Optimal Location for Indian Restaurant in NYC.

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March 1, 2021

1. Introduction

As per recent statistics, there are over 30,000 different cuisine restaurants in alone NEW YORK City. It would take years for one person to visit all the restaurants in NYC. With that being said, the restaurant business sounds one of the most lucrative business industries in New York City as the city serves home for so many people belonging to different race and culture.

Considering New York's diversity and ethnicity it is evident that starting a restaurant business would earn you more money comparatively than most of the other businesses. This project serves as one of the guides to start an Indian restaurant in New York City by performing demographic analysis on various venues in different neighborhood of the city.

2. Business Problem

New York is famous for its restaurants serving cuisines from all over the world. The food culture of NYC consists of restaurants with so many international cuisines considering the population of the immigrants. Hence, to open a restaurant in this city various factors are to be considered. The factors being:

1. New York City's Location and Demographics.
2. Study about the venues in different neighborhood of New York City.
3. Competitors in that location.
4. Analyzing the different categories of the venues.

Being a Data Scientist, it is my job to help my clients to give a deep insight of these factors and help them to take such critical business decision. It is the role of Data Scientist to give a graphical representation as to which area would be better to open a new restaurant and provide with a complete explanation as to why it is the best area.

3. Data Source

The NYC Population and demographic data was collected from.

1. https://en.wikipedia.org/wiki/New_York_City
2. https://en.wikipedia.org/wiki/Demographics_of_New_York_City
3. https://cocl.us/new_york_dataset

Various Python Libraries such as requests, BeautifulSoup, Pandas were used to extract this data. Foursquare API was used to analyze the various neighborhoods and the existing Indian restaurants in those neighborhoods along with the reviews and suggestion from different users.

4. Methodology

To begin with out analysis, we start by importing all the python required libraries. These Libraries are used to extract data from the websites as well as visualize the result in a graphical or by mapping. After all the libraries are successfully installed, we would begin to extract the data from the available data source. Our analysis is limited to New York City which contains 5 Boroughs, and each borough has many neighborhoods. The goal of our project is to determine which neighborhood would be the best location to open an Indian Restaurant.
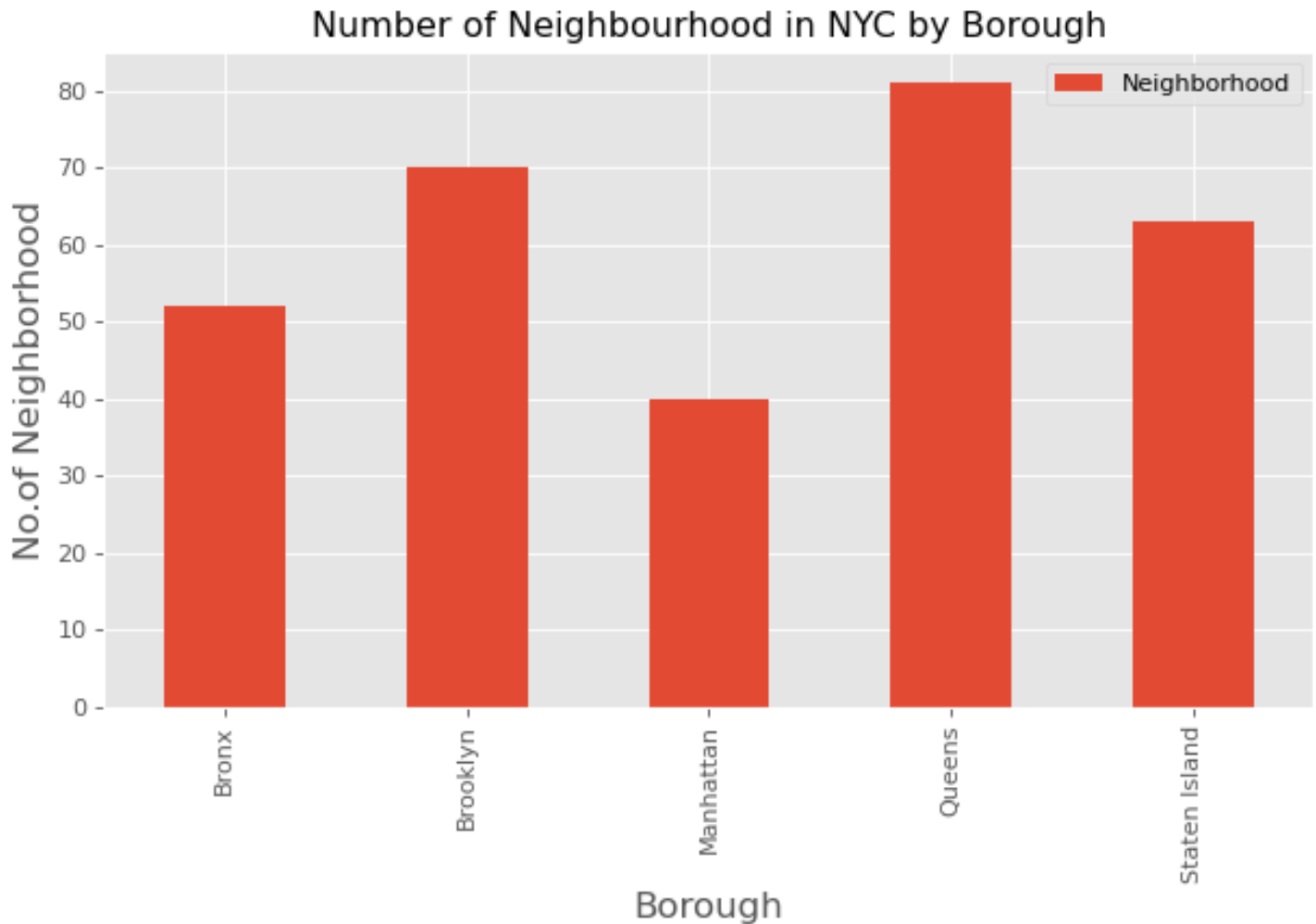

