IBM Data Science Capstone Project Opening a New Shopping Mall in Amsterdam

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Feb 2020

Business Problem

- Objective: The main objective of this project is to find the best location in city of Amsterdam to open a new Shopping Mall.

- Location is very important factor to open a new shopping mall.

- This project is best helpful for the developers who are looking to open new shopping mall in city of Amsterdam as the city lacks more shopping malls.

Data

- Data required
- ❖ Neighborhoods in city of Amsterdam
- ❖ Latitude and Longitude of each neighborhood
- ❖ Venue data in each neighborhood , especially data related to shopping malls.

- Data Source
- ❖ Data related to neighborhoods is available in kaggle datasets.
  https://www.kaggle.com/dushyantsapre/amsterdam-neighbourhood-and-venues
- ❖ Foursquare API is used for getting venue details.

Methodology

- Get neighborhood details in the city.
- Use Foursquare API to get details about venues.
- Group data by neighborhood and calculate the mean frequency of occurrence of each category in venue.
- Filter this grouped data by venue category as shopping mall.
- Cluster this grouped data of shopping mall by k-means clustering.
- Visualize the clusters on map with folium library.

Results

- Neighborhoods are classified into 3 clusters.

  - ❖ Cluster 0 : Neighborhoods
    with less number of shopping mall
  - ❖ Cluster 1 : Neighborhoods
    moderate number of shopping ma
  - ❖ Cluster 2 : Neighborhoods with
    high number of shopping malls.
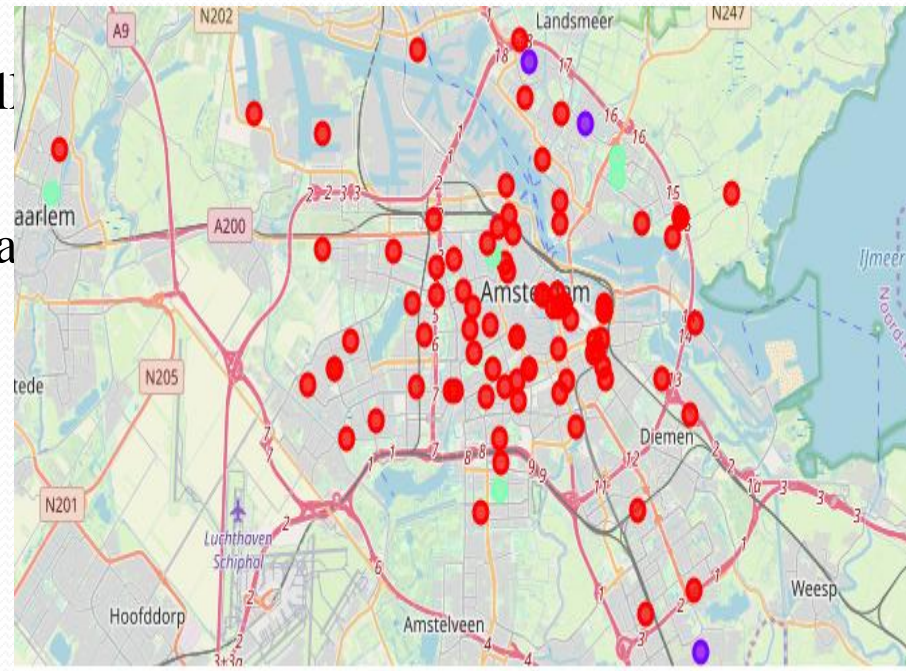
Discussion

- Most of the shopping malls are concentrated in cluster 2 and moderate number in cluster 1.

- Cluster 1 has very less number of shopping malls.

- Oversupply of shopping malls are in cluster 2. So it is not at all recommended to open shopping mall in cluster 2.

Recommendation

- From the results and discussion , it is recommended to open shopping malls in cluster 0 with no competition.

- Can also open shopping malls in cluster 1 with moderate competition.

- It is recommended to avoid opening new shopping malls in cluster 2.

Thank You