

# **Battle of the Neighborhoods – A Case of African Restaurants and Cuisines in New York City: Final Report**

## **Problem Description and Background**

As of 2019, the population demographics show that approximately 8.3 million people reside in New York City (NYC). Among this population, 25.1% are either African Americans and/or have migrated from Africa. There are so many businesses in NYC and one that is of particular interest is to me the hospitality industry.

One of the major reasons why the hospitality industry thrives in New York city is because of the population and diversity of the residents. In addition, NYC is a center of attraction where people come from all over the world for tourism and business purposes. There are several businesses within the hospitality industry. One profitable and distinct business is food and catering. Given the nature of life in NYC, the average New Yorker is always on the move and often, relies on eating out at restaurants, cafe's or placing food orders.

The primary goal of this project is to evaluate the boroughs in NYC and determine which would favor the opening of an African restaurant. The choice of an African restaurant will be detailed in the discussion section of the report. This project will be suitable for culinary investors and people looking to start African catering business where there is little to no competition.

## **Data Description**

The data that will be used in solving this problem is the New York json data file that was used in one of the assignments. The data will be imported and arranged properly. It will be read into a pandas data frame and the geographical description (coordinates and maps of NYC and selected boroughs) of the data will be conducted. The following data can be read from the file:

borough, neighborhood, latitude, longitude. In addition, I would use my Foursquare API credentials to explore the neighborhoods within the selected boroughs. This will help determine the suitable location for opening the African restaurant.

## **Methodology**

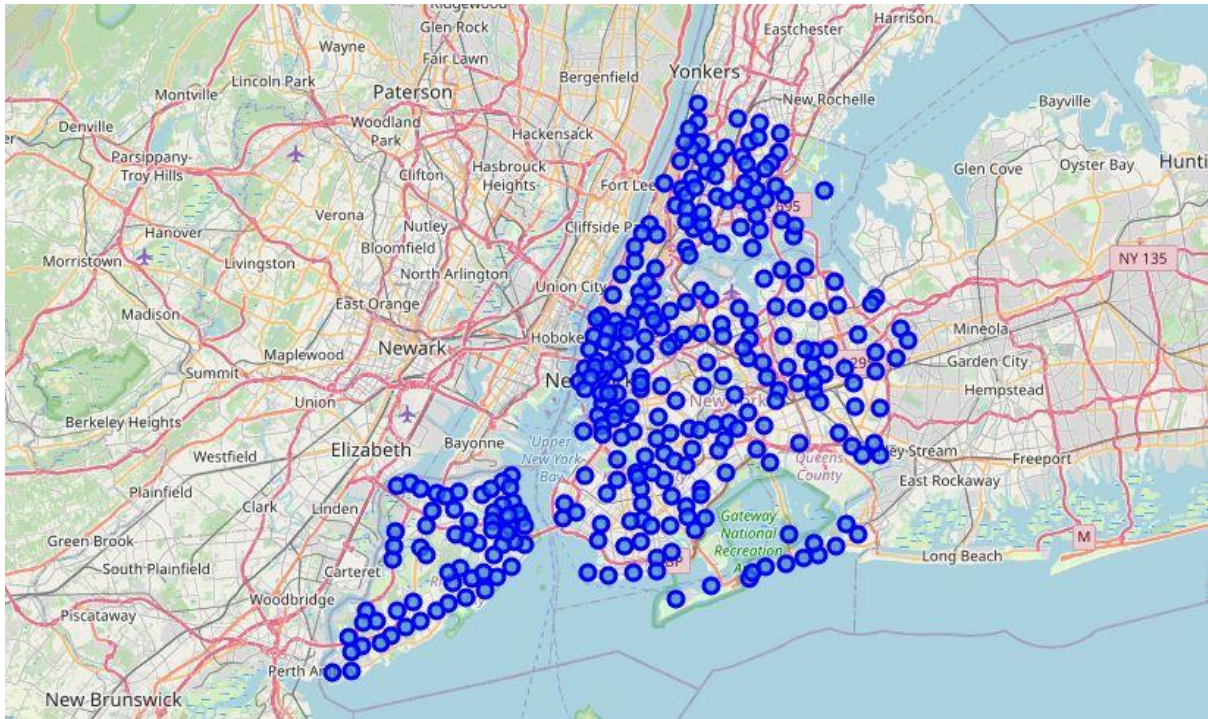
This section of the report is represented from step 1 to step 6 in the Jupyter notebook. Every step and sub-steps have been explained in detail. These steps are summarized below.

**Step 1 (Import Libraries)**: In this step, the libraries necessary to perform the study are imported. Some of the important libraries are pandas, matplotlib, json, and folium to mention a few. The libraries that have not been installed was installed before importation.

