Coursera Capstone

IBM Applied Data Science Capstone

OPTIMAL LOCATION FOR A COFFEE SHOP IN MOSCOW CITY

Author: Nursultan Agzhigitov

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Business Problem

- Location of the coffee shop 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 Moscow city to open a new coffee shop
- This project is timely as the city is currently suffering from oversupply of coffee shops
- Business question
  - In Moscow, if a property developer is looking to open a new coffee shop, where would you recommend that they open it?

Data

Data required

➢ List of neighborhoods in Moscow

➢ Latitude and longitude coordinates of the neighborhoods

➢ Venue data, particularly data related to coffee shops

Sources of data

➢ Wikipedia page for neighborhoods
(https://commons.wikimedia.org/wiki/Category:Municipal_divisions_of_Moscow)

➢ 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 Coffee shop
- Perform clustering on the data by using k-means clustering
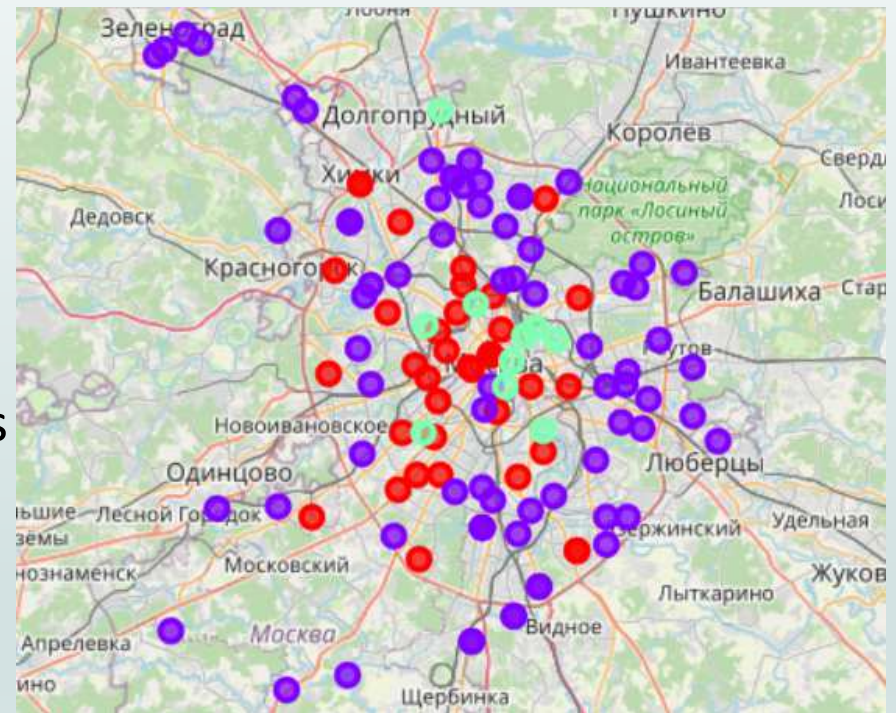- Visualize the clusters in a map using Folium

Results

Categorized the neighborhoods
into 3 clusters
Cluster 0: Neighborhoods with
moderate number of coffee shops
Cluster 1: Neighborhoods with low
number to no existence of coffee shops
Cluster 2: Neighborhoods with high
concentration of coffee shops

Discussion

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

Recommendations

- Open new coffee shop 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 coffee shops 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 coffee shops areas in their decisions to open a new coffee shop

Thank You

For Your Attention