

Selecting Locations for a Sushi Restaurant in New York City with Foursquare API



Applied Data Science Capstone Coursera Course Week 5 Peer-Graded Project Report
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Objectives

Describe population density and demographics of NYC by borough

Locate sushi venues in NYC by neighborhood and borough

Rank sushi venues by 'Rating' from Foursquare

Suggest neighborhood to evaluate closer for a new venue

Overview

Introduction

Business Problem

Location Selection

Data

Methodology

Results

Conclusion

Introduction



Introduction

Most populous city in the United States

Famous for excellent cuisine

Highly competitive

Restaurants have very high risk of failure

Increasing popularity of sushi

NYC is highly multicultural

High density of sushi restaurants

Business Problem

New York City is famous for its excellent cuisine.

It's food culture includes an array of international cuisines influenced by the city's immigrant history.

Sushi restaurants are popular in the United States.

However, given the risk of pursuing a food industry restaurant care must be taken.

Interested parties in this project would be any who would be pursuing opening a Japanese or sushi restaurant in New York City.

Location Selection

Regions will be selected based on the number of Sushi restaurants in the area, demographics of the region, and average rating of sushi restaurants in the area.

The Bronx followed by Manhattan and Queens are the most ethnically diverse of the boroughs.

Queens and Brooklyn are the most populous. Given diversity and population density Queens is a candidate as well as Brooklyn.

Data



Data Sources

Data scraping of Wikipedia site [Demographics of New York City](#)

Foursquare API to obtain venue data for neighbourhoods

https://cocl.us/new_york_dataset

Data Required

List of neighborhoods and boroughs in New York City

Latitude and longitude coordinates of neighborhoods and boroughs

Venue data focused on related to sushi restaurants

Methodology



Loading Data

Load applicable libraries

Web scraping to get NYC population density and demographics data using Python requests

Define function to interact with FourSquare API to get top 100 venues for a given latitude and longitude

Exploring Data

Created population density and demographics dataframe scraped from Wikipedia

Bar Graphs built to illustrate the number of sushi restaurants by borough and neighborhood

Lists of restaurants were prepared to explore venues by 'Ratings' and 'Likes'

Sorted list for highest ratings

Folium was used to create a map of Brooklyn with 9 venues with a rating ≥ 8.5

Results



Results

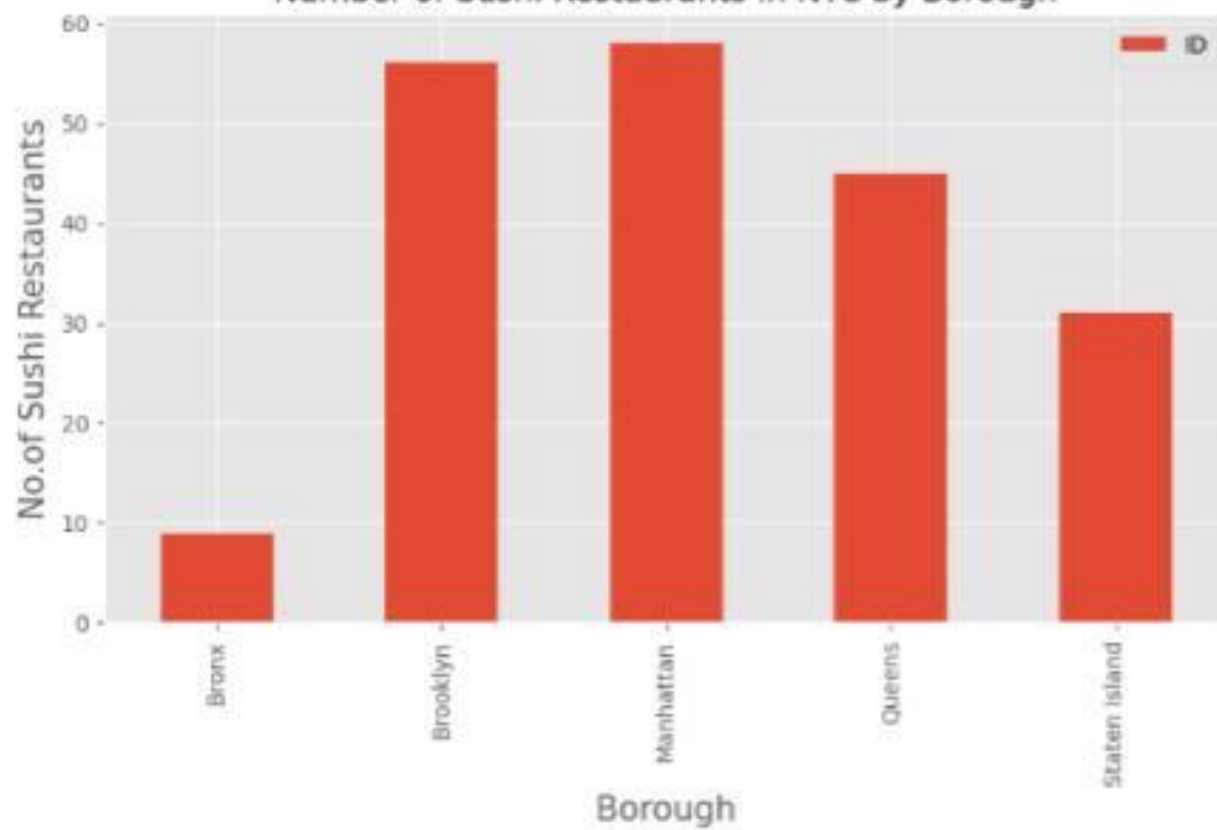
The analysis enabled the discovery and visual description of the following:

