

K-12 School Enrollment by Foreign-born Asian Analysis

Introduction and Problem Statement

In recent years, many international students have sought undergraduate and postgraduate opportunities within the United States. Moreover, students who study abroad have become younger and younger. More and more foreign teenagers are inbound for the K-12 program. According to the Biannual Report on International Student Trends by Student and Exchange Visitor Program (SEVP, 2018), there were 785,431 foreign students (including K-12, undergraduate, and postgraduate) inbound for academic studies within the United States. Specifically, California hosted the largest number of international students, dominated by 195,265 international students (SEVP, 2018, 17). These data are calculated by SEVP through F1 Visa and M1 Visa. Within these F and M students, most of them are from Asia. Given data from SEVP (2018, 10), officials summarized in the Biannual Report that 77% of foreign students called Asia as their hometown.

Given the information above, large portions of foreign-born students enroll in courses within California. Additionally, the Asian population accounts for the largest international students' population. Accordingly, this research intends to analyze the foreign-born Asian students' popular k-12 enrollment area in California state. In order to illustrate the international students like Asian students in k-12 programs clearly. It is essential to figure out the following problems:

1. Which California counties are favored by foreign-born Asian students and parents?
2. What factors affect the selection of K-12 program by the Asian population overseas?

Data

To illustrate and analyze the problems I mentioned above, I intend to conduct an analysis based on Geographic Information Systems. The data for the problems are described below:

1. The K-12 enrollment population by foreign-born Asian Students in California
This data comes from the American FactFinder in the United States Census Bureau website (<https://factfinder.census.gov>). First, I selected county-50 as the geographic type and chose all counties within California. Second, I searched for Asian as my topic. I checked my topic "selected characteristics of the foreign-born population by region of birth: Asian in 2017" Third, I checked school enrollment in Asia as my data and downloaded. This kind of Foreign-born Asian register schools includes elementary schools (grades K-8), and high schools (grades 9-12). This data estimates the enrollment population in 5 years. Fourth, I imported my data into Excel and made sure the data correct. Fifth, I downloaded California shapefile in the United States Census Bureau website (<https://www.census.gov>) and inserted the output coordinate system for my state shapefile. Last, I joined the Foreign-born Asian school enrollment data to the California shapefile in ArcMap.
2. The popular K-12 School Area by Foreign-born Asian Parents and Students in California
This data is from the "selected characteristics of the foreign-born population by region of birth: Asian in 2017", I selected foreign-born Asian student enrollment data and population first. Then, I calculated as the percentage in the excel as the text. Finally, I added it in the California shapefile which I downloaded previously.

3. The distribution of the Foreign-born Asian in California in 2017
The Foreign-born Asian population is from the American FactFinder in the United States Bureau website (<http://factfinder.census.gov>). Similarly, this data estimates the foreign-born Asian population in 5 years. Ultimately, I joined the Foreign-born Asian population to the California shapefile.
4. The distribution of the Foreign-born Asian Female in California
This data is from the American FactFinder in the United States Census Bureau website (<https://factfinder.census.gov>). In this project, the shapefile forming step is similar to the population projection. But I checked female instead. The data estimates the female percentage in 5 years as well. I finally joined the female data to the California shapefile in ArcMap.
5. The distribution of the Foreign-born Asian Male in California
This data is from the American FactFinder in the United States Census Bureau website (<https://factfinder.census.gov>). In this project, the shapefile forming step is similar to the population and the female projection. I checked male instead. This data estimates the male percentage in 5 years. I finally joined the male data to the California shapefile in ArcMap.

