

The Battle of the Neighborhoods - Week 2

Report

Determining Strategic Locations for an African/Ethiopian Restaurant in New York City



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Introduction: Business Problem

Problem Background:

New York City is the most populous city in the United States. New York City is also the most densely populated major city in the United States. The city has been described as the cultural, financial, and media capital of the world, significantly influencing commerce, entertainment, research, technology, education, politics, tourism, art, fashion, and sports. The city is composed of five boroughs, each of which is a county of the State of New York. The five boroughs—Brooklyn, Queens, Manhattan, the Bronx, and Staten Island.

This has a big implication in opening a business in NYC. The competition for any kind of business is very high as there are all kinds of business in the city. So it is essentially to look into the issue based on data and analyze the data to have insights that would help to make an optimal decision and avoid business risks.

Problem Description:

Though there are lots of restaurants in the city, the high number of population, visitors, and the economy at large, there is high demand for dining outside or take away food home and eat. There is also immense opportunity to attract the attention of visitors for African cousins.

An African/Ethiopian restaurant is a business which prepares and serves tradition spicey food and drink to customers in return for money, either paid before the meal, after the meal, or with an open account. The City of New York is famous for its excelllent African cuisine. It's food culture includes an array of international cuisines from Asia, Mexico, Europe which is influenced by the city's immigrant history. But there are still high demand for spicy, healthy from Africa varieties such as the Ethiopian Injera with vegie and Doro wot at large.

Central and Eastern European immigrants, especially Jewish immigrants - bagels, cheesecake, hot dogs, knishes, and delicatessens

Italian immigrants - New York-style pizza and Italian cuisine

Jewish immigrants and Irish immigrants - pastrami and corned beef

Chinese and other Asian restaurants, sandwich joints, trattorias, diners, and coffeehouses are ubiquitous throughout the city

mobile food vendors - Some 5,000 licensed by the city

Middle Eastern foods such as falafel and kebabs examples of modern New York street food

It is famous for not just Pizzerias, Cafe's but also for fine dining Michelin starred restaurants. The city is home to "nearly one thousand of the finest and most diverse haute cuisine restaurants in the world", according to Michelin.

So it is evident that to survive in such competitive market it is very important to startegically plan. Various factors need to be studied inorder to decide on the Location such as :

New York Population

New York City Demographics

Are there any Farmers Markets, specially those who can provide the main ingredient of for the spongy and sour flat bread (Injera) which is called Teff? What about the wholesale markets etc nearby so that the ingredients can be purchased fresh to maintain quality and cost?

Are there any venues like museum, games, gyms, entertainmnet zones, parks etc nearby where floating population is high not only on the weekends but through the weekdays.

Who are the competitors in that location? Are there any African/Asian cousins

- Cuisine served / Menu of the competitors
- Segmentation of the Borough area
- Untapped markets
- Saturated markets etc

A location which identified based on data and analytics tells that involve through investigation using data science tools is very helpful for replicating the same business and in other location in the other parts of the city.

Objective

I'm doing this research for my self and for the person who would be willing to lend their resources (financial resources) to kick off the business in the selected area of NYC. I can make sound decision on the matter and the study also helps to convince my friends to get their support in money and in other kinds. Hence, the object is to help my self and my friends to make rational decision on the matter – opening a restaurant in New York City.

Besides, I believe that this would interest anyone who wants to start a new African/Ethiopian restaurant in New York city because the opportunity is so immense if it is carefully analyzed with data.

What will make the project successful?

The success criteria of this project will be a sound recommendation of borough/neighborhood choice to the my ABC Company Inc. based on absence or shortage of such special restaurants in that location and nearest suppliers of ingredients.

The Data

To solve the problem, we will need the following data:

- New York City data containing the neighborhoods and boroughs.
- Latitude and longitude coordinates of those neighborhoods. This is required to plot the map and get the venue data.
- Venue data, particularly data related to restaurants. We are going to use this data to perform further analysis of the neighborhoods.

