



Sweet Escapes: Bay Area Treats Guide

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Abstract

“The meal is not finished without something sweet.”

Without dessert, a meal - no matter how delicious - cannot be considered a truly finished product. In this delightful journey, we treat you to a guide to the Bay Area’s sweetest spots. Hope you savor every moment :)!

Question

What Bay Area city is the **SWEETEST OF THE BAY?**

What demographic and descriptive factors are associated with high dessert shop rating?

Conclusion

Dessert shops do not correlate strongly with any demographic factors. There exists, however, a moderate positive correlation between total/white population and rating. This confirms that less populated cities are more likely “dessert desert.”

As Oakland, San Francisco, and San Jose shops are cheaper, on average, they won “Sweetest of the Bay”. Unfortunately, it’s not worth traveling to Palo Alto for dessert. In the advent of deliveries, new questions arose from our exploration:

- How do the age of ordering food online through Uber Eats and DoorDash impact dessert shop ratings?

Data Collection



- Utilized Yelp API + Postman to gather 9237 dessert shops in the Bay Area
- Keywords: Dessert, Sweets, Ice Cream, Pastries, Boba, Tea, Coffee Shop, Bakery
- Extracted: restaurant name, location (latitude/longitude), ratings, review counts, etc...
- 9237 rows x 14 columns



- Selected 30 random dessert shops from Yelp list
- Scraped TripAdvisor for random dessert reviews
- 1008 rows x 20 columns