1. Neighborhoods and boroughs of New York City
2. Demographics and population density of New York City boroughs
3. Number and geographic coordinates of sushi restaurant venues in New York city by neighborhoods and boroughs
4. 'Ratings' and 'Likes' of sushi restaurant venues
5. Locations of highest rated sushi restaurant venues

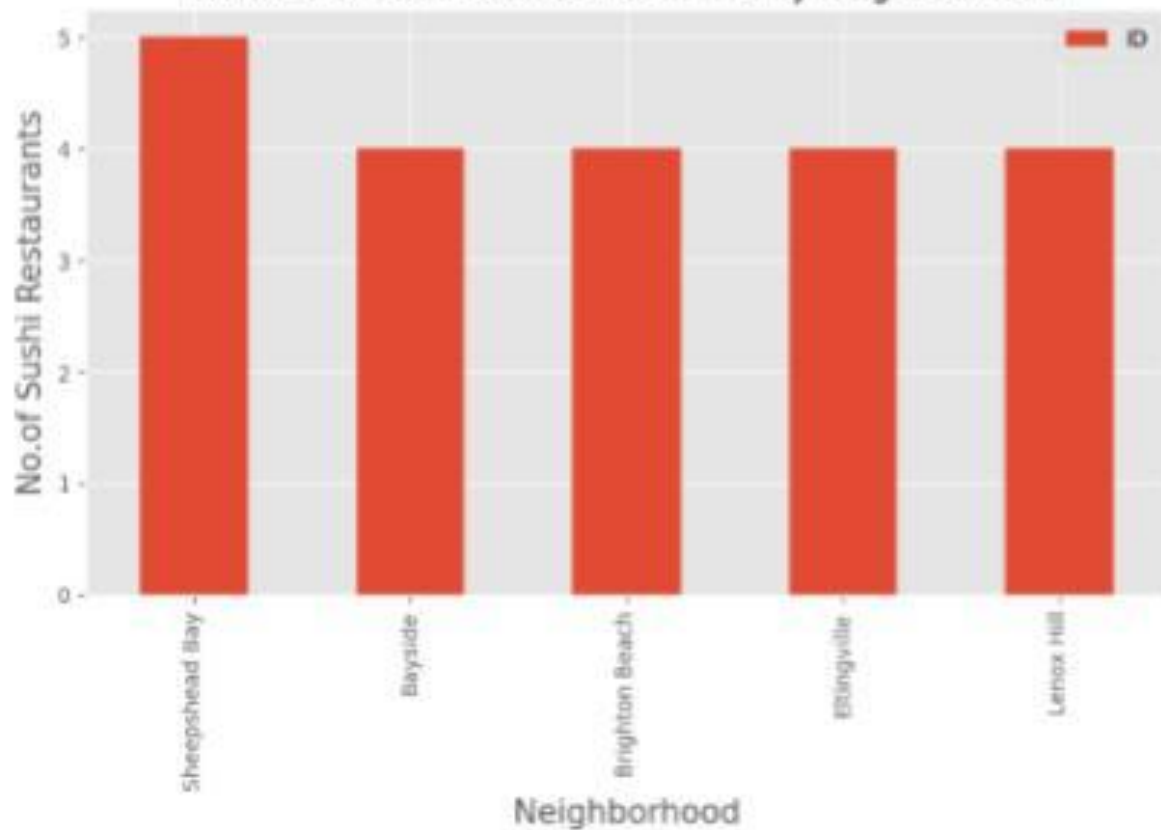
Demographics of NYC Boroughs

	jurisdiction	%_white	%_black_or_african_american	%_Asian	%_other	%_mixed_race	%_hispanic_latino_of_other_race
0	Queens	44.1	20.0	17.6	12.3	6.1	25.0
1	Manhattan	54.4	17.4	9.4	14.7	4.1	27.2
2	Bronx	29.9	35.6	3.0	25.7	5.8	48.4
3	Staten Island	77.6	9.7	5.7	4.3	2.7	12.1
4	NYC Total	44.7	26.6	9.8	14.0	4.9	27.0

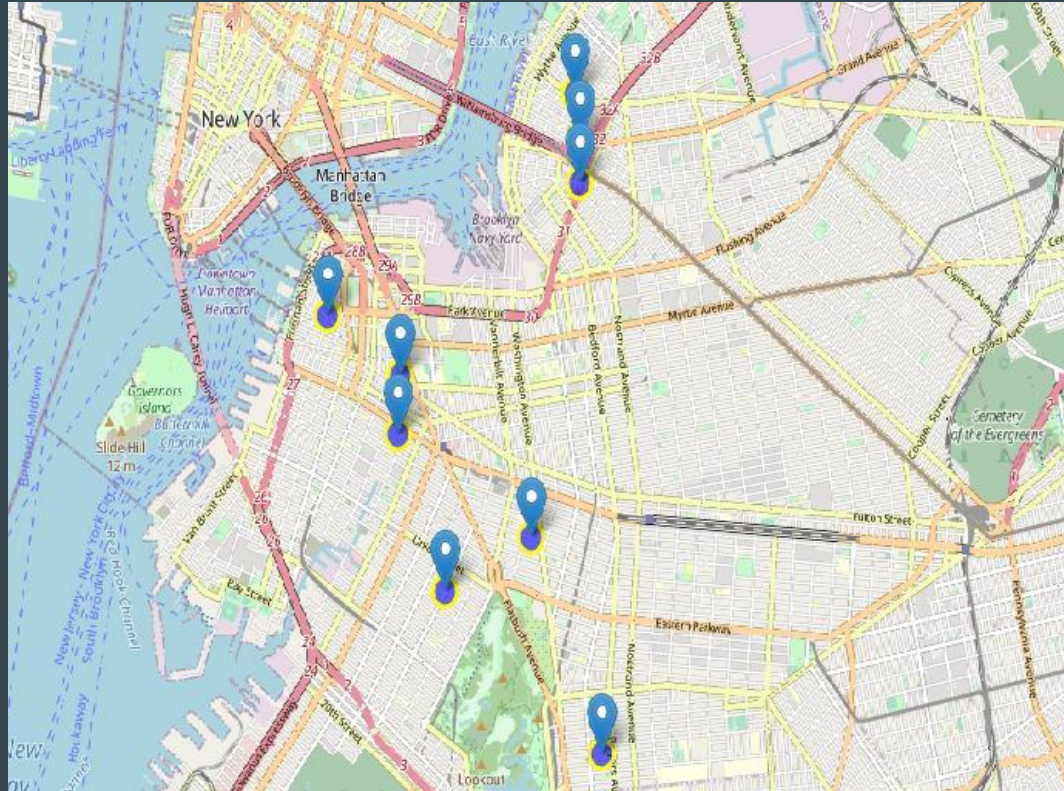
Number of Sushi Restaurants in NYC by Borough



Number of Sushi Restaurants in NYC by Neighbourhood



Map of Brooklyn with Markers of Highest Rated Sushi Venues



Conclusion



Conclusion

Using a combination of datasets, analysis and description of sushi restaurants in by neighborhood and borough in New York City was able to be performed

The highest rated venues were in Brooklyn which is also the most population dense borough

There were two clusters of 3 venues in the North side/South Side/Williamsburg and Downtown/Brooklyn Heights/Boerum Hill neighborhoods of Brooklyn

Further Directions and Limitations

Improving this could include Foursquare venue data for 'Japanese Restaurant'

Could be expanded to include other data including:

1. Property crime at restaurants
2. Other restaurant venues nearby
3. Rental prices
4. Location of food suppliers
5. Other nearby highly rated venues

Recommendations

With these limitations, the current data would suggest Brooklyn as a possible source for further analysis given the current density of highly rated sushi venues suggesting an existing consumer base as well as population density

Thank You