The Extraction of Data Source

New York City data containing the neighborhoods and boroughs will be obtained from the open data source: https://cocl.us/new_york_dataset. Then, we will get the geographical coordinates of the neighborhoods (latitude and longitude) using Python Geocoder package.

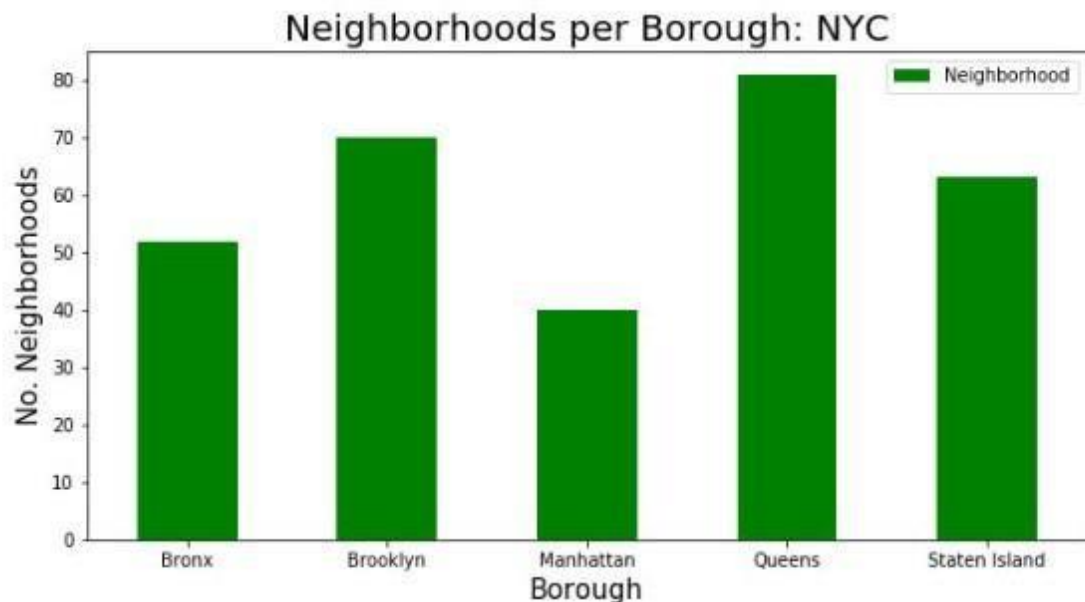
Finally, we will use Foursquare API to get the venue data for the neighborhoods defined at the previous step. Foursquare has one of the largest databases of 105+ million places and over 125,000 developers use this application. Foursquare API provides many categories of the venue data; we are particularly interested in the restaurant data to solve the business problem defined above.

This project will require using of many data science skills, from web scrapping (open source dataset), working with API (Foursquare), data cleaning, data wrangling, to map visualization (Folium). In the next Methodology section, we will discuss and describe any exploratory data analysis that we did, any inferential statistical testing that we performed, and what machine learning techniques were used.