Analysis

Figure 1. The K-12 enrollment Population by Foreign-born Asian Students in California

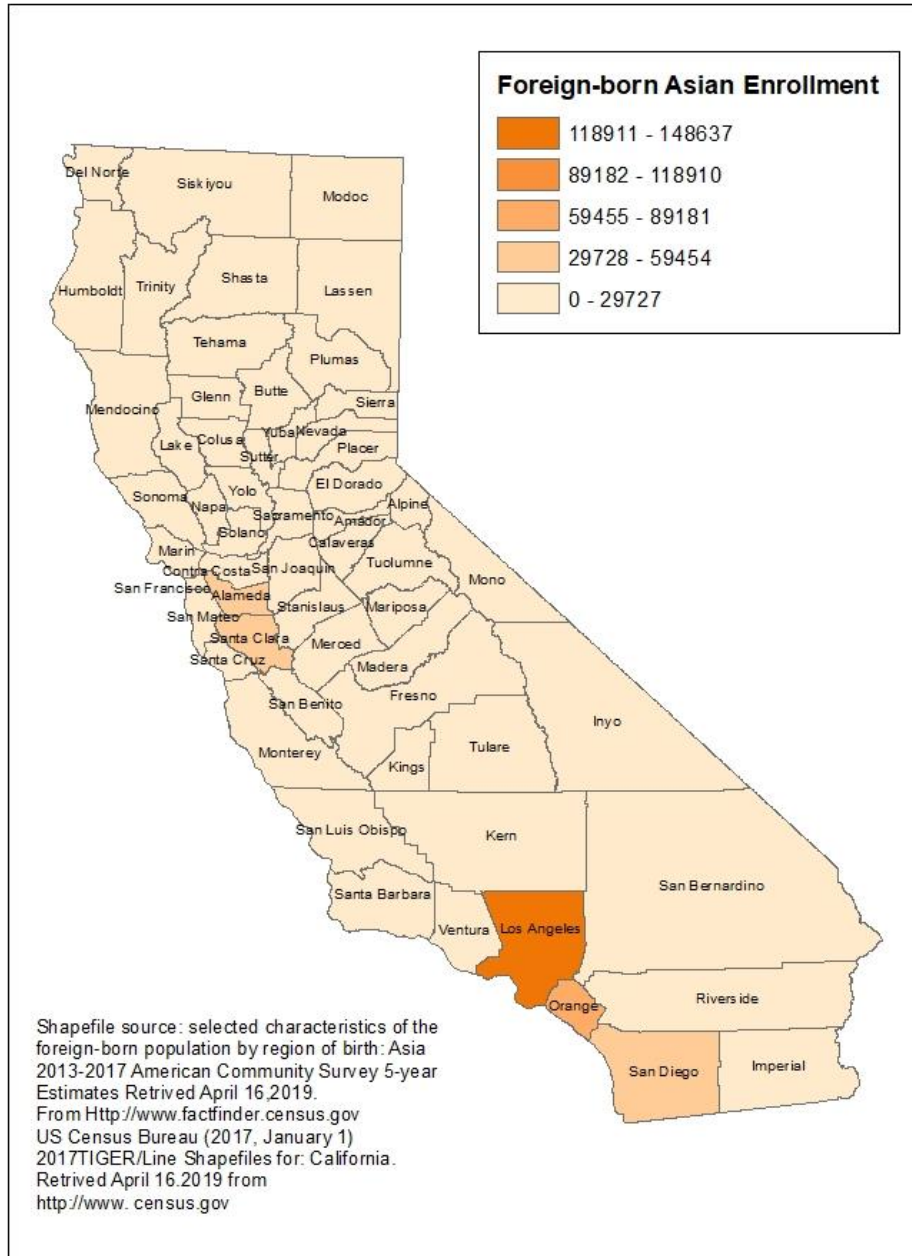
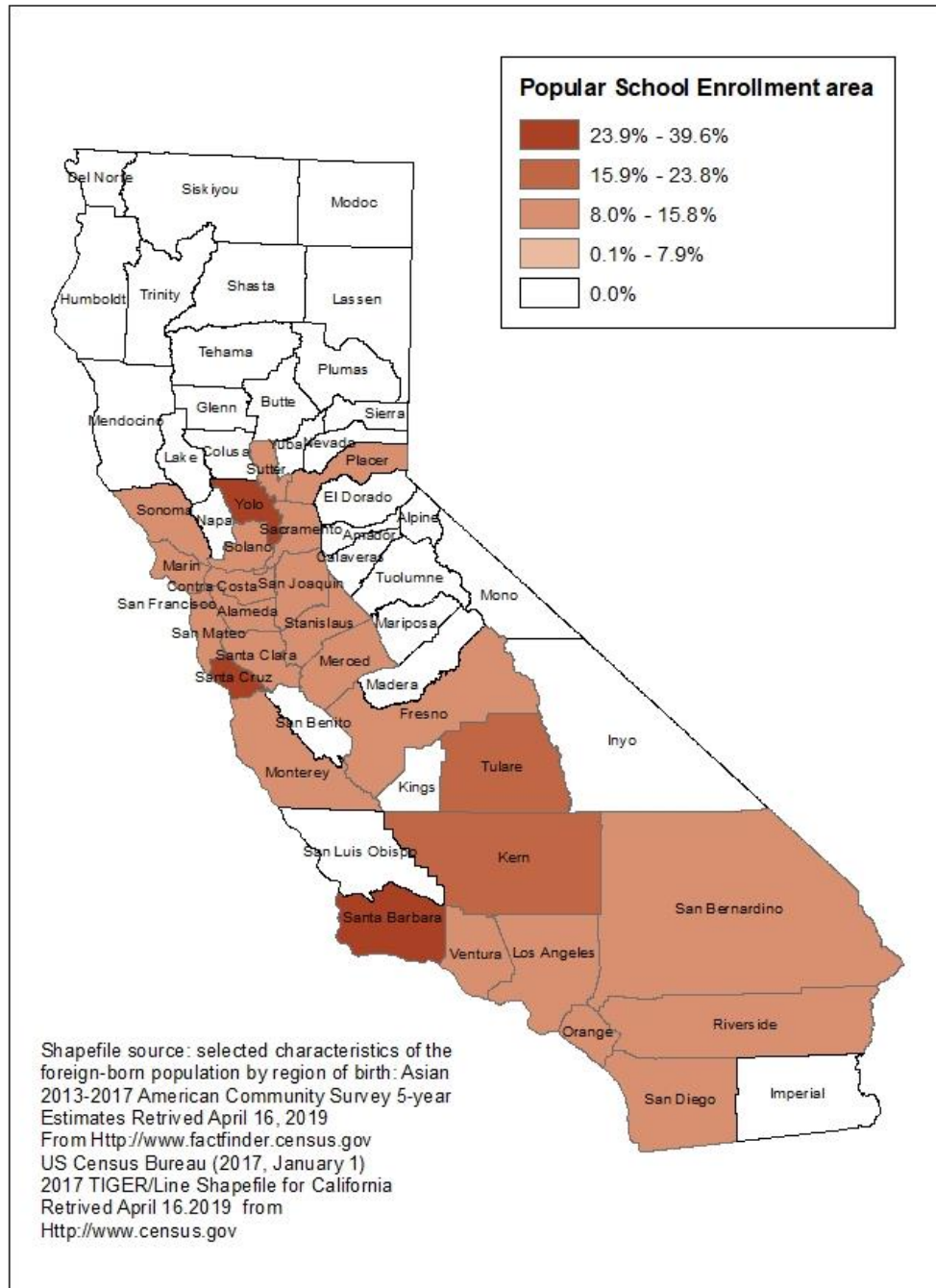


