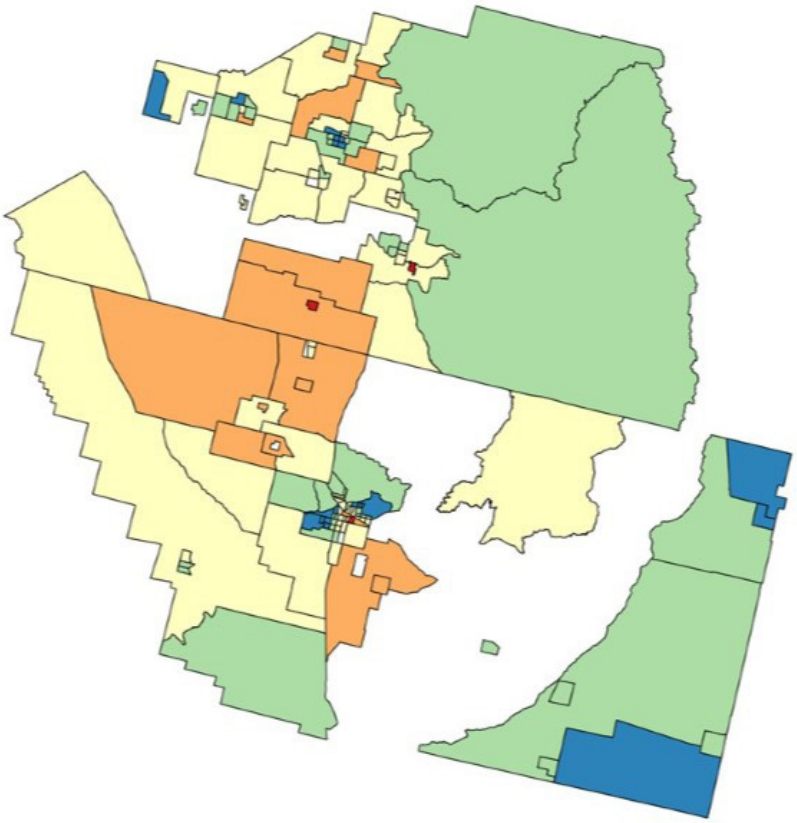



Percent Below Poverty
San Joaquin Valley, South
1980
0.0 – 10.0
10.0 – 20.0
20.0 – 30.0
30.0 – 40.0
40.0 – 50.0
50.0 – 60.0
60.0 – 64.8


Percent Below Poverty
San Joaquin Valley, South
1990
0.0 – 10.0
10.0 – 20.0
20.0 – 30.0
30.0 – 40.0
40.0 – 50.0
50.0 – 60.0
60.0 – 64.8

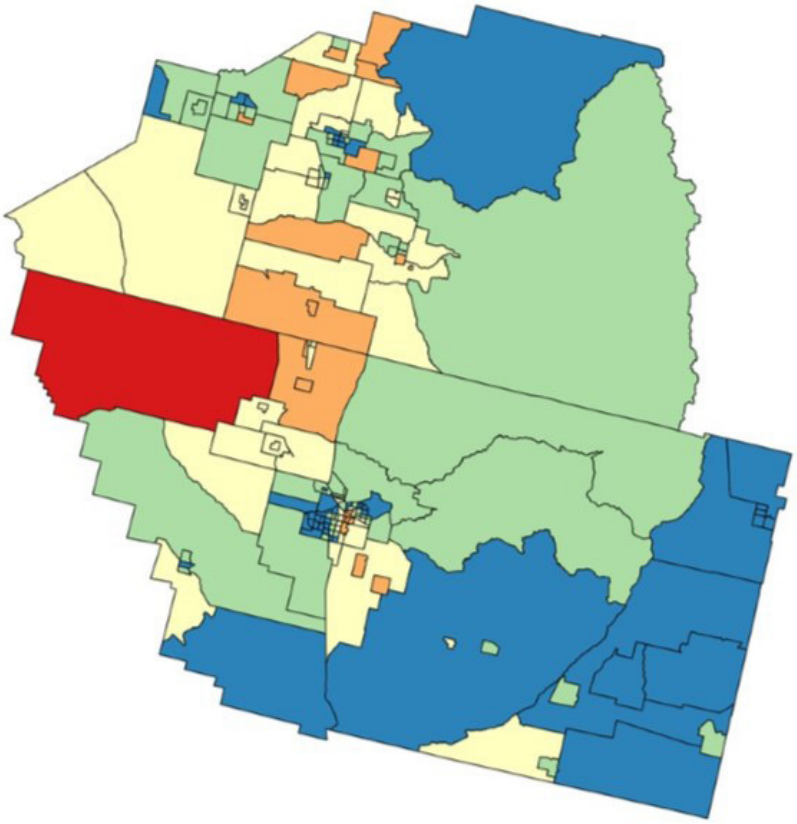

Percent Below Poverty
San Joaquin Valley, South
2000
0.0 – 10.0
10.0 – 20.0
20.0 – 30.0
30.0 – 40.0
40.0 – 50.0
50.0 – 60.0
60.0 – 64.8


Percent Below Poverty
San Joaquin Valley, South
2012
0.0 – 10.0
10.0 – 20.0
20.0 – 30.0
30.0 – 40.0
40.0 – 50.0
50.0 – 60.0
60.0 – 64.8



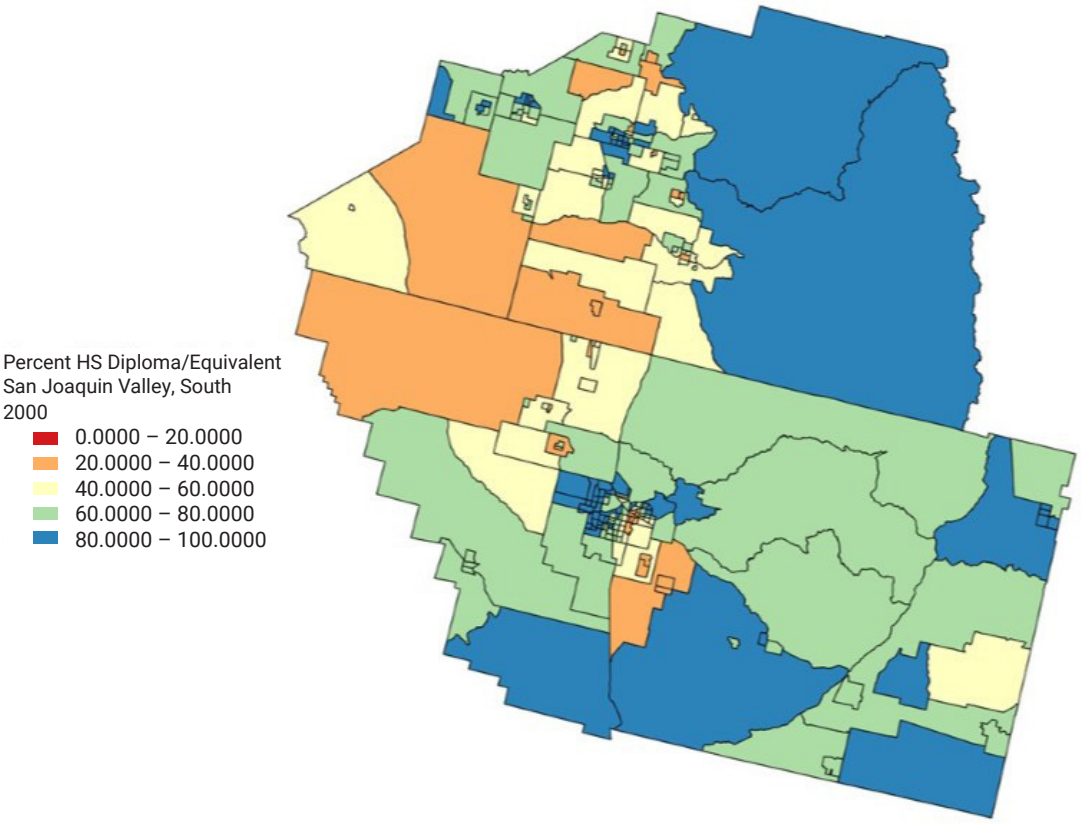
Percent HS Diploma/Equivalent
San Joaquin Valley, South
1980

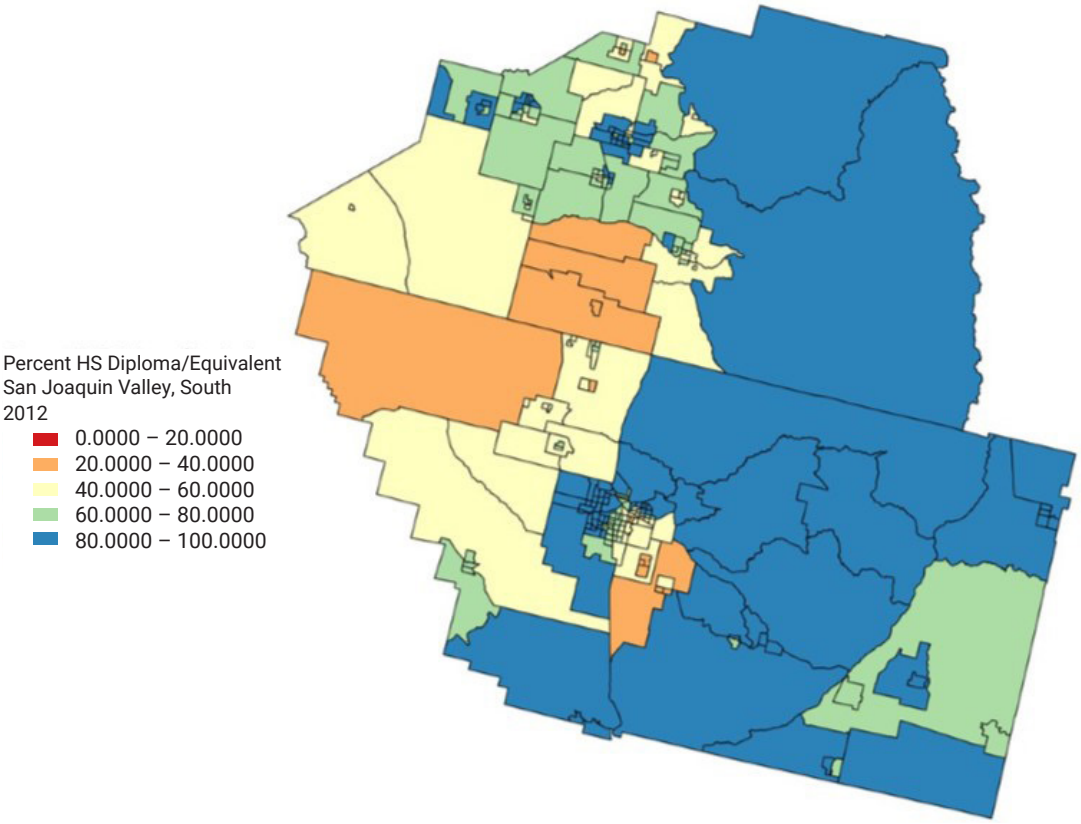
- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000

