Melina Yurie Mituo – 2020 February 13th

Introduction

New York is the most populous city in the United States. Besides that, it is well known that New York is a place where many cultures cross each other due to its strong immigration back in the 19th and 20th century. Because of this, the cuisine of this amazing city comprises many cuisines belonging to various ethinic groups. No industry has borne more mandates from the drive to reduce inequality in the city than the restaurant industry. Today, there is over 27 thousand restaurants in the city and this number just keeps growing. Restaurants are a driving force in New York's economy and they provide jobs and build careers for thousands of people, and play a vital role in local communities throughout the state. There are some data below:

- Restaurants and foodservice jobs represent 9% of the employment in the state
- 51.6 billion is the sales number estimated in New York

This report will be interesting for entrepreneurs who wants to open a restaurant in New York City. New York City can bring along a lot of the opportunities that this city can bring to the business in the future such as customers and providers. On the other hand, NY is a big city and has a lot of neighborhoods that have many peculiarities. I would like to know the best places to start my own Asian restaurant.

Data and Methodology

The data used on this project:

- List of Boroughs and neighborhoods of Manhattan with their geodata (latitud and longitud) - https://cocl.us/new_york_dataset
- Restaurants for each Manhattan/Brooklyn neighborhood - Foursquare
- NY Demographic data - https://data.cityofnewyork.us/api/views/swpk-hqdp/rows.csv?accessType=DOWNLOAD

The first list is responsible for getting us latitud and longitud to introduce into Foursquare to obtain restaurants data per neighborhood. After this, it

is important to have a number of restaurants per person (demographic data) to know if the neighborhood is saturated of this business or not.

Results and Discussion

First, a dataframe of neighborhoods and their latitude and longitude was created.

	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

Second, another dataframe with neighborhood and their population was created.

	Borough	Neighborhood	Population
195	Bronx	Claremont-Bathgate	31078
196	Bronx	Eastchester-Edenwald-Baychester	34517
197	Bronx	Bedford Park-Fordham North	54415
198	Bronx	Belmont	27378
199	Bronx	Bronxdale	35538

These two dataframes were merged to facilitate the work. Based on the latitud and longitud, it was possible to achieve many venues present in each neighborhood.

	Borough	Neighborhood	Population	Latitude	Longitude
0	Bronx	Belmont	27378	40.857277	-73.888452
1	Bronx	Bronxdale	35538	40.852723	-73.861726
2	Bronx	East Tremont	43423	40.842696	-73.887356
3	Bronx	Hunts Point	27204	40.809730	-73.883315
4	Bronx	Kingsbridge Heights	32496	40.870392	-73.901523

Then, a list of venues was created with the help of foursquare API.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Belmont	40.857277	-73.888452	Tino's Delicatessen	40.855882	-73.887166	Italian Restaurant
1	Belmont	40.857277	-73.888452	Casa Della Mozzarella	40.855440	-73.887373	Deli / Bodega
2	Belmont	40.857277	-73.888452	Full Moon Pizzeria	40.855506	-73.887557	Pizza Place
3	Belmont	40.857277	-73.888452	Zero Otto Nove	40.854714	-73.888388	Pizza Place
4	Belmont	40.857277	-73.888452	Michaelangelo's Coal Fired Brick Oven Pizza Re...	40.857412	-73.886468	Italian Restaurant

It was necessary to create a filter to obtain the Asians restaurants (Japanese, Korean, Chinese…) After this, the number of Asian restaurants per neighborhood was counted. The foursquare API has a limitation of venues that are returned, therefore is was necessary to upscale these number: the quantity of Asian restaurants in Chinatown was about 200 and the obtained by foursquare was 18. Then, a proportion relation was applied to each number of restaurants.

	Borough	Neighborhood	Population	Latitude	Longitude	Number of Asians Restaurants
0	Bronx	Belmont	27378	40.857277	-73.888452	22.0
1	Bronx	Bronxdale	35538	40.852723	-73.861726	11.0
2	Bronx	Kingsbridge Heights	32496	40.870392	-73.901523	22.0
3	Bronx	Longwood	26196	40.815099	-73.895788	11.0
4	Bronx	Norwood	40494	40.877224	-73.879391	11.0
5	Bronx	Parkchester	29821	40.837938	-73.856003	11.0
6	Bronx	Pelham Parkway	30073	40.857413	-73.854756	22.0
7	Brooklyn	Brighton Beach	35547	40.576825	-73.965094	11.0
8	Brooklyn	West Brighton	17750	40.631879	-74.107182	22.0
9	Brooklyn	Homecrest	44316	40.598525	-73.959185	56.0

With these data, it was possible to divide the number of asian restaurants and the population of each neighborhood.