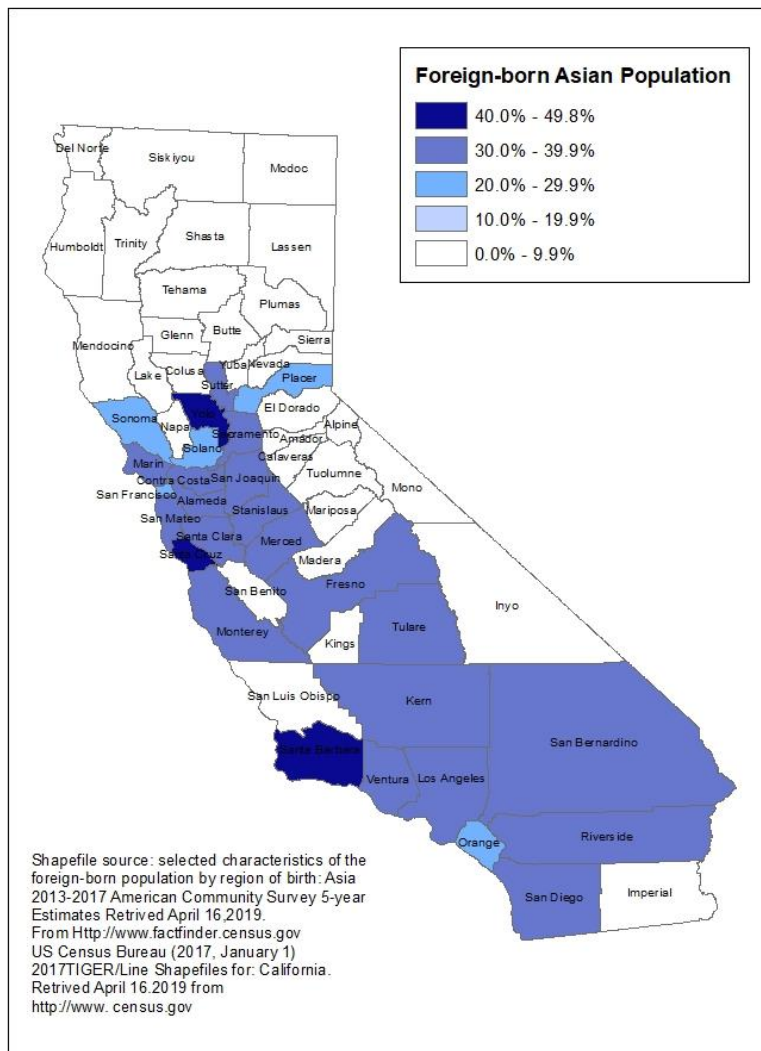
Figure 2. Popular K-12 School Area by Foreign-born Asian Parents and Students in California



