



RESEARCH REPORT

Preschool Participation for Low-Income Children and Low-Income Children of Immigrants in Silicon Valley

Part I, A Demographic Profile

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Executive Summary

Many policymakers across the country have prioritized improving access to and participation in high-quality early care and education programs, particularly for low-income children. Despite the wide body of evidence demonstrating the benefits of early care and education for low income children, they are much less likely to be enrolled in preschool than other children. Silicon Valley, which includes San Mateo and Santa Clara Counties, has higher preschool enrollment than the rest of the United States. Yet, the area's disparity in preschool enrollment between low-income children—those living in families with incomes below 200 percent of the federal poverty level—and higher-income children is substantial. Specifically, only one-quarter (26 percent) of low-income 3-year-olds in Silicon Valley are enrolled in preschool programs, compared with more than half (52 percent) of higher-income 3-year-olds. And while the disparity is smaller among 4-year olds, only three-fifths (61 percent) of low-income children in this age group are enrolled, compared with three-quarters (74 percent) of higher-income 4-year-olds. Generally, enrollment for lower-income children is lower in Santa Clara than in San Mateo. These realities lend urgency to examining the participation patterns of children from low-income families in Silicon Valley.

This report describes the unique preschool participation patterns and demographic characteristics of low-income families in Silicon Valley. It is one of two studies conducted by the Urban Institute to examine participation in higher-quality early care and education programs among low-income children in Silicon Valley. The companion report (Greenberg, Adams, and Michie 2016) explores the barriers to early care and education low-income children of immigrants face in Santa Clara and San Mateo Counties, and identifies possible strategies to address them.

Analysis of the characteristics of low-income children in Silicon Valley finds they are disproportionately from immigrant families—in other words, they live in families with at least one parent who was born outside the United States and its territories (including naturalized citizens, legal permanent residents or green card holders, temporary H1B visa workers, and undocumented residents). Specifically, nearly three-quarters of all low-income preschool-age children in Silicon Valley are children of immigrants. As a result, the particular barriers faced by low-income children in Silicon Valley often reflect challenges specific to children from low-income immigrant families. While Silicon Valley's demographic profile is unusual in the high proportion of low-income children who are from immigrant families, it reflects national trends in two ways:

- Nationally, nearly one-third of low-income children ages 5 and younger are children of immigrants, and the proportion of children overall who are the children of immigrants is growing—almost doubling between 1990 and 2012 (rising from 13 percent to 24 percent).
- Second, the demographics of low-income children in Silicon Valley reflect another national pattern: While most low-income children of immigrants in Silicon Valley have parents from Mexico and Central America, a significant minority have parents from other countries. (Nationally, 53 percent of children of immigrants ages 5 and younger have parents from Mexico and Central America, but the remaining 47 percent come from other countries.)

Examining the patterns of and challenges to preschool participation in Silicon Valley can provide insight for the rest of the country on barriers to enrollment among low-income children, particularly low-income children of immigrants (though Silicon Valley is a unique context, as described in our companion report, Greenberg, Adams, and Michie 2016).

This report focuses on demographic characteristics that could help us identify which barriers most often prevent preschool participation. This knowledge can help inform efforts to support participation in early education. For example, our analysis finds that in Silicon Valley, many low-income children face barriers particular to immigrants:

- While almost all low-income preschool-age children in Silicon Valley are citizens, about half have parents who are not citizens. Most early education programs in Silicon Valley are available to families regardless of parents' documentation status. Yet, parents who do not have legal documents to be in the United States may fear interacting with public agencies and may have more difficulty meeting income documentation and other paperwork requirements. Even those who are here legally may not understand how to engage in services or what services exist.
- Another key barrier is limited English proficiency (LEP). Sixty percent of low-income children living in Silicon Valley counties have at least one LEP parent. Most LEP parents speak Spanish, but a significant minority speak other languages.

However, our analysis reveals that there are other relevant factors that may be important for access to early childhood care and education for these low-income children. For example:

- Most low-income children live in two-parent households; this statistic is driven by children of immigrants, who are more likely to live in two-parent households than children of native-born parents.

- Most low-income children have at least one parent who works, but many two-parent households only have one parent working. Again, these statistics are largely driven by children of immigrants.

These results suggest that low-income children of immigrants in Silicon Valley may be more likely to have a parent at home to care for them—potentially reducing the need to use early education for child care. Thus, Silicon Valley providers might focus on ensuring parents understand the importance of early education to development.

Finally, we examine the geographic distribution of preschool enrollment, focusing on census tracts with the lowest preschool participation. Our key findings include the following:

- The share of 3- and 4-year-olds enrolled in preschool varies widely in different geographical areas within Silicon Valley. Unsurprisingly, the areas with the lowest preschool enrollment are often those with the most poverty.
- Census tracts with the lowest preschool enrollment in Silicon Valley also tend to have a higher concentration of individuals with limited English proficiency.
- Across low-enrollment tracts in Silicon Valley, the languages LEP individuals speak vary tremendously. Some tracts with high concentrations of LEP individuals and low preschool enrollment have a high concentration of Spanish-speaking residents, while others exhibit a diverse array of languages spoken.
- Low-enrollment census tracts also have fewer child care and early education programs overall, as well as fewer early care and education programs that meet quality standards higher than basic licensing. This suggests that geographically convenient supply may also affect enrollment.

In conclusion, this report suggests that efforts in Silicon Valley to support preschool enrollment for low-income children should include a focus on immigrant families, recognizing the unique challenges they face. These challenges, and possible strategies to help immigrant families overcome barriers to participation, are examined in the companion report (Greenberg, Adams, and Michie 2016).

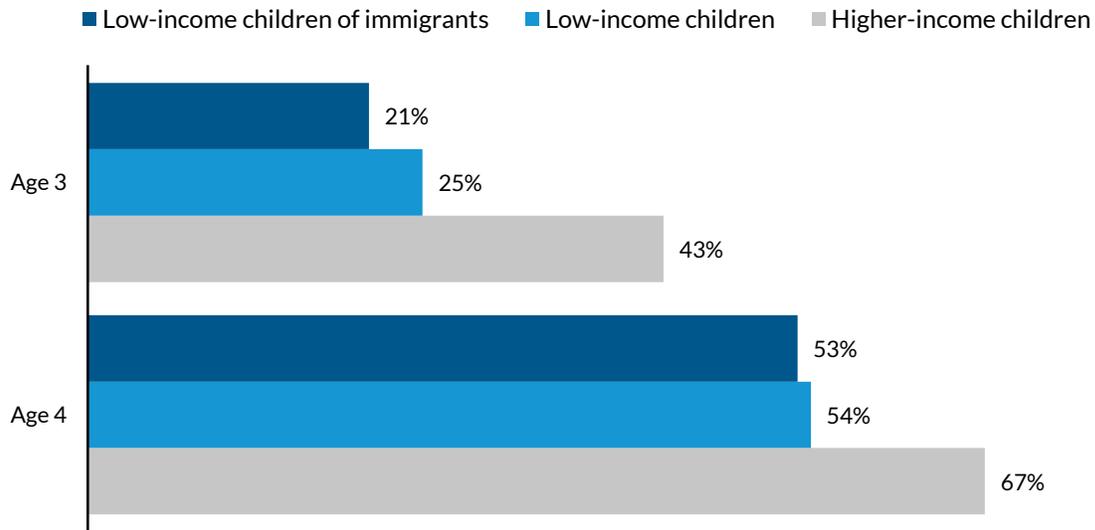
Introduction

Ensuring that young children obtain the strong early learning experiences they need to succeed in school has become a priority for policymakers across the country. Much of this concern focuses on making sure that children who face greater challenges to school success are able to access quality early care and education programs that can give them a strong start. There has been particular interest in helping low-income children attend early education programs and addressing barriers to their participation. In addition to a general concern about early education for low-income children, the participation of low-income children of immigrants has received increasing attention. This focus stems from two important facts about children of immigrants. First, they make up a substantial minority of low-income children—almost one-third have at least one immigrant parent—and they are a growing share of all children in the United States.¹ Second, immigrant children and families can face particular risk factors associated with school challenges; specifically, children of immigrants are more likely to be low income, to have parents with low educational attainment, and to have parents with limited English proficiency.² (This report defines children of immigrants as those with at least one parent who was born outside the United States and its territories, including naturalized citizens, legal permanent residents or green card holders, temporary H1B visa workers, and undocumented residents.)

A broad body of research shows the benefits of high-quality early education for low-income children (Shonkoff and Phillips 2000; Yoshikawa et al. 2013), and a growing body of work suggests that children of immigrants may particularly benefit (Crosnoe 2007; Currie and Thomas 1999; Loeb et al. 2007; Magnuson, Lahaie, and Waldfogel 2006). Despite these facts, however, low-income children, particularly low-income children of immigrants, are less likely to participate in early education than their higher-income peers (figure 1). Specifically, in the United States, 43 percent and 67 percent of higher-income 3- and 4-year-olds, respectively, are enrolled in early education programs. This compares with 25 percent and 54 percent of low-income 3- and 4-year-olds, and 21 percent and 53 percent of 3- and 4-year-olds from low-income immigrant families.³

FIGURE 1

Preschool Enrollment of 3- and 4-Year-Olds in the United States by Income (percent)



Source: US Census Bureau, American Community Survey, 2008–12.

These facts highlight the importance of identifying barriers that can limit preschool participation for low-income children, particularly low-income children of immigrants, as well as the importance of identifying strategies and solutions.

Research suggests several reasons low-income families enroll in preschool less often. Some are common across low-income families, regardless of their immigrant status. These include an inadequate supply of care, high cost, inconvenient locations, mismatching schedules, lack of information, and transportation barriers. However, evidence shows that immigrant families can face additional challenges, such as language barriers and fear of or unfamiliarity with government institutions (Adams and McDaniel 2012a; Gelatt, Adams, and Huerta 2014). In the past, lower preschool enrollment for immigrant families was thought to be related to immigrant parents' preference for family care. However, recent research (including the companion report Greenberg, Adams, and Michie 2016) suggests these patterns are related to other factors (Hernandez, Denton, and Macartney 2011; Karoly and Gonzalez 2011; Valencia, Pérez, and Echeveste and Tomás Rivera Policy Institute 2006; Zucker, Howes, and Garza-Mourino 2007).

Yet research also suggests that these issues can play out differently in different communities, for families with different characteristics, and for different immigrant subgroups (see, for example, Adams and McDaniel 2012a). As a result, efforts to support low-income families' participation will likely be

more effective if they are based on a careful needs assessment examining local participation patterns and if they take into account which barriers are at play for which populations. This information will ensure that efforts to improve participation are designed appropriately.