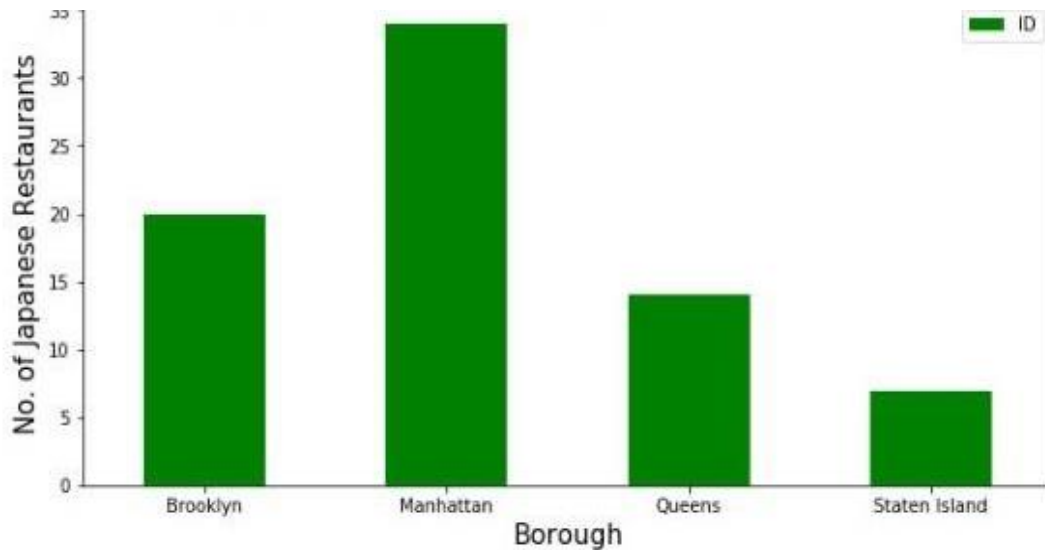
Results

The results of our analysis showed below:

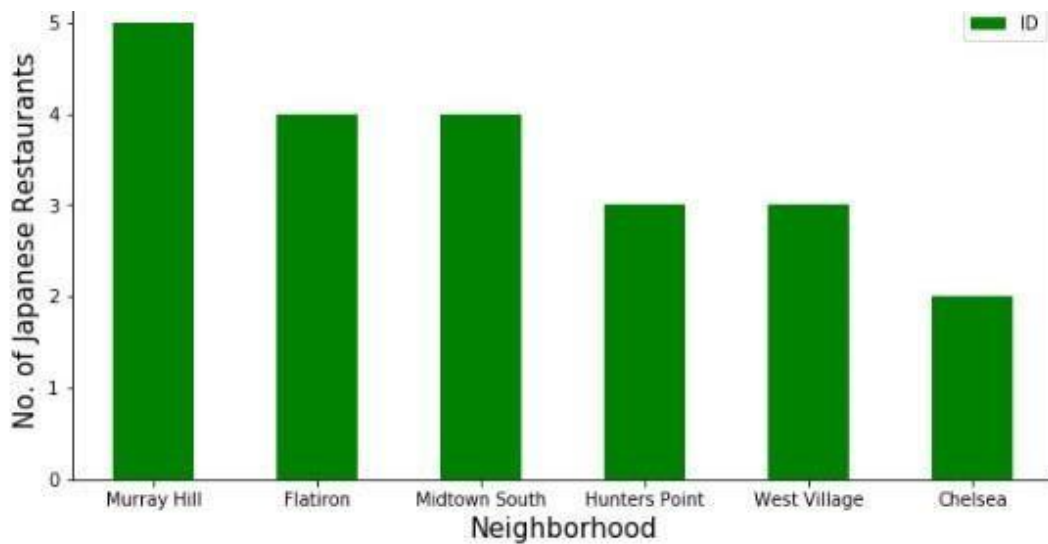
1. We see that Queens has the highest number of Neighborhoods.