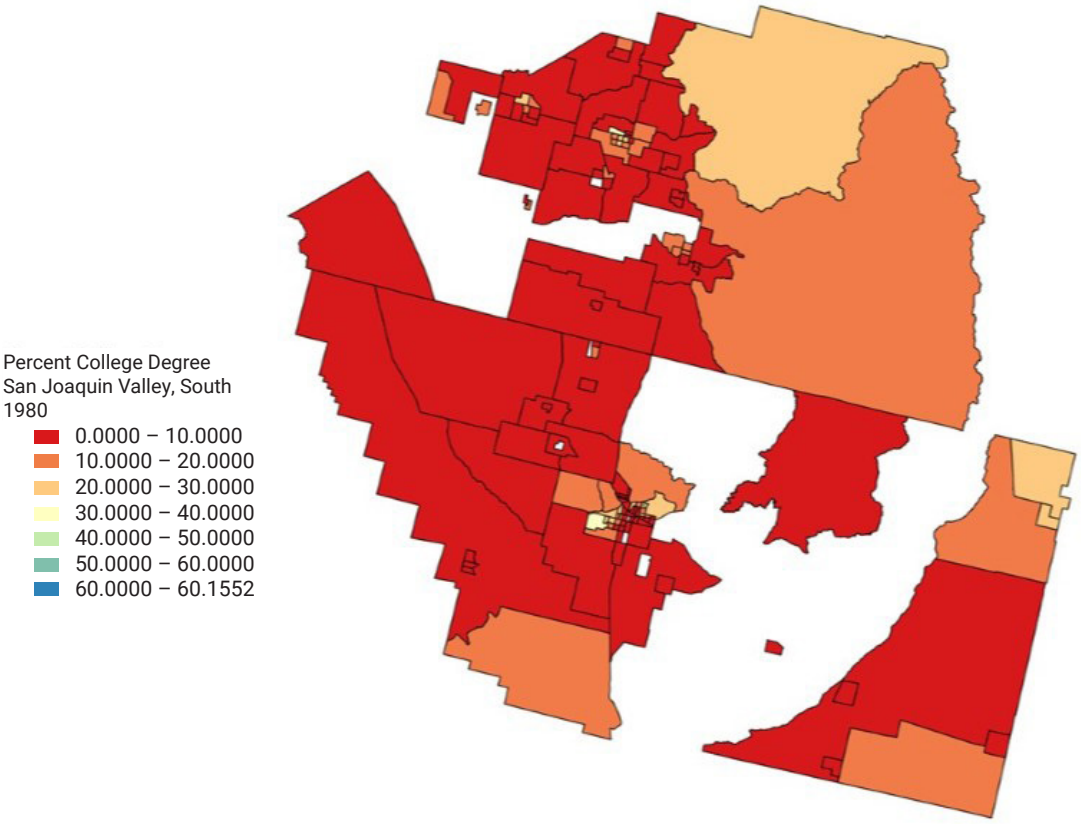


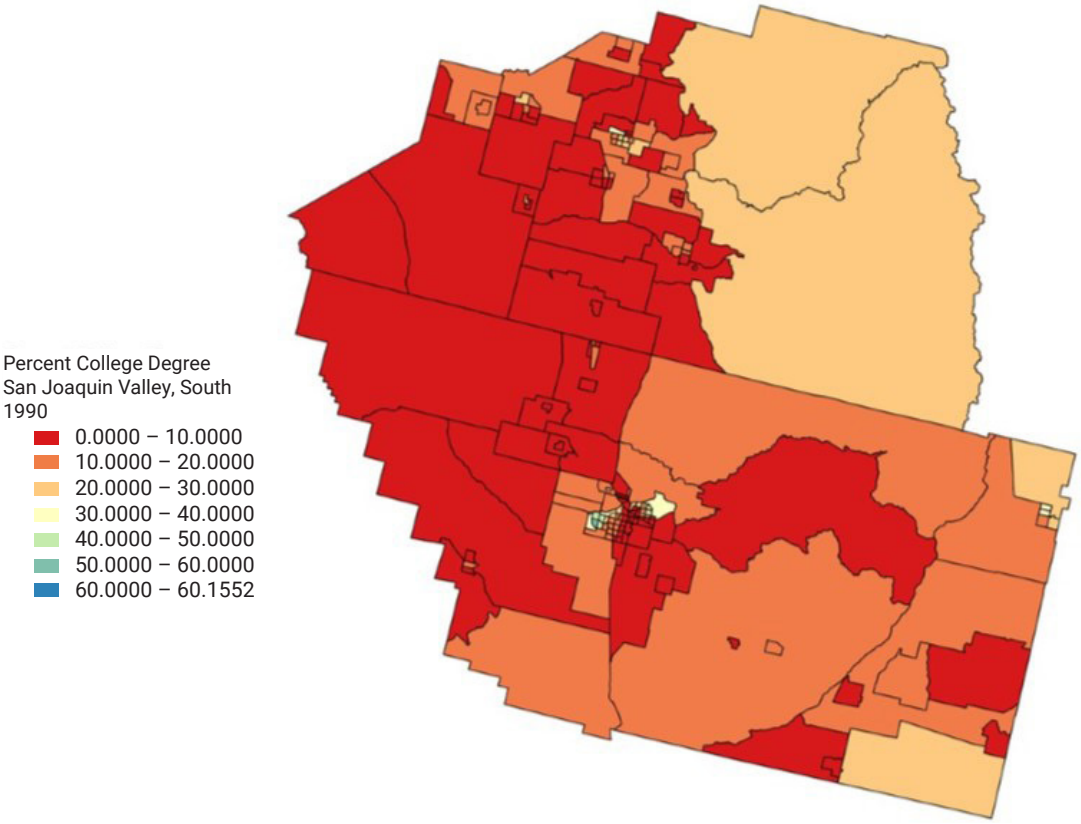
Percent HS Diploma/Equivalent
San Joaquin Valley, South
1990

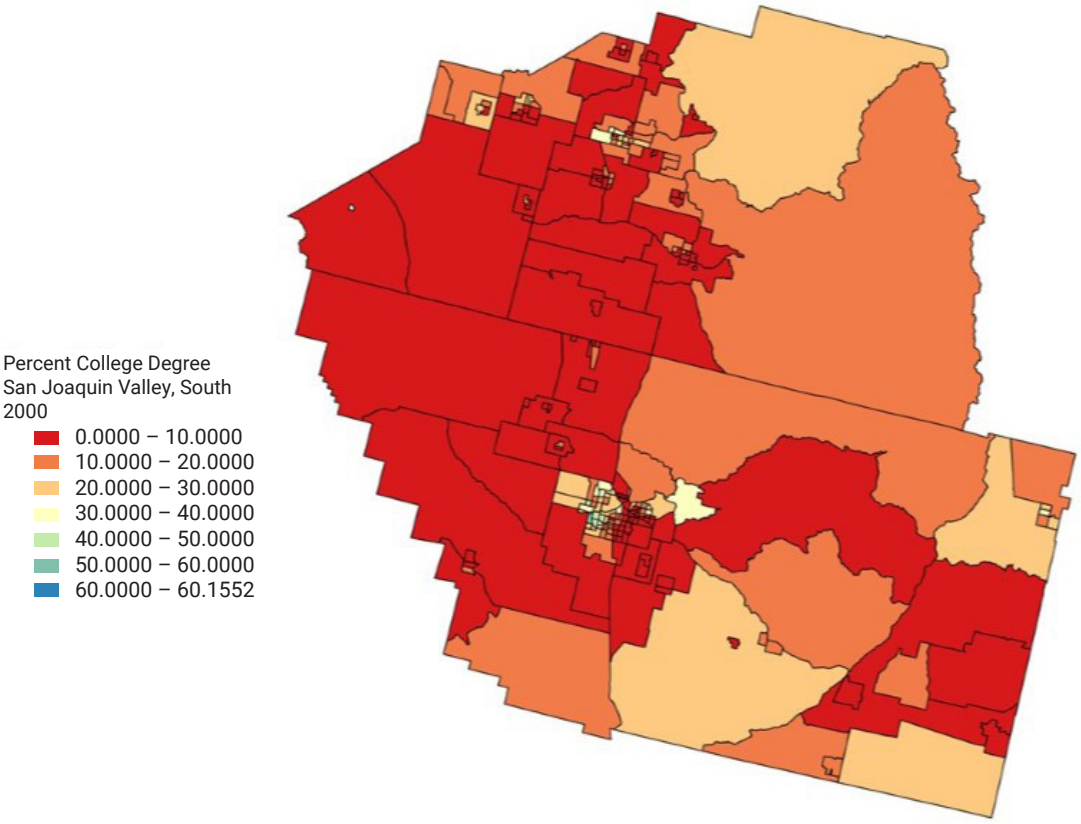
- 0.0000 – 20.0000
- 20.0000 – 40.0000
- 40.0000 – 60.0000
- 60.0000 – 80.0000
- 80.0000 – 100.0000

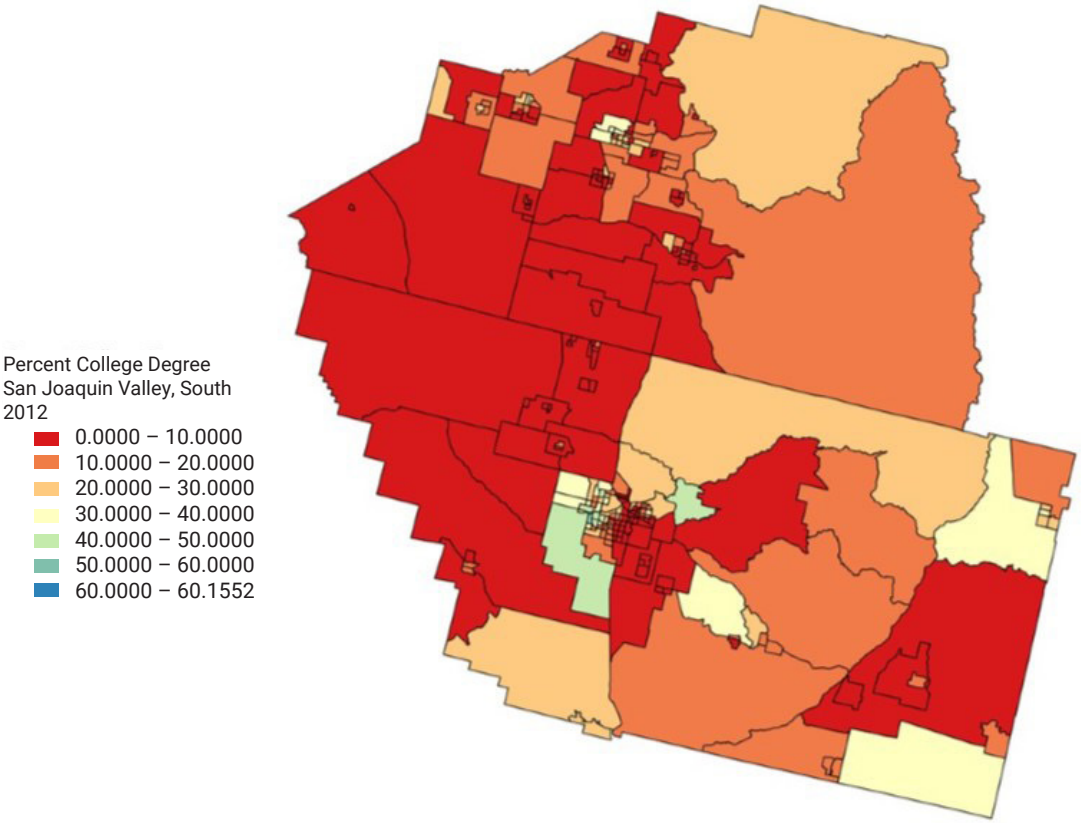

Percent HS Diploma/Equivalent
San Joaquin Valley, South
2000
0.0000 – 20.0000
20.0000 – 40.0000
40.0000 – 60.0000
60.0000 – 80.0000
80.0000 – 100.0000