This report is one of two studies conducted by the Urban Institute to explore participation patterns and barriers to preschool participation for low-income children in Silicon Valley. It examines demographic characteristics for children of low-income families, focusing on characteristics that could inform efforts to improve preschool participation. Specifically, as detailed later in this report, we find that 70 to 76 percent of the low-income children ages 5 and younger in Silicon Valley are children of immigrants. As a result, this analysis suggests, any effort to support preschool enrollment among these low-income children in Silicon Valley should focus on low-income *immigrant* families. The lessons from Silicon Valley can provide insight for many other communities where children of immigrants make up a growing share of low-income children.

In this report, we analyze American Community Survey (ACS) data from 2008 to 2012 to describe the early education participation patterns of low-income children and low-income children of immigrants in San Mateo and Santa Clara Counties. We examine selected parent and family characteristics that may affect participation, how patterns may differ by subgroup, and where these families live compared with where early childhood programs are located. The companion report to this study (Greenberg, Adams, and Michie 2016) focuses on barriers to preschool enrollment and participation faced by low-income immigrant families in these counties. It is based on findings from interviews conducted with local stakeholders and experts about these challenges and identifies possible strategies to address them. Together, these reports shed light on preschool enrollment for low-income families, particularly low-income immigrant families, in Silicon Valley. The findings are, however, relevant for many communities facing rapid demographic change.

Understanding the Data and Definitions of Terms

Our analysis uses ACS data from 2008 to 2012 to explore the characteristics of low-income and immigrant children ages 5 and younger in San Mateo and Santa Clara Counties. The ACS is the largest survey in the United States that captures detailed information on US residents' country of birth, language spoken at home, preschool enrollment, and English-speaking ability. See appendix A for more detail about the data. See box 1 for definitions of some key terms used in this report.

BOX 1

Definitions

- **Census tracts:** “Small, relatively permanent statistical subdivisions of a county or equivalent entity.”^a Census tracts are areas with similarly sized populations of between 1,200 and 8,000. Therefore, census tracts in densely populated areas are geographically small, and those in sparsely populated areas are large.
- **Child of immigrants:** A child with at least one immigrant parent in the household.
- **Child of native-born parents:** A child with only native-born parents in the household.
- **Citizen:** A person who is native born or a naturalized US citizen.
- **Enrolled in preschool:** When parents respond to the ACS that their child is enrolled in “nursery school/preschool, kindergarten, or grade school.”
- **Higher-quality early care and education:** A program meeting standards higher than state licensing, such as Head Start, state prekindergarten, contracted centers, programs enrolled in the Quality Rating and Improvement System, or programs accredited by the National Association for the Education of Young Children.
- **Immigrant:** Persons born outside the United States and its territories, including naturalized citizens, legal permanent residents (green card holders), temporary workers (H1B visa holders), and undocumented residents.
- **LEP (limited English proficient):** Those who respond to the ACS that they speak a language other than English at home and that they speak English less than “very well.”
- **Linguistically isolated:** Households in which all persons ages 14 or older are LEP.
- **Low income:** Families with income below 200 percent of the federal poverty level (this was income below \$47,100 for a family of four in 2013).
- **Native born:** Born in the United States and its territories, including Puerto Rico, or born abroad to US citizens.
- **Noncitizen:** A person who is foreign born and not a naturalized citizen, including temporary workers with an H1B visa, legal permanent residents, and undocumented residents.

a. “American Community Survey: Geographic Areas—Definitions (for Custom Tabs Request),” US Census Bureau, June 23, 2015, http://www.census.gov/acs/www/data_documentation/custom_tabulation_request_form/geo_def.php.

Findings

This report uses the ACS to explore the early childhood participation patterns of preschool-age children from low-income families in Silicon Valley. The findings are presented in four sections:

- some unique characteristics of San Mateo and Santa Clara Counties and their immigrant populations that help provide context;
- preschool enrollment patterns and selected characteristics of low-income children and their families in these counties, focusing on characteristics that may provide insights into barriers or outreach strategies;
- information about where unenrolled children live within these counties, and the locations of child care and early education options; and
- a concluding discussion of key lessons and implications from these data.

Understanding the Unique Nature of San Mateo and Santa Clara Counties

San Mateo and Santa Clara Counties make up the lion's share of Silicon Valley, an area known across the world for its concentration of high-skilled tech workers and wealth. When considering early education enrollment of low-income children in the two counties, it is useful to first understand some unusual characteristic of the area. These include the counties' sizes, unusually high costs of living, and sizeable immigrant populations.

- **Both counties are large.** Both San Mateo and Santa Clara Counties, located in northern California, are quite large in population and geographic area. San Mateo County has more than 700,000 residents—an estimated 56,000 of them children ages 5 and younger, 13,000 of whom live in low-income families. It spans 448 square miles.⁴ Santa Clara County, which includes the metro area of San Jose, has almost 1.8 million residents—an estimated 152,000 of them children ages 5 and younger, 38,000 of whom live in low-income families. It spans 1,290 square miles.⁵ Together, the two counties are bigger than the state of Rhode Island, and have more than 50,000 low-income children ages 5 and younger.

- **Both counties have unusually high costs of living.** The cost of living in San Mateo and Santa Clara Counties is more than twice the national average and about 50 percent higher than the California average, according to some estimates. This is largely driven by the high cost of housing, which is more than four times higher than the US average. In addition, families in San Mateo and Santa Clara Counties have higher incomes than the US average.

In this report we define *low income* as family income below 200 percent of the federal poverty level, which is roughly \$47,100 per year for a family of four in 2013. Approximately a quarter of children ages 5 and younger in San Mateo and Santa Clara Counties lived in families that had incomes below this level.⁶ However, owing to the high cost of living, 200 percent of the federal poverty level is well below a living wage in Silicon Valley. One study estimates a living wage for a family of four in San Mateo and Santa Clara Counties as \$86,676 and \$82,153 a year, respectively, about twice as much as our low-income threshold.⁷

High cost of living affects whether low-income families are able to get public benefits. Many federal benefit programs set income eligibility at the same level across the country, regardless of variation in the cost of living; for example, Early Head Start and Head Start require that families have incomes at or below 130 percent of the federal poverty level (i.e., \$30,615 a year for a family of four in 2013). Thus, families in Silicon Valley can have incomes just above eligibility levels for federal programs, yet have a harder time making ends meet than families in counties with lower costs of living. Similar problems exist with state-funded programs, such as California State Preschool, that require families to have incomes below 70 percent of the state median (i.e., less than \$46,896 a year for a family of four in 2012); again, families at this income level in Silicon Valley have a harder time making ends meet than do families earning the same amount in other parts of the state.

- **Both counties have high proportions of immigrants, including a disproportionate share of high-skilled immigrants.** The immigrant population in Silicon Valley is unusual in two ways:
 - » Silicon Valley has an unusually high proportion of immigrants. About one-third of the populations in San Mateo County (34 percent) and Santa Clara County (37 percent) are immigrants, compared with 27 percent in California and 13 percent in the United States.⁸
 - » Silicon Valley also has disproportionately high shares of high-skilled immigrants and higher-income immigrants. In the United States, 27 percent of immigrants have at least a college degree; in San Mateo and Santa Clara Counties 44 percent of immigrants have at least a college degree. The immigrant population in these two counties is, thus, a combination of high-income immigrants, most of whom were likely attracted by the tech industry, and low-income immigrants.

What Do We Know about Preschool Enrollment, Immigrant Status, and Family Characteristics for Low-Income Children in Silicon Valley?

This section examines what we know about preschool enrollment patterns among low-income children in Silicon Valley and provides information about child and family characteristics that can help us understand barriers to preschool enrollment and inform outreach efforts. Our analysis suggests that low-income 3- and 4-year-old children in Silicon Valley are less likely to be enrolled in school than are children from higher-income families. We found several characteristics that could yield insights to support higher preschool enrollment.

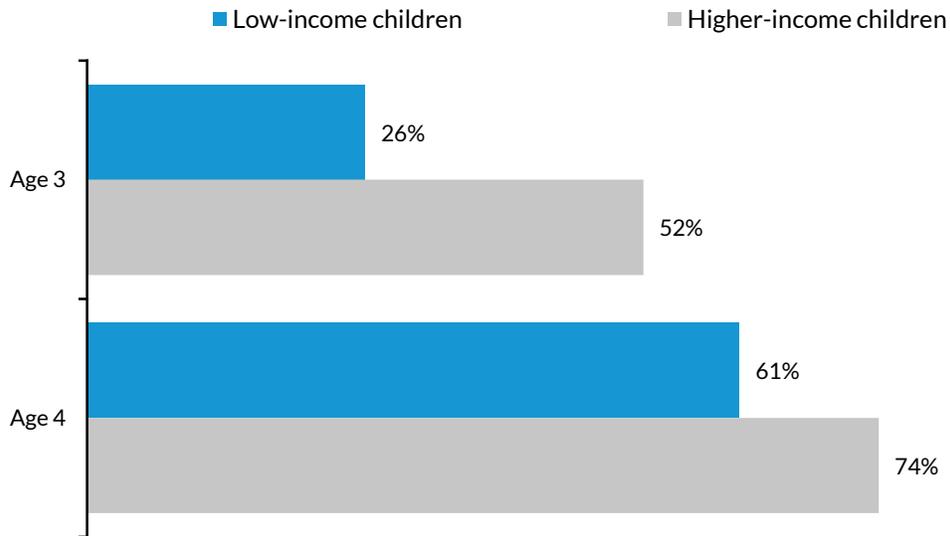
Enrollment Patterns

The first set of issues concern the extent to which children are enrolled in preschool in Silicon Valley. The ACS asks parents whether their children are enrolled in nursery school, preschool, or kindergarten. The answers suggest persistent disparities:

- **Low-income 3- and 4-year-olds in Silicon Valley are much less likely to be enrolled in preschool than are higher-income 3- and 4-year-olds, and disparities are particularly high for 3-year-olds.** More than three-quarters of 3-year-olds and about two-fifths of 4-year-old children in low-income families in Silicon Valley are not enrolled in preschool (figure 2). (Data on preschool enrollment are not available for children younger than age 3.)
 - » The enrollment disparities are greatest among 3-year-olds. At this age, low-income children are about half as likely to be enrolled in school as higher-income children—26 percent of low-income children are enrolled in school in San Mateo and Santa Clara Counties compared with 52 percent of higher-income children.
 - » While the gap closes somewhat by age 4, there is still a substantial disparity in school enrollment: 61 percent of low-income children are enrolled in school at age 4, compared with 74 percent of higher-income children.

FIGURE 2

Share of 3- and 4-Year-Olds Enrolled in Preschool in Silicon Valley by Income Level



Source: US Census Bureau, American Community Survey, 2008–12.

