

This project looks into a possible correlation between the demographics of California counties' population and the acceptance rate and application GPAs of high school students who applied to the nine University of California campuses in 2017.

The following are some of the initial analyses:

1) Even though Fresno county has the highest children poverty rate at 36.48 percent, its admission's rate for each ethnic group was on par with Placer county which as the lowest poverty rate at 8.3 percent.

counties' poverty rate	White admit rate	Black admit rate	Latino admit rate	Asian admit rate	Native American admit rate	Other admit rate
Fresno: 36.48%	69.42	54.43	59.13	70.71	0	42.86
Placer: 8.3%	60	52.78	54.48	69.96	100	40

The population of Fresno's 16 to 19 year-olds is 56,709 while the 16 to 19 year-old population Placer county is 18,701. This suggests poverty does not have much of an affect on acceptance rates except for the Native American population in Placer county. It could be inferred that the low poverty level in Placer county advanced their chances of getting into the universities.

2) Mariposa county had the highest application GPA at 4.004 while Plumas county had the lowest application GPA at 3.046.

county	Total population	% with Bachelors	% with Masters	% with Professional	% with Doctorate	Income	Childhood poverty rate
Mariposa	17658	24.42	9.65	2.82	0.97	51385	17.5
Plumas	18724	22.59	10.12	2.42	0.55	50266	12.78

It seems income nor the education level attained in those two counties played a part in the average application GPAs. This seems to suggest that GPAs are independent of other variables.

3) The highest median household income at \$106,761 is in Santa Clara county while the lowest is in Trinity county at \$36,563. The levels of education attainment are a factor in the disparity in income.

county	Total population	% with Bachelors	% with Masters	% with Professional	% with Doctorate
Santa Clara	1911226	50.02	23.18	6.34	3.63
Trinity	13037	19.47	4.06	1.03	0.51

Since there isn't data on the Black, Latino, and Asian admittance count, a comparison between those two counties is not possible. However, the white admittance rate between two counties have 5.23 percentage difference; Santa Clara at 62.37 percent and Trinity at 57.14 percent.

Because these initial observations indicate a lack of correlation between UC admittance and California demographics, I attempted to evaluate model fit using linear regression. The models did not show any meaningful results such as median income and poverty rates predicting GPA and admittance rates. To see assessment, please refer to the "uc_county.r" file.