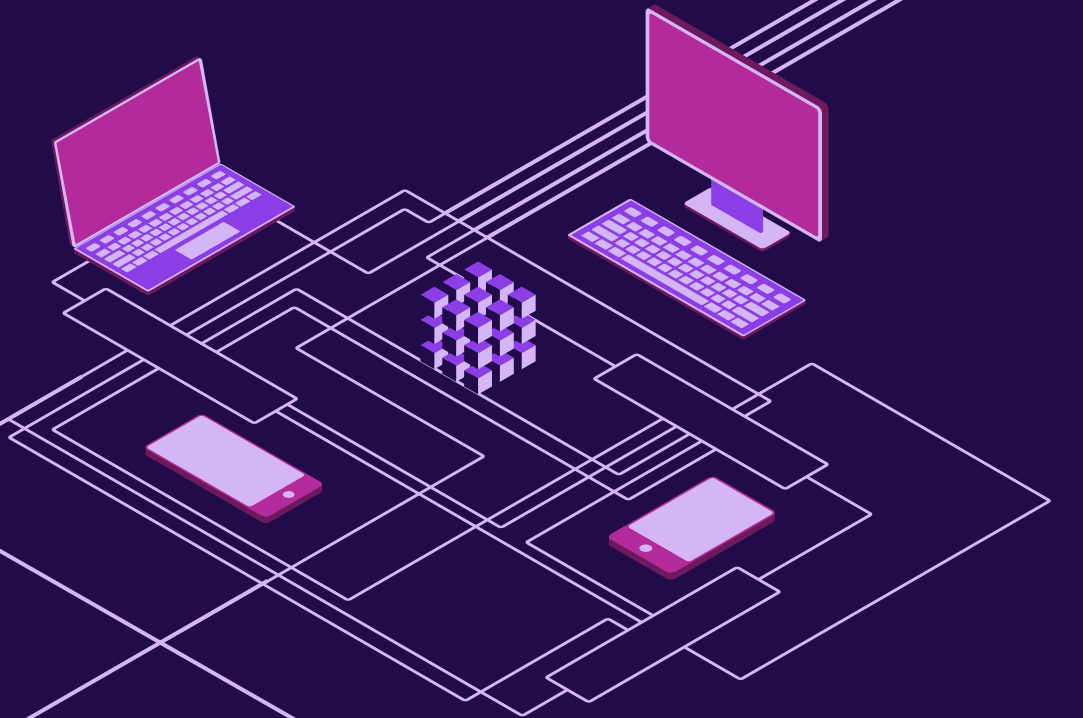# The Battle of Neighborhoods

Finding the best place to open an African restaurant in New York City

Thierno Oumar Diallo

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01

BUSINESS UNDERSTANDING

PROBLEM

Due to the large number of restaurants in New York City, it can be difficult for a business owner to know the best place to open his african restaurant to get more customers.

SOLUTION

For that, it is necessary to analyze the data of the city to know the places where there are a lot of people, no African restaurants and few other restaurants. In addition, the best places will be those that are close to the city centre.

02

Data ACQUISITION AND CLEANING

1. Data **acquisition**

FOURSQUARE

The first data is Foursquare API to find information on neighborhoods and restaurants in New York.

The second is New York City's data on its neighborhoods, boroughs and population density.

2. Data cleaning

➔ First, using data from the json file, only the features concerning neighbourhoods, districts, latitudes and longitudes were selected.

➔ Then, with Foursquare, the data was filtered to select only New York restaurants.