- **Preschool enrollment rates for low-income children are lower in Santa Clara County than in San Mateo County.** The enrollment rate for low-income 3-year-olds in Santa Clara County is 23 percent, compared with 34 percent in San Mateo County. For lower-income 4-year-olds in Santa Clara County, enrollment is 59 percent, compared with 68 percent in San Mateo County. In contrast, enrollment rates for higher-income families are similar across the two counties.
- **Enrollment rates are higher in Silicon Valley than in the rest of California and the United States.** While our findings suggest that preschool enrollment could improve in San Mateo and Santa Clara Counties, these counties have higher overall rates of preschool enrollment than California and the nation. This pattern is true for all children, regardless of household income level or immigrant status. The preschool enrollment rate for all children ages 3 to 4 in these two counties is 58 percent, compared with 50 percent in California and 48 percent nationwide.

Family and Child Characteristics That May Affect Enrollment

Several family and child characteristics may affect enrollment patterns. Below we highlight characteristics of low-income children ages 5 and younger and their families in Silicon Valley, focusing

on those that may influence enrollment or inform strategies to improve enrollment. As discussed earlier, immigrant status emerged as a dominant issue in this analysis.

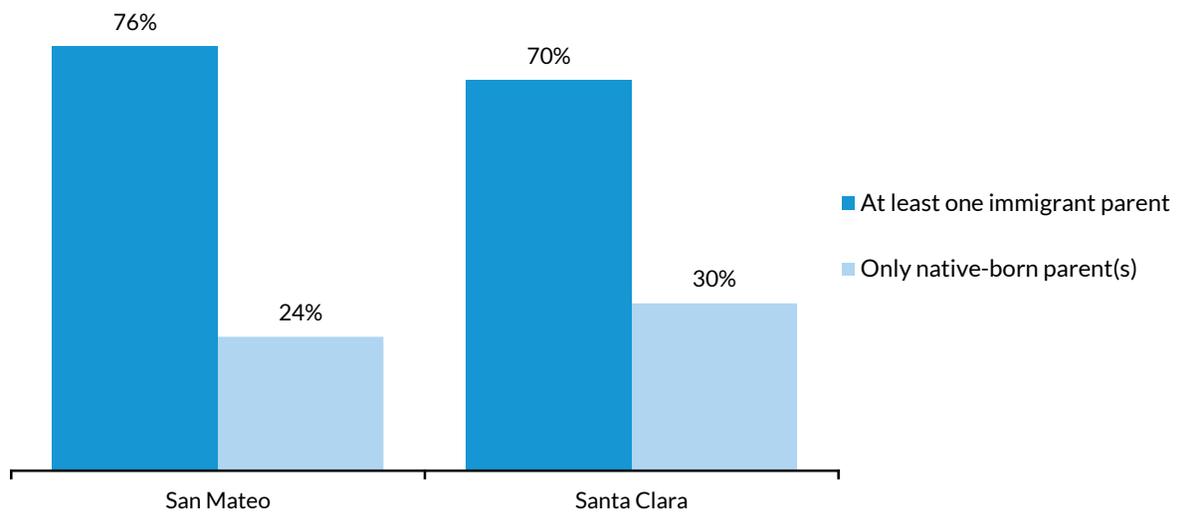
IMMIGRANT STATUS AND COUNTRY OF ORIGIN

The most powerful story emerging from our analysis is that low-income children in Silicon Valley are disproportionately from immigrant families (i.e., at least one parent was born outside the United States and its territories).

- **In San Mateo and Santa Clara Counties, children in low-income families are disproportionately children of immigrants.** Children of immigrants make up 76 percent and 70 percent of all low-income children ages 5 and younger in San Mateo County and Santa Clara County, respectively (figure 3). This is much higher than in California overall (57 percent) and the national average (30 percent). However, because of the high proportions of higher-income immigrants in Silicon Valley, many preschool-age children of immigrants in these counties are *not* low income. This suggests that support for preschool enrollment should not focus broadly on children of immigrants; instead, efforts should focus on low-income children, most of whom are children of immigrants.

FIGURE 3

Share of Children Ages 5 and Younger in Low-Income Families by County and Parents' Immigrant Status



Source: US Census Bureau, American Community Survey, 2008–12.

- **Low-income children of *native-born* parents in San Mateo and Santa Clara Counties may share characteristics with low-income children of immigrants.** Eleven percent of low-income children ages 5 and younger with native-born parents in San Mateo County and 10 percent in Santa Clara County have at least one LEP parent. This suggests that some native-born parents in low-income families may be second- or third-generation immigrants facing challenges similar to low-income immigrant parents.
- **While most low-income children in Silicon Valley are US citizens, many have noncitizen parents.** Ninety-seven percent of low-income children in San Mateo and Santa Clara Counties are themselves native-born US citizens. However, almost half (47 percent) have noncitizen parents who may not have legal status to reside in the United States. Most low-income children of immigrants will be legally eligible for programs and services; however, their noncitizen parents may find accessing public services and institutions more challenging. While most early education programs in Silicon Valley are available to children regardless of their parents' documentation status, parents who do not have legal documents to be in the United States may fear interacting with public agencies. Further, even parents who are legal residents may not understand how to engage in services or what services exist; they may also be concerned about interacting with public agencies if some family members are undocumented (Fix 2007; Gelatt and Koball 2014; Matthews and Jang 2007).
- **Low-income children in Silicon Valley tend to have parents from Mexico or Central America, though a significant minority have parents from other countries.** Fifty-eight percent of low-income children in San Mateo County and 48 percent of low-income children in Santa Clara County have parents from Mexico or Central America. Another 26 percent of low-income children in San Mateo County and 32 percent in Santa Clara County have native-born parents. The remaining 16 to 20 percent of low-income children have parents from other countries, though the mix differs between the two counties (table 1). San Mateo County has more low-income children from the Philippines (4 percent). Santa Clara County has more low-income children from Vietnam (8 percent).
- **In Silicon Valley, the majority of low-income children with native-born parents are Hispanic.** In San Mateo County, 50 percent and in Santa Clara County 66 percent of low-income children with native-born parents are Hispanic. In San Mateo County, another 15 percent of low-income children with parents born in the United States are black, 8 percent are Asian, and the remaining 27 percent are white. In Santa Clara County, 13 percent of low-income children with native-born parents are black, 6 percent are Asian, and 16 percent are white.

TABLE 1

Country or Region of Origin for Parents of Low-Income Children Ages 5 and Younger in Silicon Valley by County (percent)

	San Mateo	Santa Clara
United States	25.9	31.5
Latin America		
Mexico	48.5	43.5
Central America	9.2	4.5
South America	1.3	1.0
Southeast Asia		
Vietnam	0.2	7.9
Philippines	4.1	2.2
Other Southeast Asia	1.0	0.7
East Asia and Pacific	3.6	3.3
Middle East and South Asia	3.8	2.9
Africa and West Indies	0.2	1.1
Europe, Canada, and Australia	2.3	1.5

Source: US Census Bureau, American Community Survey, 2008–12.

PARENTS’ EDUCATIONAL AND LANGUAGE BARRIERS

Parents’ educational and family language barriers are another important set of characteristics to explore for Silicon Valley:

- **A majority of the low-income children in Silicon Valley have parents with limited education.** About 58 percent of low-income children in Silicon Valley have parents with a high school diploma or less, and 33 percent have parents without a high school diploma. These proportions are even higher for low-income children from immigrant families: 67 percent have parents with a high school diploma or less, and 38 percent have parents without a high school diploma.
- **Many low-income children in Silicon Valley come from families who face language barriers.** Sixty percent of low-income children in San Mateo and Santa Clara Counties have at least one LEP parent. Across the two counties, almost half (49 percent) have *only* LEP parents. More than a third (37 percent) are linguistically isolated, which means *all* individuals in the household ages 14 or older are LEP. Language and linguistic isolation is therefore likely a major barrier for these families.
- **Though Spanish is the most common language spoken at home for low-income children with LEP parents in Silicon Valley, a significant minority of LEP families speak languages other than Spanish.** Considering the countries of origin for low-income families in Silicon Valley, it is

not surprising that most LEP parents speak Spanish at home (table 2). Specifically, 83 percent of low-income children with LEP parents in San Mateo County and 74 percent of low-income children with LEP parents in Santa Clara County have parents who speak Spanish at home. However, this also means that 17 percent of low-income children in San Mateo County and 26 percent of low-income children in Santa Clara County with LEP parents have parents who speak languages other than Spanish. Table 2 shows this group exhibits substantial diversity, with most populations being small except for the 11 percent of children living with low-income LEP parents who speak Vietnamese in Santa Clara County. In San Mateo County, children with LEP parents who do not speak Spanish primarily speak Hindi, Chinese, and Tagalog. In Santa Clara County, these parents primarily speak Vietnamese, Hindi, and Chinese.

TABLE 2

Primary Language Spoken by Limited English Proficient Parents of Low-Income Children Ages 5 and Younger in Silicon Valley by County (percent)

	San Mateo	Santa Clara
Spanish	83.1	73.5
Vietnamese	0.0	11.1
Chinese	2.1	2.3
Hindi and related	1.5	1.2
Filipino, Tagalog	1.3	1.1
Other	5.1	5.8
Missing	6.7	4.9

Source: US Census Bureau, American Community Survey, 2008–12.

FAMILY COMPOSITION AND EMPLOYMENT

The final characteristics that emerged as important are family composition and work status. Family composition, or the number of parents in the household, can shape families’ need for early education and care options. Providers must consider this need in designing parent outreach efforts. Similarly, parental work status can affect families’ eligibility for public programs that provide full-day services (Greenberg, Adams, and Michie 2016). Work status can also affect how well part-day preschool schedules match parents’ schedules.

- **Most low-income children in Silicon Valley live in two-parent households.** In Silicon Valley, 70 percent of low-income children have two parents in the household. This statistic is largely driven by the high share of children of immigrants, 82 percent of whom live with two parents. In contrast, only 42 percent of low-income children of native-born parents live with two parents.

- **While most low-income children in Silicon Valley have parents who work, many also have one parent at home full-time.** Ninety percent of low-income children in Silicon Valley live in households where at least one parent reports working. This statistic is partly driven by the high share of children of immigrants: 94 percent of low-income children of immigrants have at least one parent working, compared with 80 percent of low-income children of native-born parents. Despite the high employment rate, 53 percent of low-income children have at least one parent at home full-time. Again, this statistic is largely driven by children of immigrants: 58 percent of low-income children of immigrants have at least one parent who does not work at all, compared with 41 percent of low-income children of native-born parents. Some experts, however, suggest that estimates of work in immigrant families may be artificially low; immigrant parents may not understand that informal work would be considered work or may not want to report it.

Other factors are also relevant to understanding the needs and realities of low-income children and their parents in Silicon Valley. For example, most low-income children of immigrants live in two-parent households where one adult is working. Low-income children of immigrants may be more likely to have a parent at home who could care for them, potentially reducing the need for child care, and strengthening the need to ensure that parents understand the educational purposes of child care.

What Can We Learn from Different Communities within Silicon Valley?

