VENUE ANALYSIS FOR A NEW ITALIAN RESTAURANT IN BROOKLYN

FINDING A NEIGHBORHOOD BEST SUITED FOR NEW BUSINESS

- Choosing a neighborhood for starting a new restaurant can be a tedious task as it involves a lot of money.

- Data might contribute in determining a suitable place.

- Analyzing every aspect such as the population of an area, top venues liked and often visited by people in a neighborhood can be really helpful.

- This model can be used by other investors too who are new to an area and want to analyze first before investing.

DATA DESCRIPTION

- Borough, Neighborhood, Latitude and Longitude values of New York from https://geo.nyu.edu/catalog/nyu_2451_34572. Data was reduced to that of Brooklyn.

- Brooklyn current population statistics from https://www.worldatlas.com/articles/brooklyn-neighborhoods-by-population.html

- Foursquare API, Geopy and Folium were used.

THE MASTER DATAFRAME

- We have all the Boroughs, their Neighborhoods and their latitudes and longitudes. But we require a subset of this dataframe that is only for the Borough of Brooklyn.
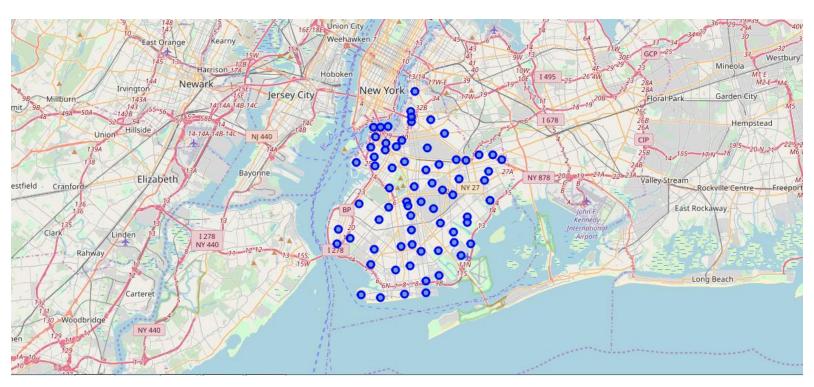
	Borough	Neighborhood	Latitude	Longitude
0	Bronx	Wakefield	40.894705	-73.847201
1	Bronx	Co-op City	40.874294	-73.829939
2	Bronx	Eastchester	40.887556	-73.827806
3	Bronx	Fieldston	40.895437	-73.905643
4	Bronx	Riverdale	40.890834	-73.912585

CREATING A DATAFRAME FOR ALL THE NEIGHBORHOODS OF BROOKLYN

	Borough	Neighborhood	Latitude	Longitude
0	Brooklyn	Bay Ridge	40.625801	-74.030621
1	Brooklyn	Bensonhurst	40.611009	-73.995180
2	Brooklyn	Sunset Park	40.645103	-74.010316
3	Brooklyn	Greenpoint	40.730201	-73.954241
4	Brooklyn	Gravesend	40.595260	-73.973471

VISUALIZING THE NEIGHBORHOODS OF BROOKLYN

- Folium is being used to create a map which visualizes all the neighborhoods of Brooklyn. Geopy is being used to get the location.

FINDING THE MOST POPULATED NEIGHBORHOOD IN BROOKLYN

- Though there are many challenges and many factors to be considered, if an area is highly populated, it means that there is less risk in starting a new restaurant. Businessmen usually prefer prime locations to start such ventures.

- There are 36 Neighborhoods in Brooklyn.

- I used a dataset to determine the most populated areas.

SELECTING THE TOP 2 FROM THIS DATAFRAME

- Bensonhurst and Bedford Stuyvesant are the 2 most populated neighborhoods with many venues around them.

	Rank	Neighborhood	Population
0	1	Bedford-Stuyvesant	157530
1	2	Bensonhurst	151705
2	3	Bushwick	129239
3	4	Sunset Park	126000
4	5	Borough Park	106357

FINDING THE VENUES IN BOTH THE AREAS

Foursquare lab functions are being used for determining the venues and their category for both the neighborhoods.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Bedford Stuyvesant	40.687232	-73.941785	Sincerely Tommy	40.686066	-73.944294	Boutique
1	Bedford Stuyvesant	40.687232	-73.941785	Bed-Vyne Brew	40.684751	-73.944319	Bar
2	Bedford Stuyvesant	40.687232	-73.941785	Bed-Vyne Wine & Spirits	40.684668	-73.944363	Wine Shop
3	Bedford Stuyvesant	40.687232	-73.941785	Anchor Coffee	40.684145	-73.941015	Coffee Shop
4	Bedford Stuyvesant	40.687232	-73.941785	Eugene & Co	40.683899	-73.944023	New American Restaurant

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Bensonhurst	40.611009	-73.99518	il Colosseo	40.612221	-73.997436	Italian Restaurant
1	Bensonhurst	40.611009	-73.99518	Coco Nails	40.614735	-73.994620	Cosmetics Shop
2	Bensonhurst	40.611009	-73.99518	Il Fornaretto Bakery	40.613940	-73.999359	Bakery
3	Bensonhurst	40.611009	-73.99518	Bagel Town	40.610199	-73.989510	Bagel Shop
4	Bensonhurst	40.611009	-73.99518	Frank And Sal's Prime Meats	40.610232	-73.999227	Butcher

FINDING THE FREQUENCY OF ALL KIND OF VENUES

○ Frequency of existence of all kind of venues in the neighborhoods so that we could know more about the competitions.

	Neighborhood	Yoga Studio	Adult Boutique	American Restaurant	Antique Shop	Arepa Restaurant	Argentinian Restaurant	Art Gallery	Arts & Crafts Store	Arts & Entertainment	Asian Restaurant	Athletics & Sports	BBQ Joint	Bagel Shop	Bakery	Bank	Bar
0	Bedford Stuyvesant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.0	0.035714	0.035714	0.000000	0.0	0.071429
1	Bensonhurst	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.033333	0.0	0.000000	0.033333	0.033333	0.0	0.000000

FINDING THE FREQUENCY OF THE TOP 5 VENUES

- For both the locations:

```
----Bedford Stuyvesant----
          venue  freq
0    Coffee Shop  0.11
1  Deli / Bodega  0.11
2    Pizza Place  0.07
3           Café  0.07
4            Bar  0.07


----Bensonhurst----
                venue  freq
0  Chinese Restaurant  0.10
1  Italian Restaurant  0.07
2      Ice Cream Shop  0.07
3          Donut Shop  0.07
4                 Spa  0.07
```

TOP 5 MOST COMMON VENUES IN BOTH THE NEIGHBORHOODS

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Bedford Stuyvesant	Deli / Bodega	Coffee Shop	Pizza Place	Café	Bar
1	Bensonhurst	Chinese Restaurant	Sushi Restaurant	Italian Restaurant	Donut Shop	Spa

RESULT AND CONCLUSION

- There is already a famous and favorite Italian Restaurant in Bensonhurst and it stands 3rd in the Most Common Venues.

- There are no special cuisine restaurants in the top most common venues for Bedford-Stuyvesant. So, it is a better option than Bensonhurst for starting a new Italian Restaurant.

- However, we can also notice that there is a Pizza Place which is often visited by the people in the neighborhood which tells us that people are interested in Italian cuisine.

- As a result, Bedford Stuyvesant is the neighborhood in Brooklyn which the investor should choose to go on with the proposal of starting a new Italian Restaurant.