➔ The two previous data have been merged to obtain information on restaurants, neighbourhoods, boroughs, …

➔ Then, with the New York population data, only the Brooklyn data in 2010 were selected

➔ After filtering data to get only neighborhoods that have few restaurants, we got 400 rows and 14 columns
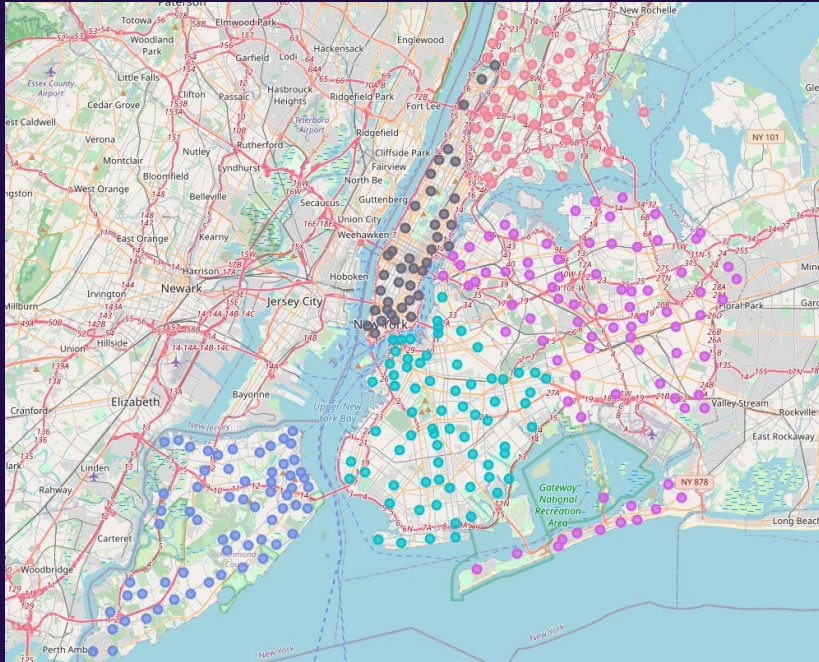
03

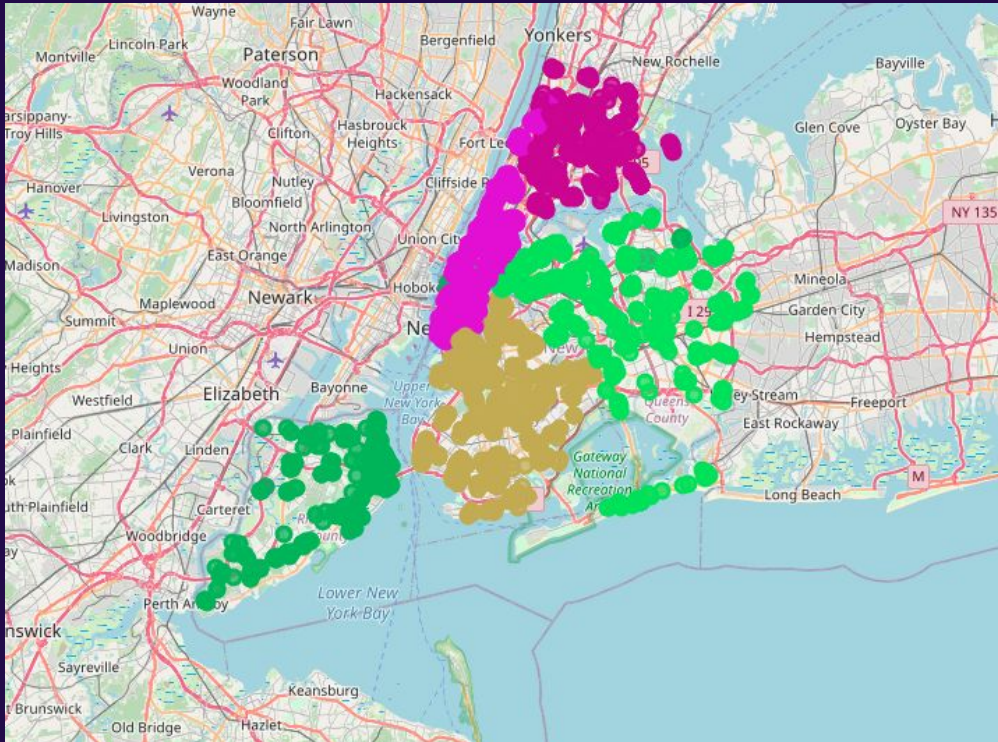# METHODOLOGIE

1. Data Exploratory

All neighborhoods in New York.

