Opening a New Shopping Mall in Kuala Lumpur, Malaysia

By:

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June 2020

Applied Data Science Capstone - IBM

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 analyze 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 neighborhoods list

- Get latitude and longitude coordinates using Geocoder

- Use Foursquare API to get venue data

- Group data by neighborhood 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

- Categorized the neighborhoods into 3 clusters :
  ➢Cluster 1: Neighborhoods with high number of shopping malls ➢Cluster 2: Neighborhoods with moderate number of shopping malls
  ➢Cluster 3: Neighborhoods with low number to no existence of shopping malls

Results

- Most of the shopping malls are concentrated in the central area of the city

- Highest number in cluster 1 and moderate number in cluster 2

- Cluster 3 has very low number to no shopping mall in the neighborhoods

- Oversupply of shopping malls mostly happened in the central area of the city, with the suburb area still have very few shopping malls

Discussion

Recommendations

- Open new shopping malls in neighborhoods in cluster 3 with little to no competition

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

- Avoid neighborhoods in cluster 1, already high concentration of shopping malls and intense competition

Conclusion

- Answer to business question:
  The neighborhoods in cluster 3 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