*Bar Chart representing the neighborhood count Borough wise.*

We would perform our analysis based on the already existing Indian Restaurants in NYC. We would analyze the likes, tips, and rating of each restaurant in NYC using Foursquare API. Based on this analysis we would find an optimal location to open a new Indian Restaurant.

Our determination of the number of Indian Restaurant based on the Borough is represented by the following bar chart.

Number of Indian Restaurants in NYC by Borough
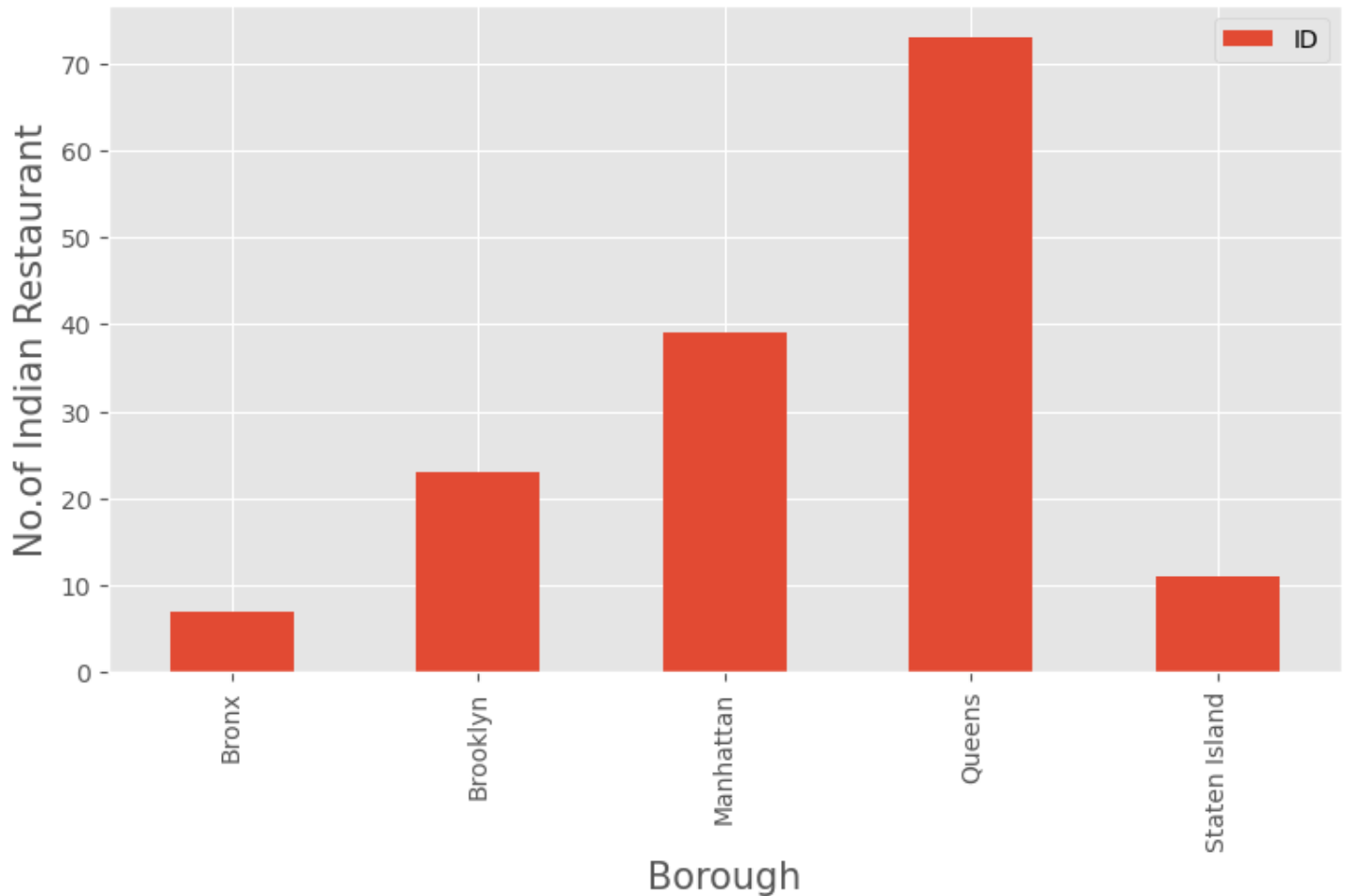
