

COURSERA CAPSTONE IBM

APPLIED DATA SCIENCE

**CAPSTONE OPENING A NEW
SHOPPING MALL IN KUALA
LUMPUR, MALAYSIA**

Prasanth Loka

BUSINESS PROBLEM

- • Location of the shopping mall is one of the most important decisions that will determine whether the mall will be a success or a failure
- • Objective: To analyse and select the best locations in the city of Kuala Lumpur, Malaysia to open a new shopping mall
- • This project is timely as the city is currently suffering from oversupply of shopping malls
- • Business question : In the city of Kuala Lumpur, Malaysia, if a property developer is looking to open a new shopping mall, 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 neighbourhoods
(https://en.wikipedia.org/wiki/Category:Suburbs_in_Kuala_Lumpur)
 - 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 Shopping Mall
- • 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 shopping malls
 - Cluster 1: Neighbourhoods with low number to no existence of shopping malls
 - Cluster 2: Neighbourhoods with high concentration of shopping malls



DISCUSSION

- Most of the shopping malls are concentrated in the central area of the city
- • Highest number in cluster 2 and moderate number in cluster 0
- • Cluster 1 has very low number to no shopping mall in the neighbourhoods
- • Oversupply of shopping malls mostly happened in the central area of the city, with the suburb area still have very few shopping malls

RECOMMENDATION

- • Open new shopping malls in neighbourhoods in cluster 1 with little to no competition
- • Can also open in neighbourhoods in cluster 0 with moderate competition if have unique selling propositions to stand out from the competition
- • Avoid neighbourhoods in cluster 2, already high concentration of shopping malls and intense competition

CONCLUSION

- • Answer to business question: The neighbourhoods in cluster 1 are the most preferred locations to open a new shopping mall
- • 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 shopping mall

THANK YOU