IBM Data Science Professional Capstone Project:
Opening a Mexican Restaurant in San Diego

J.B. Paragas • 09.12.2020

Overview

Business Problem

Location of Mexican Restaurants can play a major role in its success

Objective

- Analyze San Diego cities
- Determine best locations to open a new Mexican Restaurant

Audience Query

If a property developer is looking to open a Mexican Restaurant in San Diego, where would you recommend they look?

Data

Types

- List of cities in San Diego

- Geographical coordinates of each city

- Data behind venues in San Diego

Sources

- Wikipedia

- Geocoder python package

- Foursquare API

Methodology

Collection

- Web-scrape Wikipedia for list of cities

- Use Geocoder to generate geographical coordinates for each city

- Query Foursquare API for venue data

Analysis

- Group data by city

- Take the mean of the frequency of each venue category, filtering out Mexican Restaurants

- Cluster data using k-means clustering

- Visualize clusters using Folium

Results

Categories

- Cluster 0: moderate competition (9 cities, red)

- Cluster 1: light competition (7 cities, purple)

- Cluster 2: heavy competition (2 cities, mint)
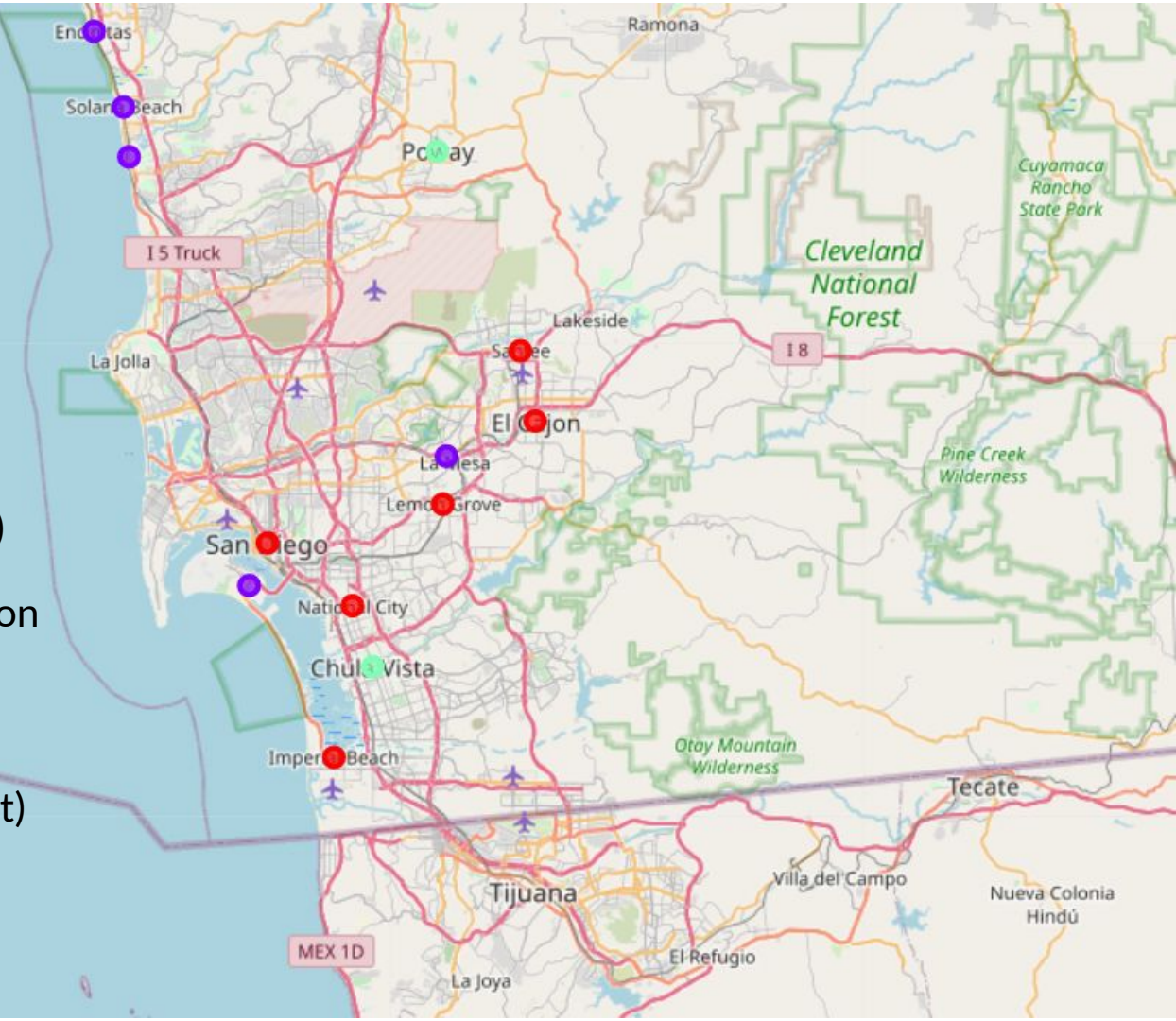
Discussion

- Mexican Restaurants are concentrated in clusters 2 and 0.