According to the above analysis, Queens has the maximum number of Indian Restaurant with approximately 75 of them followed by Manhattan. These Restaurants are scattered in different neighborhoods of queens and when we list down the top 10 neighborhoods with maximum number of Indian Restaurant then we realize that Floral Park, has the maximum number of restaurants.
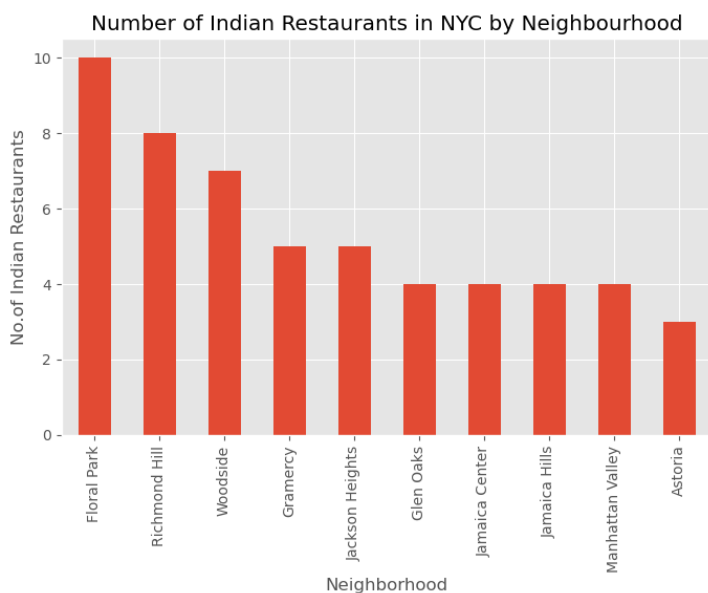
The beside figure represents the distribution of Indian Restaurants in the neighborhoods of queens.

