



# **Data Analysis on Plan of Opening A New Shopping Mall in Kuala Lumpur, Malaysia**

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# Introduction Section



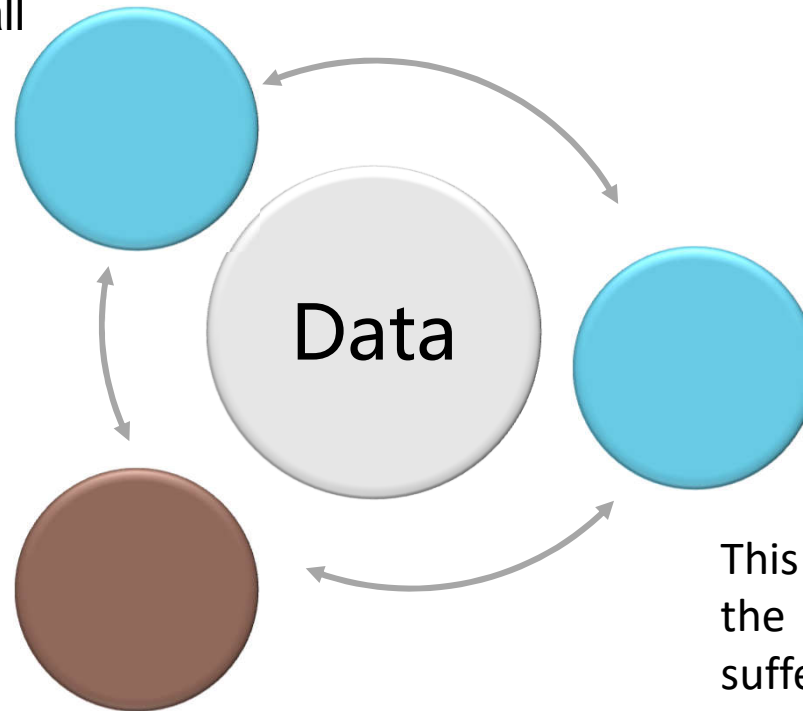
Opening a new shopping mall requires serious consideration and is a lot more complicated than it seems. Particularly, the location of the shopping mall is one of the most important decisions that will determine whether the mall will be a success or a failure.

# Business Problem

Objective: To analyze and select the best locations in the city of Kuala Lumpur, Malaysia to open a new shopping mall

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

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?



This project is timely as the city is currently suffering from oversupply of shopping malls

# Data Section

- Data required

- ✓ List of neighborhoods in Kuala Lumpur
- ✓ Latitude and longitude coordinates of the neighborhoods
- ✓ 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](https://en.wikipedia.org/wiki/Category:Suburbs_in_Kuala_Lumpur))

Geocoder package for latitude and longitude coordinates

- ✓ Foursquare API for venue data

# Methodology Section

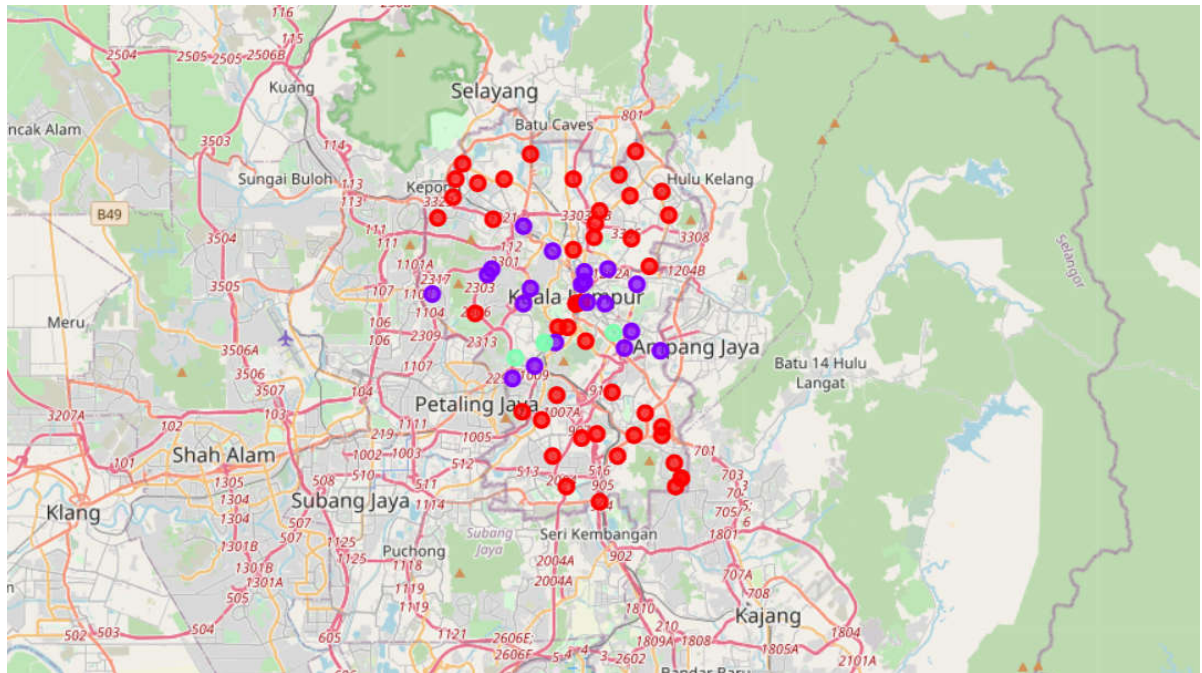
- Web scraping Wikipedia page for neighborhood's list
- Get latitude and longitude coordinates using Geocoder
- Use Foursquare API to get venue data
- Group data by neighborhoods and taking the mean of the frequency of occurrence of each venue category
- Filter venue category by Shopping Mall
- Perform clustering on the data by using k-means clustering
- Visualize the clusters in a map using Folium



# Results Section

The results from the k-means clustering show that we can categorize the neighborhoods into 3 clusters based on the frequency of occurrence for “Shopping Mall”, which are shown as below:

- ✓ Cluster 0: Neighborhood's with moderate number of shopping malls.
- ✓ Cluster 1: Neighborhood's with low number of shopping malls.
- ✓ Cluster 2: Neighborhood's with high concentration of shopping malls.



## Discussions Section

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



## Conclusions Section

- Open new shopping malls in neighborhood's in cluster 1 with little to no competition.
- Or open in neighborhood's in cluster 0 with moderate competition if have unique selling propositions to stand out from the competition.
- Or avoid neighborhood's in cluster 2, already high concentration of shopping malls and intense competition.

It is a good option to open a shopping mall with main business on outlets shopping as well as large entertainment place in the suburb area, owing to the lower land price for the property developer and rental for the commercial dealers. Considering more parking lots than the central area, more people will enjoy the new shopping mall built in the suburb area.