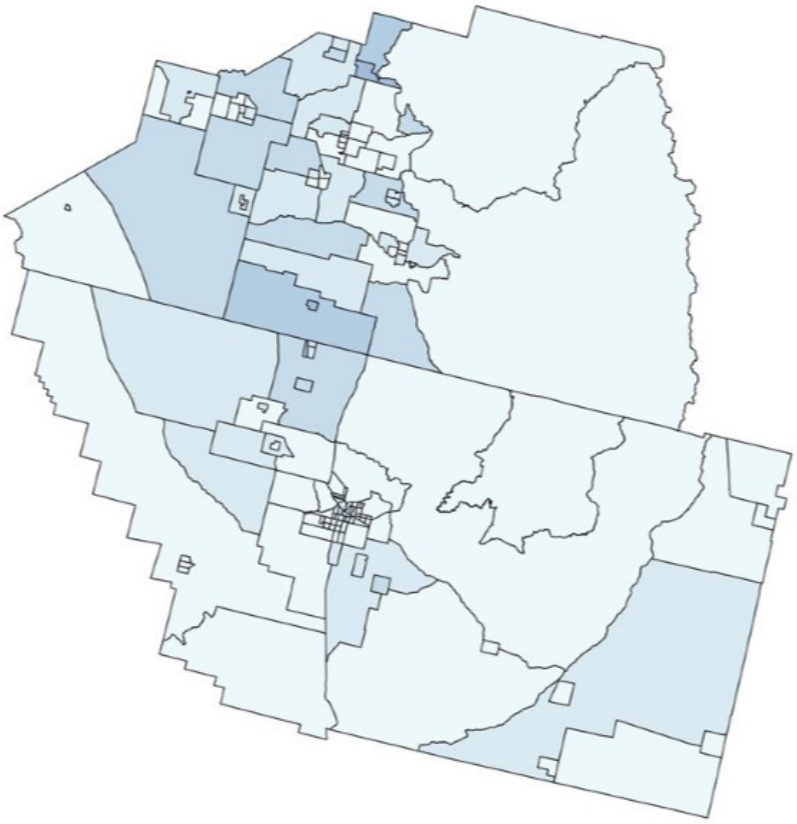

Percent HS Diploma/Equivalent
San Joaquin Valley, South
2012
0.0000 – 20.0000
20.0000 – 40.0000
40.0000 – 60.0000
60.0000 – 80.0000
80.0000 – 100.0000


Percent College Degree
San Joaquin Valley, South
1980
0.0000 – 10.0000
10.0000 – 20.0000
20.0000 – 30.0000
30.0000 – 40.0000
40.0000 – 50.0000
50.0000 – 60.0000
60.0000 – 60.1552


Percent College Degree
San Joaquin Valley, South
1990
0.0000 – 10.0000
10.0000 – 20.0000
20.0000 – 30.0000
30.0000 – 40.0000
40.0000 – 50.0000
50.0000 – 60.0000
60.0000 – 60.1552

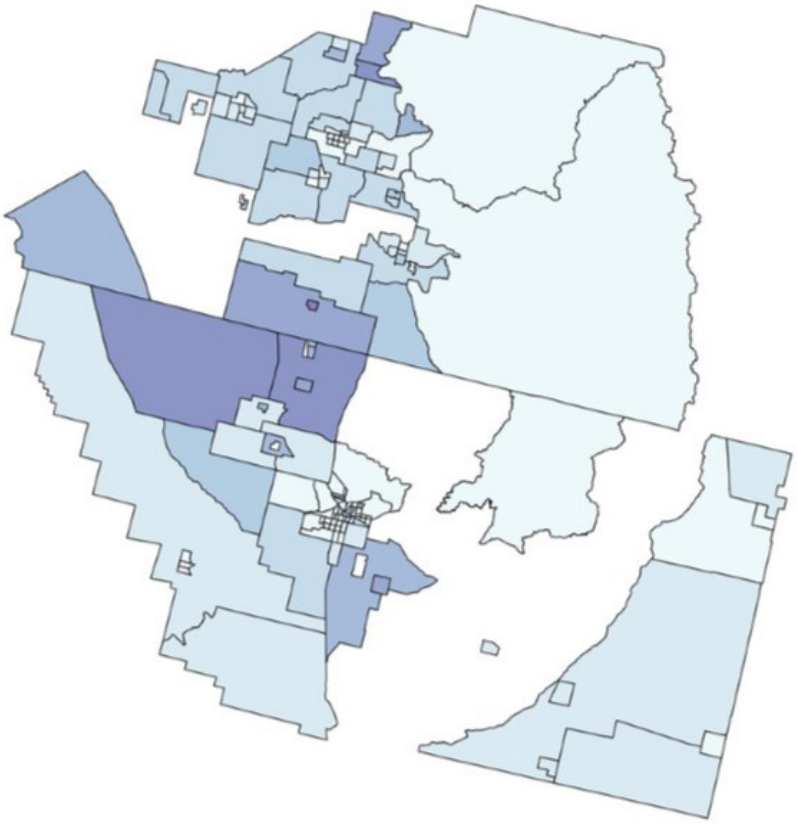

Percent College Degree
San Joaquin Valley, South
2000
0.0000 – 10.0000
10.0000 – 20.0000
20.0000 – 30.0000
30.0000 – 40.0000
40.0000 – 50.0000
50.0000 – 60.0000
60.0000 – 60.1552


Percent College Degree
San Joaquin Valley, South
2012
0.0000 – 10.0000
10.0000 – 20.0000
20.0000 – 30.0000
30.0000 – 40.0000
40.0000 – 50.0000
50.0000 – 60.0000
60.0000 – 60.1552



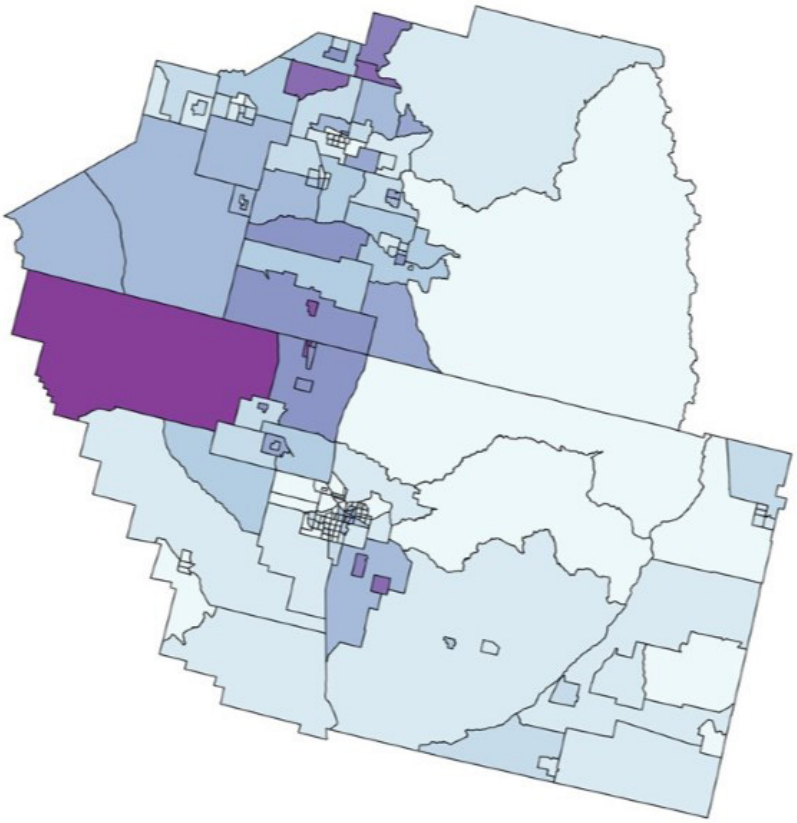
Percent Foreign-Born
San Joaquin Valley, South
1970

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3



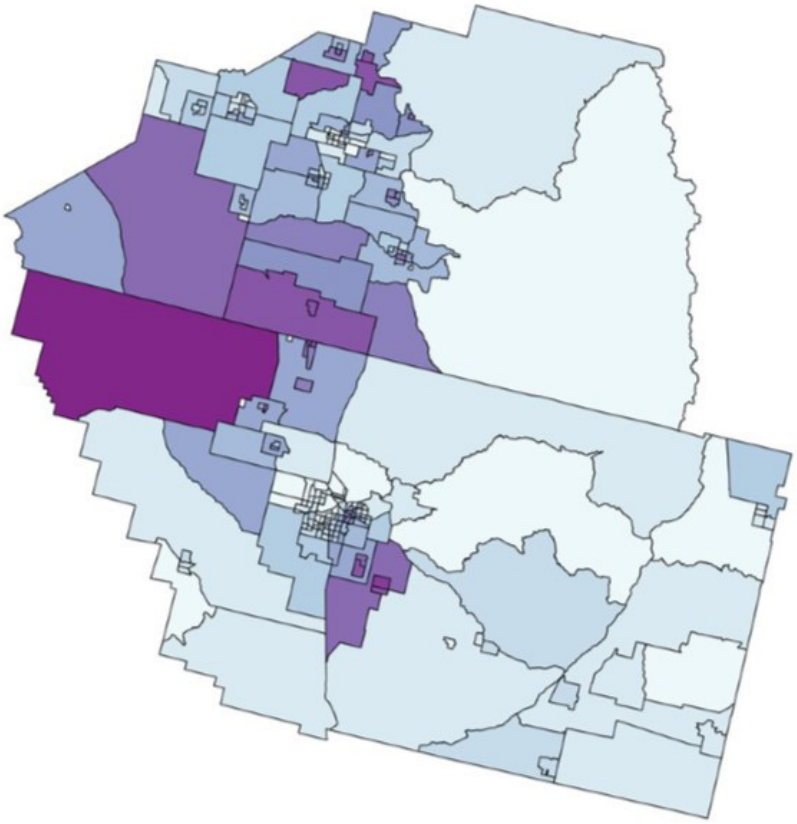
Percent Foreign-Born
San Joaquin Valley, South
1980

- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3



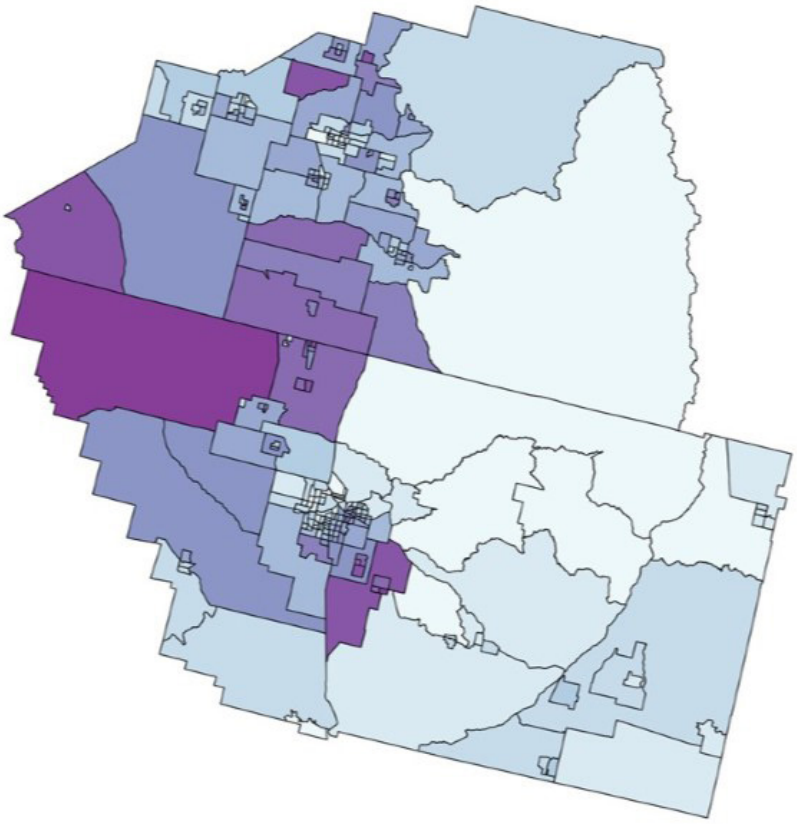
Percent Foreign-Born
San Joaquin Valley, South
1990

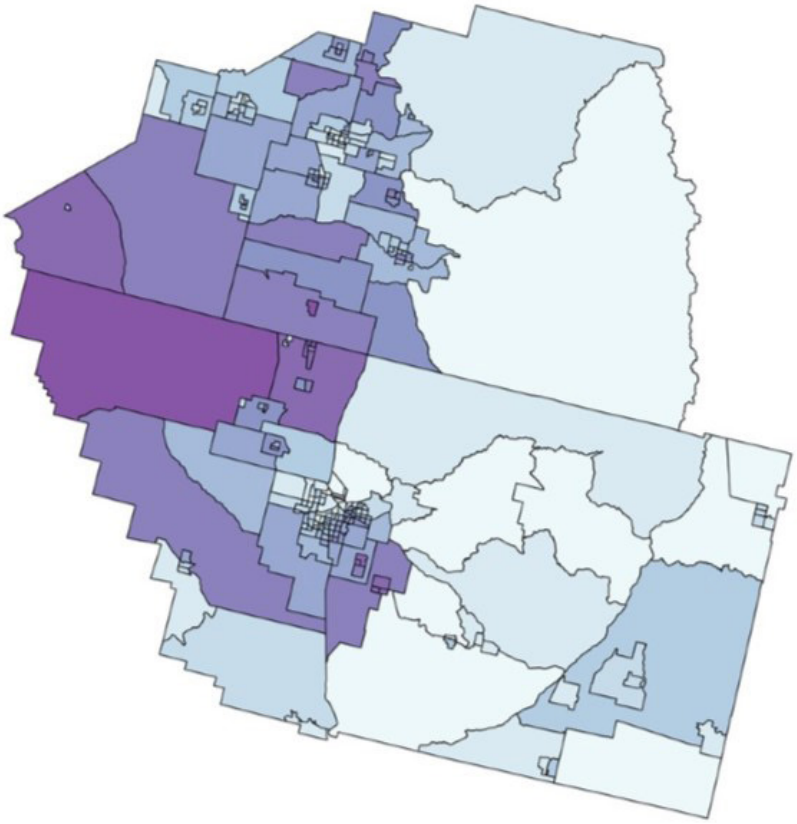
- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3

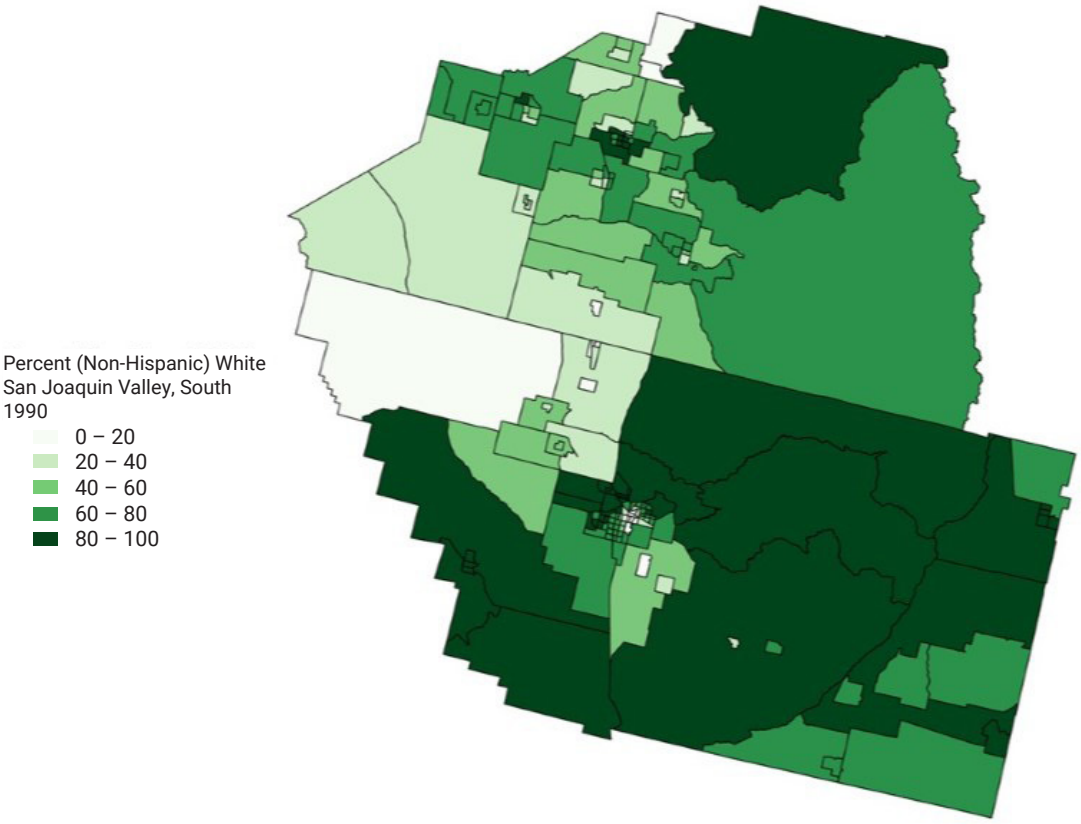


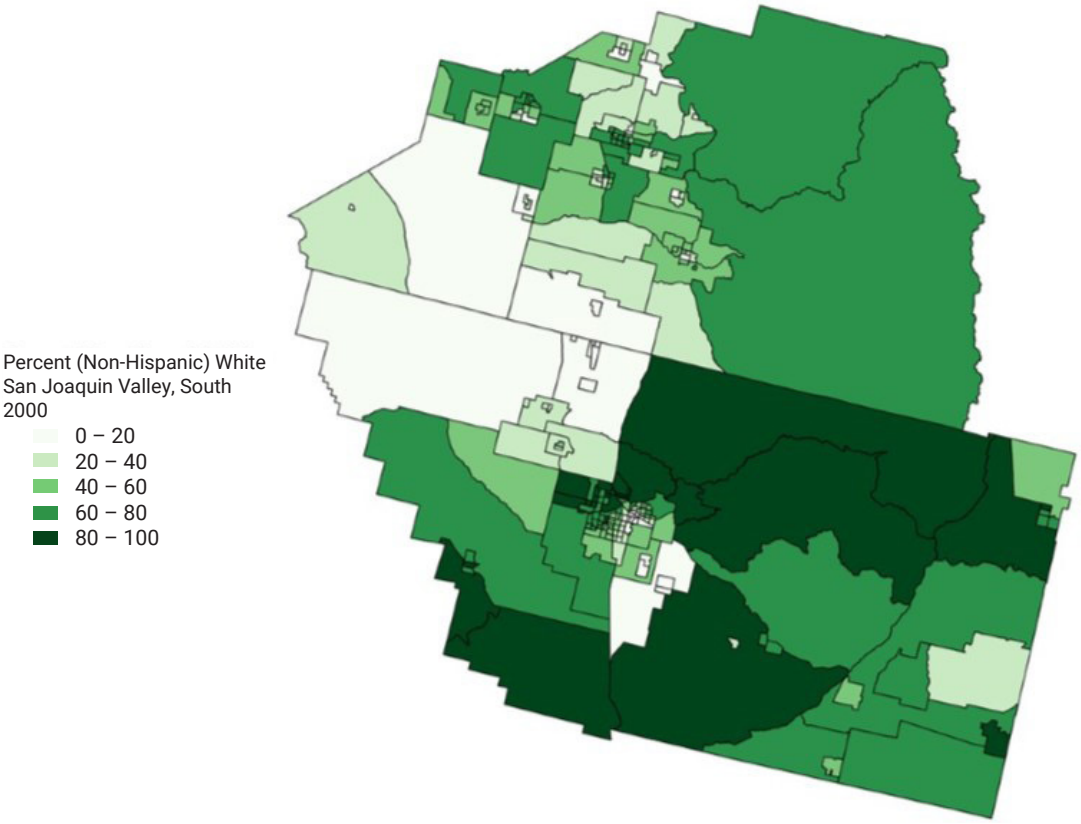
Percent Foreign-Born
San Joaquin Valley, South
2000