Further using Foursquare API, we would determine the likes, tips, and rating of all these Indian Restaurants. With this Analysis we would which Borough has the best rating restaurant in NYC and that would give us an Idea about the location we are looking for.

Initially we categorize the Restaurants with Maximum Likes and Ratings. The table below gives the result of our analysis.

	Neighborhood	Average Rating
71	Tribeca	9.1
55	Prospect Heights	8.9
76	West Village	8.8
13	Chelsea	8.8
22	East Village	8.7
56	Prospect Lefferts Gardens	8.7
47	Midtown	8.6
15	Clinton Hill	8.5
29	Fort Greene	8.5
63	Roosevelt Island	8.4

This table gives us the top 10 count of Neighborhood which has the best average ratings.

For example: the Indian Restaurants in Tribeca are mostly likely preferred by the people and the list goes on.

Does this justify our analysis? NO!

Since New York is so diversified, we still need to be sure about everything before we put our money on it. To further narrow our analysis, we will consider only those Restaurants and the Neighborhoods where people most likely like to visit. This can be done by only considering the restaurants with an average rating of 8.5 and above. This would give us a clearer picture.

5. Results

Manhattan- As per my analysis here Manhattan has the second highest average ratings after brooklyn but Manhattan being the most densely populated and majorly attracts more diverse crown it would be advisable to open a restaurant in Manhattan. Mid Town Manhattan and East Village can be the best neighborhoods since they don't have much competition of the same cuisine.

The map below gives us the representation of these neighborhoods in a map.