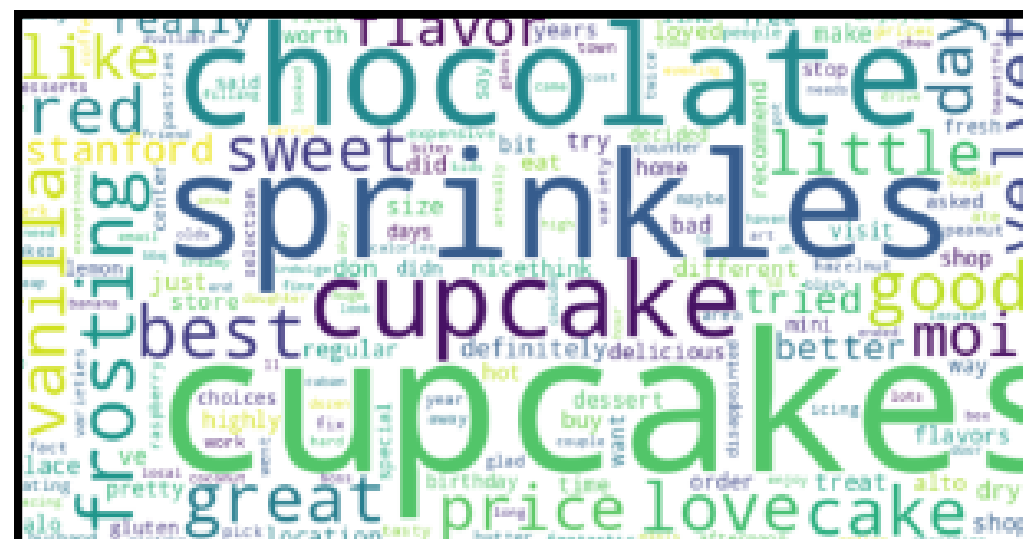


- Used U.S. Census API for demographic data in Bay Area

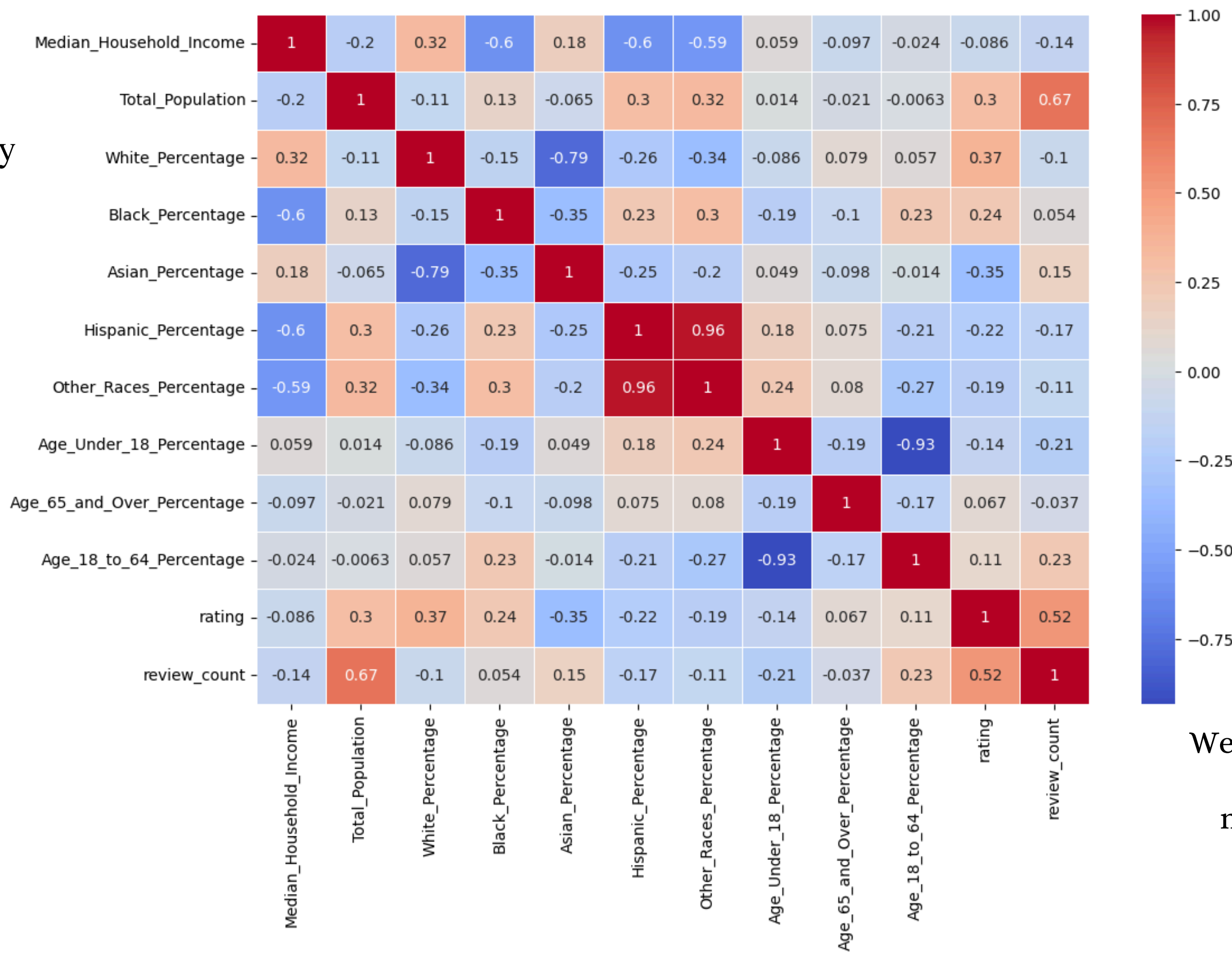
Data Exploration - Review

We used 4-Means and TFIDF to our review data to gain insights on the diverse types of dessert shops in the Bay Area.

Can you guess what they are?