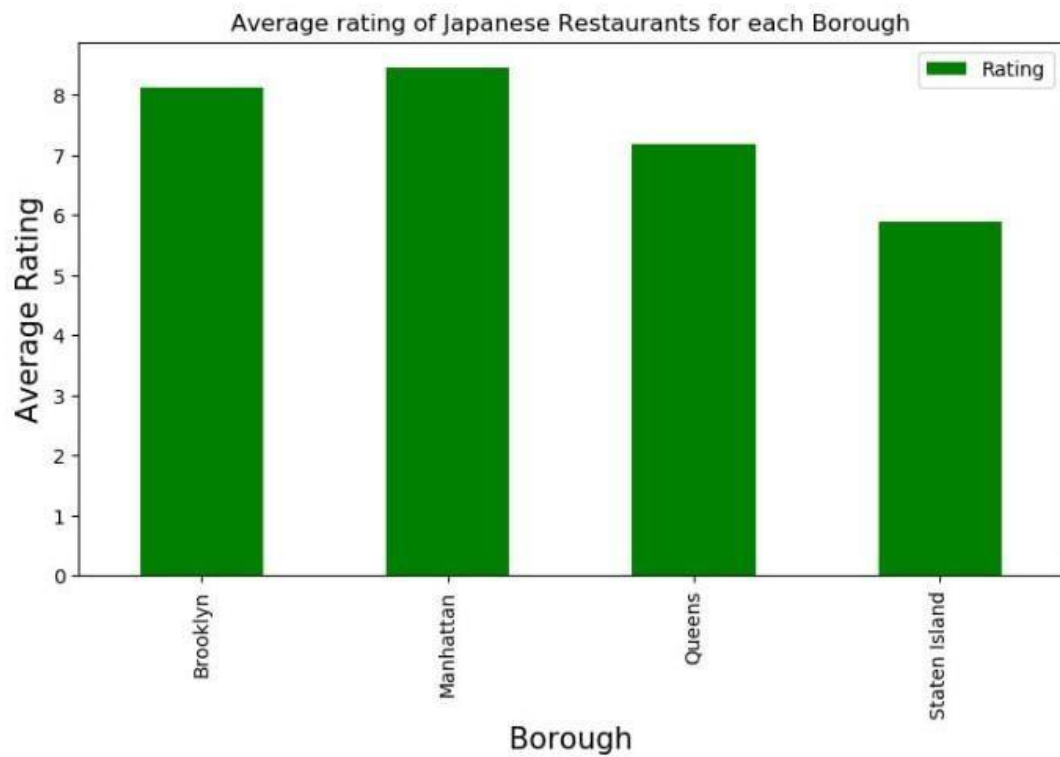
2. Although Manhattan had the least number of neighborhoods, it does have the highest number of Japanese restaurants.



3. The Murray Hill in Manhattan has the highest number of Japanese Restaurants with a total count of 5.



4. Manhattan has the highest average rating for African/Ethiopian Restaurants.
Brooklyn goes right behind the Manhattan with the average rating of its Japanese restaurants only a little lower than Manhattan. Two neighborhoods with the highest average rating for African/Ethiopian Restaurants are Cobble Hill and North Side (both located in Brooklyn).



	Neighborhood	Average Rating
9	Cobble Hill	9.100000
36	North Side	9.100000
15	Flatiron	8.975000
12	East Village	8.950000
25	Hunters Point	8.933333
16	Fort Greene	8.900000
1	Boerum Hill	8.800000
10	Downtown	8.800000
33	Midtown South	8.800000
6	Chelsea	8.750000

Top Ten neighborhoods with Japanese Restaurants with the best average rating

Discussion Section

Based on the results of our analysis, I would state that Manhattan and Brooklyn are the best locations for African/Ethiopian cuisine in NYC. To have the best shot of success, I would open a African/Ethiopian restaurant in Brooklyn. Brooklyn has multiple neighborhoods with average ratings exceeding 8.0 on a scale of 1.0 to 10.0 and has less amount of African/Ethiopian restaurants than Manhattan, making competition easier. In addition, we should keep in mind, that real estate prices in Brooklyn are much cheaper than in Manhattan

Limitations and suggestions for future researches

All of the above analysis is depended on the accuracy of Four Square data. Besides, during this project, we used a free Sandbox Tier Account of Foursquare API that goes with limitations as to the number of API calls and results returned. To get better results, future research work and more comprehensive analysis could consider using a paid account to bypass these limitations as well as incorporating data from other external databases.

Conclusions

In the project we have gone through the process of identifying the business problem, specifying the data required, extracting and preparing the data, performing data analysis, and lastly providing recommendations to the investors/developers. During the project, we applied different data science methods and instruments to get the answer to our main question: “Where in the City of New York, should the investor open a African/Ethiopian Restaurant?” The findings of this project will help the relevant investor better understand the advantages and disadvantages of different New York neighborhoods/boroughs in terms of opening a Japanese restaurant.