Average rating of Indian Resturants for each Borough
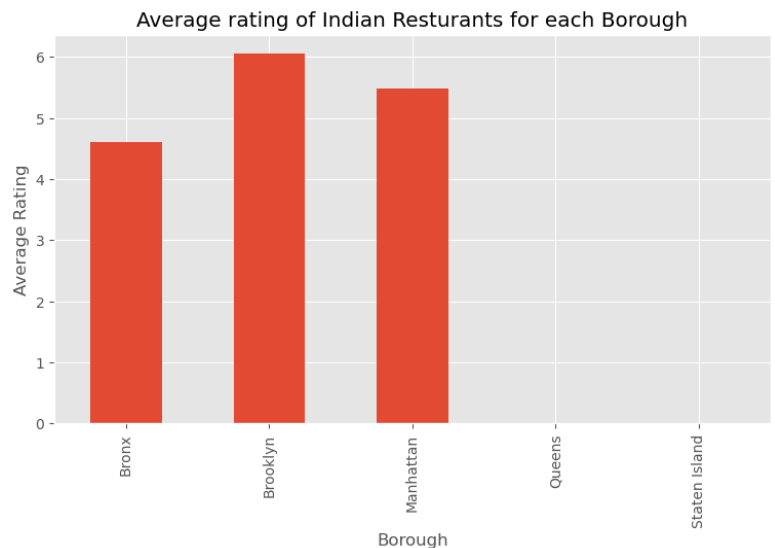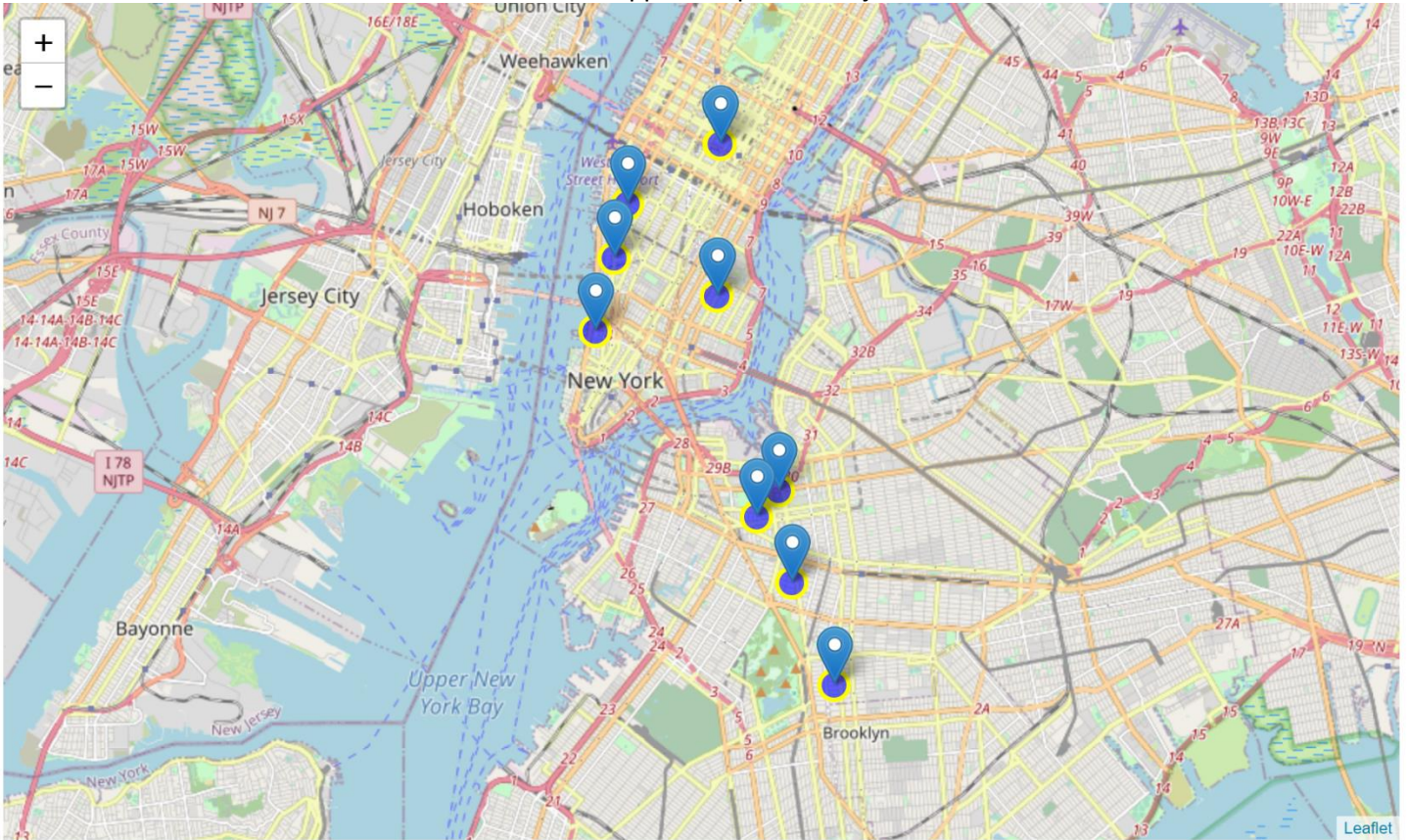
6. Conclusion

Opening a Restaurants require a lot of research. New York city has over 100,000 of restaurants of different cuisines. Every day a new restaurant opens in NYC on the other had restaurants closes too cause of lack of business. Thus, it is very advisable to do a complete research before opening any restaurant in NYC.

My Analysis states that Midtown Manhattan and East Village could possibly be the best location because of its tourist attractions and the diverse crowd.