Each borough with a different color

- 306 neighborhoods
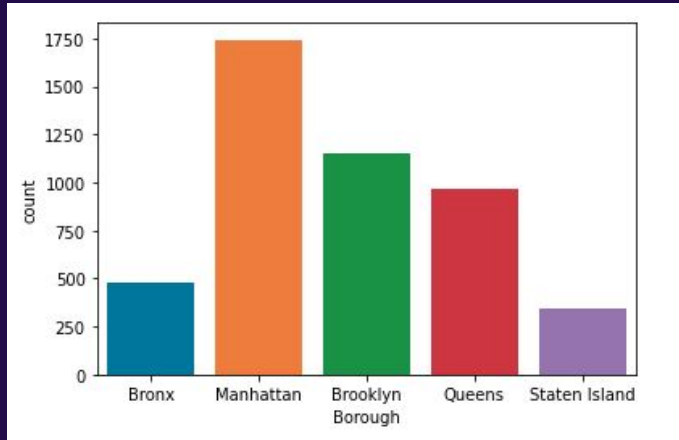- 5 Boroughs

All food restaurants in New York.

- 16 African restaurants
- 4677 other restaurants
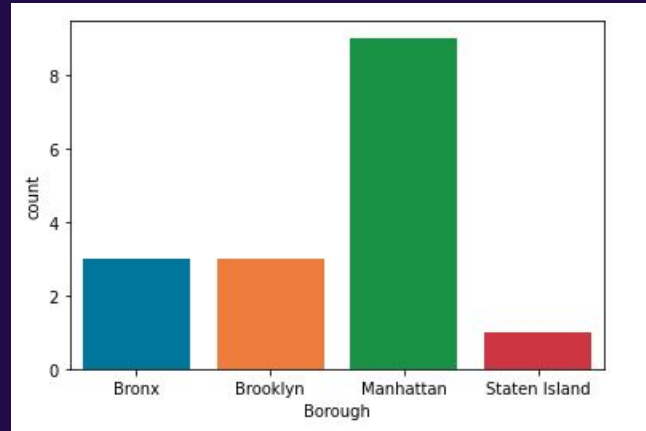
Fast food, coffee shops, pizza shops are not included.

The next step will be to focus on boroughs with few restaurants.

