Coursera Capstone

IBM Applied Data Science Capstone Opening

Opening a New Chinese Restaurant in Singapore

By: Junli Wu

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Business Problem

▶ The objective of this capstone project is to analyse and select the best locations in the city of Singapore to open a new Chinese Restaurant

Business Question:

▶ In the city of Singapore, if a property developer is looking to open a new Chinese Restaurant, where would you recommend that they open it?

Data

Data required

▶ List of neighbourhoods in Kuala Lumpur

▶ Latitude and longitude coordinates of the neighbourhoods

▶ Venue data, particularly data related to shopping malls

Sources of data

▶ Wikipedia page for Planning Areas of Singapore.
  (https://en.wikipedia.org/wiki/Planning_Areas_of_Singapore)

▶ Geocoder package for latitude and longitude coordinates

▶ Foursquare API for venue data

Methodology

▶ Web scraping Wikipedia page for neighbourhoods list

▶ Get latitude and longitude coordinates using Geocoder

▶ Use Foursquare API to get venue data

▶ Group data by neighbourhood and taking the mean of the frequency of occurrence of each venue category

▶ Filter venue category by Chinese restaurant

▶ Perform clustering on the data by using k-means clustering

▶ Visualize the clusters in a map using Folium

Results
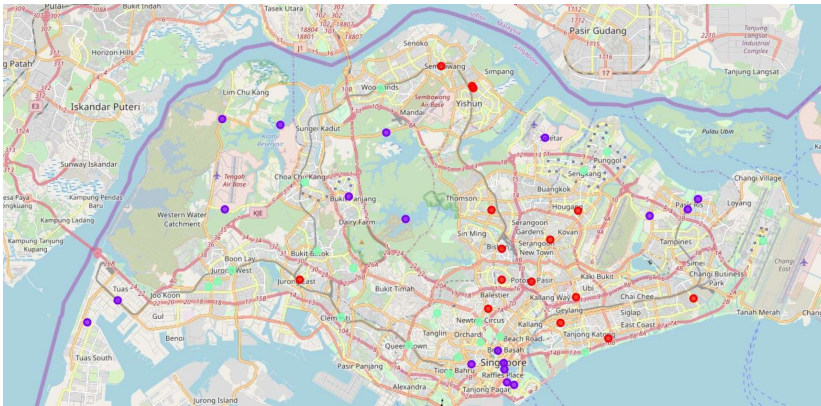
Categorized the neighbourhoods into 3 clusters :

▶ Cluster 0: Neighbourhoods with moderate number of Chinese restaurants

▶ Cluster 1: Neighbourhoods with low number to no existence of Chinese restaurants

▶ Cluster 2: Neighbourhoods with high concentration of Chinese restaurants

Discussion

- Chinese restaurant are scattered evenly in the different regions of Singapore city

- Highest number in cluster 0 and moderate number in cluster 2

- Cluster 1 has very low number to no Chinese restaurant in the neighbourhoods

Recommendations

- Open new Chinese restaurants in neighbourhoods in cluster 1 with little to no competition

- Can also open in neighbourhoods in cluster 2 with moderate competition if have unique selling propositions to stand out from the competition

- Avoid neighbourhoods in cluster 1, already high concentration of Chinese restaurants and intense competition

Conclusion

▶ Answer to business question: The neighbourhoods in cluster 1 are the most preferred locations to open a new Chinese restaurants

▶ Findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding overcrowded areas in their decisions to open a new Chinese restaurant

Thank You !