

Coffee Shop Analysis in New York City

Subtitle



Background and Challenge

- New York City is a famous destination for people around the world. There are millions of tourists visit this island each year.
- There are many good variety coffee shops & restaurants in this big apple city. Thus, if you are a new entrepreneur who wants to open a new coffee shop in New York it will be very challenging as there are highly competitive as well as high demanding.
- There are five boroughs in New York City: The Bronx, Brooklyn, Manhattan, Queens and Staten Island. Each borough is coextensive with a respective county of New York States. Each borough is composed of many neighborhoods in the area which has its own unique characteristics. **The location to open a new coffee shop is an important factor to become success or failed in this business.**



Reference:

https://en.wikipedia.org/wiki/Boroughs_of_New_York_City

Business Challenge

Which borough and neighborhood are the best place to open the new coffee shop in New York City?

New York / Boroughs



The Bronx



Manhattan



Brooklyn



Queens



Staten Island



15 Best Coffee Shops In New York City ...
secretnyc.co



Coffee Shop in So Many Stores ...
nytimes.com



Coffee Shops Open Right Now in NYC
ny.eater.com



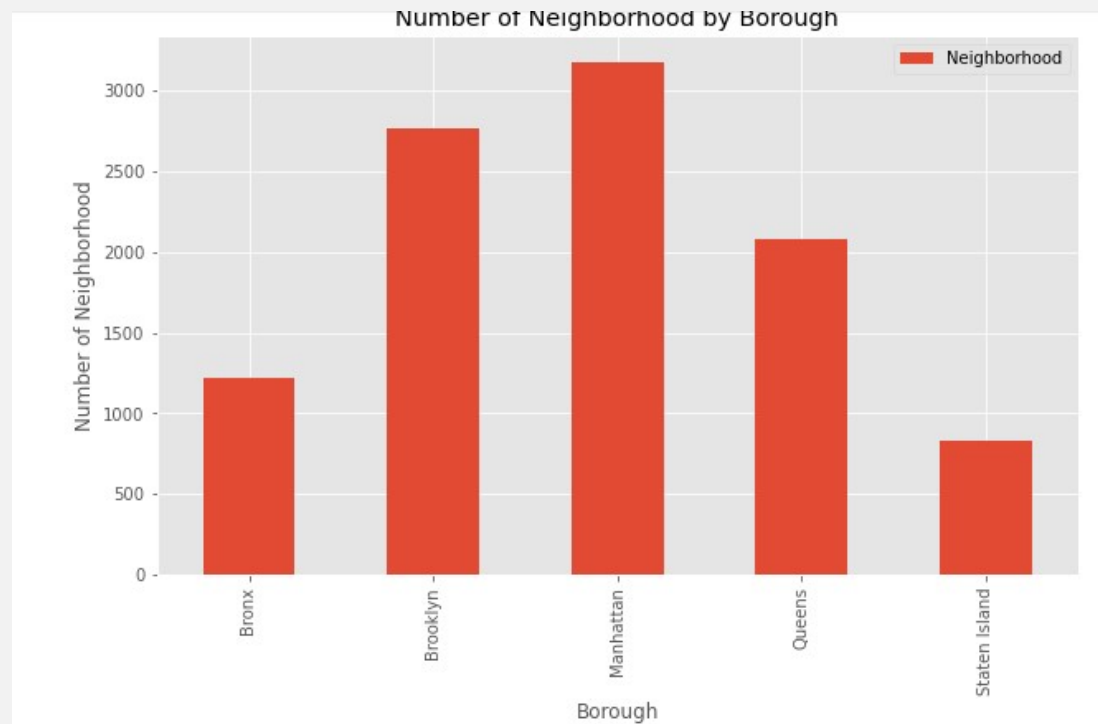
Coffee Shops Open Right Now in NYC ...
ny.eater.com

Data

- New York City Borough and Neighborhood
 - https://geo.nyu.edu/catalog/nyu_2451_34572
- Foursquare location data
 - Neighborhood Location
 - Venue location
 - Venue Category