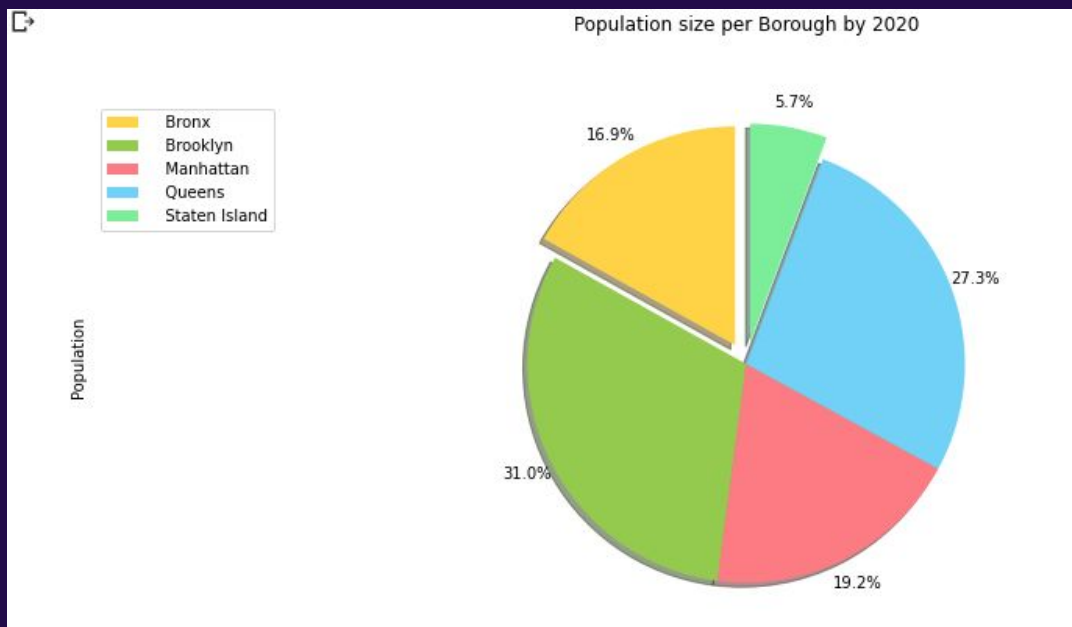# 1. Data Exploratory

Number of restaurants per borough.

Staten Island, Bronx and Brooklyn have the fewest African restaurants. Let's focus on them

All restaurants

African restaurants

1. Data Exploratory

Populous borough

Population size per Borough by 2020

Bronx
Brooklyn
Manhattan
Queens
Staten Island

5.7%
16.9%
27.3%
31.0%
19.2%

Population

Brooklyn is densely populated and has few African restaurants.

Let's focus on Brooklyn for next steps
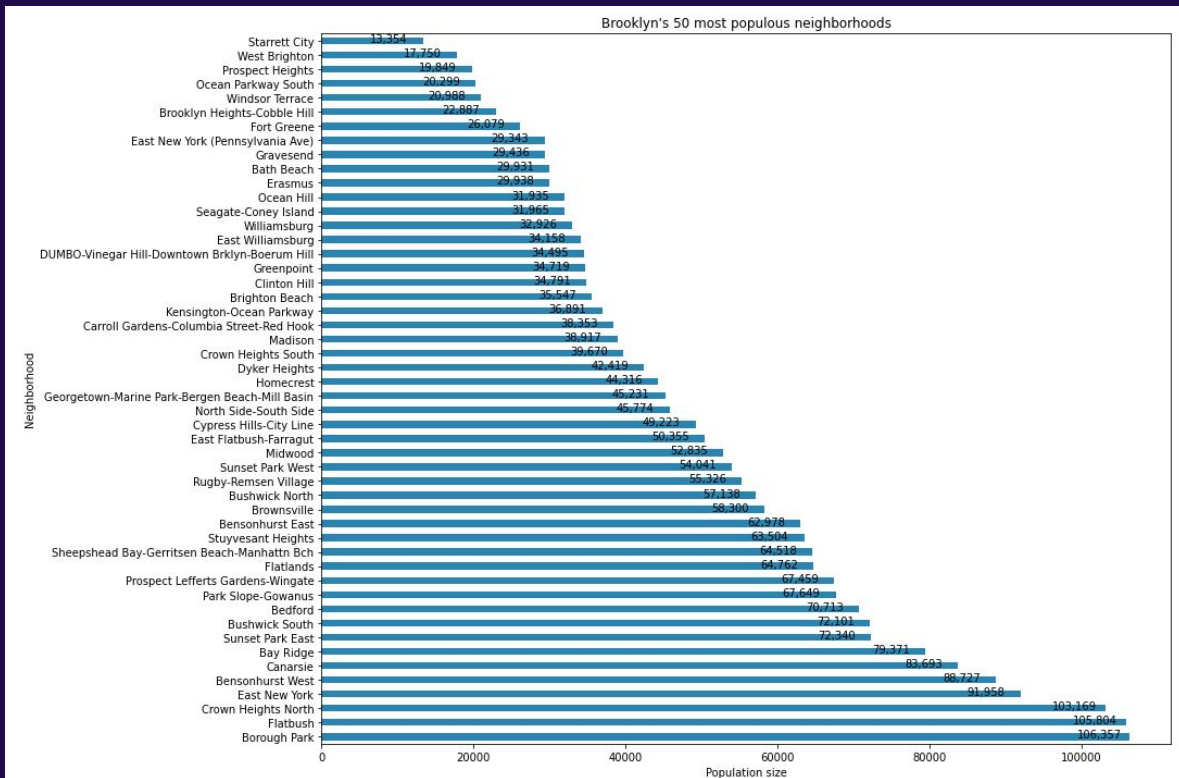
1. Data Exploratory

