



Coursera Capstone

Opening a New Shopping Mall in Mumbai, India

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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 Mumbai, India 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 Mumbai, India, 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 neighborhoods in Mumbai.
- Latitude and longitude coordinates of the neighborhoods.
- Venue data, particularly data related to shopping malls.

- Sources of Data

- Wikipedia page for neighborhoods
(https://en.wikipedia.org/wiki/List_of_neighbourhoods_in_Mumbai)
- Geocoder package for latitude and longitude coordinates.
- Foursquare API for venue data



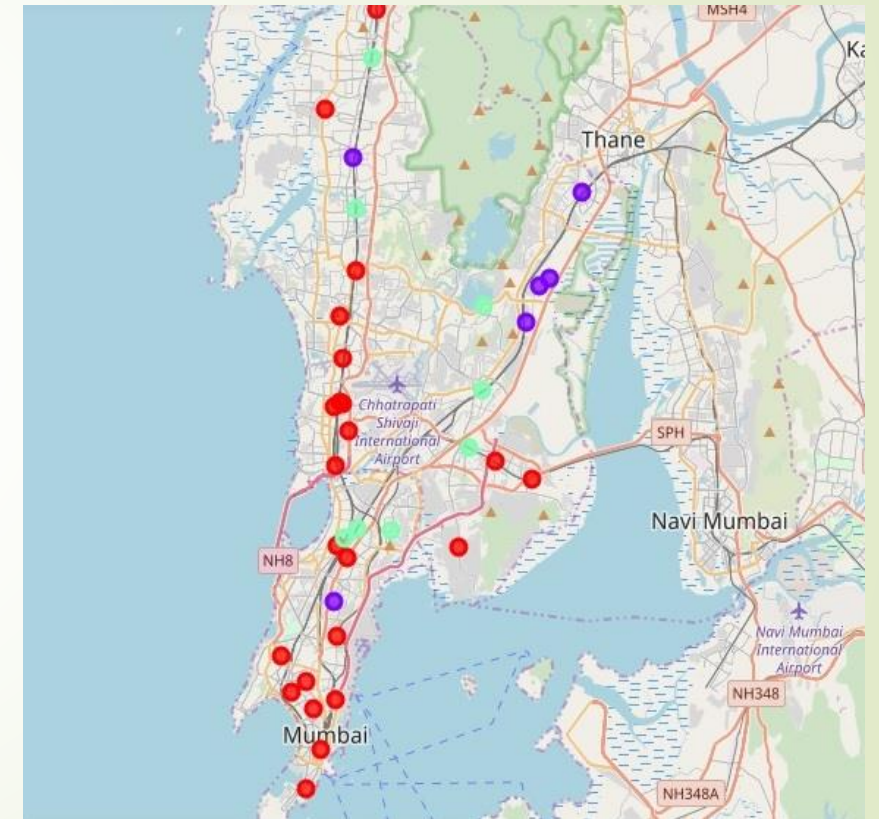
Methodology



- 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

Results

- Categorized the neighborhoods into 3 clusters :
 - Cluster 0: Neighborhoods with low number to no existence of shopping malls.
 - Cluster 1: Neighborhoods with high concentration of shopping malls.
 - Cluster 2: Neighborhoods with moderate number of shopping malls.






Discussion

- Most of the shopping malls are concentrated in the Northern areas of Mumbai city.
- Highest number in cluster 1 and moderate number in cluster 2.
- Cluster 0 has very low number of shopping mall in the neighborhoods.
- Oversupply of shopping malls mostly happened in the Northern areas of the city, with the suburb area like South Mumbai still have very few shopping malls.



Recommendations

- Open new shopping malls in neighborhoods in cluster 0 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.
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Conclusion



- Answer to business question: The neighborhoods in cluster 0 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!