Coursera Capstone
IBM Applied Data Science Capstone

Opening a New Restaurant Chain in Ahmedabad, India

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Business Problem

- Location of the restaurant 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 Ahmedabad, India to open a new shopping mall

- Business question
  - In the city of Ahmedabad, if a company / an entrepreneur is looking to open a new restaurant (chain), where would you recommend that they open it?

Data

- Data required
  - List of neighbourhoods in Ahmedabad
  - 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:Neighbourhoods_in_Ahmedabad)
  - 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 Restaurants
- 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 low number to no existence of restaurants
  - ➢Cluster 1: Neighbourhoods with high concentration of restaurants
  - ➢Cluster 2: Neighbourhoods with moderate number of restaurants
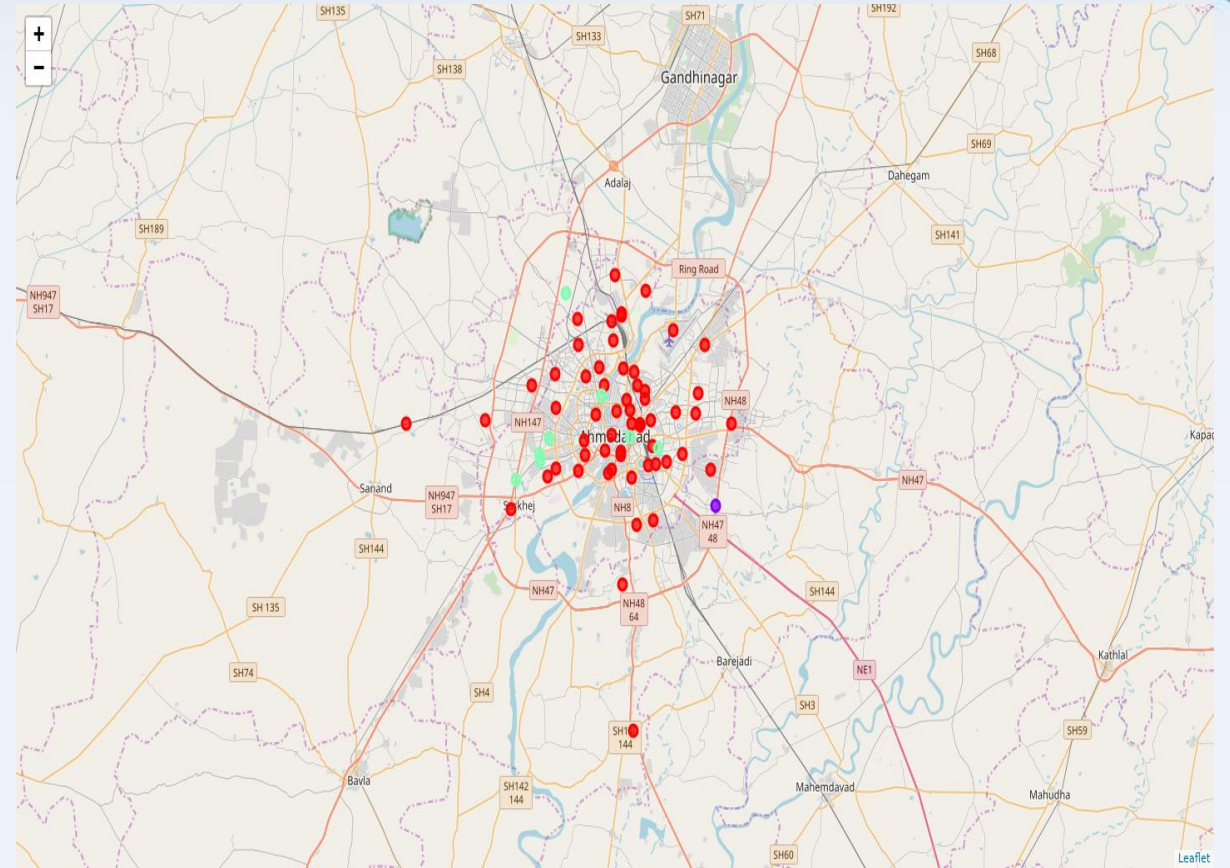
Discussion

- 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 0 has either a very low number to no restaurants in the neighbourhoods

- Oversupply of restaurants mostly happened in the outer area of the city, with the suburb area still have very few restaurants

Recommendations

- Open new restaurants in neighbourhoods in cluster 0 with little to no competition

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

- Avoid neighbourhoods in cluster 1, already high concentration of restaurants and intense competition

Conclusion

- Answer to business question: The neighbourhoods in cluster 0 are the most preferred locations to open a new restaurant
- 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 new restaurants

Thank you!