Increasing participation in early care and education for low-income children is likely to require targeted outreach strategies tailored toward the particular barriers families face. Further, these strategies must be implemented effectively and appropriately for the particular realities specific communities and neighborhoods face. This final section of our report presents maps of the census tracts in San Mateo and Santa Clara Counties to demonstrate the geographic distribution of community characteristics. Specifically, the maps depict the intersection of preschool enrollment with community characteristics, including the poverty rate, the LEP rate, languages spoken, and the locations of child care centers. While only some characteristics are available at the census-tract level, the combined picture provides insight into how these issues play out geographically.

These data provide a glimpse of county patterns. However, we have a limited ability to look precisely at the population of low-income children of immigrants or the characteristics of individuals within the tracts. In box 2, we describe the limitations of these maps and these data. Despite these

limitations, these maps provide insight for those designing strategies to support preschool enrollment for immigrant families.

BOX 2

The Limitations of Examining Census Tracts

- **We cannot pinpoint where individuals live within a census tract.** Our data are presented by census tracts, geographic areas defined by the census for gathering data. Tracts generally have similar population sizes—between 1,200 and 8,000 people—and they differ in how much land they cover. Census tracts in densely populated areas are small and those in sparsely populated areas are large. However, we are unable to pinpoint where individuals live within the census tracts. A large, sparsely populated census tract may have a small town in one corner, but that would not be evident from the map.
- **The characteristics available by census tract are limited.** Because census tracts are small in population, the Census Bureau does not release information on detailed subgroups at the tract level, to protect respondents' identities. This limits what we can observe. For example, we can tell which census tracts have high shares of unenrolled children but not which have high shares of unenrolled low-income children or unenrolled children of immigrants.
- **Information is only available for the overall census tract.** We can only provide information for the whole census tract, meaning that disparate areas within it would not be evident. For example, a census tract may show up as higher income but include a substantial lower-income neighborhood.

Cross-County Patterns

The maps in appendix B provide an overview of Silicon Valley. The maps show where enrollment challenges are greatest. Many San Mateo and Santa Clara County census tracts with the lowest preschool enrollment rates also have high poverty rates and high levels of LEP residents. Our analyses suggest that fewer child care centers, and even fewer higher-quality early education programs, are located in or near many census tracts with low enrollment. A lack of nearby programs could be worth exploring to understand why children in low-income families enroll less often in early education programs.

PRESCHOOL ENROLLMENT AND POVERTY

Census tracts do not provide enrollment data specifically for children in low-income families. Figures B.1 and B.2 thus identify census tracts with the lowest preschool enrollment rates for *all* 3- and 4-year-olds and census tracts high in poverty. (We identify high-poverty tracts as those falling within the highest 20 percent of poverty rates in the county.) These maps show that both San Mateo and Santa Clara Counties exhibit significant overlap between the census tracts with the lowest preschool enrollment and those with highest poverty rates, suggesting that high-poverty areas may well have significant proportions of low-income children who are not enrolled. Specifically, in San Mateo County, the areas with the lowest school enrollment rates for all 3- and 4-year-olds (not solely immigrant or low-income children) are in the northwest and northeast part of the county. In Santa Clara County, most neighborhoods with the lowest school enrollment rates for all 3- and 4-year-olds are in the center of San Jose, with some in the south near Gilroy and some in the north.

LEP STATUS IN LOW-ENROLLMENT CENSUS TRACTS

Figures B.3 and B.4 identify the subset of census tracts with particularly low preschool enrollment numbers—where more than 40 percent of 3- and 4-year-olds are not enrolled in preschool—and examines whether they also have high shares of LEP individuals. These maps illustrate that many census tracts with low preschool enrollment have high shares of LEP individuals, especially in San Jose, Daly City, and Redwood City. Our focus on this subset of tracts does not suggest that no unenrolled low-income children live in communities that are not highlighted. This map simply depicts communities with the lowest participation rates.

LANGUAGE IN LOW-ENROLLMENT CENSUS TRACTS

Figures B.5 and B.6 use the same subset of low-enrollment census tracts and show the variation in languages spoken by LEP individuals. These maps show significant variation across census tracts in the languages spoken. In both San Mateo and Santa Clara Counties, low-enrollment tracts contain high shares of LEP adults who speak Spanish. However, quite a few low-enrollment tracts contain LEP adults who speak other languages. For example, figure B.5 shows that the areas in northeast San Mateo County with low enrollment rates (Redwood City, East Palo Alto, and Burlingame) have high numbers of Spanish-speaking LEP adults. Areas in northwest San Mateo County with low enrollment rates (Daly City, San Bruno, and South San Francisco) have high shares of Spanish-speaking LEP individuals but also have many Asian-language and Indo-European-language speakers. In Santa Clara County (figure B.6), low-enrollment census tracts also have large shares of LEP individuals who speak Spanish, Asian

languages, and Indo-European languages. Unlike San Mateo County, however, they are generally intermixed in the same areas.

CHILD CARE CENTERS AND PRESCHOOL ENROLLMENT

The final set of maps superimposes the supply of child care centers in San Mateo and Santa Clara Counties on the preschool enrollment maps in figures B.1 and B.2. Figures B.7 and B.8 present the locations of all center-based child care programs, using information from the San Mateo and Santa Clara Child Care Resource and Referral Networks and the County Offices of Education. Neighborhoods with high enrollment generally have more programs, while neighborhoods with low enrollment generally have fewer, though there are some exceptions.

Figures B.9 and B.10 show the locations of the subset of centers that meet quality standards higher than child care licensing, such as Head Start, California State Preschool, programs with subsidy contracts, programs participating in the Quality Rating and Improvement System and meeting standards above the lowest tier, and programs meeting higher accreditation standards.⁹ These maps suggest that lower-enrollment neighborhoods also have fewer programs that meet higher-quality standards.¹⁰

These maps are not precise, as other programs besides those noted here can provide quality child care services, but they do depict a rough picture of the supply of care. These supply challenges may contribute to enrollment patterns and shape access to higher-quality programs.

Conclusion

This report provides insights into preschool enrollment in Silicon Valley to help inform efforts to increase participation. Major points include the following:

- There are large disparities in preschool enrollment between low-income children and other children. About two-fifths of Silicon Valley’s low-income 4-year-olds and three-quarters of its low-income 3-year-olds are not enrolled in preschool. Disparities between higher- and lower-income children are particularly high among 3-year-olds, with children from low-income families half as likely to be enrolled in preschool.
- About three-quarters of low-income preschool-age children in Silicon Valley are children of immigrants, which suggests that any strategy to improve preschool enrollment and participation of low-income children must focus on barriers faced by low-income immigrant families. While many of these children have Spanish-speaking parents who come from Mexico and Central America, a significant minority have parents from other parts of the world who speak other languages.
- Silicon Valley is unusual in several ways, such as the cost of living and the high proportion of higher-skill and higher-income immigrants. Yet, a large share of low-income children have immigrant families, which means the area faces challenges many other counties and states face on a smaller scale.
- While it is essential to examine such economic and demographic issues in more depth, as in our companion paper (Greenberg, Adams, and Michie 2016), these data suggest the following key points for outreach efforts:
 - » Outreach to low-income families of preschoolers must take into account that in Silicon Valley, most of these children are citizens but many have noncitizen parents. Parents’ immigration status may result in eligibility barriers, and—for those in undocumented or mixed-status families—fear of government institutions. Even families who are all citizens may not be familiar or experienced with publicly funded programs or government agencies.
 - » Outreach efforts should recognize that a significant proportion of these families have little education and may face literacy challenges. As a result, outreach efforts might pay particular attention to literacy barriers.
 - » Outreach efforts must also address language barriers, given that a significant proportion of the parents of low-income children are LEP. Further, while outreach in Spanish will

effectively reach a large portion of immigrant families in Silicon Valley, a significant minority in both counties speak other languages.

- » Any outreach effort should be tailored to communities within these counties. Neighborhoods vary substantially in enrollment, poverty status, LEP share of the population, and languages spoken by the LEP population.
- » Outreach efforts should be targeted to reach low-income children, most of whom are children of immigrants. Low-income children, regardless of parental immigrant status, have lower participation rates than children not in low-income families, and almost three-quarters of these low-income children are children of immigrants.
- These data also suggest that the supply of child care centers overall, particularly child care and early education programs that meet higher quality standards, is lower in communities with higher shares of unenrolled children, higher poverty rates, and larger LEP populations. This finding should be explored in more depth to identify the issues at play. The companion report (Greenberg, Adams, and Michie 2016) highlights several relevant issues.

In conclusion, those interested in giving low-income children in San Mateo and Santa Clara Counties a stronger start and greater chance at school success would do well to include a focused effort to support preschool enrollment for low-income immigrant children; one designed to meet the particular needs of immigrant families in Silicon Valley.

Appendix A. Additional Insights about the American Community Survey Approach

This appendix includes information about two issues—first, some ways the Census Bureau uses the American Community Survey (ACS) to collect data about immigrants and individuals with limited English proficiency (LEP), and second, how the census frames questions about language and preschool enrollment.

First, the US Census Bureau, which runs the ACS, expends considerable time and effort reaching a sample of Americans that represents the country’s full diversity, including immigrants and those with limited English proficiency. Strategies include the following:

- **Undercounting for LEP immigrants:** To protect against nonresponse by LEP individuals, the US Census Bureau maintains a language assistance program, which translates documents into multiple languages, recruits and trains bilingual interviewers, and provides telephone or Internet assistance in multiple languages (US Census Bureau 2009). The Census Bureau also conducts research on the census-taking experiences of limited English proficient individuals to make improvements (see, for example, Whitworth 2001 or Pan and Lubkemann 2012). The Census Bureau has found the share of households who do not answer the ACS because of language barriers is essentially 0 percent. In only two US counties did language problems lead more than 1 percent of households to not answer the survey (Griffin and Broadwater 2005).
- **Undercounting for undocumented immigrants and other immigrants:** Demographers estimate that the undercount is larger for immigrants than for other groups. Undercount rates for the 2010 Decennial Census are estimated at 1.5 percent for the Hispanic population, 2.1 percent for the black population, and 0.1 percent for the Asian population. Some estimate an undercount of about 10 percent for undocumented immigrants and 2.5 percent for legal immigrants (Hofer, Rytina, and Baker 2012). Evidence suggests the census is getting better at surveying immigrant households (Passel, Cohn, and Gonzalez-Barrera 2013). Sampling weights are used in this analysis to help correct for undersampling of certain populations at the state and local levels.