- Cluster 2 cities, in particular, likely suffer from intense competition due to oversupply and overconcentration of restaurants.

- Cluster 1 cities present the greater opportunity and high potential areas to open a new Mexican Restaurant.

- Cluster 0 cities have a higher level of competition among Mexican Restaurants, but may offer a conservative level of risk for a new business.
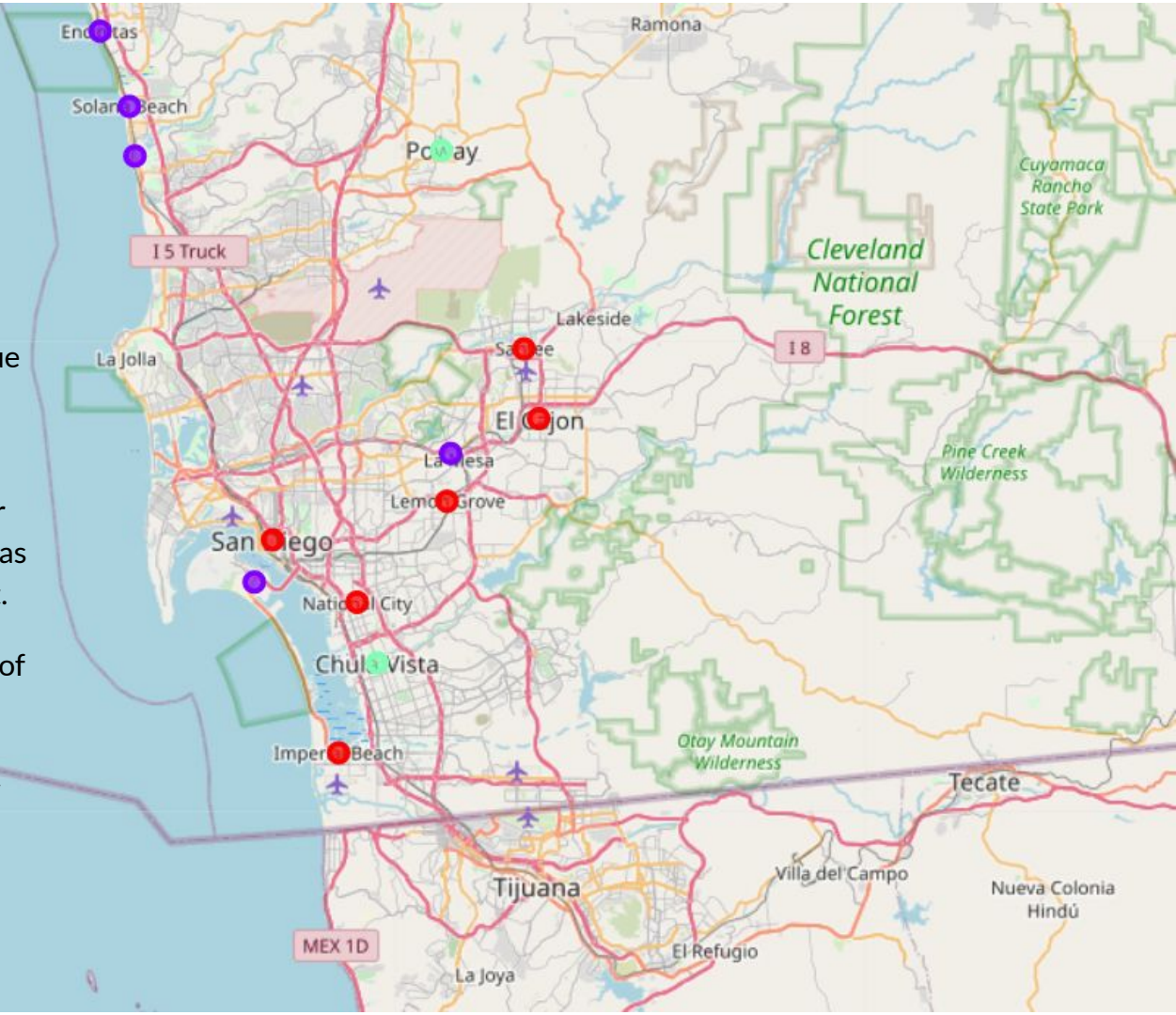
Conclusion

Recommendations

Cluster 1 cities
Property developers with unique selling propositions may find better success among their competition by contesting the existing Mexican Restaurants in Encinitas, Coronado, and Del Mar, in particular.

Cluster 0 cities
Property developers looking to mitigate risk may find success in Cluster 0 cities. The lower level of risk will mean trading away a potentially higher profit margin.

Cluster 2 cities
I advise property developers to avoid neighborhoods in Cluster 2 cities, which already have a high concentration of Mexican Restaurants and suffer from intense competition.

Goals for next project

1. Consider city population and average income to more accurately determine location for a new restaurant.

2. Bring in zip code data, to further drill down into which neighborhoods would be the best choices.

3. Use higher tier account on Foursquare to unlock more API calls and results.