From 2013 to 2017, there were more than 50,000 international students selecting K-12 schools in counties like Alameda County, Santa Clara County, San Diego County, Orange County, and Los Angeles County. Pointedly, over 100,000 foreign students enrolled in schools in Los Angeles County (Graph. 1). In graph 2, a large percentage of Asian students preferred Yolo County, Santa Cruz County, and Santa Barbara County as their K-12 schools. Schools in these three counties became the Asian people's first choice.

To see which factors impacted the K-12 schools, I created individual maps that included the foreign-born population distribution, female population distribution, and male population distribution, respectively.

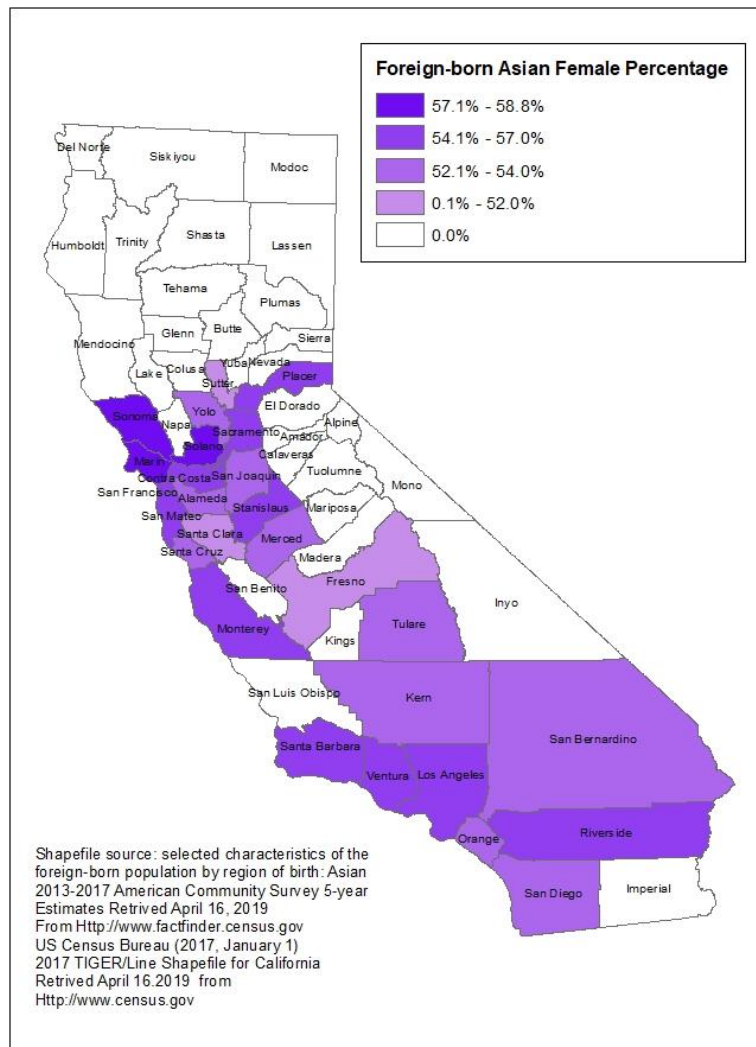
Figure 3. The distribution of the Foreign-born Asian in California in 2017



Based on figure 3, approximately 50% of foreign-born Asians are likely to choose neighborhoods in the western part of California (Santa Barbara County, Yolo county, and Santa Cruz County).

It seems that the more Asian residents that were in the counties, the more Asian students enrolled in the K-12 programs. For example, figure 2 shows that most foreign-born Asian residents registered in classes in Santa Barbara County, Yolo county, Santa Cruz County, etc. For this reason, the K-12 enrollment rate might be higher in that county compared with other counties. To summarize, the Asian population distribution is relevant to the K-12 enrollment rate.

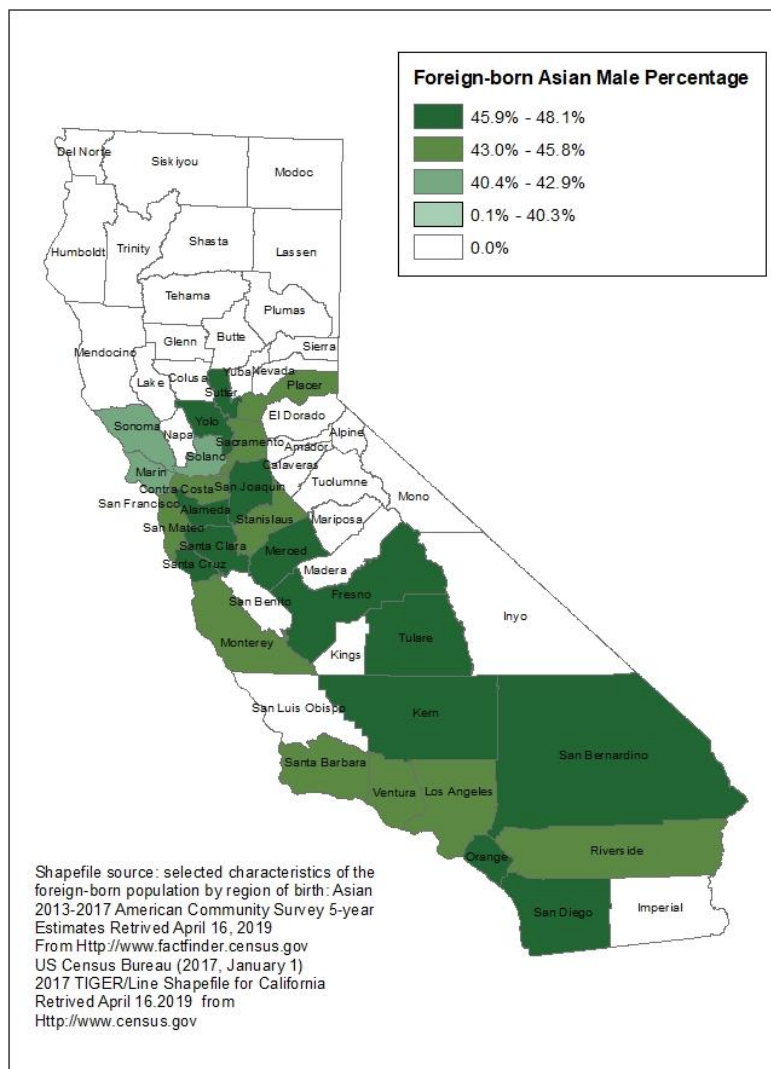
Figure 4. The Distribution of the Foreign-born Asian Female in California



