

Coursera Capstone Project

Japanese Restaurant in Chicago
Saisharath Reddy Kondakindi, March 2020



Introduction

Chicago's demographics show that it is a large and ethnically diverse metropolis. It is one of the largest city in the United States with a long history of international immigration. Over the last decade the city has been growing **faster** than the region.

This final project explores the best locations for Japanese restaurants throughout the city of Chicago. it has a long tradition of different ethnical restaurants. Now when the idea of a healthy lifestyle conquered the minds of people all over the country, Japanese restaurants became extremely popular, as they offer a healthy alternative to regular American eating habits. However, as with any business, opening a new restaurant requires serious considerations and is more complicated than it seems from the first glance. In particular, the location of the restaurant is one of the most important factors that will affect whether it will have success or a failure. So our project will attempt to answer the questions “Where should the investor open a Japanese Restaurant?” and “Where should I go If I want great Japanese food?”

Business Problem

The objective of this capstone project is to analyze and select best locations in the city of Chicago to open a new Japanese restaurant. Using Data Science methodology and instruments such as Data Analytics and Visualization, this project aims to provide solutions to answer the business question, Where in the City of Chicago, should the invested open a Japanese restaurant to have the best chance of being successful?

Data

To solve the problem, we will need the following data:

1. List of Community Areas and Neighborhoods of Chicago Area
2. Latitude and Longitude of Chicago Neighborhoods
3. Venue data, data related to restaurants

Data Sources

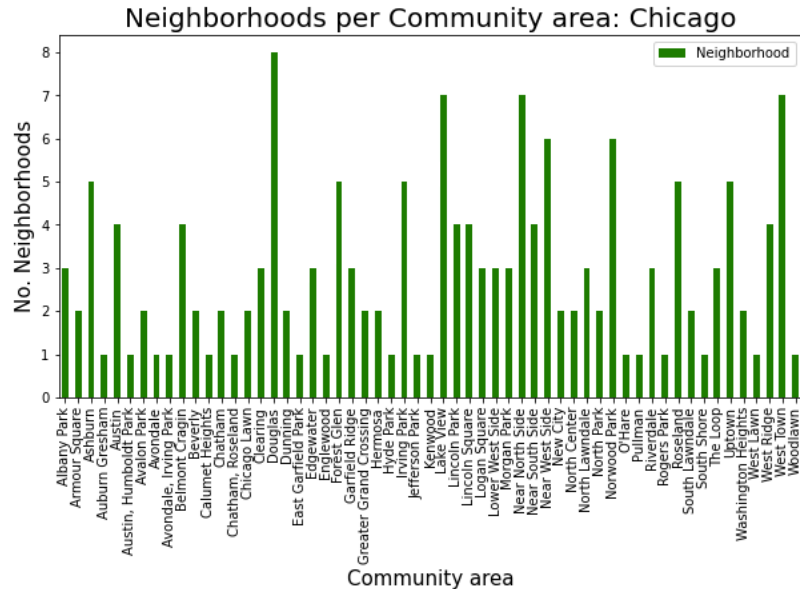
1. Wikipedia to collect Chicago Community and Neighborhood data(https://en.wikipedia.org/wiki/List_of_neighborhoods_in_Chicago).
2. Geocoder Python Package for Longitude and Latitude Data
3. Foursquare API for restaurants venue data

Methodology

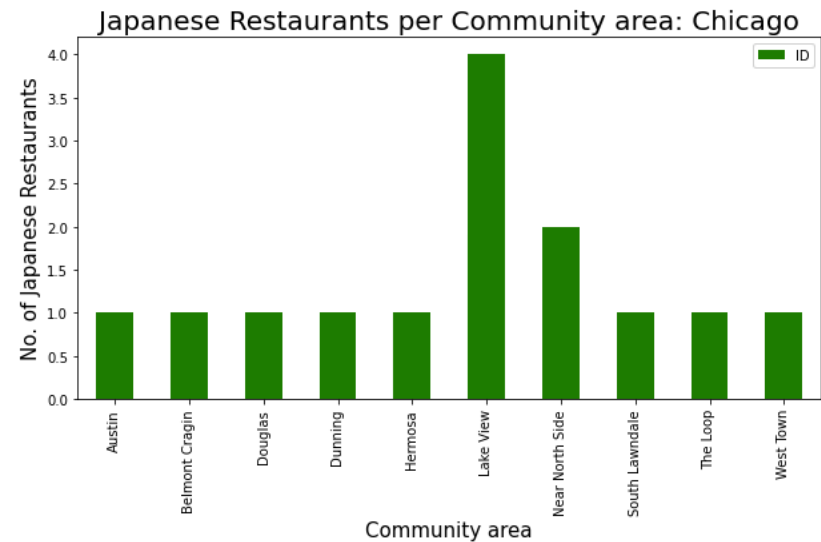
1. Collect Data from https://en.wikipedia.org/wiki/List_of_neighborhoods_in_Chicago, clean and preprocess into Dataframe.
2. For above data append Longitude and Latitude information using Foursquare API to extract Venue ID, Name, Tips and Likes
3. Remove data anomalies
4. Visualize data using various python package and libraries.