Second, to understand the data presented in this report, we explain how the ACS approaches questions relevant to language proficiency and enrollment in early childhood programs. Key issues include the following:

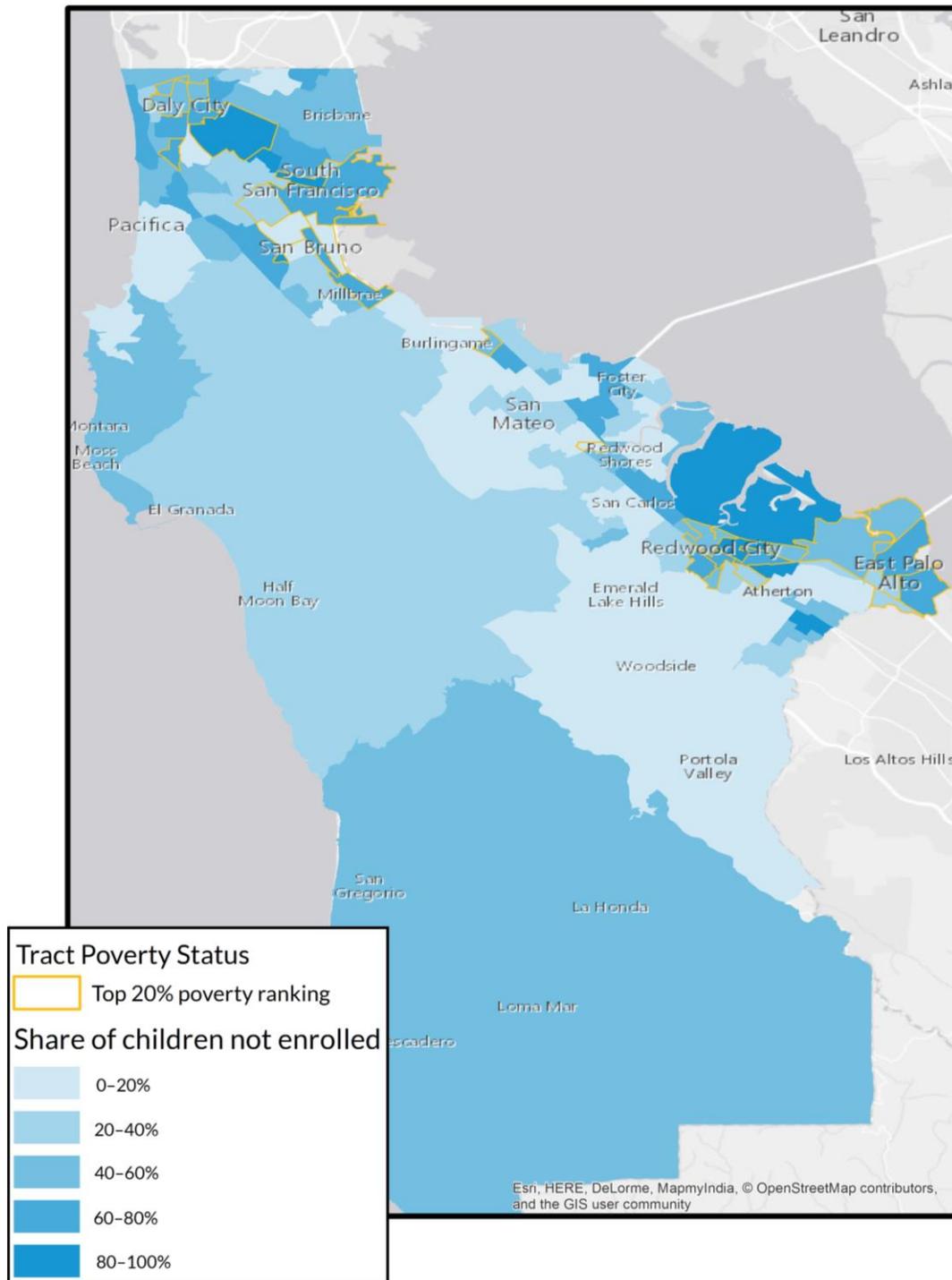
- **Language spoken at home:** Language spoken at home is self-reported in the ACS. These data are collected for all those who report speaking a language other than English at home. The ACS only records one language per household, so those who speak more than one language at home must pick a single language to list. The Census Bureau tabulates languages in the way they are recorded. For example, some individuals report a language category rather than a specific language: a large portion of those who speak a Chinese language write down “Chinese” rather than “Mandarin,” “Cantonese,” or another specific Chinese language. Further, to protect confidentiality and simplify data tables and datasets, the Census Bureau combines some less-common languages into categories. For example, the language Tigrinya is combined with Amharic into the category “Amharic/Ethiopian.”
- **Limited English proficiency:** Questions about limited English proficiency are only asked of those who report speaking a language other than English at home. Respondents are asked, “How well do you speak English?” and are presented with the response categories “very well,” “well,” “not well,” and “not at all.” Researchers generally define those who speak “well,” “not well,” or “not at all” as LEP. While reports of English ability are subjective and different individuals may have different thresholds for determining that they speak English “very well,” these measures have been shown to correlate overall with English ability as measured through more specific questions and language tests (Siegel, Martin, and Bruno 2001).
- **Enrollment in early care and education:** Enrollment in school is reported by the head of household. First the head of household is asked, “At any time IN THE LAST 3 MONTHS, has this person attended school or college?” The question further specifies to “include only nursery or preschool, kindergarten, elementary school, home school, and schooling which leads to a high school diploma or a college degree.” If the respondent says yes, then he or she is asked, “What grade or level was this person attending?” and is presented with the response categories “nursery school, preschool”, “kindergarten,” “grade 1 through 12,” “college undergraduate years,” or “graduate or professional school beyond a bachelor’s degree.” In this sense, we only know whether a child is enrolled in “school” but do not know which kind of program. In addition, families may interpret “preschool” and “nursery school” in different ways.

Appendix B. Maps of Preschool Enrollment and Population Characteristics in San Mateo and Santa Clara Counties

The following maps use 2008–12 American Community Survey data from the US Census Bureau’s American Fact Finder, as well as data on child care locations from Child Care Resource and Referral Networks and County Offices of Education. These data are presented by census tracts, geographic areas defined by the census for gathering data. These generally have similar population sizes, between 1,200 and 8,000 people, which means they may differ in how much land area they cover. For example, census tracts in densely populated areas are geographically small and those in sparsely populated areas are large. However, we are unable to pinpoint where within the census tracts individuals live. Low-enrollment areas are those with less than 40 percent of 3- and 4-year-old children enrolled in preschool.

FIGURE B.1

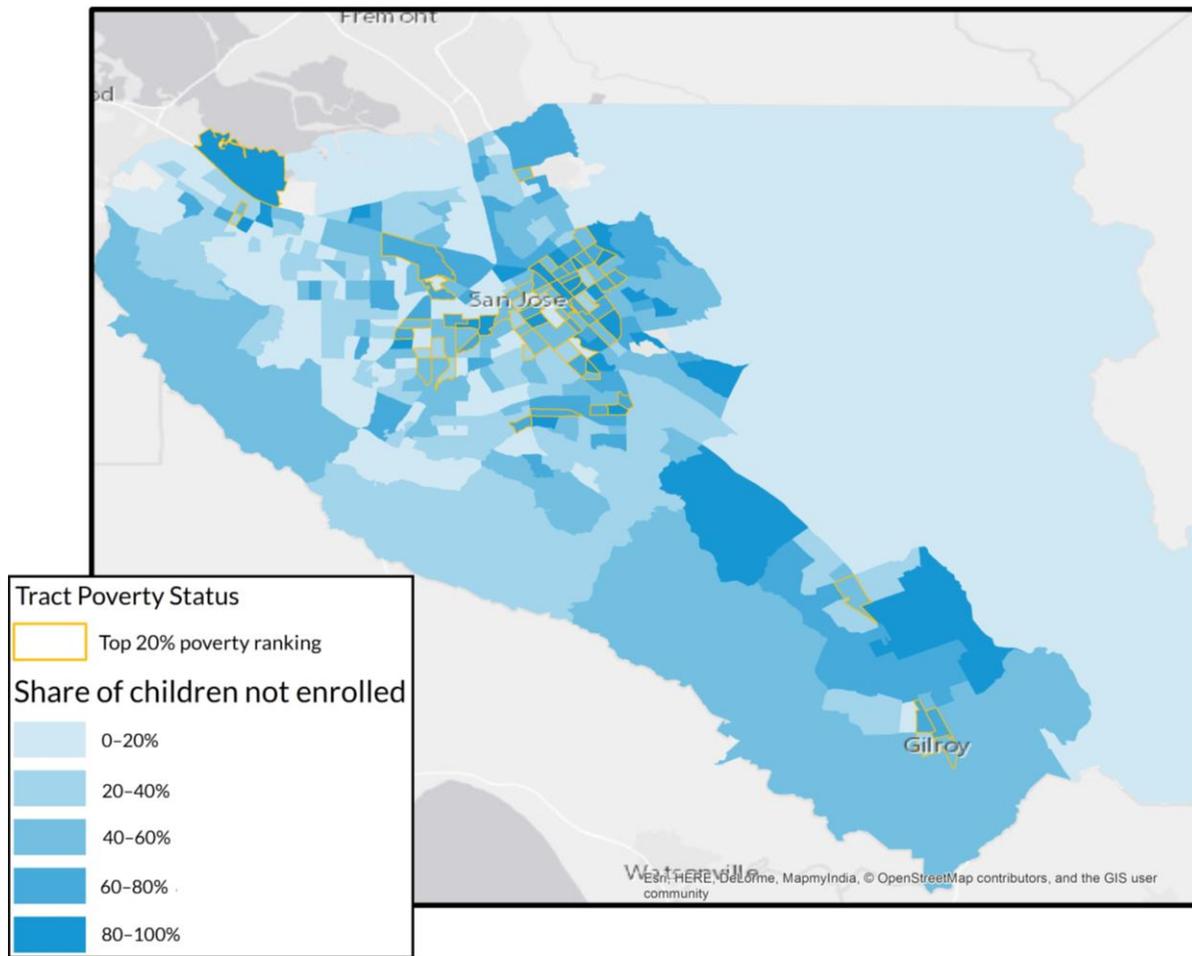
Preschool Enrollment and Poverty in All Neighborhoods, San Mateo County



Source: US Census Bureau, American Community Survey, 2008-12.

