LOCATING A NEW JAPANESE RESTAURANT IN NEW YORK CITY

Applied Data Science Capstone by IBM

ABSTRACT

The objective of this project is to gathering data, analyze and find the optimized locations in the city of New York to establish a new Japanese restaurant. Using Data Science methodologies and instructions such as Data Analysis and Visualization.

Hadi Niktabe

Capstone Project - The Battle of Neighborhoods (Week 1)

Introduction

New York City's demographics show that it is a large and ethnically diverse metropolis. It is the largest city in the United States with a long history of international immigration. New York City was home to nearly 8.3 million people in 2019, accounting for over 40% of the population of New York State and a slightly lower percentage of the New York metropolitan area, home to approximately 23.6 million. Over the last decade, the city has been growing faster than the region. The New York region continues to be by far the leading metropolitan gateway for legal immigrants admitted into the United States.

This final project explores some optimized locations for Japanese restaurants throughout the city of New York. Potentially the owner of the new Japanese restaurant can have great success and consistent profit. 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 a financier open a Japanese Restaurant?" and "Where should we go If we want to have a great Japanese food?"

Business Problem

The objective of this project is to gathering data, analyze and find the optimized locations in the city of New York to establish a new Japanese restaurant. Using Data Science methodologies and instructions such as Data Analysis and Visualization, this project aims us to provide solutions in order to answer the business question: Where is an optimized location in the New York City, that a financier should open a Japanese Restaurant?

Project stakeholders and some demographic facts

This project is particularly useful to developers and investors looking to open or invest in a Japanese restaurant in the city of New York. Overall, New York is a great place to open a restaurant. As New York is the most diverse city in the world (800 languages are spoken in New York). With its diverse culture, comes diversity in the food items. There are many restaurants in New York City, each belonging to different cultures and nations like Chinese, Indian, French, etc. Why did we decide to focus on Japanese cuisine in our project?

According to the World Health Organization, in 2018, the average life expectancy in Japan is 84.2 years old. Men live an average of 81.1 years, and women live an average of 87.1 years. So, what is the island nation's secret to long, healthy lives? Diet is one reason for the country's population of "centenarians," or people older than 100 years. When the Japanese eat meat, they eat mostly heart-healthy fish, rich in omega-3 fatty acids. Other popular foods include tofu, seaweed and octopus, all of which carry a low risk for some cancers and arteriosclerosis.

Data and Data Sources

In order to run the project, we will need the following data:

- New York City data containing the neighborhoods and boroughs
- Latitude and longitude coordinates of those neighborhoods. This is required to plot the map and get the venue data
- Venue data, particularly data related to restaurants. We are going to use this data to perform further analysis of the neighborhoods

New York City data containing the neighborhoods and boroughs will be obtained from the open data source: https://cocl.us/new_york_dataset . After it, we will get the geographical coordinates of the neighborhoods (latitude and longitude) using Python Geocoder package.

Finally, we will use Foursquare API to get the venue data for the neighborhoods defined at the previous step. Foursquare has one of the largest databases of 105+ million places and over 125,000 developers use this application. Foursquare API provides many categories of the venue data; we are particularly interested in the restaurant data to solve the business problem defined above.

We will use some data science skills such as web scrapping (open source dataset), working with API (Foursquare), data cleaning, data wrangling, visualization (Folium).