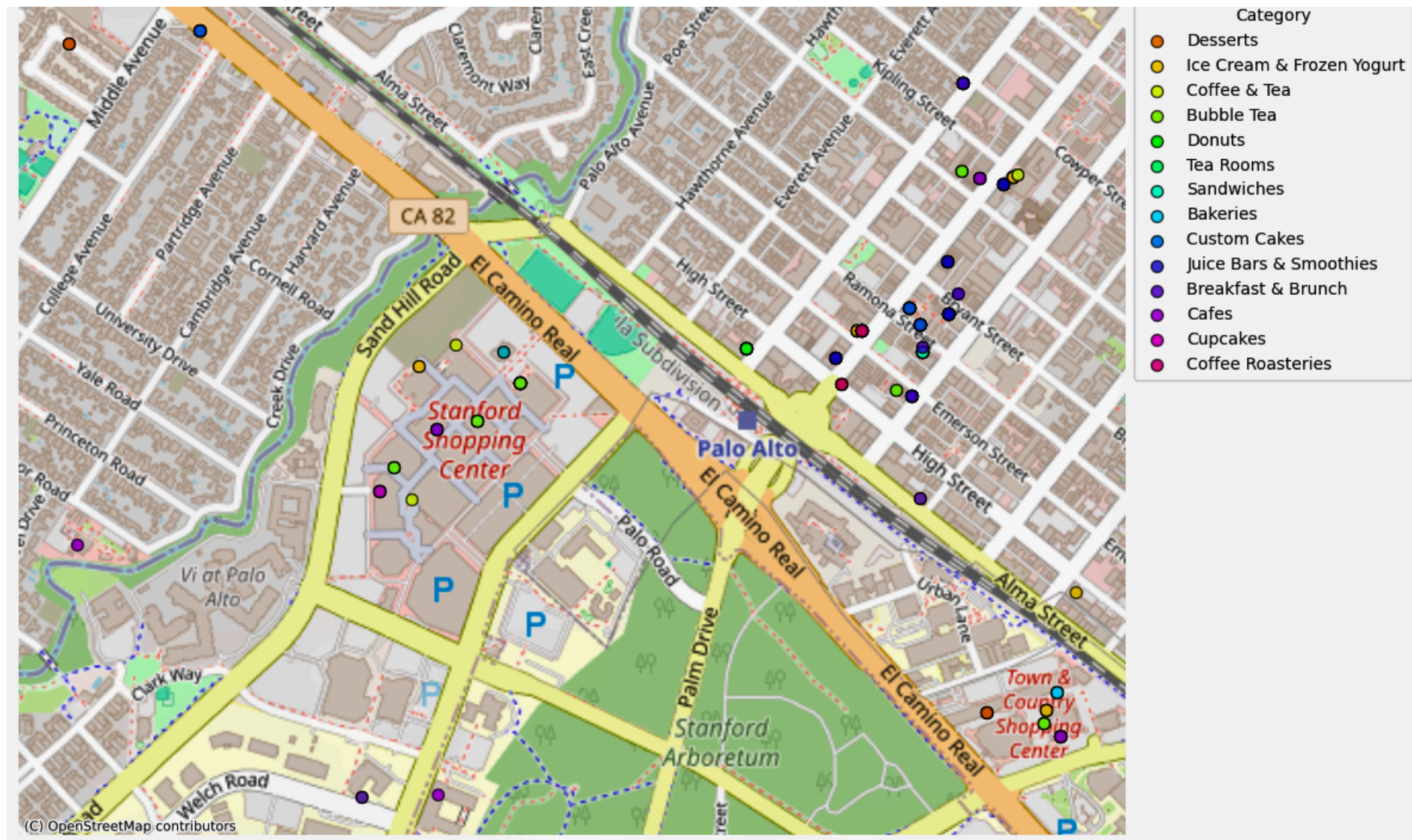


Demographics Correlation Matrix



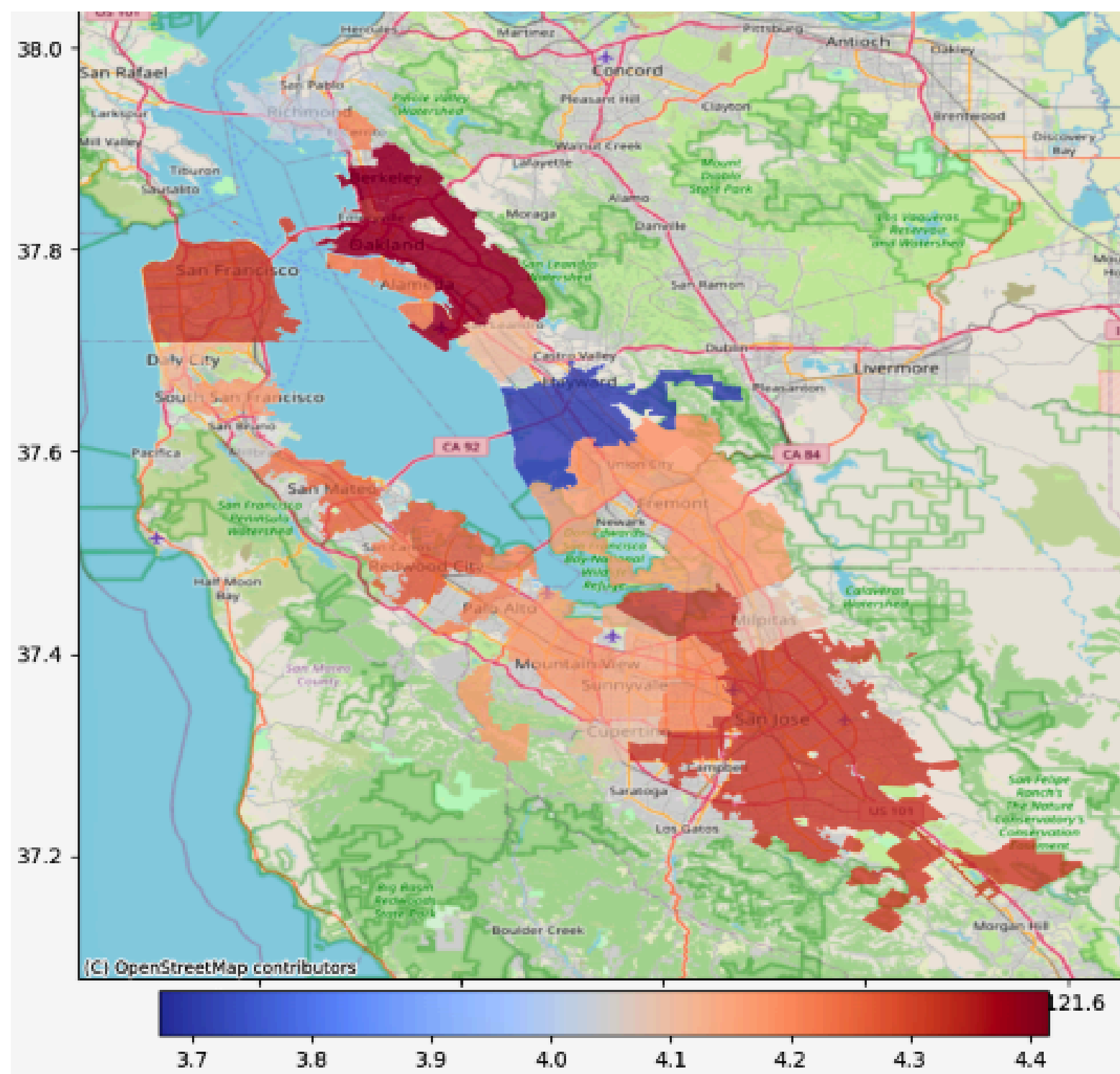
We merged Yelp and Census dataset and formed a correlation matrix. Interestingly, there is a moderate positive correlation between white population and higher rating.

What’s sweet in Palo Alto?



We decided to map the dessert places in Palo Alto by category and take the mean ratings per category. Boba & coffee shops are some of the most popular and they are everywhere around the Stanford campus!

Who is the Sweetest of the Bay?



Where to go if not Palo Alto? The highest-rated dessert restaurants on average can be found in Berkeley, Oakland, San Francisco, and San Jose!

The Best Bang for Your Buck?

After examining the common words in reviews, we were curious about the role that price plays in restaurant ratings. We made a Logistic Regression model to try to predict the price of restaurants where it was unknown and see **if a pattern emerged: let’s take a look!**

	\$	\$\$	\$\$\$
\$	4	5	0
\$\$	1	33	0
\$\$\$	0	0	2

This confusion matrix shows that our Logistic Regression model predicted with 86.67% accuracy. It classified 39/45 sweets shops correctly.

We had also tried a K-Neighbors Classifier Model with 10 neighbors, though the accuracy was only 75.55%

Merging datasets and filling the unknowns in our original Palo Alto price data with our predictions, we found that more expensive restaurants do not lead to higher ratings.

pa_joined.groupby("price")["rating"].mean()	
price	
\$	4.183333
\$\$	4.140000
\$\$\$	3.750000