Recommending a Location for a New Seafood Restaurant

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1. Introduction / Business Problem

A client has hired me to help their company find a new location for their 5 star seafood restaurant business. They are trying to decide between opening the new business in Manhattan, NY or Paris France. Their preference is to first narrow down the city by researching market saturation. After that, they would like to identify the neighborhood that is best suited for the restaurant. The ideal neighborhood will have an average amount of restaurants, and few seafood restaurants.

2. Data

In this project, I will utilize the Foursquare API combined with geographical data to pull in the total restaurants and seafood types for each city. After determining the city, I will use neighborhood data to narrow down the best location. If needed, the NY data will be taken from here: https://cocl.us/new_york_dataset and the Paris dataset will be scraped from: https://en.wikipedia.org/wiki/Arrondissements_of_Paris

### 3. Methodology

3.1 Comparing the two locations

The first order of business was to compare the two locations requested by the client to see which high-level location would be the best fit for a new upscale seafood restaurant. To do this, I used the Foursquare API to pull in the total number of restaurants for both coordinates.

Surprisingly, the volume of restaurants in Paris was enormous at 249 compared to the relatively small 62 restaurants in Manhattan. It is important to note that I used a 1,000 meter radius from the coordinates provided for each location. Both of the locations had a similar # of seafood restaurants when looked at as a % of all restaurants, with Paris having 9% and Manhattan having 8%.

Due to the heavy market saturation in Paris, I decided to focus on Manhattan as the deep dive location to find the best neighborhood for the new restaurant.

3.2 Manhattan focus

At this point, I used the New York dataset linked above to pull in the coordinates for all 40 neighborhoods in Manhattan. The below map is a visual representation of each of the locations.
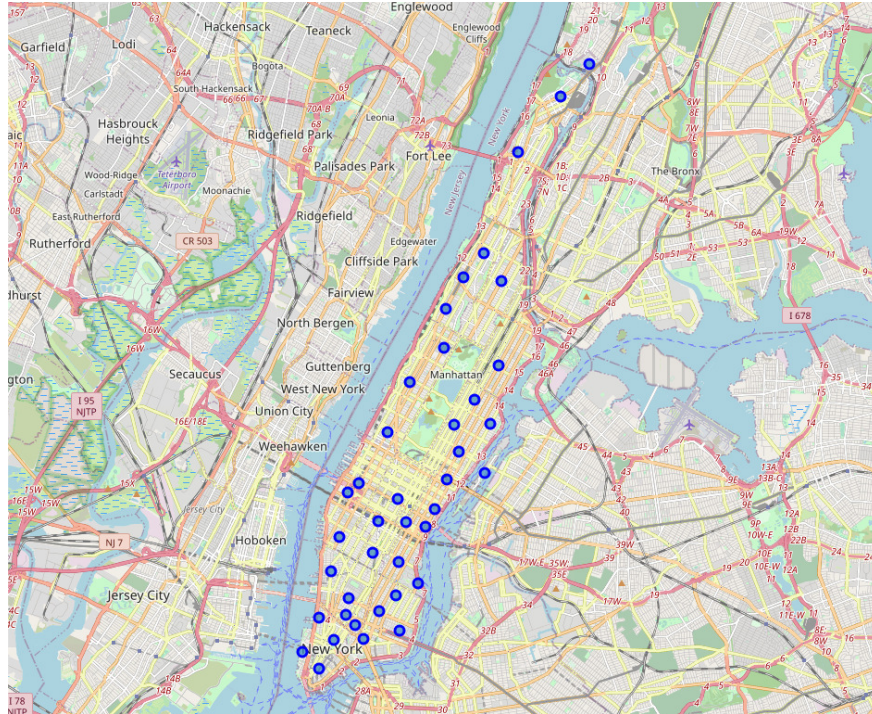
To start to deep dive into the neighborhoods that would be the best for the new restaurant, I prepared a new call to pull in only restaurants around each neighborhood. This gave me a total restaurant count, and allowed me to see what types of restaurants were available in each area. Keeping in mind that our goal was to find a market that was not oversaturated, had little to no seafood restaurants, but had a solid dining out culture, I narrowed down the list to 6 neighborhoods that had between 30 and 80 restaurants, and 0 seafood restaurants.

These new locations are visually represented below:
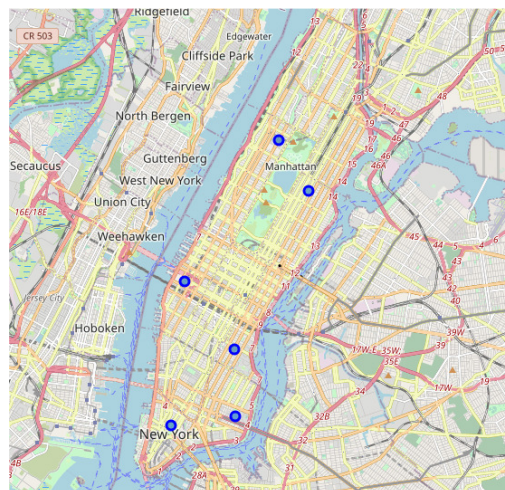
To provide further insight into the differences between each of the neighborhoods, I decided to pull in the top venues for each neighborhood, and this time not limit it to restaurants. This would show me how active the local community is in dining out, and give a sense of other popular venues in the surrounding area.

To do this, I called out to Foursquare once again for each of the six neighborhood candidates. I then grouped each neighborhood by their top venues, and clustered like-neighborhoods together. This allowed me to accomplish my task of gaining insight into what else is available for the community in the area.

4. Results

Each of the six neighborhoods that we selected appear to be good candidates for the new restaurant. However, one in particular stood out for several reasons.

- **Lower East Side**
  - Forty-two total restaurants, zero of which are seafood restaurants
  - 5 restaurants in the top 10 most common venues, shows a healthy dining out culture
  - Art gallery and Cocktail Bar are also top venues in the neighborhood, which pair well with an upscale restaurant.

5. Discussion

More data could be included in the future to better select a neighborhood. Some examples would be aggregating an average rating by restaurants in the area (requires a paid Foursquare account). This would give a sense if the home for an upscale restaurant fits in with the other restaurants surrounding it. I also made assumptions based on what a client may decide is the right criteria for the restaurant, such as average number of restaurants in the neighborhood and Art Gallery and Cocktail Bar being an indicator of feasibility of an upscale restaurant. I could also foresee better narrowing the diameter for the Foursquare calls based on the actual size of the neighborhoods and cities.

6. Conclusion

In this project, I used Python and Data Science to help narrow down a city for a new Seafood restaurant location. I was able to use Foursquare and location data to pick one of two larger locations, and using similar data on a lower level, narrow down to the ideal neighborhood out of forty in the chosen city. I was able to gain further insights by grouping and clustering the neighborhood candidates together, and I have some ideas on how I can expand and improve the research in the future.