Restaurants in Brooklyn

African restaurants are in red. There are just 3

We got 70 categories of venues

1150 restaurants

1. Data Exploratory

Brooklyn's 50 most populous neighborhoods

- We're focusing on Brooklyn's 50 most populous neighborhoods
- We got 400 restaurants from these neighborhoods

1. Data Exploratory

Restaurants in Brooklyn

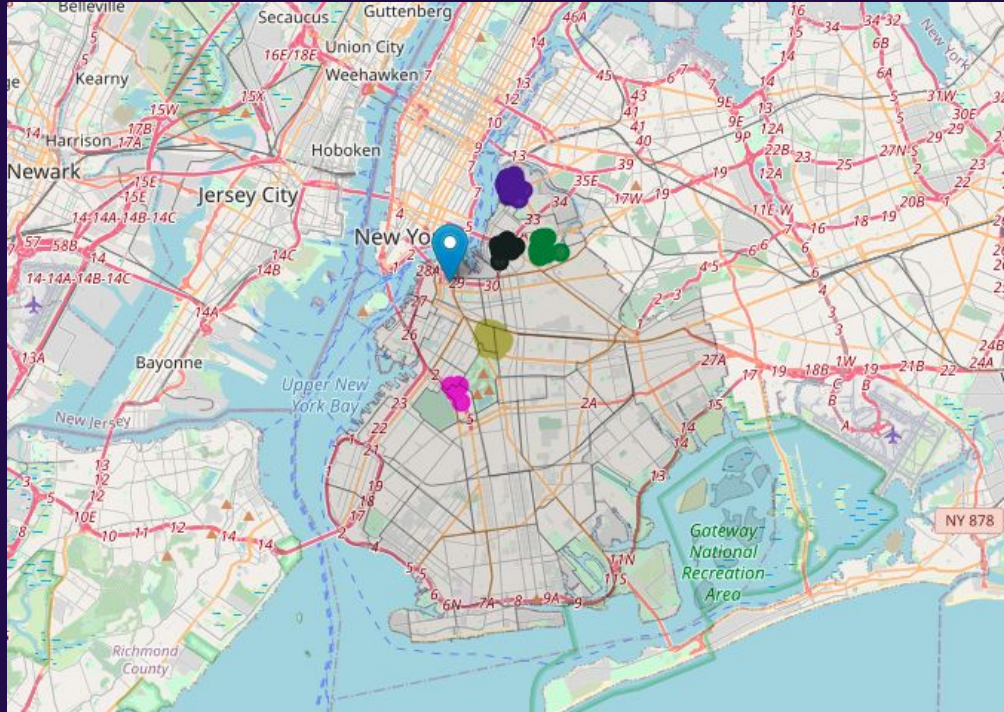We focus on the 20 neighborhoods with the least number of restaurants

We got 263 restaurants in the 20 neighbourhoods with the fewest restaurants in Brooklyn.

1. Data Exploratory

The shortest distances are ~2 km from Downtown Brooklyn

Next steps, we focus on neighborhoods that are no more than 5 km from Downtown Brooklyn

1. Data Exploratory

Finally, we obtained 5 neighborhoods that have fewer restaurants and are no more than 5 km from Downtown Brooklyn.

