

## **Introduction/Business Problem**

This study aims at helping an investor to choose a suitable location for setting up a restaurant in Toronto. The location is planned to be chosen using the clustering of neighbourhoods on the basis of income, the population as well as considering the existing competitors of that neighbourhood.

## **The Data**

Toronto's 2016 census that contains information related to population, average income per neighbourhood will be combined with foursquare API to gain the information of competitors based on the same neighbourhood.

## **Methodology**

For this report, I used a few different maps that could help a new investor to decide the best neighbourhood to open a restaurant in Toronto based on its income, population and available competitors. In order to do that I've used the 2016 Census information combined with choropleth maps to visually display the wealthier and more populational neighbourhoods and Foursquare data to display the current restaurants in each region.

## **Results**

Comparing the maps we can notice the majority of the restaurants grouped on main streets and on the south of the city, although some of the wealthiest neighbourhoods are up to the north. Also, the areas with a dense population don't reflect on the number of restaurants.

## Discussion

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From the results of the clustering algorithm, it was determined that neighborhoods corresponding to cluster 3 were the best choice for opening an Indian restaurant based on the normalized spending power and population. This narrowed down possible locations to six different areas. Using the results in Figure 5, the Agincourt North, L'Amoreaux East, Milliken, Steeles East region the Newtonbrook, Willowdale region and the Harbourfront, Regent Park region were eliminated due to the large number of restaurants in the area.

From the three remaining regions, I would recommend that the client open his/her restaurant in either the Rouge, Malvern region or the Cloverdale, Islington, Martin Grove, Princess Gardens, West Deane Park region. Both regions have very few restaurants and are farther away from the downtown area. While the Cloverdale, Islington, Martin Grove, Princess Gardens, West Deane Park region has a higher spending power and population, the Rouge, Malvern region has a higher percentage of South Asians and thus the optimal region to open the Indian Restaurant.

## Conclusion

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Opening a restaurant is a complex task that can lead to a large monetary loss if not done properly. Thus, extensive research about the area would greatly increase the likelihood of the restaurant succeeding. From the project above, I demonstrated the workflow necessary for a client to determine what area the restaurant should open. For specifically, I determined that the optimal location to open an Indian restaurant in Toronto should be in the Rouge, Malvern region.