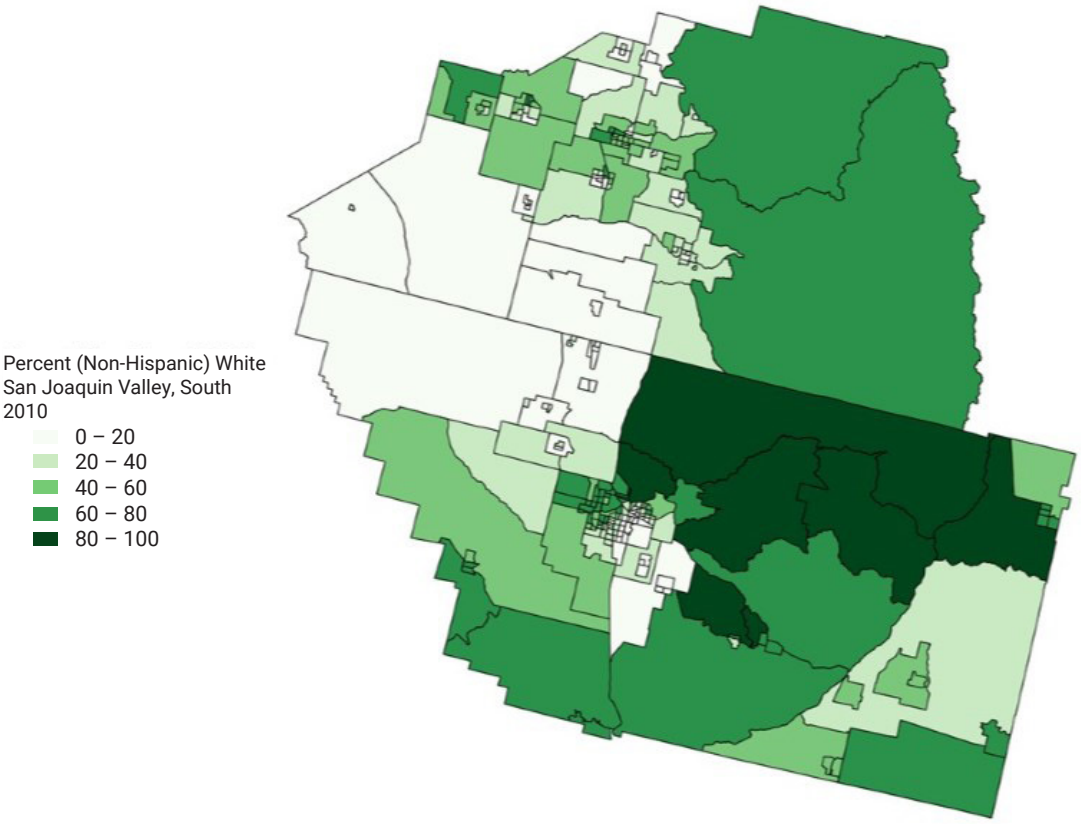
- 0.0 – 5.0
- 5.0 – 10.0
- 10.0 – 15.0
- 15.0 – 20.0
- 20.0 – 25.0
- 25.0 – 30.0
- 30.0 – 35.0
- 35.0 – 40.0
- 40.0 – 45.0
- 45.0 – 50.0
- 50.0 – 55.0
- 55.0 – 60.0
- 60.0 – 64.3

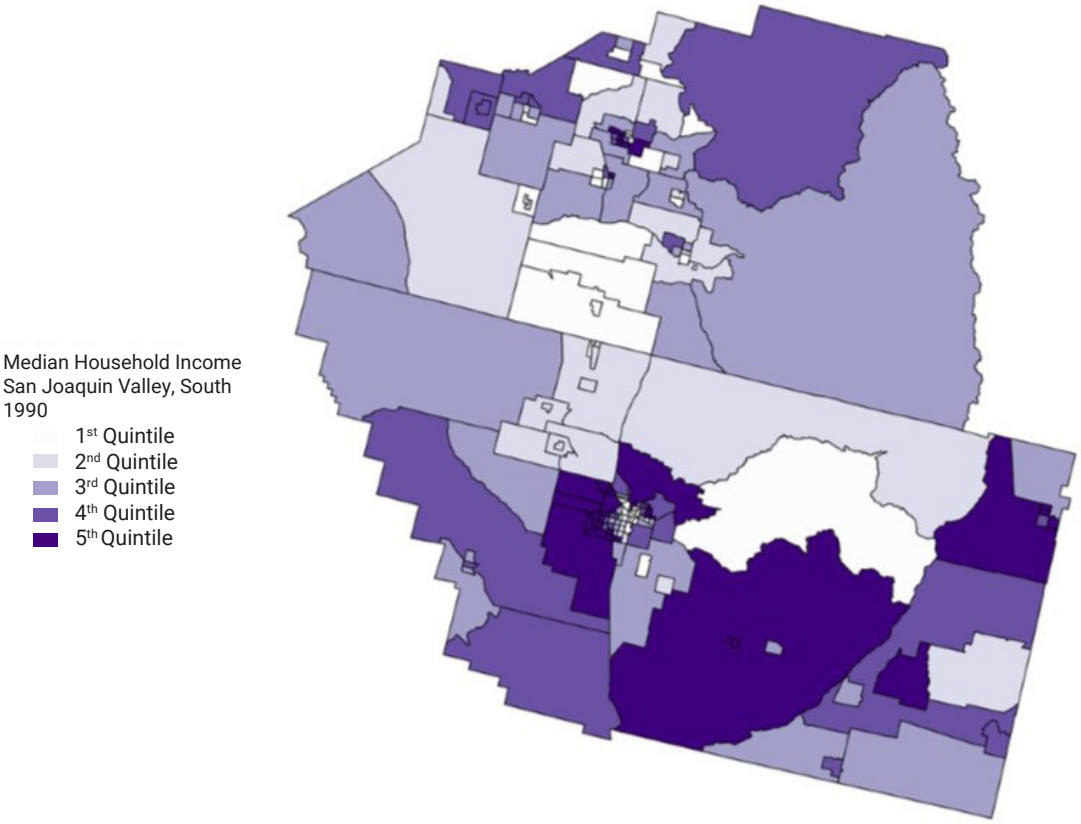

Percent Foreign-Born
San Joaquin Valley, South
2012
0.0 – 5.0
5.0 – 10.0
10.0 – 15.0
15.0 – 20.0
20.0 – 25.0
25.0 – 30.0
30.0 – 35.0
35.0 – 40.0
40.0 – 45.0
45.0 – 50.0
50.0 – 55.0
55.0 – 60.0
60.0 – 64.3

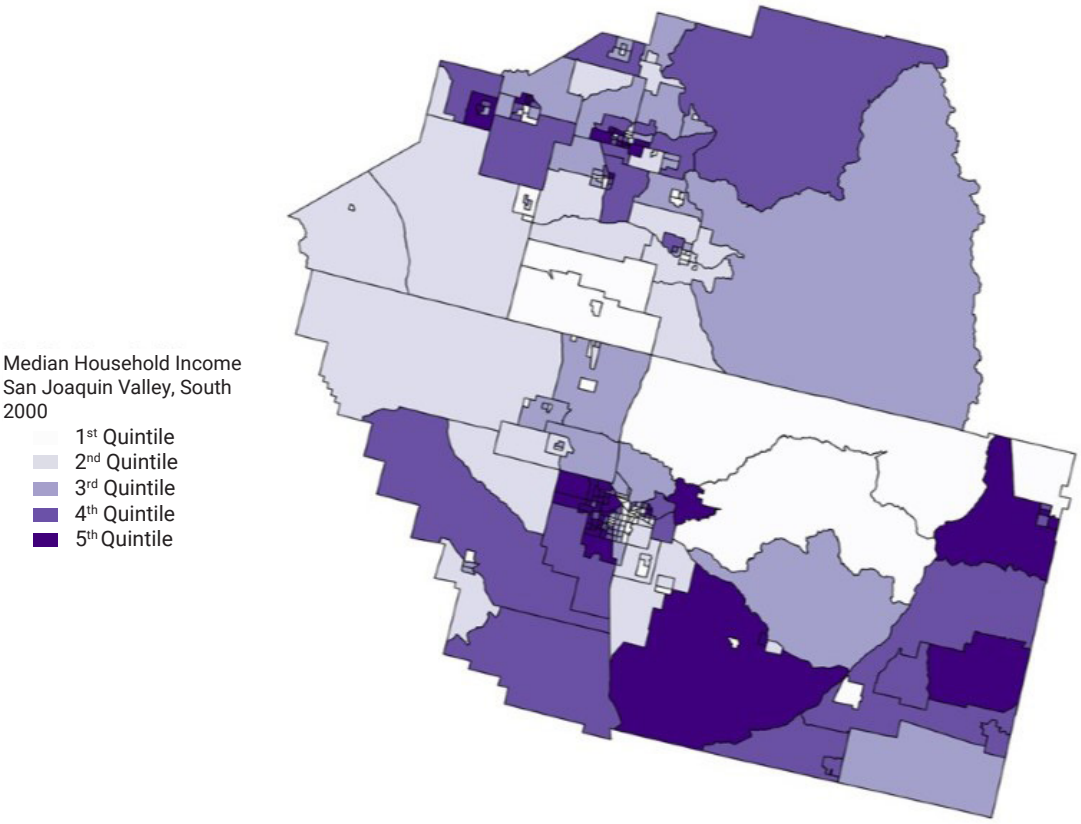

Percent Foreign-Born
San Joaquin Valley, South
2017
0.0 – 5.0
5.0 – 10.0
10.0 – 15.0
15.0 – 20.0
20.0 – 25.0
25.0 – 30.0
30.0 – 35.0
35.0 – 40.0
40.0 – 45.0
45.0 – 50.0
50.0 – 55.0
55.0 – 60.0
60.0 – 64.3

