

COURSERA/IBM APPLIED DATA SCIENCE CAPSTONE PROJECT



Opening a new Fried Chicken Restaurant in Toronto
CANADA

BUSINESS PROBLEM

Location of a new business is one of the most important decisions that will determine whether it will be a success or a failure.

In this project we will try to find the optimal locations for a new Fried Chicken Restaurant in Toronto, Canada.

Data

Data Required

- List of neighborhoods in Toronto
- Latitude and longitude coordinates of the neighborhoods
 - Venue data

Sources of Data

- Wikipedia page for neighborhoods
(https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)
- The data that contain all the geographical coordinates of the neighborhoods
“https://cocl.us/Geospatial_data”
- Foursquare API for venue data

Methodology

- Web scraping Wikipedia page for neighborhoods
 - Get the coordinates using
“https://cocl.us/Geospatial_data”
 - Use Foursquare API to get venue data
- Group data by neighborhood and taking the mean of the frequency of occurrence of each venue category
 - 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 1 :

Most of them are at the center of Toronto. So it means high cost high gain for a new business.

Cluster 2 :

There are mostly business areas with cafe, restaurants, bar, etc. The neighborhoods are a little bit far from the center of Toronto. So it means high cost, high gain.

- Cluster 3 :

Relatively low cost.

Discussion

In this project, we only consider one factor, i.e. frequency of venues, there are other factors such as population, demographics and income of residents that could influence the location decision of a new business. However, to the best knowledge of this researcher, such data are not available to the neighborhood level required by this project. Future research could devise a methodology to estimate such data to be used in the clustering algorithm to determine the preferred locations to open a new Fried Chicken Restaurant.

RECOMMENDATIONS

- 1. Regent Park, Harbourfront
 - It seems as the best option.
 - The venues and restaurants density is not saturated.
 - There is not other chicken restaurant so close.
 - The neighborhood is close to the center of the city and other neighborhoods that don't have a fried chicken restaurant
- 2. Kensington Market, Chinatown, Grange Park
 - It may be the best option but there are two other fried chicken restaurants close by.
 - High cost, high gain for a new business like Regent Park
- 3. Willowdale
 - Good place to start with a new business in a new country to see how it will work.
 - Relatively low cost, low risk.

CONCLUSION

- **Answer to business question:** Regent Park, Harbourfront is the most preferred locations to open a new Fried Chicken Restaurant
- 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 for same type of business projects.