

Coursera Capstone IBM Applied Data Science Capstone

Opening a New Shopping Mall in Kuala Lumpur, Malaysia

*By : Nishanth Gowda
August 2020*

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

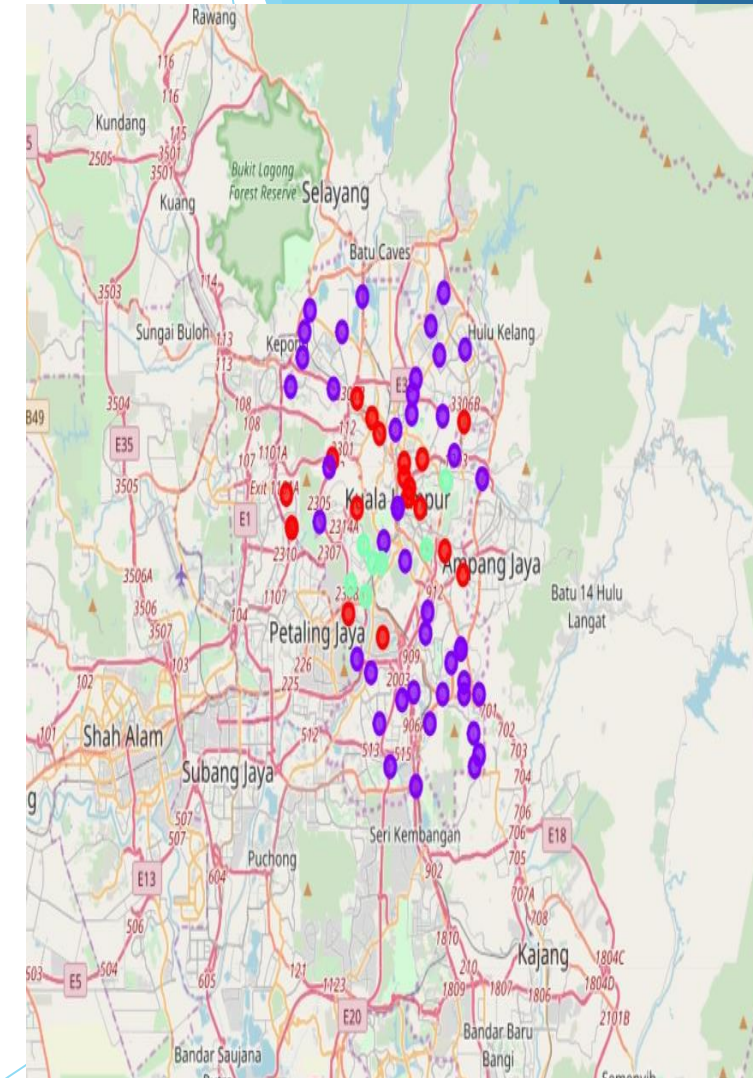
- ▶ Data required
 - List of neighbourhoods in Kuala Lumpur
 - Latitude and longitude coordinates of the neighbourhoods
 - Venue data, particularly data related to shopping malls
- ▶ Sources of data
 - Wikipedia page for neighbourhoods
(https://en.wikipedia.org/wiki/Category:Suburbs_in_Kuala_Lumpur)
 - 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 ShoppingMall
- ▶ 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

Recommendations

- ▶ 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!