- Windsor Terrace
- **Williamsburg**
- **East Williamsburg**
- **Greenpoint**
- **Prospect Heights**
- **Downtown Brooklyn**

1. Data Exploratory

The top 5 venues for each neighborhood

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	East Williamsburg	Mexican Restaurant	Thai Restaurant	Vegetarian / Vegan Restaurant	Latin American Restaurant	Mediterranean Restaurant
1	Greenpoint	Chinese Restaurant	Mexican Restaurant	Sushi Restaurant	French Restaurant	Restaurant
2	Prospect Heights	Mexican Restaurant	Thai Restaurant	American Restaurant	Diner	Southern / Soul Food Restaurant
3	Williamsburg	Latin American Restaurant	Middle Eastern Restaurant	Caribbean Restaurant	Chinese Restaurant	Diner
4	Windsor Terrace	Sushi Restaurant	Chinese Restaurant	Diner	American Restaurant	French Restaurant

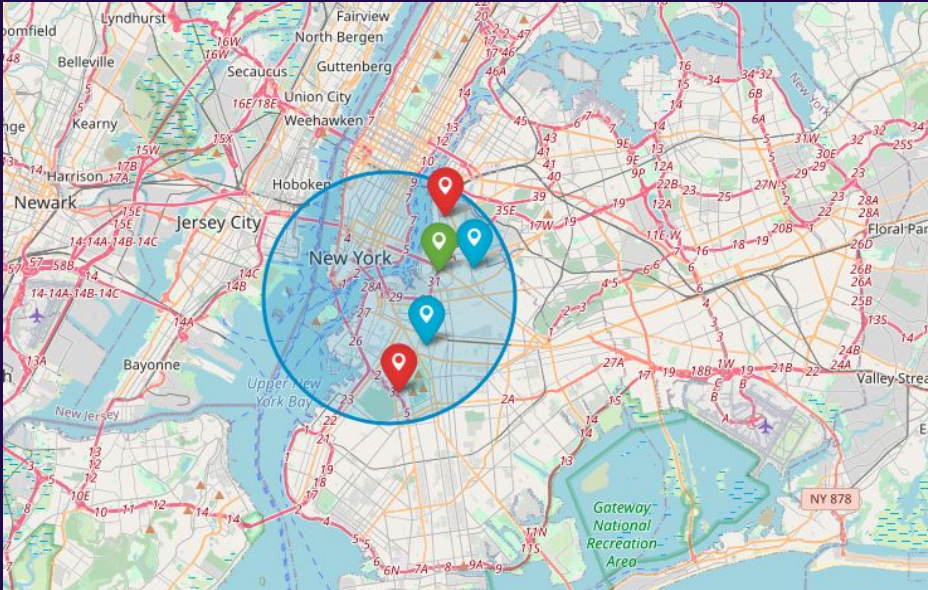This will give the business owner or entrepreneur an idea of the most common venues in each neighborhood.

2. MODELING

I use Kmeans Algorithm to cluster the neighborhoods into 5.

It will help the business owner to know the differences and similarities between neighbourhoods.

2. MODELING

The circle corresponds to Downtown Brooklyn projected at 100 radius

Cluster 0

Windsor Terrace, 4.37 km, 15 restaurants
Greenpoint, 4.57 km, 31 restaurants

Cluster 1

East Williamsburg, 4.08 km, 21 restaurants
Prospect Heights, 2.7 km, 31 restaurants

Cluster 2

Williamsburg, 2.54 km, 15 restaurants

04

CONCLUSION

1. Results

The Business owner could choose where there are:

- **Closest location with the fewest restaurants**
  Williamsburg

- **Asian restaurants**
  Greenpoint or Windsor Terrace

- **Latin American restaurants**
  Prospect Heights or East Williamsburg

2. Future

Other factors could be used to improve these results

The areas most visited by tourists

The safest places

Rental prices

THANKS!