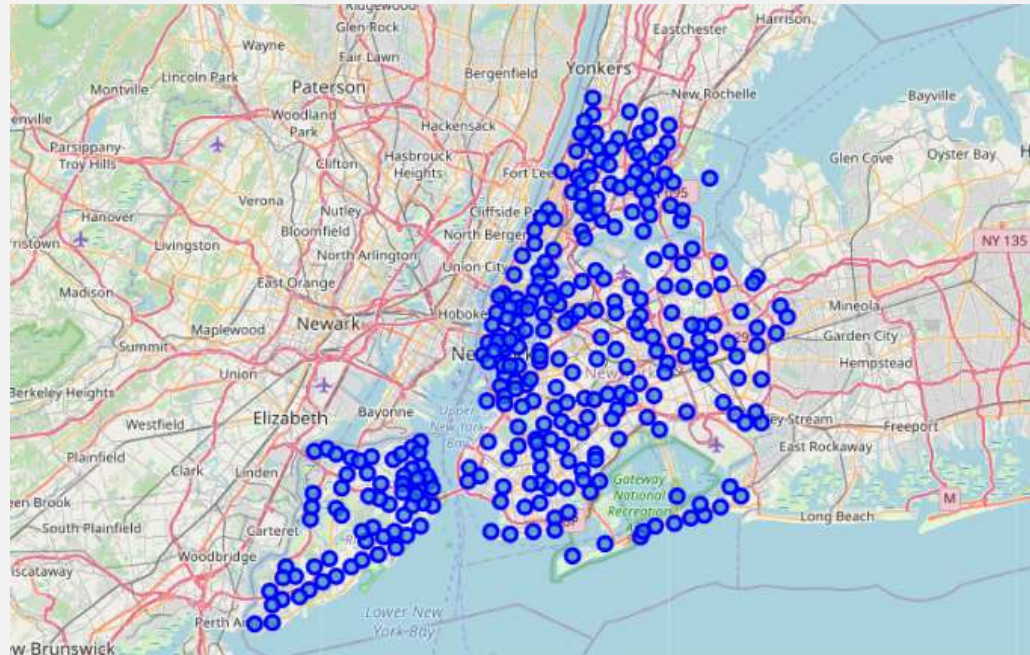
Data Analysis

- Number of Neighborhood in each Borough in New York City



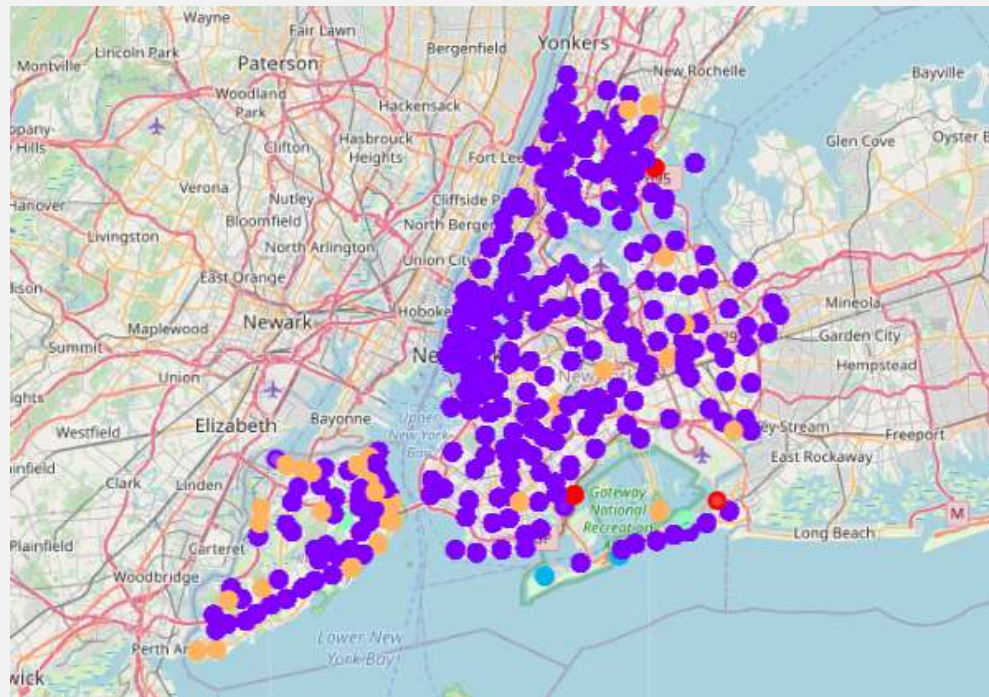
Data Analysis

- Neighborhoods in New York City



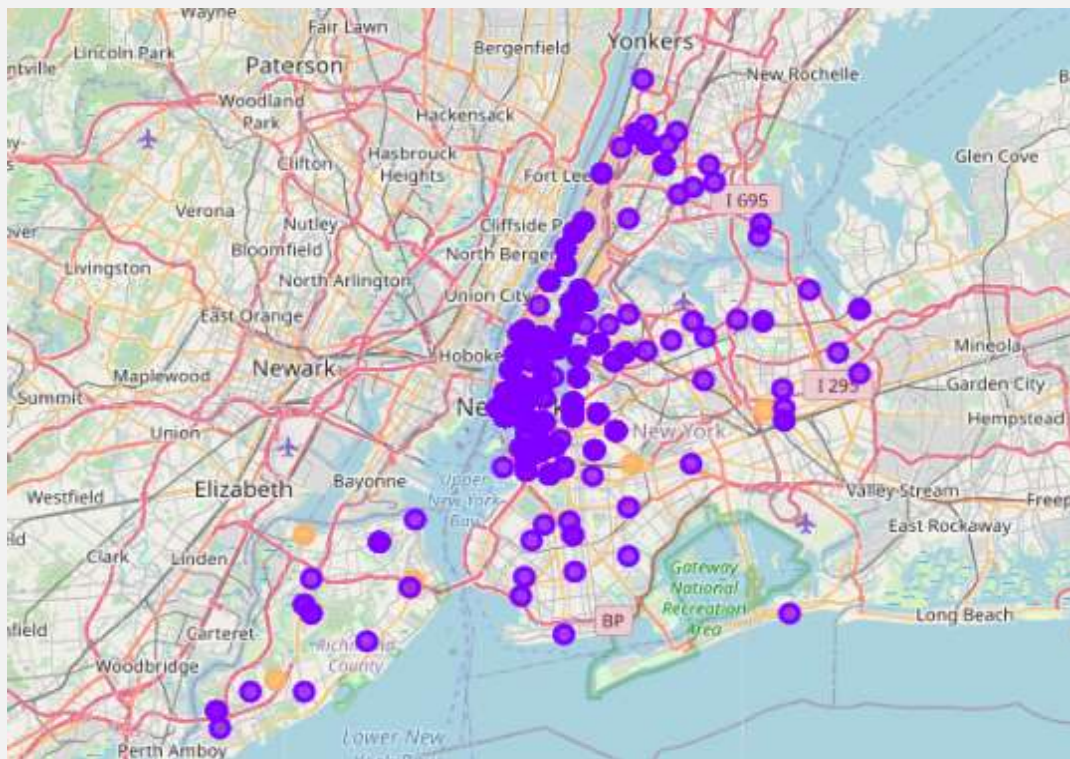
Data Analysis

- 5 Cluster all venue categories in New York City



Data Analysis

- Only 2 clusters contains coffee shop venues



```
newyork_venues_cluster.groupby('Cluster Labels')['Coffee Shop'].mean()

Cluster Labels
0    0.000000
1    0.021719
2    0.000000
3    0.000000
4    0.022672
Name: Coffee Shop, dtype: float64
```

```
newyork_venues_cluster.groupby('Cluster Labels')['Coffee Shop'].count()

Cluster Labels
0      3
1    268
2      2
3      2
4     30
Name: Coffee Shop, dtype: int64
```


Recommendation

Option 1: Open new coffee shop in the area that already have the business up and running

- Consider to open new coffee shop in cluster 1 and 4
- Cluster 1: Borough = Bronx with 116 Neighborhoods
- Cluster 4: Borough = Brooklyn (1 Neighborhood), Queens (1 Neighborhood) and Staten Island (3 Neighborhoods)

Option 2: Open new coffee shop in the area that does not have the any coffee shop opened yet

- Consider to open new coffee shop in cluster 0, 2 and 3

Conclusion

- K-Means is vastly used for clustering in many data science application, in this study we use K-Means to cluster the neighborhood to identify the potential area that is the best to open a new coffee shop business in New York City.
- Clustering technique can be used to roughly identify which borough within 5 boroughs in the New York City we should do the next deep dive analysis in the specific areas for further analysis to find the success factors to open a new coffee shop using correlation technique.