Results

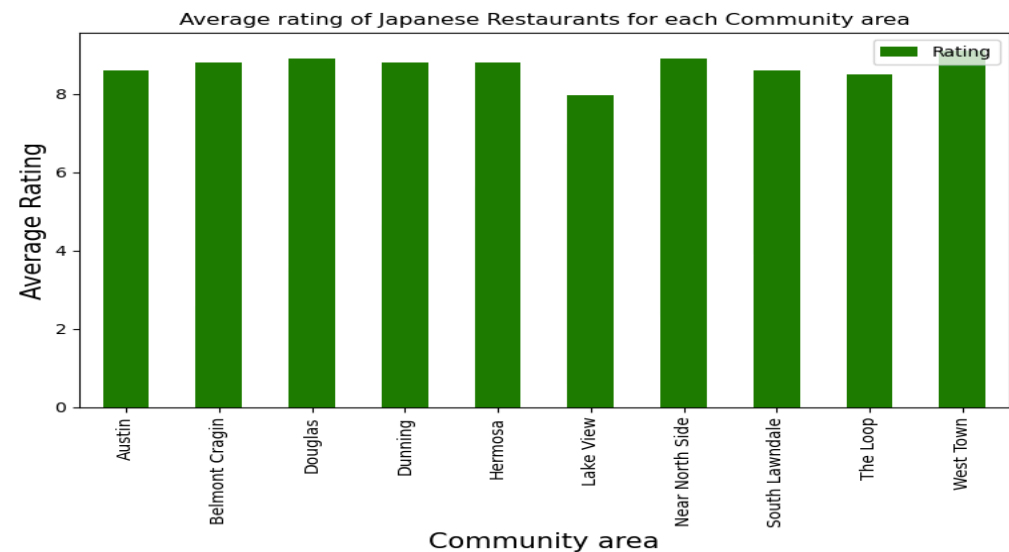
1. We see that Douglas has 8 highest number of Neighborhoods followed by West Town, Near North Side and Lake view each with 7



2. Lake View have the highest number of Japanese Restaurants

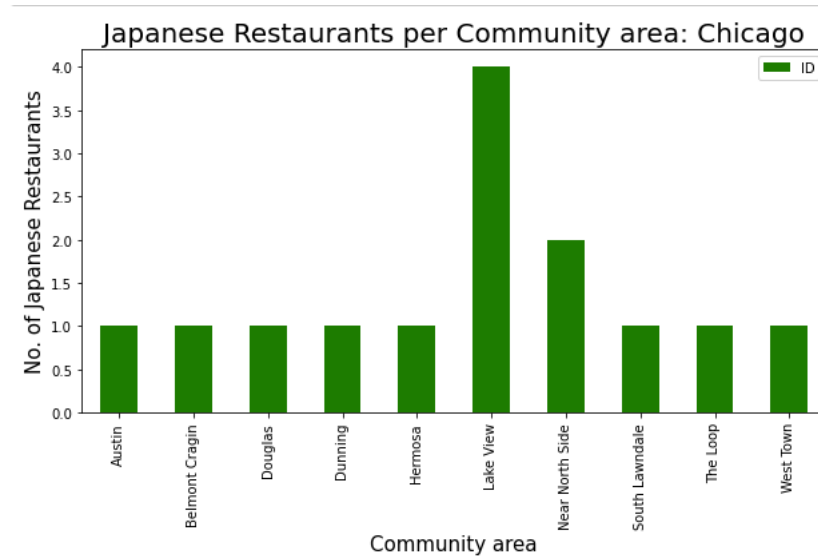


3. West Town has the best Japanese restaurant based on rating



	Community area	Neighborhood	Latitude	Longitude	Average Rating
0	Belmont Cragin	Belmont Central	41.9398	-87.6533	8.800000
1	Hermosa	Belmont Gardens	41.9398	-87.6533	8.800000
2	Dunning	Belmont Terrace	41.9398	-87.6533	8.800000
3	Lake View	Boystown	41.9439	-87.6493	8.033333
4	South Lawndale	Little Village	41.891	-87.6356	8.600000
5	Near North Side	Magnificent Mile	41.8945	-87.6242	8.900000
6	The Loop	Printer's Row	41.8738	-87.6289	8.500000
7	West Town	Smith Park	41.8928	-87.6904	9.100000
8	Near North Side	Streeterville	41.8934	-87.622	8.900000
9	Douglas	The Gap	41.8924	-87.6236	8.900000
10	Austin	The Island	41.891	-87.6356	8.600000

4. Out of 4 top communities with high Neighborhoods, Douglas and West Town only have one Japanese Restaurant in each



Discussion Section

1. Based on the results from analysis, West Town is best location for Japanese Cuisine in Chicago
2. West Town or Douglas are more promising place to open a new Japanese restaurant
3. Neighborhood "The Gap" (Douglas) or "Smith Park" (West Town) are the best place in Chicago to open a new Japanese Restaurant

Limitations and Suggestions for future researches

All the above analysis is depended on the accuracy of Foursquare data. Using free tier account of Foursquare API limit To the number of Api calls and results returned. For better results, future research need to be implemented on paid Account with full access to data and incorporating external datasets like real estate and census to get actual return of Investment and customer engagement.

Conclusion

In this project we have gone through the process of identifying the business problem, specifying the data required, Extracting and preparing the data, performing data analysis and lastly providing recommendations to the investors. During the project, we applied different data science methods and instruments to get the answer to our main question: “where in the city of Chicago, should the investor open a Japanese restaurant ? “ The findings of this project will help the Relevant investor better understand the advantages and disadvantages of different Chicago neighborhoods or Communities in terms of opening an new Japanese Restaurant.