

*Opening a New Shopping Mall in
Toronto*

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Business Problem

- Location is a very important criterium in order to chose if open a shopping mall
- The object of this project is to select the best location in the city of Toronto
- Business question: if a real estate investor is looking for a location where to open a shopping mall which neighborhoods would you suggest?

Data

- Data required

- List of neighborhoods of the city of Toronto

- Latitude and longitude of neighborhoods

- Venues data

- Sources of data

- Wikipedia page for

- neighborhoods(https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)

- Foursquare API for venue data

Methodology

- Web scraping Wikipedia page for neighborhoods list
- Get latitude and longitude coordinates
- 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 ShoppingMall
- 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 of shopping malls
 - Cluster 1: Neighbourhoods with high number to no existence of shopping malls
 - Cluster 2: Neighbourhoods with moderate 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 2
- Cluster 0 has very low number to no shopping mall in the neighbourhoods

Recommendations

- Open new shopping malls 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 neighborhoods in cluster 1, already high concentration of shopping malls and intense competition

Conclusion

- Answer to business question: The neighbourhoods in cluster 0 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