Coursera Capstone

BM Applied Data Science Capstone

Opening a New Shopping Mall in Lille, France

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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 analyse and select the best locations in the Lille city, France to open a new shopping mall
- Business question

➤In the city of Lille, France 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 Lille
  - Latitude and longitude coordinates of the neighbourhoods
  - Venue data, particularly data related to shopping malls
- Sources of data
  - Web page of neighbourhoods (http://www.mapcrow.info/Lille-FR-suburbs)
  - Geocoder package for latitude and longitude coordinates
 - Foursquare API for venue data

Methodology

- Web scraping web 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 Shopping Mall
- Perform clustering on the data by using k-means clustering
- Visualize the clusters in a map using Folium

Result

Categorize the neighbourhoods into 3 clusters:

- Cluster 0: Neighbourhoods with moderate number of shopping malls
- Cluster 1: Neighbourhoods with high number to no existence of shopping malls
- Cluster 2: Neighbourhoods with low concentration of shopping malls
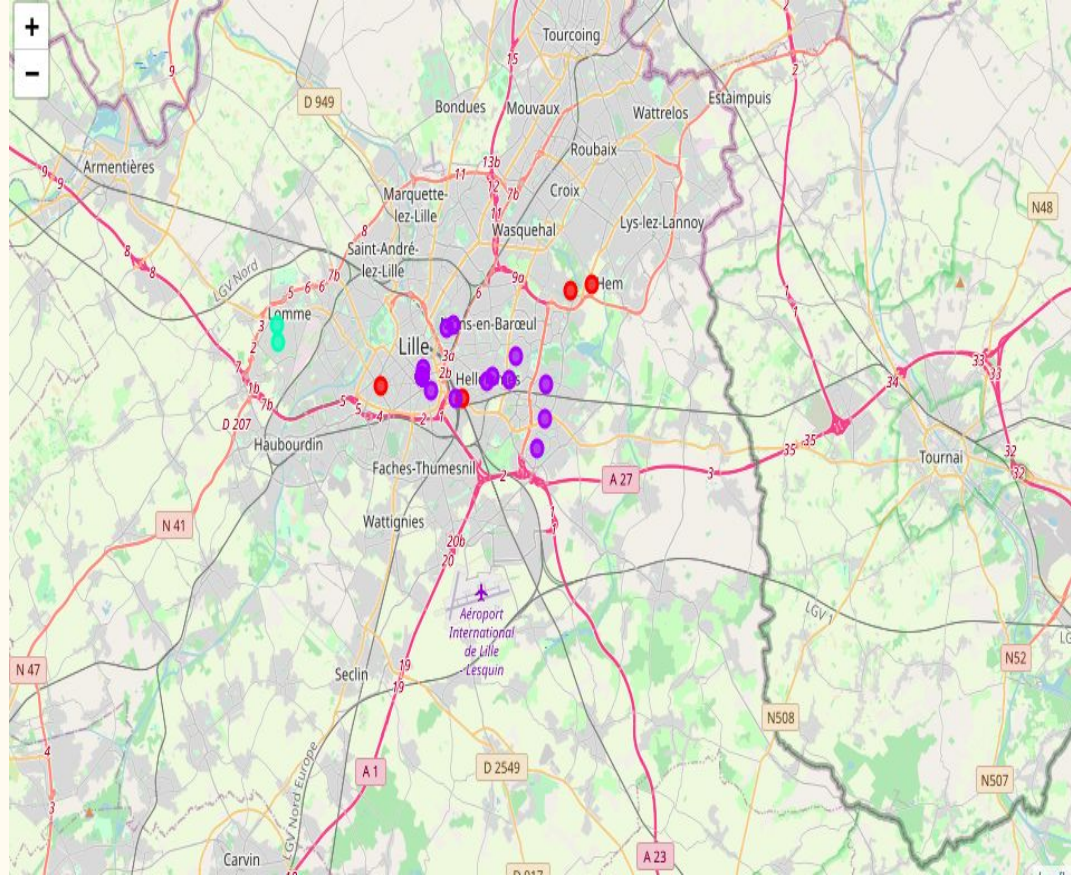
Discussion

- Most of the shopping malls are concentrated in the central area of the city
- Highest number in cluster 1 and moderate number in cluster 0
- Cluster 2 has very low number to no shopping mall in the neighbourhoods
- Oversupply of shopping malls mostly happened in the central area of the city, with the suburb area still have very few shopping malls

Recommendations

- Open new shopping malls in neighbourhoods in cluster 2 with little to no competition
- Can also open in neighbourhoods in cluster 0 with moderate competition if have unique selling propositions to stand out from the competition
- Avoid neighbourhoods in cluster 1, already high concentration of shopping malls and intense competition

Conclusion

- Answer to business question: The neighbourhoods in cluster 2 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 !!