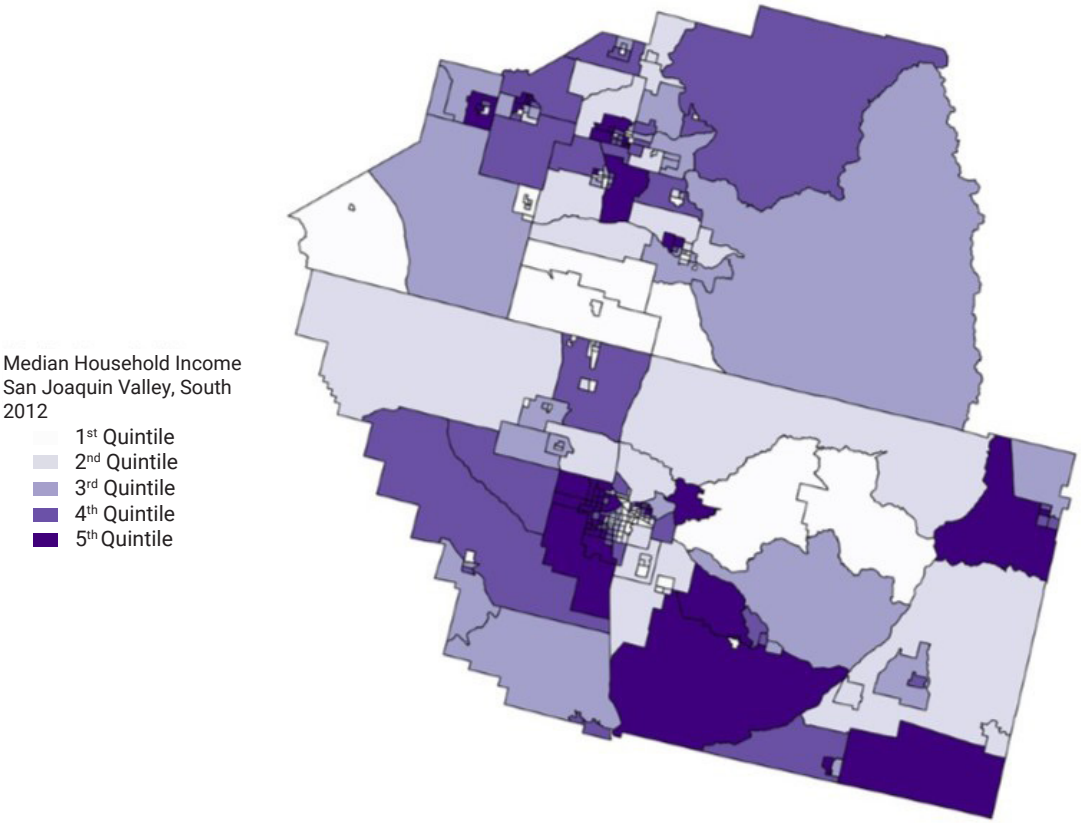

Percent (Non-Hispanic) White
San Joaquin Valley, South
1990
0 – 20
20 – 40
40 – 60
60 – 80
80 – 100

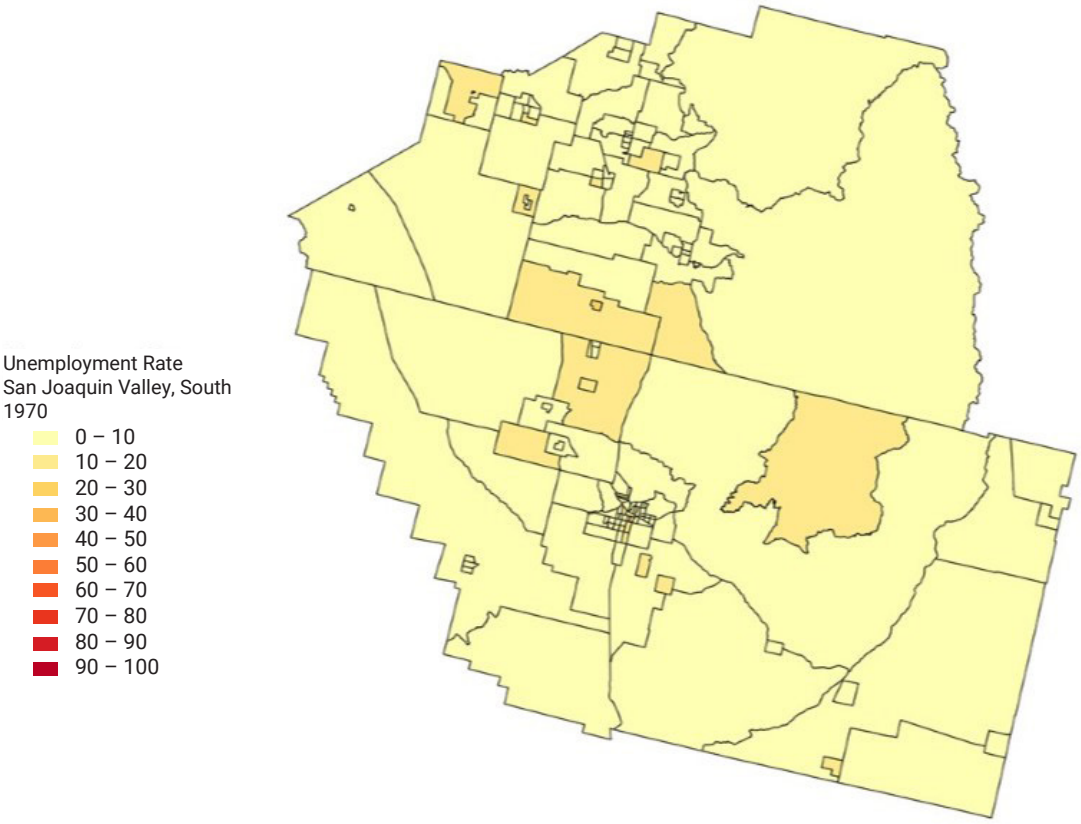

Percent (Non-Hispanic) White
San Joaquin Valley, South
2000
0 – 20
20 – 40
40 – 60
60 – 80
80 – 100

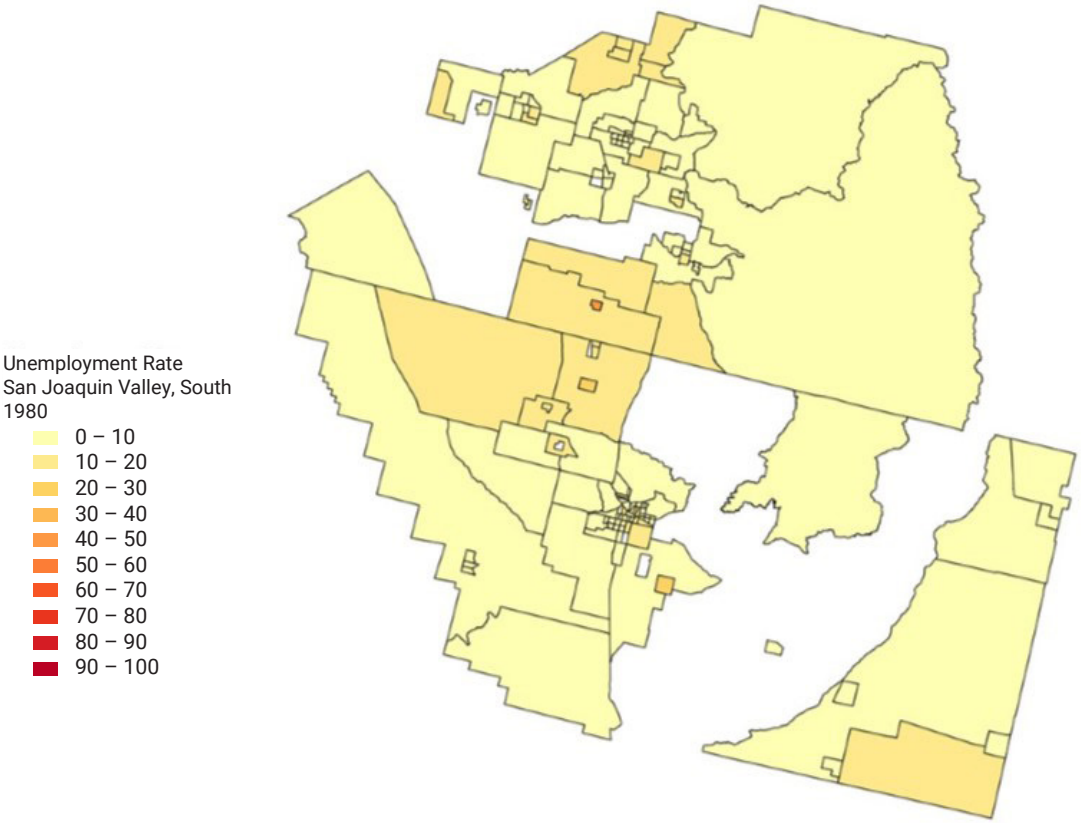

Percent (Non-Hispanic) White
San Joaquin Valley, South
2010
0 – 20
20 – 40
40 – 60
60 – 80
80 – 100

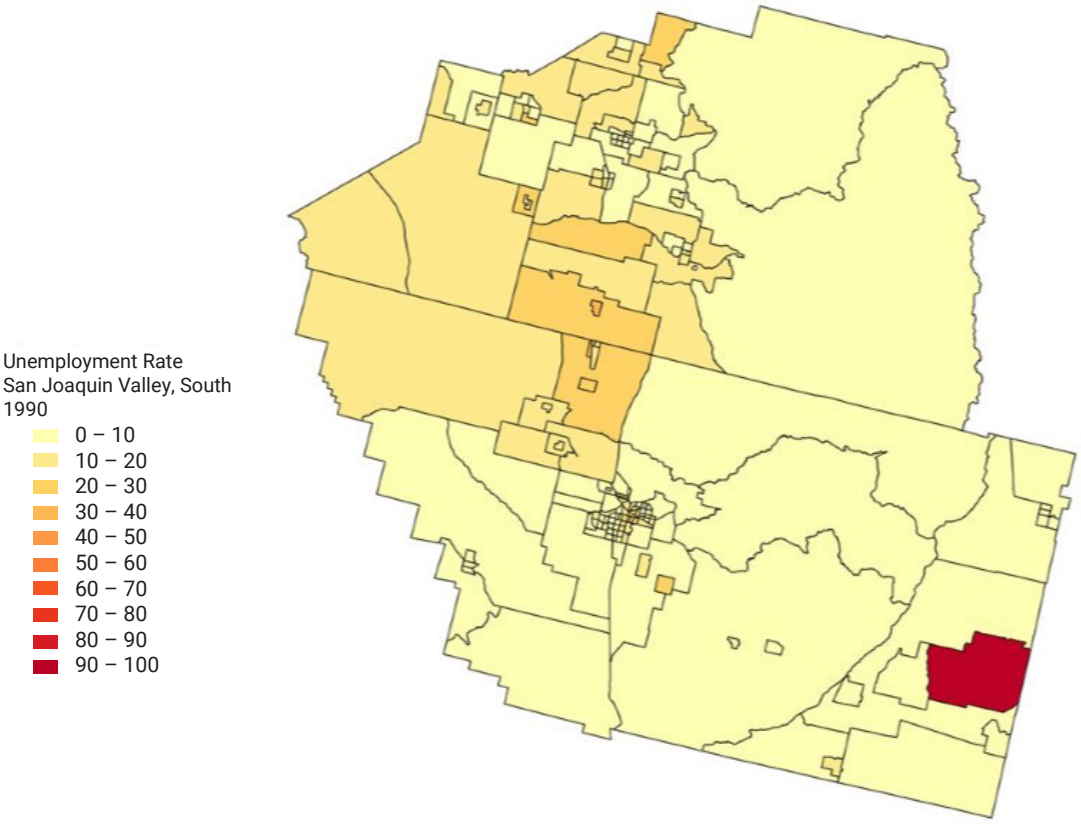

Median Household Income
San Joaquin Valley, South
1990
1st Quintile
2nd Quintile
3rd Quintile
4th Quintile
5th Quintile

