Locations for Opening New Japanese Restaurant in Manhattan

Introduction

This report describes the distribution of restaurant in Manhattan, New York City and provides some recommendations on good locations for opening new Japanese restaurant in the area according to the findings. It is targeted for readers who are considering his/her own casual style Japanese restaurant within the area.

Data

The data referenced in this notebook are based on the following two sources:

- New York City Neighborhood information, provided by New York (City) Department of City Planning (https://geo.nyu.edu/catalog/nyu_2451_34572)
- New York City Population By Neighborhood Tabulation Areas, published by NYC Open Data (https://data.cityofnewyork.us/City-Government/Manhattan-populations-by-neighborhood/8m6s-esnp)

Combination of these data offers an overall picture on the distribution of the existing Japanese restaurant against the distribution of the potential customers in Manhattan.

Analysis

The proposed idea on selecting a new location for a new restaurant is to pick a location which has a lot of potential customers and the current level of competition is relatively low. To obtain the necessary information for making the business decision, the following steps were performed in the given order:

1. Obtain the New York City dataset from New York City Department of Planning
2. Extract the list of neighborhoods in Manhattan and their coordinates from the dataset
3. For each of the neighborhoods in the list, retrieve the information of all the existing Japanese restaurants in the neighborhood from FourSquare
4. Remove the identified restaurants which are not really offering Japanese style cuisine from the restaurant lists
5. Count the total number of actual Japanese restaurants in each neighborhood inside Manhattan. The result is shown in below:

Neighborhood	Count
Battery Park City	6
Carnegie Hill	14
Central Harlem	2
Chelsea	34
Chinatown	36
Civic Center	35
Clinton	29
East Harlem	2
East Village	45
Financial District	39
Flatiron	36
Gramercy	28
Greenwich Village	38
Hamilton Heights	3
Hudson Yards	5
Lenox Hill	30
Lincoln Square	3
Little Italy	40
Lower East Side	12
Manhattan Valley	7
Manhattanville	7
Marble Hill	1
Midtown	39
Midtown South	45
Morningside Heights	1
Murray Hill	44
Noho	46
Roosevelt Island	1
Soho	37
Stuyvesant Town	1
Sutton Place	38
Tribeca	13
Tudor City	45
Turtle Bay	45
Upper East Side	16
Upper West Side	16
Washington Heights	3
West Village	37
Yorkville	23

Table 1: Total number of existing Japanese restaurants in each neighborhood of Manhattan

6. Obtain the population data from New York City Population By Neighborhood Tabulation Areas, published by NYC Open Data
7. Combine the population data with the table of number of existing Japanese restaurants obtained before.
8. For comparison, we define "market index" as population of a neighborhood divided by the total number of restaurants in the same area:

$$Market = \frac{Population}{Total\_Japanese\_Restaurants}$$

9. Calculate the market index of each neighborhood. The subsample of the results is shown in below:

Neighborhood	Count	Population	Market Index
Battery Park City	6	39699	6617
Carnegie Hill	14	84491	6035
Central Harlem	2	75282	37641
Chelsea	34	70150	2063
Chinatown	36	47844	1329

Table 2: Sample of the market indices of selected neighborhoods

Result and Discussion

As the market index indicates the existing market size (i.e. potential number of customers) each existing Japanese restaurant in the given neighborhood is having, the list of neighborhoods we obtained in our analysis was sorted according to their calculated market index in decreasing order. The following table shows the 5 neighborhoods in Manhattan with the largest market index:

Rank	Neighborhood	Count	Population	Market Index
1	Roosevelt Island	1	80771	80771
2	Morningside Heights	1	55929	55929
3	Washington Heights	3	151574	50525
4	Marble Hill	1	46746	46746
5	Central Harlem	2	75282	37641

Table 3: Top 5 Neighborhoods for Japanese Restaurant in highest market index

From the result, Roosevelt Island has a large population and only 1 Japanese restaurant, and so it would be the best place for opening a new Japanese restaurant as the level of competition at there is small. Other good locations with similar low level of competition are Morningside Heights, Washington Heights, Marble Hill and Central Harlem, in which their populations are also high and there are not too many similar type of restaurants competing in the same market.

Conclusion

Based on the analysis on the distribution of restaurant in Manhattan, New York City with their market indices, several good locations with low level of competition and high population have been identified for opening new Japanese restaurant in the Manhattan area.