

Coursera Capstone

IBM Applied Data Science Capstone

Opening Shopping Mall in Auckland, New Zealand

Submitted By
Rahul Chakraborty
August 2020

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 Auckland, New Zealand to open a new shopping mall.
- ◆ Project Timing:- This project is timely as the world is currently suffering from pandemic, and post pandemic the world may behave differently.
- ◆ Business question:- In the city of Auckland, New Zealand, 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 Auckland, New Zealand
- Latitude and Longitude coordinates of the neighborhoods
- Venue data, specially data related to shopping malls

Sources of Data:-

- Wikipedia page of neighborhoods (List of suburbs)
- Geocoder package for latitudes and longitudes
- Foursquare API for Venues.

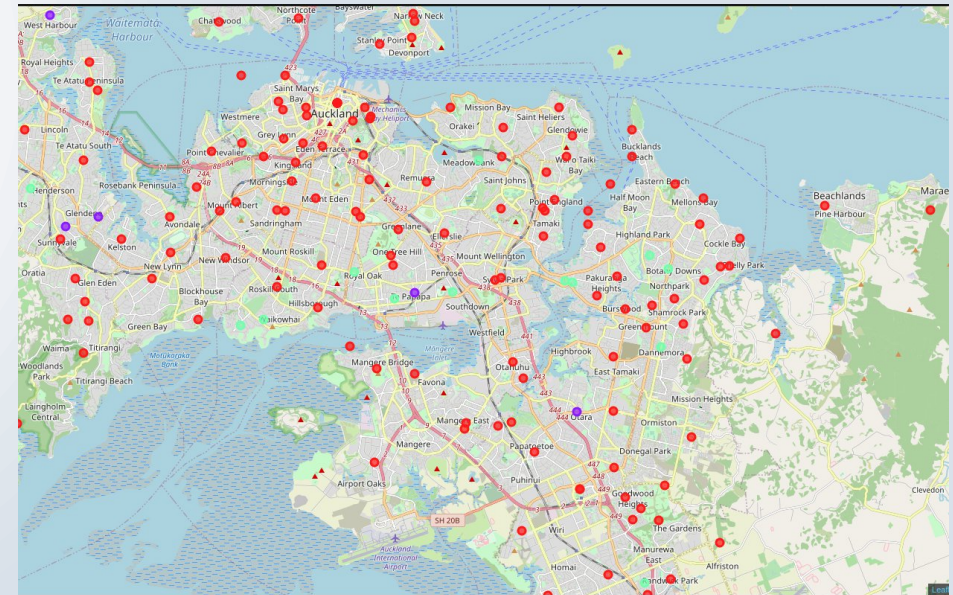
Methodology

- Web scrapping Wikipedia page for neighborhoods list
- Latitude and Longitudes from Geocoder API
- Get Venue data using Foursquare API
- Group data by neighborhood and taking the mean of the frequency of occurrence of each venue category
- Filter venues by Shopping Malls
- Perform Clustering (K-means Clustering) of the data
- Visualization of the clusters using Folium map

Results

Categorize the neighborhood into 3 clusters:

- Cluster 0: Neighborhoods with moderate no. of shopping malls
- Cluster 1: Neighborhoods with low to no no. of shopping malls
- Cluster 2:



Discussion

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

Recommendations

- For opening shopping mall with no competition, cluster 1 will be the best option
- Opening in neighborhoods in cluster 0 is also advisable as with moderate competition and with unique selling propositions it can also provide option to stand out from the competition
- But, neighborhoods in cluster 2 with already high concentration of shopping malls and intense competition is not advisable for opening new mall

Conclusion

- Now coming to answering the business question: From our data, we can say that neighborhoods in cluster 1 are the most preferred locations to open a new shopping mall because of less competition giving more opportunities.
- 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!