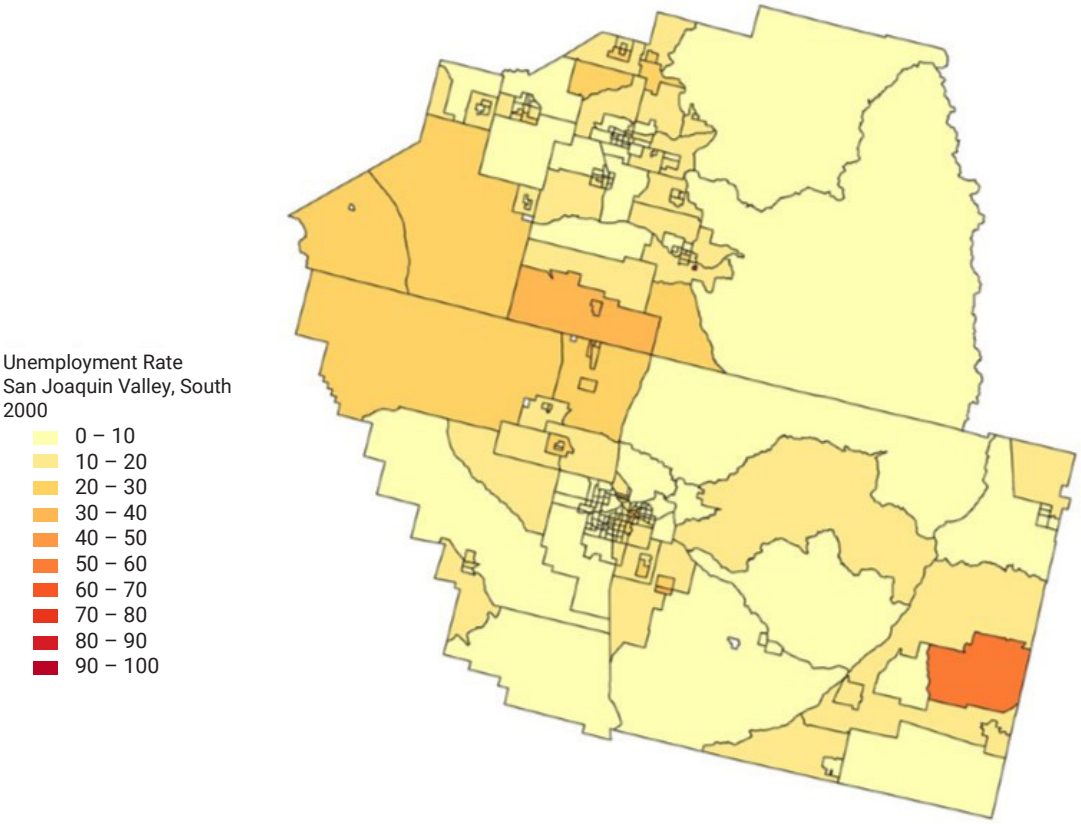

Median Household Income
San Joaquin Valley, South
2000
1st Quintile
2nd Quintile
3rd Quintile
4th Quintile
5th Quintile

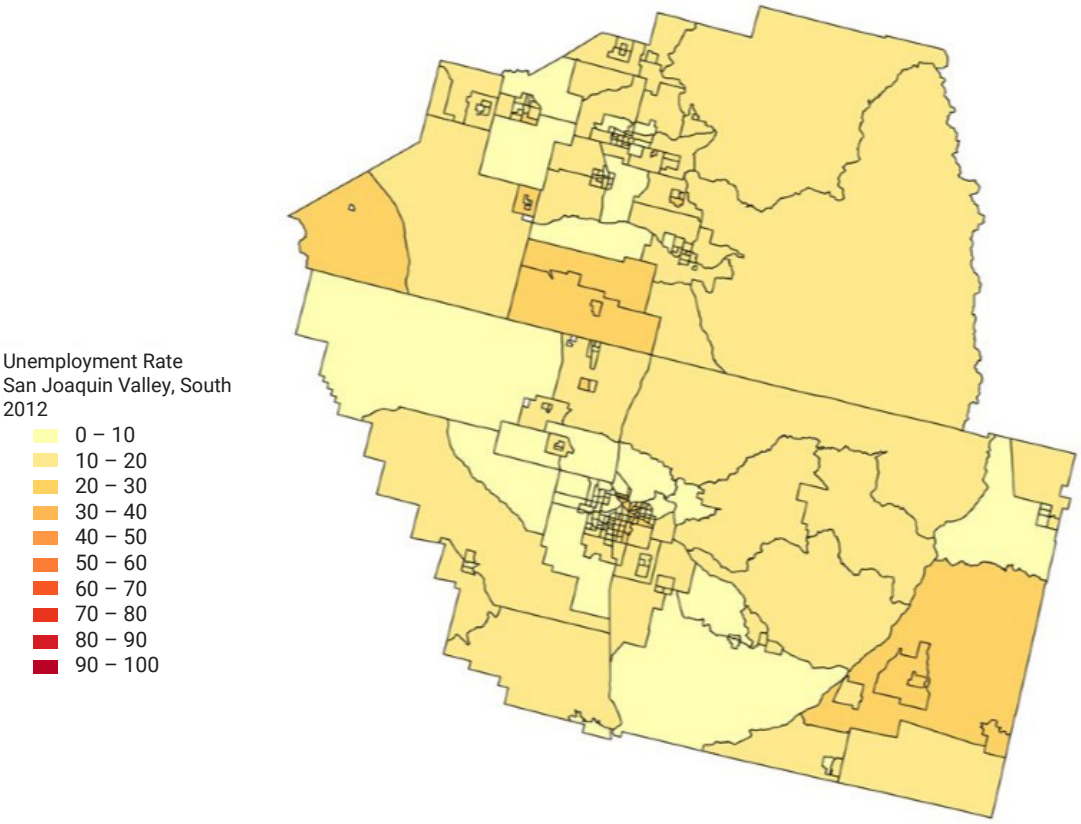

Median Household Income
San Joaquin Valley, South
2012
1st Quintile
2nd Quintile
3rd Quintile
4th Quintile
5th Quintile

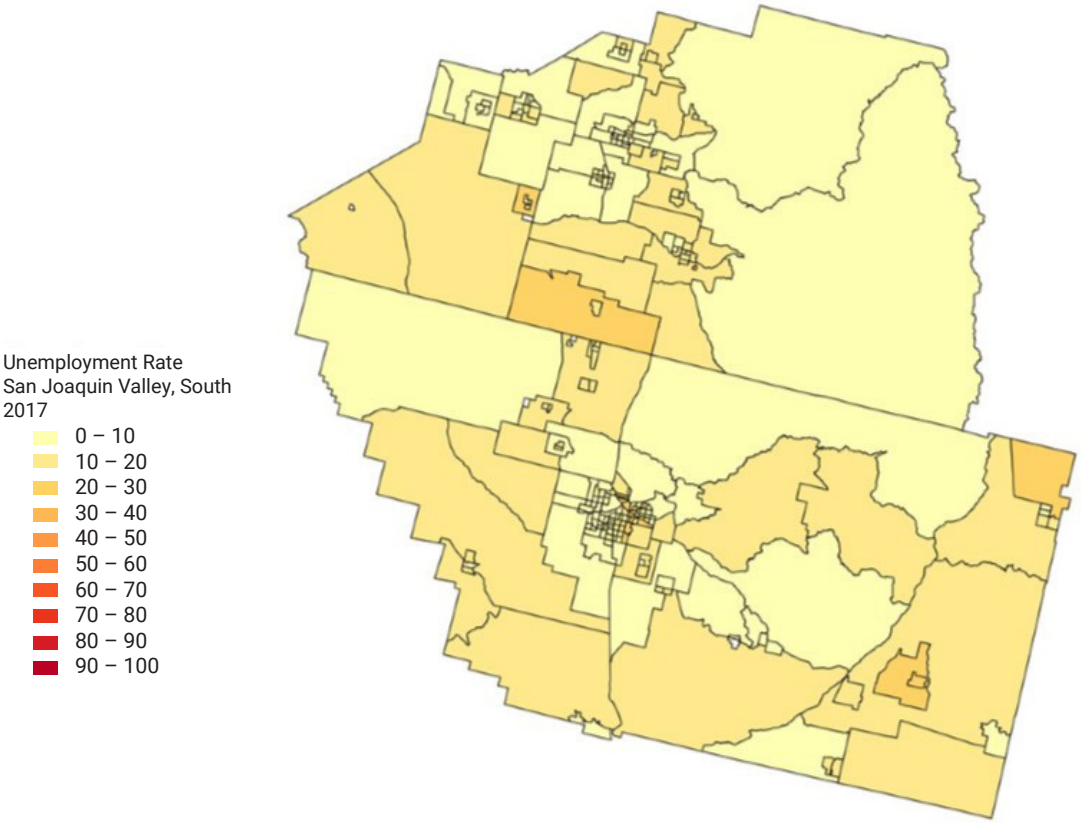

Unemployment Rate
San Joaquin Valley, South
1970
0 – 10
10 – 20
20 – 30
30 – 40
40 – 50
50 – 60
60 – 70
70 – 80
80 – 90
90 – 100