FIGURE B.2

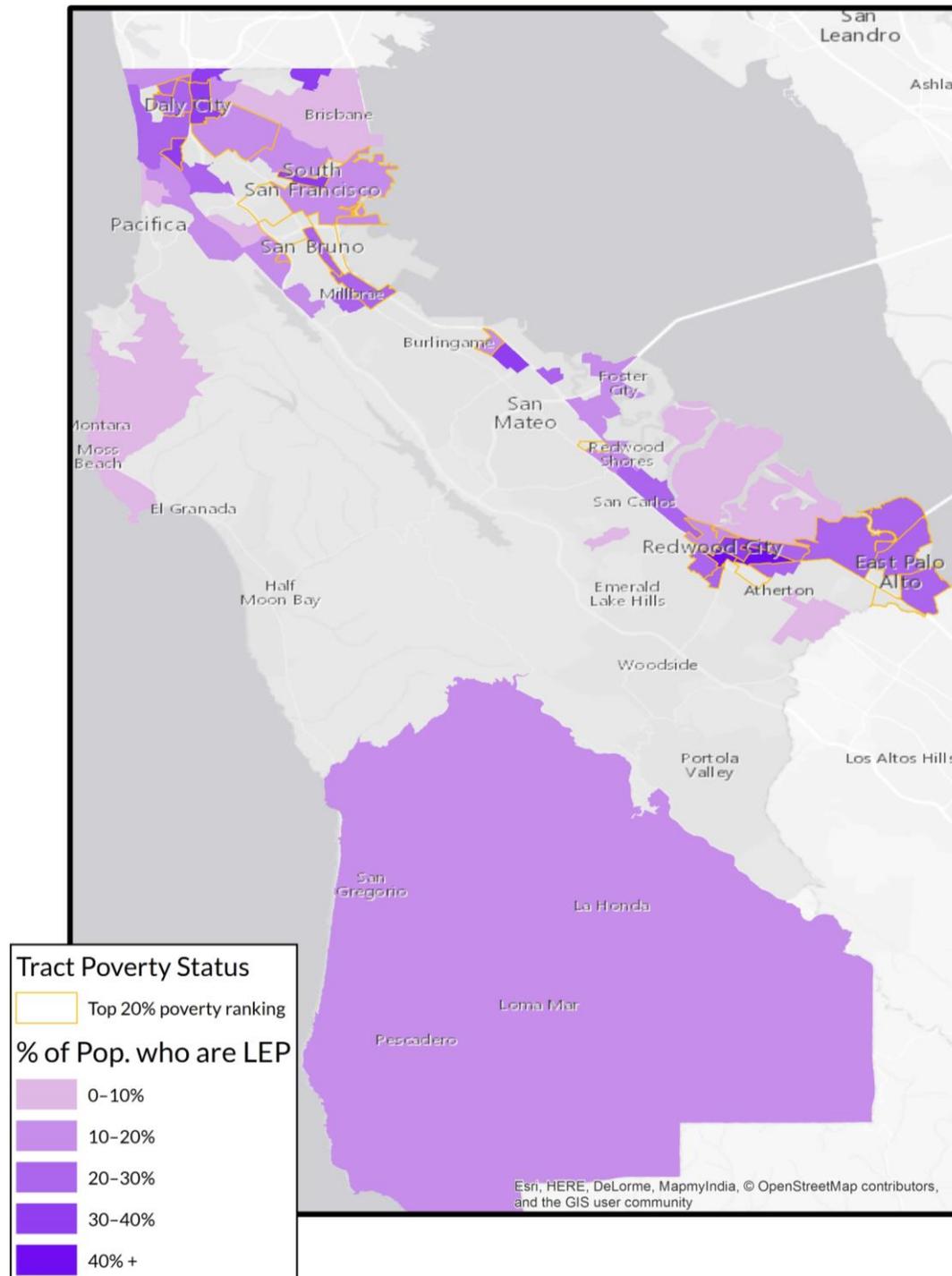
Preschool Enrollment and Poverty in All Neighborhoods, Santa Clara County



Source: US Census Bureau, American Community Survey, 2008-12.

FIGURE B.3

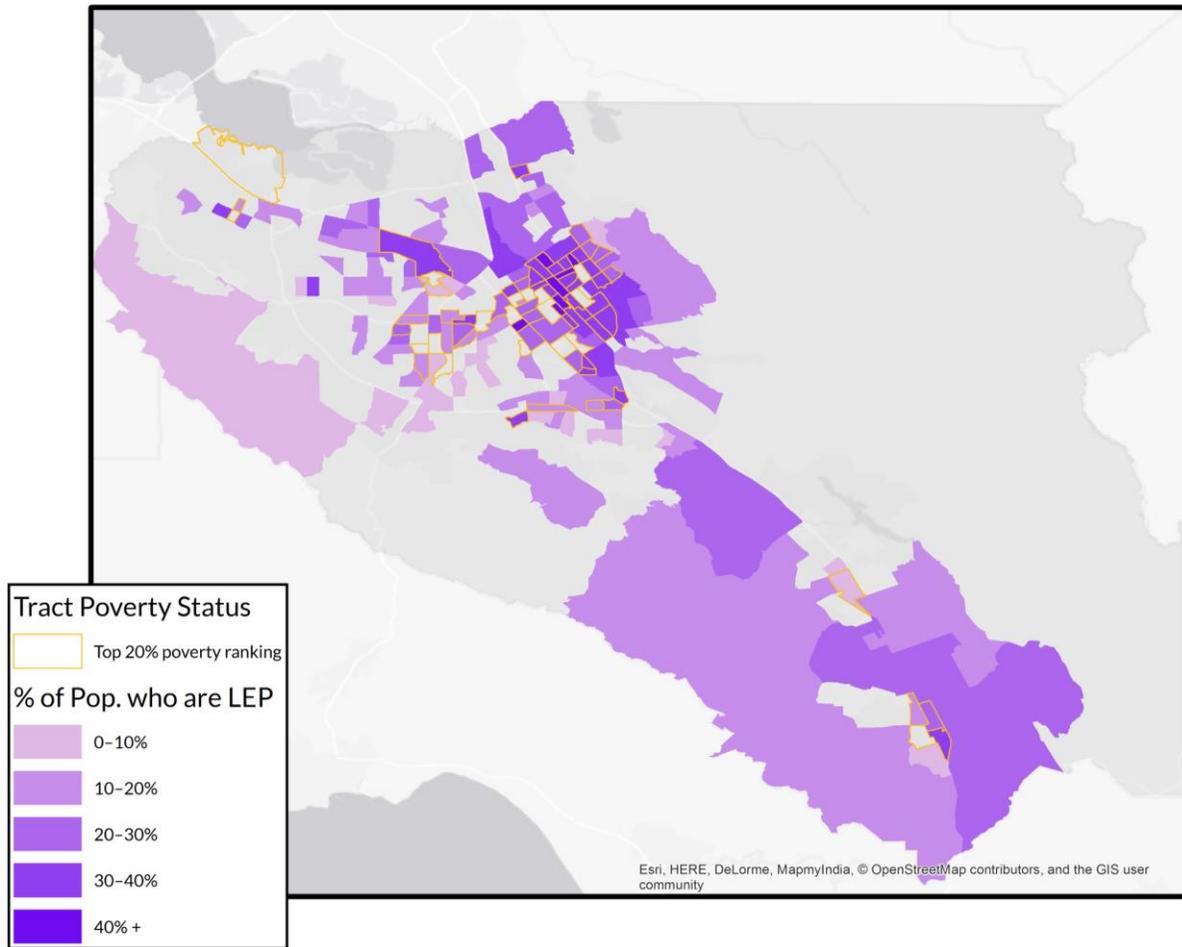
Population with Limited English Proficiency in Low-Enrollment Neighborhoods, San Mateo County



Source: US Census Bureau, American Community Survey, 2008-12.

FIGURE B.4

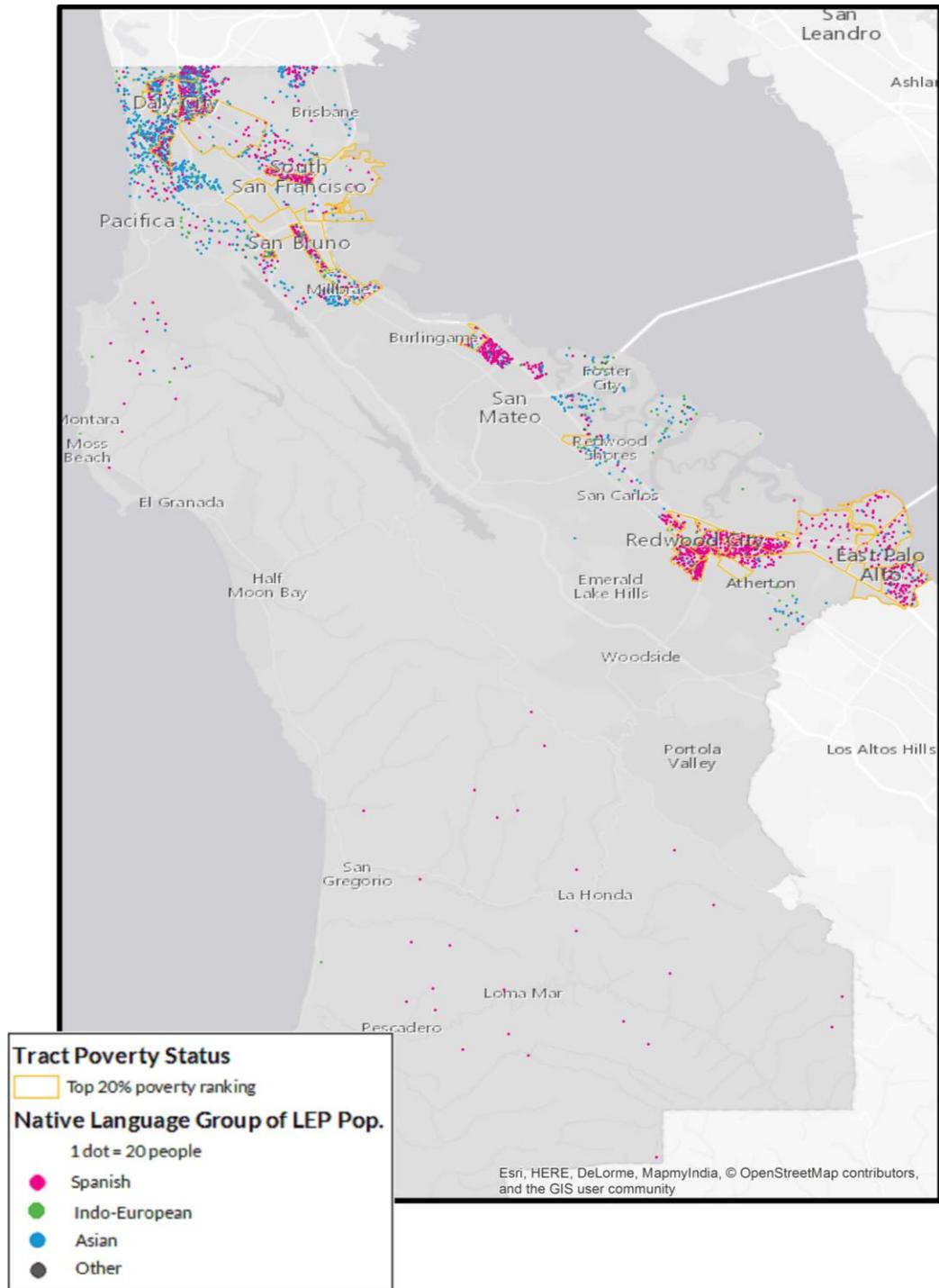
Population with Limited English Proficiency in Low-Enrollment Neighborhoods, Santa Clara County



Source: US Census Bureau, American Community Survey, 2008-12.

