Fast Food Analysis

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The objective of our group project was to analyze the amount of Fast Food restaurants against health data and population demographics in California counties. Our intent was to find correlations between Fast Food restaurants, California County demographics and health issues. Below is a list of our initial questions we wanted to answer.

* Is there any link between Fast Food restaurant population and obesity in the area?

We looked at census data and broke up California populations by county. We compared that data with data from the US Department of Agriculture for the number of Fast Food Restaurants in each county. We noticed a strong correlation between larger populations and fast food restaurants. The higher the population in the county, the more restaurants could be found. We chalked this up to standard demand and supply and decided to dive deeper into census and health demographics. Scatterplot is shown below comparing the correlation between population and Fast Food restaurants.

Chart, line chart, scatter chart

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* Are Fast Food restaurants more common in lower income areas?

We expected to find that majority of Fast Food restaurants would fall in counties with lower Per Capita incomes and poverty rates. We found a weaker correlation with poverty rates and Fast Food restaurants, but a higher correlation for Per Capita Income to Fast Food restaurants. Below are the scatterplots for Poverty and Per Capita Income and heatmaps for Fast Food and Per Capita Income for the year 2016. We decided to take a deeper look into Per Capita Income and see if it was strongly correlated with any other factors.

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* What is the concentration of Fast Food restaurants in the selected county?

We looked at census data and broke up California populations by county. We compared that data with data from the US Department of Agriculture for the number of Fast Food Restaurants in each county. We collected that data into a Data Frame then created a heatmap that showed the concentrations by county.

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* How high is the concentration of these health factors in our population areas?

We used health data by year from the CDC and merged that to compare against our Fast Food data and census data. We decided to look specifically at obesity and diabetes per county population. We collected the data by the same method listed above and put them in heatmaps for years 2011 and 2016. The year 2016 for obesity and diabetes is shown below.

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We compared both against the collected Fast Food data and unfortunately found weak correlations.

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We then decided to compare obesity data to census demographic data, as that proved to have a moderate correlation against Fast Food restaurant data. We noticed a very strong correlation when comparing obesity to income, obesity to education and subsequently income to education. Our findings showed that college educated individuals often make higher incomes. Individuals with higher incomes are less likely to suffer from obesity. We can infer that a higher income is more likely to yield better, healthier food options and potentially improved access to health care.

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Though we did not find significant correlations for our initial questions (aside from a strong population correlation), we were pleased to make this connection between obesity, income, and education. Our findings are significant to us, as college students, in which we can take note of higher incomes potentially leading to healthier lifestyles. If we were to continue our research, we would delve deeper into Fast Food restaurant profits, especially in counties with higher Per Capita Incomes and try to make more comprehensive correlations.

Data Sources:

For our research we utilized of Census data for populations and demographics from the California Census\*, Fast Food Data from the US Department of Agriculture\*, and Health Data from the CDC\*. Individual links can be found on the README.md on https://github.com/improvbutterfly/Fast-Food-Analysis-California.

\* Fast Food Data: [United States Department of Agriculture](https://www.ers.usda.gov/data-products/food-environment-atlas/go-to-the-atlas/).

\* California Census Data came from the Census API: [Census Package](https://github.com/datamade/census).

\* Health Data: [CDC](https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html).