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 New Delhi, India to open a new shopping mall.

- Business question :

   - In the city of New Delhi, 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 New Delhi
  - ▶ 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/Category:Neighbourhoods_in_Delhi)
  - ▶ 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 moderate number of shopping malls (color : Red)

  ▶ Cluster 1: Neighborhoods with low number to no existence of shopping malls (color : Purple)

  ▶ Cluster 2: Neighborhoods with high concentration of shopping malls (color : Mint Green)
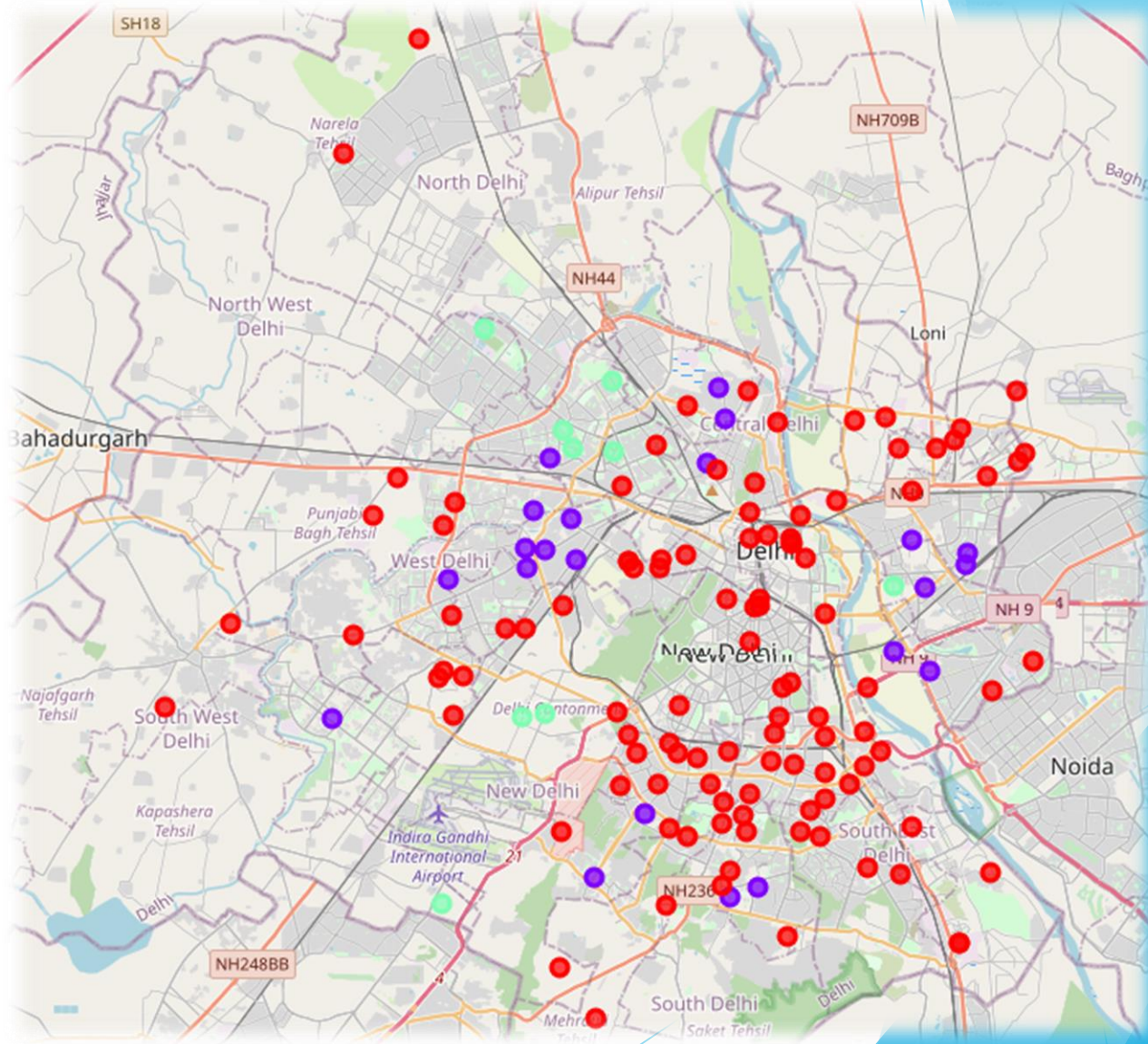
Discussion

- Most of the shopping malls are concentrated in the West 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 West area of the city, with the suburb area still have very few shopping malls

Recommendations

▶ Open new shopping malls in neighborhoods in cluster 1 with little to no competition

▶ Can also open in neighborhoods in cluster 0 with moderate competition if have unique selling propositions to stand out from the competition

▶ Avoid neighborhoods in cluster 2, already high concentration of shopping malls and intense competition

Conclusion

► Answer to business question: The neighborhoods 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