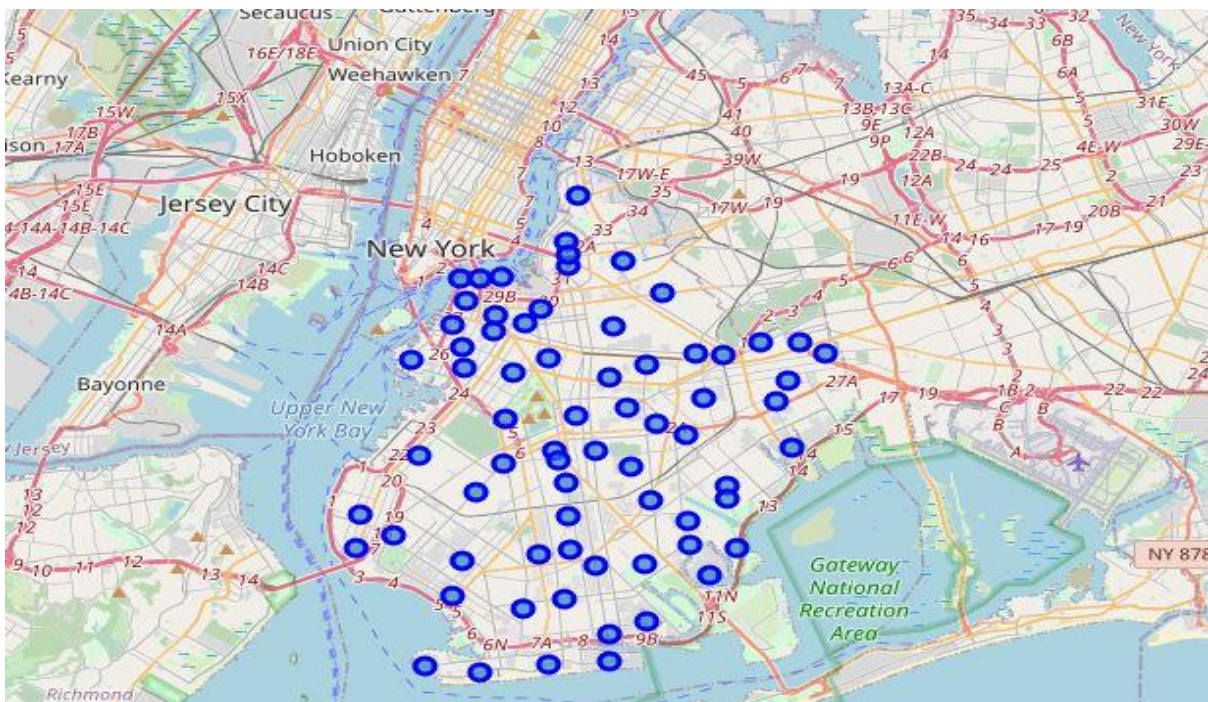
**Step 2 (Import and Arrange Data)**: In this step, the New York city data is a json file. The json library was used to import the data. The data is then transformed into a pandas dataframe. This is essentially transforming the data of nested Python dictionaries into a pandas dataframe. Empty data frames are created, and the data looped through to fill the dataframe one row at a time. After this, the new dataframe is viewed with the `.head()` and `.shape` functions.

**Step 3 (Geographical Exploration of New York City)**: In this step, the geopy library used to get the latitude and longitude values of New York City. After this, the folium library used to visualize the map of New York City which is shown in figure 1.

**Step 4 (Geographical Exploration of Three New York Boroughs)**: In this step, the original dataframe is sliced to create new dataframes for Manhattan, Brooklyn, and Queens. The reason for selecting these boroughs are presented in the discussion section. After creating the new dataframes, their coordinates are obtained and then their maps are visualized. Figure 2 shows the map of Brooklyn. All other maps are found in the notebook.



**Figure 1: Map of New York City**



**Figure 2: Map of Brooklyn**

**Step 5 (Using Foursquare API to Explore the Boroughs):** In this step, I established my Foursquare API credential. These credentials are client ID, client secret, and version. After

establishing these credentials, the Foursquare API was used to explore the selected boroughs in NYC. First, the coordinates of the first neighborhood in each borough was obtained. Next, a get-category-type function was used to extract the category information for the first 100 venues from these boroughs, after which the json files are cleaned and structured into a pandas dataframe.

***Step 6 (Explore Neighbourhoods in Manhattan, Brooklyn, and Queens):*** In this step, a get-nearby-venue function is created to repeat the whole step 5 for all the venues in the neighbourhoods of the boroughs. After this, each neighbourhood is evaluated for the purpose of locating a new African restaurant.

## **Results**

The results of this work are presented in step 6. In this step, the Foursquare API was used to evaluate and explore the neighborhoods within Manhattan, Brooklyn, and Queens. The results show that: In Manhattan, there are 3 African restaurants all in the Central Harlem neighborhood. In Brooklyn, there is only 1 African restaurant in Ocean Hill neighbourhood. In Queens, there is no African restaurant on record.

## **Discussions**

The three boroughs were chosen because Manhattan is the biggest commercial borough. Queens has the largest land mass (108.1 sq miles) followed by Brooklyn (69.5 sq miles). The two busiest airports in NYC are located in Queens.

Furthermore, according to the demographics of New York City (Wikipedia, 2019), 2 out of every 5 residents in NYC live in Brooklyn and 1 out of every 5 residents live in Queens. Thus, the target borough audience for opening a new African restaurant is in Queens and Brooklyn. Manhattan is considered because of its commercial presence. Given the result, a

recommendation for establishing an African restaurant in Queens NYC is made. This rule out the competition challenge and repetition of restaurant types and cuisines.

## **Conclusion**

In this study, NYC data was evaluated to determine the most suitable borough for opening an African restaurant. Several python libraries and methods were used to read and evaluate the data. Foursquare API credentials were also used to investigate the neighborhoods in the selected boroughs. The reasons for selecting three boroughs have been provided in the discussion. This work can be extended to the remaining two boroughs. At the end of the study, Queens borough appears to be the most suitable borough for locating the proposed African restaurant.