FIGURE B.5

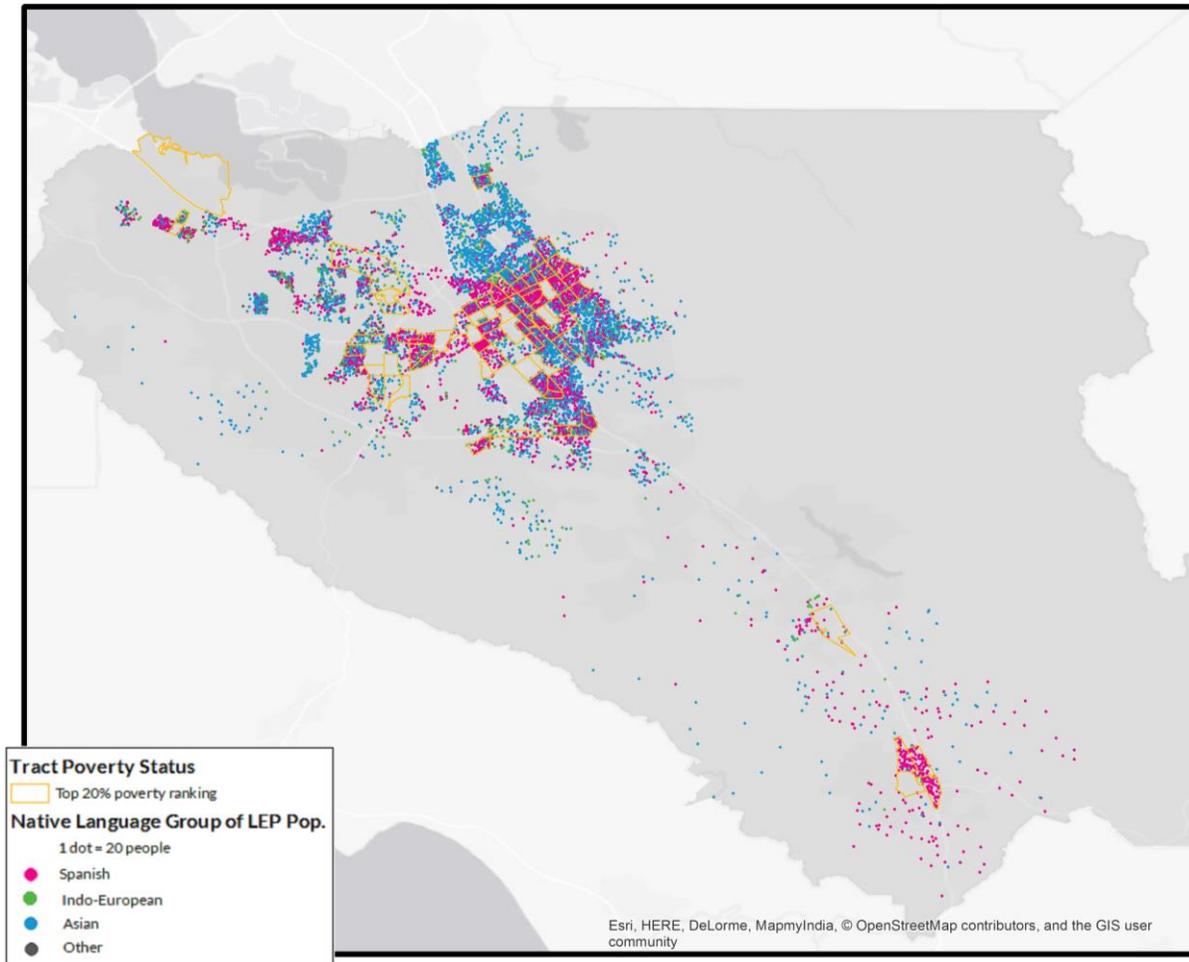
Languages Spoken at Home by People with Limited English Proficiency in Low-Enrollment Neighborhoods, San Mateo County



Source: US Census Bureau, American Community Survey, 2008–12.

FIGURE B.6

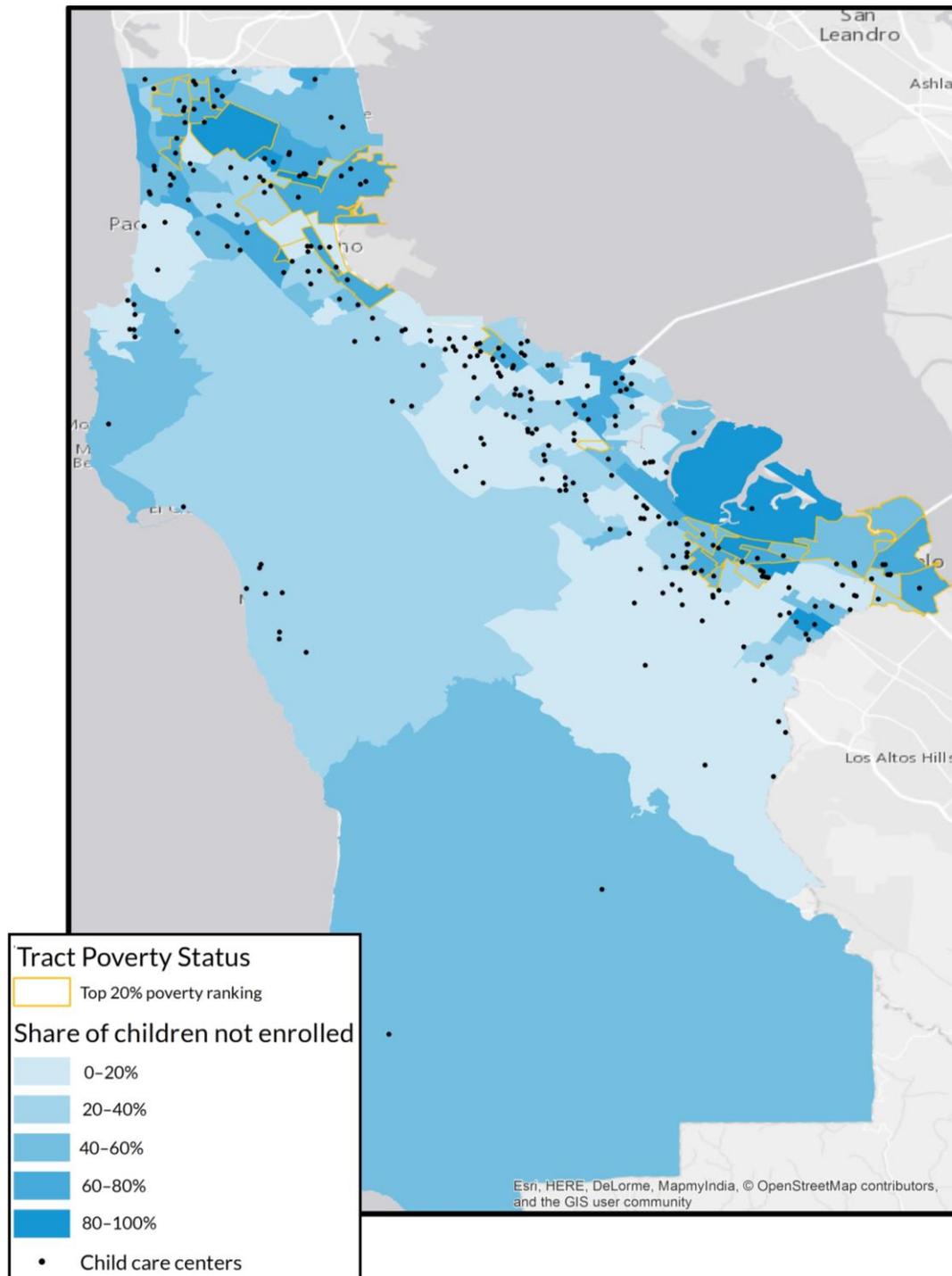
Languages Spoken at Home by People with Limited English Proficiency in Low-Enrollment Neighborhoods, Santa Clara County



Source: US Census Bureau, American Community Survey, 2008–12.

FIGURE B.7

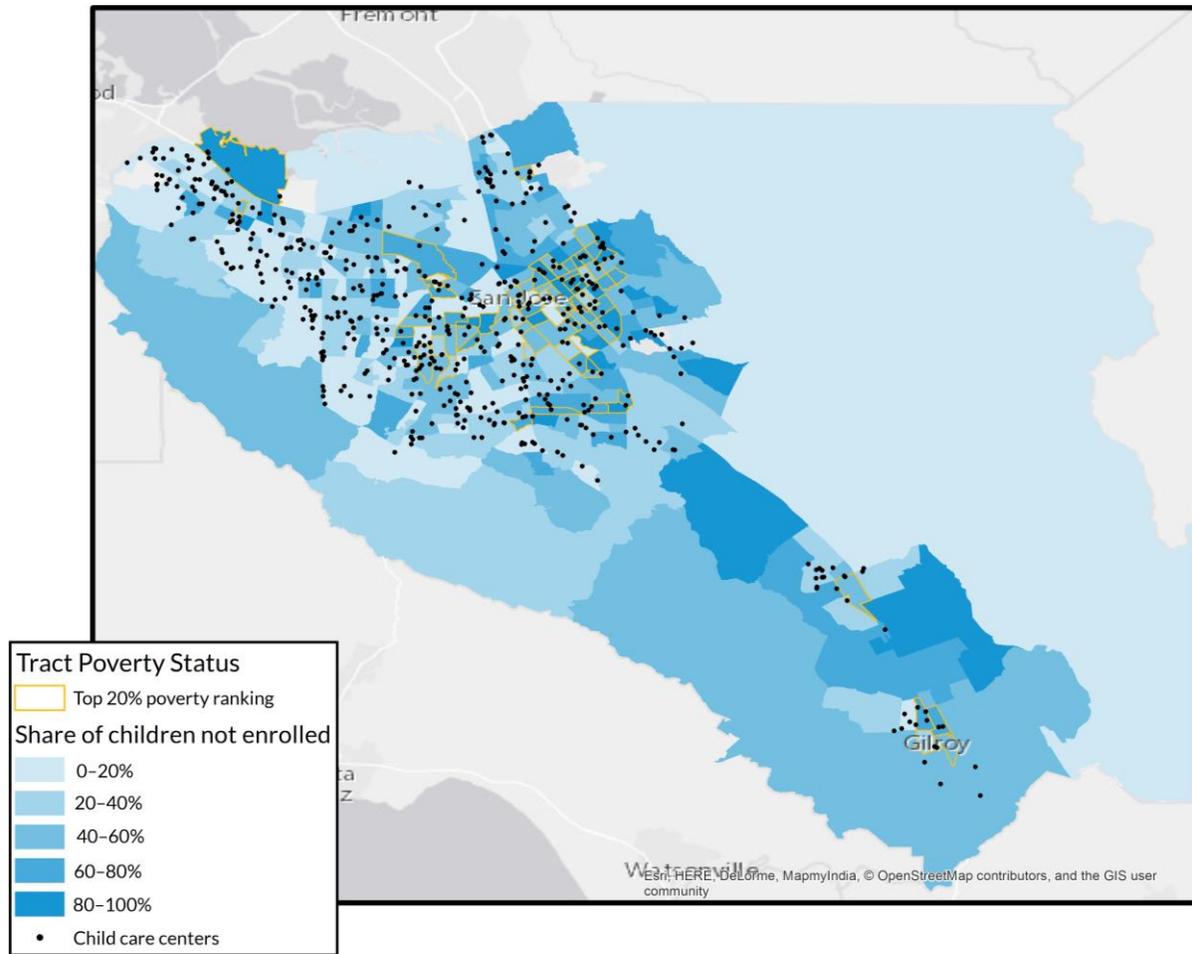
Preschool Enrollment and Child Care Locations in All Neighborhoods, San Mateo County



Sources: US Census Bureau, American Community Survey, 2008-12; unpublished data from San Mateo County Child Care Resource and Referral Network; San Mateo County Office of Education.