From figure 4, most Asian females are likely to live in neighborhoods in the northwest part of California, namely Sonoma County, Marin County, and Solano County. Contrastingly, compared with graph 3, there were less Asian students enrolled in the K-12 program within these three counties. Thus, Asian females are not a direct impact on the Asian enrollment population.

Female family and students select schools emotionally. They pick schools in terms of economic level and cultural life. For example, Sonoma County is the home of many vineyards. It has the fame of the wine business rather than its educational reputation.

Figure 5. The Distribution of the Foreign-born Asian Male in California



It is interesting in figure 5 that the male population are relevant to the location selection of school enrollment. The school enrollment population are mainly in Yolo County and Santa Cruz County. In these two counties, the school enrollment by Asian people is higher than in other counties. In some Asian countries, males dominate in the family which gives them voices to the decision-making process. Following suit, it can be assumed that males in the family dominate in selecting K-12 program location.

Compared with school selection by females, males in the family have more traditional approach in making school selections. They will consider schools in terms of transportation, school rankings, and academic environment. First, Yolo County is one of the popular K-12 enrollment regions chosen by male family members. Yolo County is located in the northwest part of California. It is the part of "I-80 corridor" which extends between Sacramento and the Bay Area (YoloCounty.org). The transportation in that county is convenient, since it is nearby the Sacramento International Airport and two major interstate highways. Second, Asian parents are oriented with school rankings. According to California School Rating website, Davis Joint Unified School District receive the highest school ranking in 2016. Third, as for the academic environment, University of California, Davis, is one of the most well-known universities located in Yolo County. The reasons for school selection by male family members in Santa Cruz are similar.

Conclusion

The foreign-born Asian parents and students are in favor of the K-12 programs in Yolo County, Santa Cruz County, and Santa Barbara County. When thinking about the impacts of these school enrollment selections, the foreign-born Asian distribution, female distribution, and male distribution are considered. First, the more Asian people live in the counties, the more students enroll in the school in those counties. Second, there is no evidence that shows the relevance of the K-12 school enrollment and the Asian female distribution. Third, men in the family prefer to decide the K-12 school enrollment.

Comparing the impact of the female distribution and the male distribution by the Asian population, it exhibits the opposing results. To be well-prepared for children's future, males in the family make decisions and pay more attention to the education for their children. They focus on the transportation, school rankings, and academic environment. As a result, the K-12 school enrollment is relevant to the Asian male distribution.

Limitations

First, there are 58 counties within California. However, the data that I attained from the United States Census Bureau contains 27 counties. More than half of the counties lose data of Asian population. However, I assume the impact of the enrollment population by foreign-born Asian depending on the current data in the United States Census Bureau. Second, the data didn't require the details of the K-12 program. I didn't know the schools belongs to public schools, private schools, or the charter schools. However, I proposed my data are combined with these kinds of schools.

References

SEVIS by the Numbers. (2018). Retrieved from <https://www.ice.gov/doclib/sevis/pdf/byTheNumbersApr2018.pdf>

2002-2007 Yolo County Housing Element. (2007). Retrieved from <https://www.yolocounty.org/Home/ShowDocument?id=1651>

California School Ratings. (2016). Retrieved from <https://school-ratings.com/counties/Yolo.html>