	Borough	Neighborhood	Population	Latitude	Longitude	Number of Asians Restaurants	Population/Restaurants	Restaurants/Population
0	Bronx	Belmont	27378	40.857277	-73.888452	22.0	1244.454545	0.000804
1	Bronx	Bronxdale	35538	40.852723	-73.861726	11.0	3230.727273	0.000310
2	Bronx	Kingsbridge Heights	32496	40.870392	-73.901523	22.0	1477.090909	0.000677
3	Bronx	Longwood	26196	40.815099	-73.895788	11.0	2381.454545	0.000420
4	Bronx	Norwood	40494	40.877224	-73.879391	11.0	3681.272727	0.000272
5	Bronx	Parkchester	29821	40.837938	-73.856003	11.0	2711.000000	0.000369
6	Bronx	Pelham Parkway	30073	40.857413	-73.854756	22.0	1366.954545	0.000732
7	Brooklyn	Brighton Beach	35547	40.576825	-73.965094	11.0	3231.545455	0.000309
8	Brooklyn	West Brighton	17750	40.631879	-74.107182	22.0	806.818182	0.001239
9	Brooklyn	Homecrest	44316	40.598525	-73.959185	56.0	791.357143	0.001264

A filter was created: only Brooklyn and manhattan were considered to host the restaurant.

	Borough	Neighborhood	Population	Latitude	Longitude	Number of Asians Restaurants	Population/Restaurants	Restaurants/Population
7	Brooklyn	Brighton Beach	35547	40.576825	-73.965094	11.0	3231.545455	0.000309
8	Brooklyn	West Brighton	17750	40.631879	-74.107182	22.0	806.818182	0.001239
9	Brooklyn	Homecrest	44316	40.598525	-73.959185	56.0	791.357143	0.001264
10	Brooklyn	Gravesend	29436	40.595260	-73.973471	44.0	669.000000	0.001495
11	Brooklyn	Bath Beach	29931	40.599519	-73.998752	33.0	907.000000	0.001103
12	Brooklyn	Bay Ridge	79371	40.625801	-74.030621	67.0	1184.641791	0.000844
13	Brooklyn	Windsor Terrace	20988	40.656946	-73.980073	11.0	1908.000000	0.000524
14	Brooklyn	Flatbush	105804	40.636326	-73.958401	11.0	9618.545455	0.000104

The table was sorted ascending by the last column and:

	Borough	Neighborhood	Population	Latitude	Longitude	Number of Asians Restaurants	Population/Restaurants	Restaurants/Population
14	Brooklyn	Flatbush	105804	40.636326	-73.958401	11.0	9618.545455	0.000104
23	Brooklyn	East New York	91958	40.669926	-73.880699	11.0	8359.818182	0.000120
15	Brooklyn	Canarsie	83693	40.635564	-73.902093	11.0	7608.454545	0.000131
7	Brooklyn	Brighton Beach	35547	40.576825	-73.965094	11.0	3231.545455	0.000309
24	Brooklyn	East Williamsburg	34158	40.708492	-73.938858	11.0	3105.272727	0.000322
21	Brooklyn	Ocean Hill	31935	40.678403	-73.913068	11.0	2903.181818	0.000344
22	Brooklyn	Brownsville	58300	40.663950	-73.910235	22.0	2650.000000	0.000377
27	Manhattan	Upper West Side	132378	40.787658	-73.977059	56.0	2363.892857	0.000423
13	Brooklyn	Windsor Terrace	20988	40.656946	-73.980073	11.0	1908.000000	0.000524
20	Brooklyn	Greenpoint	34719	40.730201	-73.954241	22.0	1578.136364	0.000634
19	Brooklyn	Williamsburg	32926	40.707144	-73.958115	22.0	1496.636364	0.000668

We can see that Brooklyn is less saturated of asian restaurants than manhattan. It was expected since Manhattan is the core of New York City, where the most of the food experiences are located. Despite the data, there are other factors such as rent, distance from the suppliers/providers, people circulation, etc..

Conclusion

The best neighborhood to open the restaurant is Flatbush, but some other factors were not included such as rent, people circulation, and it could be a direction to the investment, but it can’t be 100% confirmed.