FIGURE B.8

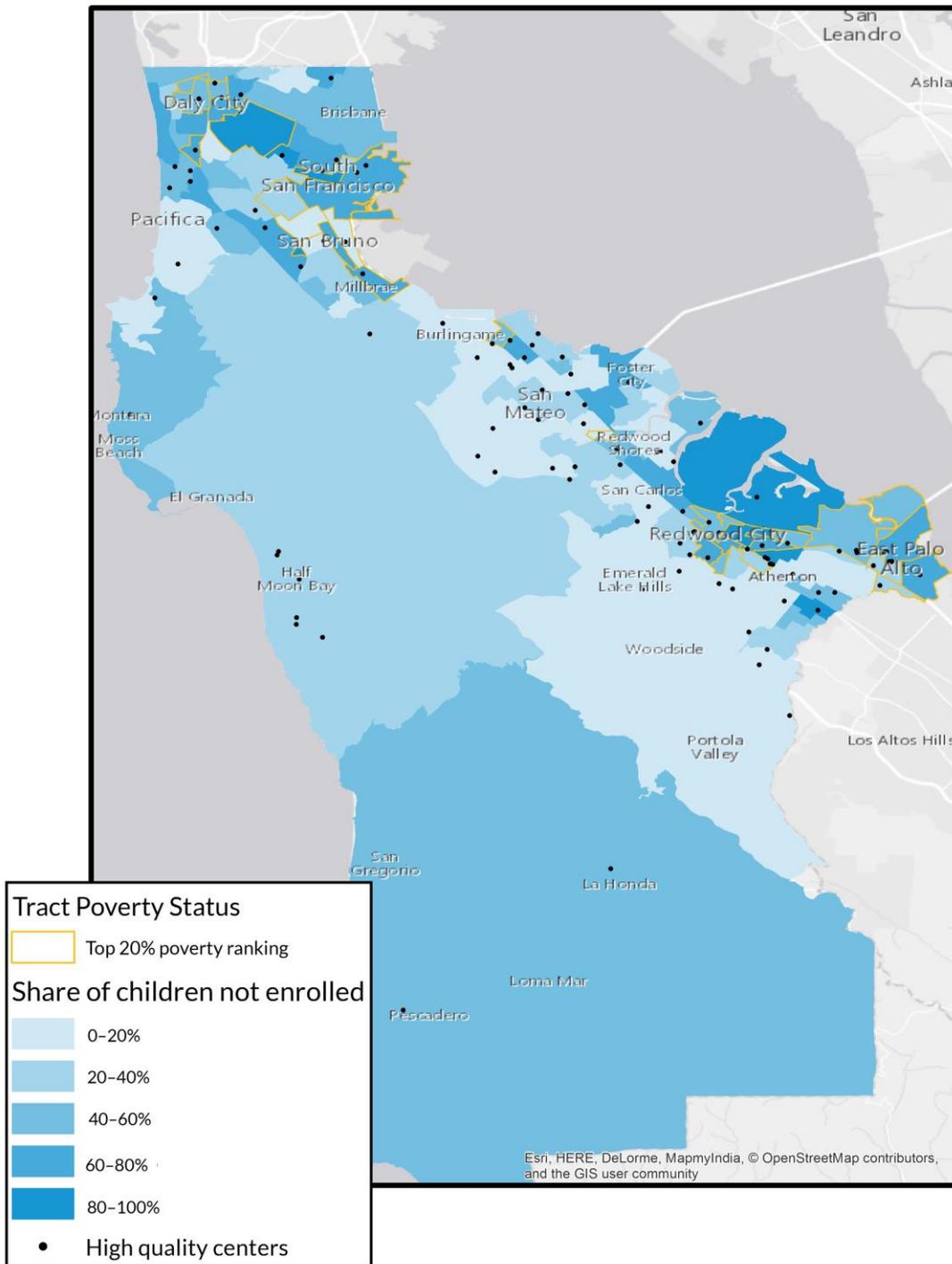
Preschool Enrollment and Locations of Child Care in All Neighborhoods, Santa Clara County



Sources: US Census Bureau, American Community Survey, 2008-12; unpublished data from Santa Clara County Child Care Resource and Referral Network; Santa Clara County Office of Education.

FIGURE B.9

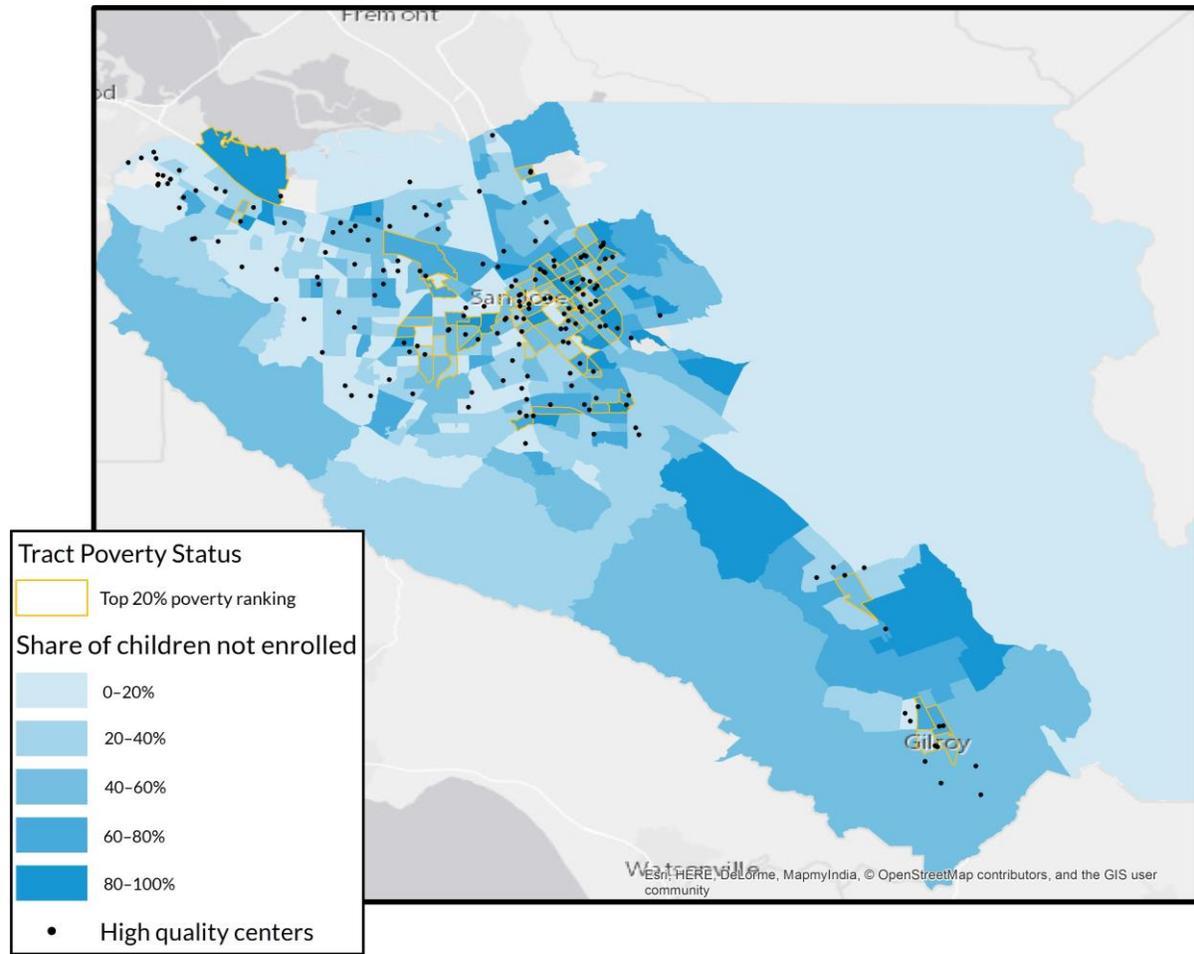
Preschool Enrollment and High-Quality Child Care Locations in All Neighborhoods, San Mateo County



Sources: US Census Bureau, American Community Survey, 2008-12; unpublished data from San Mateo County Child Care Resource and Referral Network; San Mateo County Office of Education.

FIGURE B.10

Preschool Enrollment and High-Quality Child Care Locations in All Neighborhoods, Santa Clara County



Sources: US Census Bureau, American Community Survey, 2008-12; unpublished data from Santa Clara County Child Care Resource and Referral Network; Santa Clara County Office of Education.

Notes

1. Children of Immigrants Data Tool using ACS 2012–13 data, <http://datatool.urban.org/charts/datatool/pages.cfm>.
2. US Census Bureau, American Community Survey, 2008–12, five-year estimates.
3. US Census Bureau, American Community Survey, 2008–12, five-year estimates.
4. US Census Bureau, American Community Survey, 2008–12, five-year estimates; “State & County QuickFacts: San Mateo County, California,” US Census Bureau, last revised December 2, 2015, <http://quickfacts.census.gov/qfd/states/06/06081.html>.
5. Ibid.
6. US Census Bureau, American Community Survey, 2008–12 five-year estimates.
7. Amy Glasmeier, “Living Wage Calculator,” Massachusetts Institute of Technology, 2015, <http://livingwage.mit.edu/>.
8. US Census Bureau, American Community Survey, 2008–12, five-year estimates.
9. Data on higher-quality programs only include child care centers and preschools in the Child Care Resource and Referral Network and County Office of Education databases.
10. The data on child care programs is meant only to provide a proxy for access to early education, and the data on those meeting higher-quality standards is only a proxy for higher quality. Other program types can provide quality care, so our list is not definitive. However, it does provide a general sense of program availability.

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