The Most Favorite Chinese Restaurant in Stockholm, Sweden

**Devy Kartika Ratnasari**

# Introduction

With the globalization, a large number of products from other countries become alternatives for customers compared with domestic products. Some of consumers prefer to choose the native products in order to support national industry. Others would like to try something abroad. At the same time, suppliers want to develop overseas marketing which means more opportunities and wealth. Many foreign restaurants can be seen on the street of Stockholm and different kind of imported food can be found in native or Asian supermarkets in Sweden.

According to the questionnaire survey carried out by Jie Chen under supervision of Ola Feurst from Gotland University, Swedes like Chinese food because it is healthy, and it has natural and safe ingredients. Moreover, the delicious Chinese food could bring a good mood to Swedes. Swedes also think the price of Chinese food is cheaper than Swedish meal. Compared to fast food, Chinese buffet offer more kinds of dishes for choosing.

Considering the complicated process of cooking Chinese’s food, Swedes who do not want to spend time in cooking hardly choose to prepare Chinese food at home. The best way is going to Chinese restaurant.

The aim of this project is to use Foursquare location data and regional clustering of venue information to determine the best Chinese restaurant in Stockholm County.

This project is aimed towards Swedes who like Chinese food, citizens and residents of Sweden who were born in or have ancestry from nations in Asia, tourist from nations in Asia, as well as Chinese food suppliers.

# Data

The data used in this project is a combination of CSV files from multiple sources. The list of cities in Stockholm County and the geographical location of the cities are taken from Sweden Cities Database. The venue data pertaining to Chinese restaurants is obtained via the Foursquare API utilised via the request library in Python.

# Methodology

Pandas, Numpy, Json, Requests, and Folium libraries as well as One Hot Encoding are used to perform Data Acquisition, Data Cleaning, as well as Data Exploration and Analysis.

# Result

The data taken from Sweden Cities Database contains the list of Cities and their detail information on Latitude, Longitude, and County.

Table

Description automatically generated

There are two cities 'Uppsala' in Uppsala and Stockholm counties. In this project, the acquired data is used as it is without alteration.

Python folium library was used to visualise the region of Stockholm County and its cities from the latitude and longitude of the cities.

Map

Description automatically generated

The Foursquare API was utilised to explore the cities from their given latitude and longitude informations. Below are the venues found in Stockholm County along with its latitude, longitude and category informations.

A picture containing graphical user interface

Description automatically generated

There are 109 unique venue categories returned by Foursquare and there are Chinese restaurants in Stockholm County.

A technique called one hot encoding was performed to transform categorical data into numerical data. Individual venues were turned into the number of venues located in each city.

Table

Description automatically generated

Then, the venues were grouped by city and by taking the average of the occurrence frequency of each Venue Category.

Table

Description automatically generated

Then, a data frame was created to store the city names and the frequency of Chinese restaurants in the respective city.

Table

Description automatically generated

The data frame above shows that Chinese restaurants can be found in Södertälje and Uppsala. Below is a data frame presenting the Chinese restaurants located in both cities.

A picture containing graphical user interface

Description automatically generated

Later, The Foursquare API was used to investigate which restaurant gets more likes.

A picture containing diagram

Description automatically generated

Golden China restaurant in Uppsala is the most-likes Chinese restaurant.

# Discussion

From the data taken from Sweden Cities Database, this has been mentioned in the Result section as well, there are two cities 'Uppsala' in Uppsala and Stockholm counties. In this project, the acquired data is used as it is without alteration. The result shows that the most favourite Chinese restaurant in Stockholm County, Sweden, is Golden China restaurant in Uppsala. However, there are some limitations in the Data Exploration and Analysis. The result is completely based on the accuracy of Foursquare data that goes with limitations as to the number of API calls and results returned.

In my experience, I have gone to many restaurant which serves Chinese foods in Stockholm City. However, there was no Chinese restaurant listed in Stockholm City from the data returned by Foursquare. If we look closely to the venue categories from Foursquare, there were Sushi restaurant, Indian restaurant, Japanese restaurant, Thai restaurant, Korean restaurant, and Asian restaurant. Geographically, India, Japan, Thailand, Korea, and China are Asian countries. This is another limitation in this project. Some restaurant may be registered as non-Chinese restaurant and serve Chinese foods.

There was also a challenge on extracting the rating of Chinese restaurant. Key error from the code was observed during the run. Investigating how many likes for each restaurant was performed instead.

# Conclusion

The most favourite Chinese restaurant in Stockholm County, Sweden, is Golden China restaurant in Uppsala. This project can be improved with the assistance of more information and distinctive Machine Learning strategies. Paid account on Foursquare can be considered for future research work and more comprehensive analysis to overcome the limitation of the number of API calls and results returned. Incorporating data from other external databases can also be evaluated.