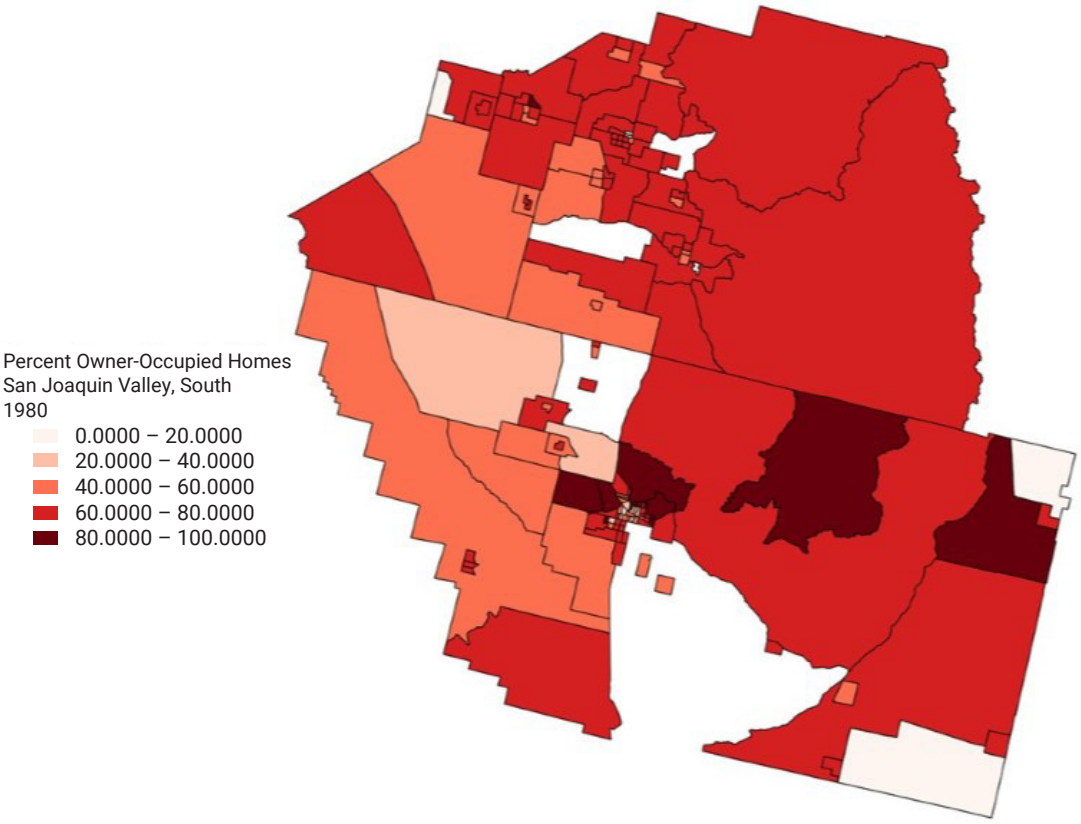

Unemployment Rate
San Joaquin Valley, South
1980
0 – 10
10 – 20
20 – 30
30 – 40
40 – 50
50 – 60
60 – 70
70 – 80
80 – 90
90 – 100

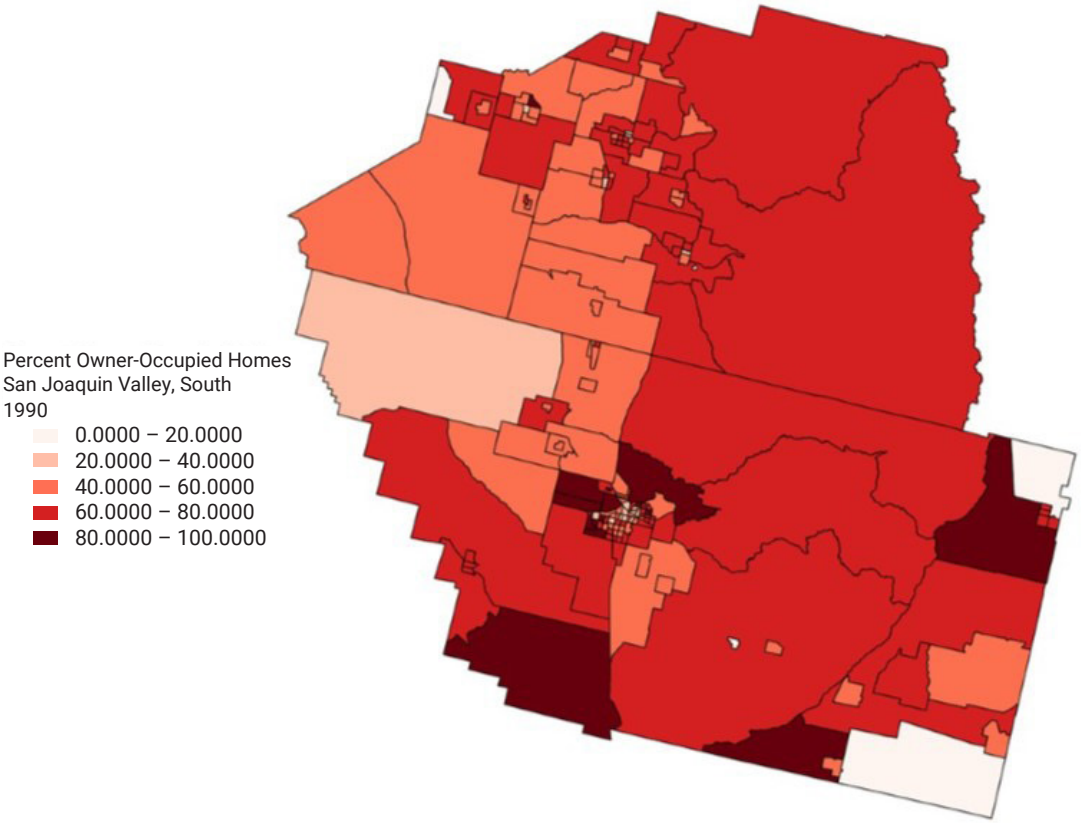

Unemployment Rate
San Joaquin Valley, South
1990
0 – 10
10 – 20
20 – 30
30 – 40
40 – 50
50 – 60
60 – 70
70 – 80
80 – 90
90 – 100

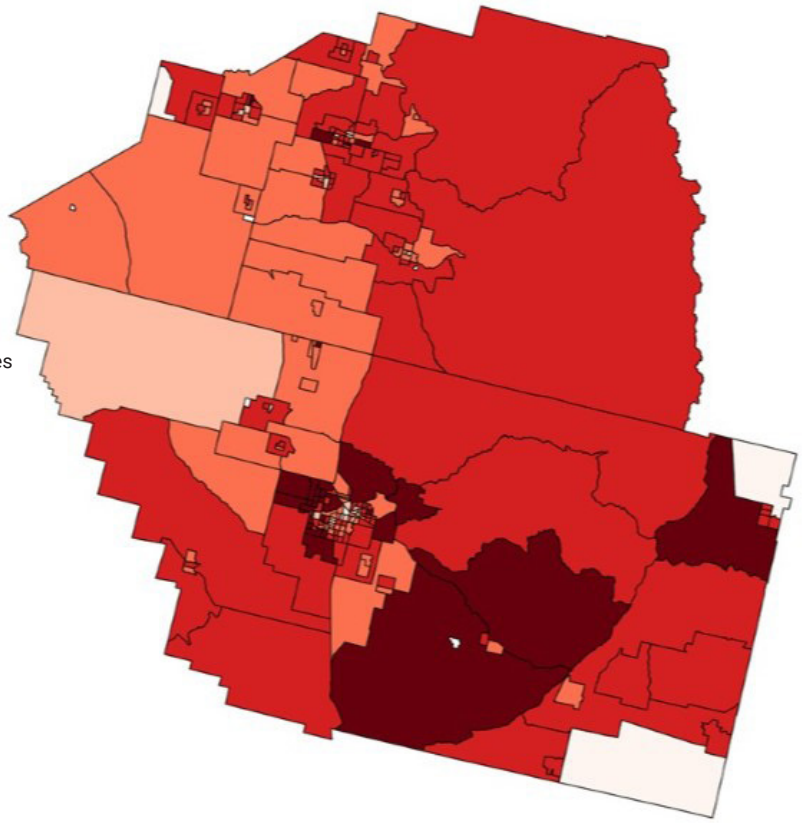

Unemployment Rate
San Joaquin Valley, South
2000
0 – 10
10 – 20
20 – 30
30 – 40
40 – 50
50 – 60
60 – 70
70 – 80
80 – 90
90 – 100


Unemployment Rate
San Joaquin Valley, South
2012
0 – 10
10 – 20
20 – 30
30 – 40
40 – 50
50 – 60
60 – 70
70 – 80
80 – 90
90 – 100


Unemployment Rate
San Joaquin Valley, South
2017
0 – 10
10 – 20
20 – 30
30 – 40
40 – 50
50 – 60
60 – 70
70 – 80
80 – 90
90 – 100

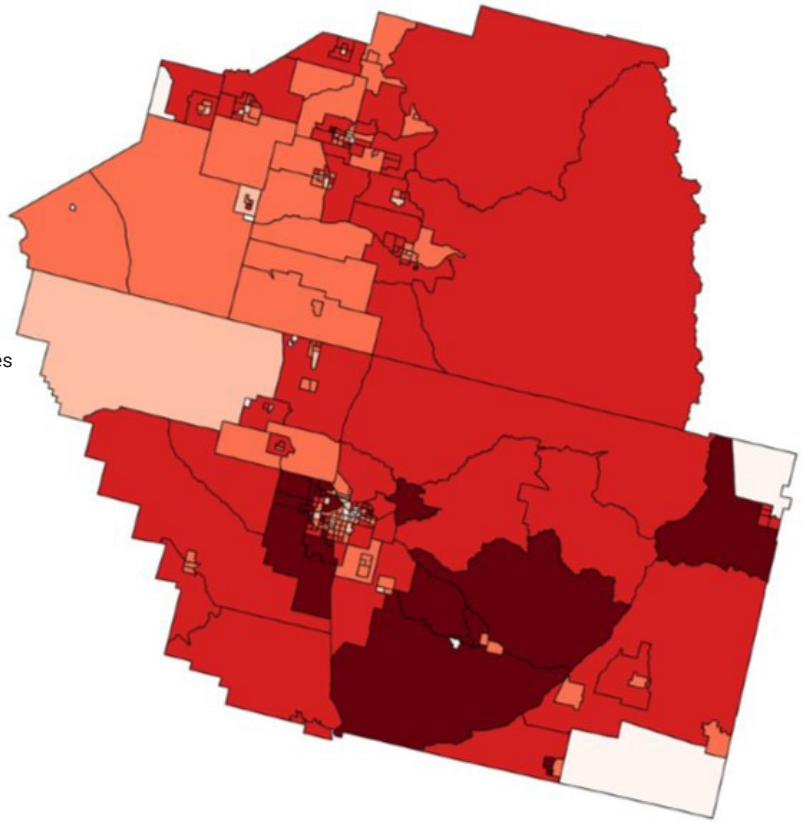

Percent Owner-Occupied Homes
San Joaquin Valley, South
1980
0.0000 – 20.0000
20.0000 – 40.0000
40.0000 – 60.0000
60.0000 – 80.0000
80.0000 – 100.0000


Percent Owner-Occupied Homes
San Joaquin Valley, South
1990
0.0000 – 20.0000
20.0000 – 40.0000
40.0000 – 60.0000
60.0000 – 80.0000
80.0000 – 100.0000



Percent Owner-Occupied Homes
San Joaquin Valley, South
2000

0.0000 – 20.0000
20.0000 – 40.0000
40.0000 – 60.0000
60.0000 – 80.0000
80.0000 – 100.0000



Percent Owner-Occupied Homes
San Joaquin Valley, South
2010

0.0000 – 20.0000
20.0000 – 40.0000
40.0000 – 60.0000
60.0000 – 80.0000
80.0000 – 100.0000

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FRESNO STATE

California Water Institute

2703 E Barstow Ave, MS JC133 • Fresno, Ca 93740
559.278.7001 • www.californiawater.org