



BATTLE OF NEIGHBORHOODS

Devan Constance

Introduction and Problem

- During this time of COVID-19 there has been a drastic shift in both our economies and communities. We have been forced to self-isolate/self-distant and many people have lost their jobs and ultimately had to alter their way of life.
- these changes there has been an increase in activities that people are able to participate in, one for example is cycling/biking
- There may be a real opportunity to open a new bike store location, either big chain retailers in high density neighbourhoods or boutique stores for higher income and low population density
- In Toronto Ontario what would be the best situated area to be economically viable
- Criteria: the income and population of each neighbourhood as well as the competitors already located in the surrounding regions.

Data

- The data used to obtain the necessary information about population and income will be provided using the census data from <https://open.toronto.ca/dataset/neighbourhood-profiles/> - Neighbourhood data 2001,2006,2011.xlsx.
- Data contains various categories including individual average incomes and population for each neighbourhood
- https://raw.githubusercontent.com/jasonicarter/toronto-geojson/master/toronto_crs84.geojson was used to create choropleth maps.
- To determine the competitor locations in the surrounding regions the foursquare API technology was used to accurately and efficiently locate them based on the regions that show potential for a business.

Methodology

- The initial data was read into a data frame using the pandas library
- Several unwanted columns and rows were dropped while the population in each neighbourhood as well as their average income were kept to and added to the data frame
- There are three main components :
 - Neighbourhoods
 - Population of 2011
 - Income 2011.

Final data frame

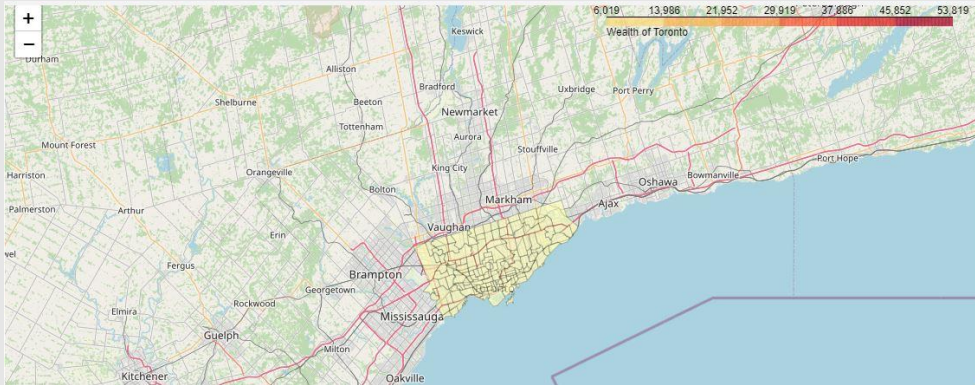
	Neighbourhood	Population 2011	Income 2011
0	Black Creek	22057.0	24154.0
1	Oakridge	13497.0	25013.0
2	Mount Olive-Silverstone-Jamestown	32788.0	25072.0
3	Glenfield-Jane Heights	31390.0	25726.0
4	York University Heights	27713.0	26759.0

Choropleth maps

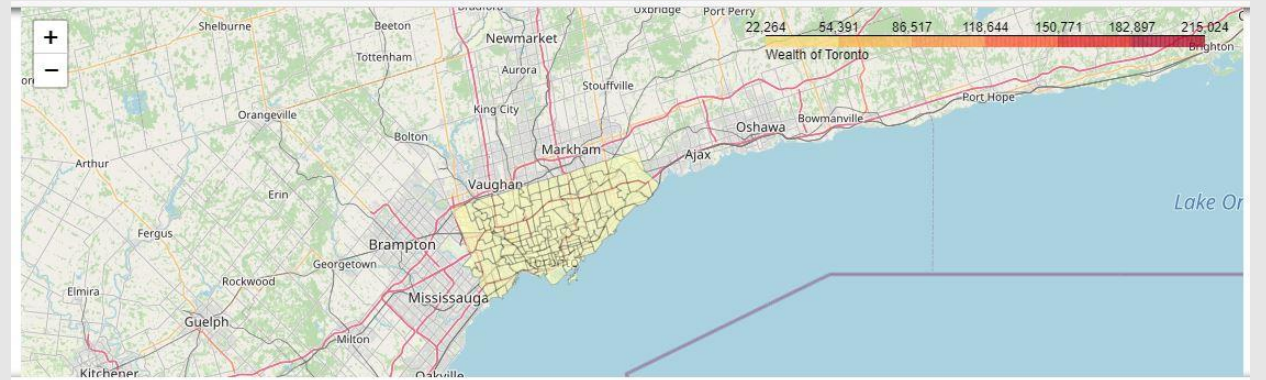
- To visualize the data better two choropleth maps were created to show the varying population density as well as the income density in each neighbourhood.

Choropleth maps

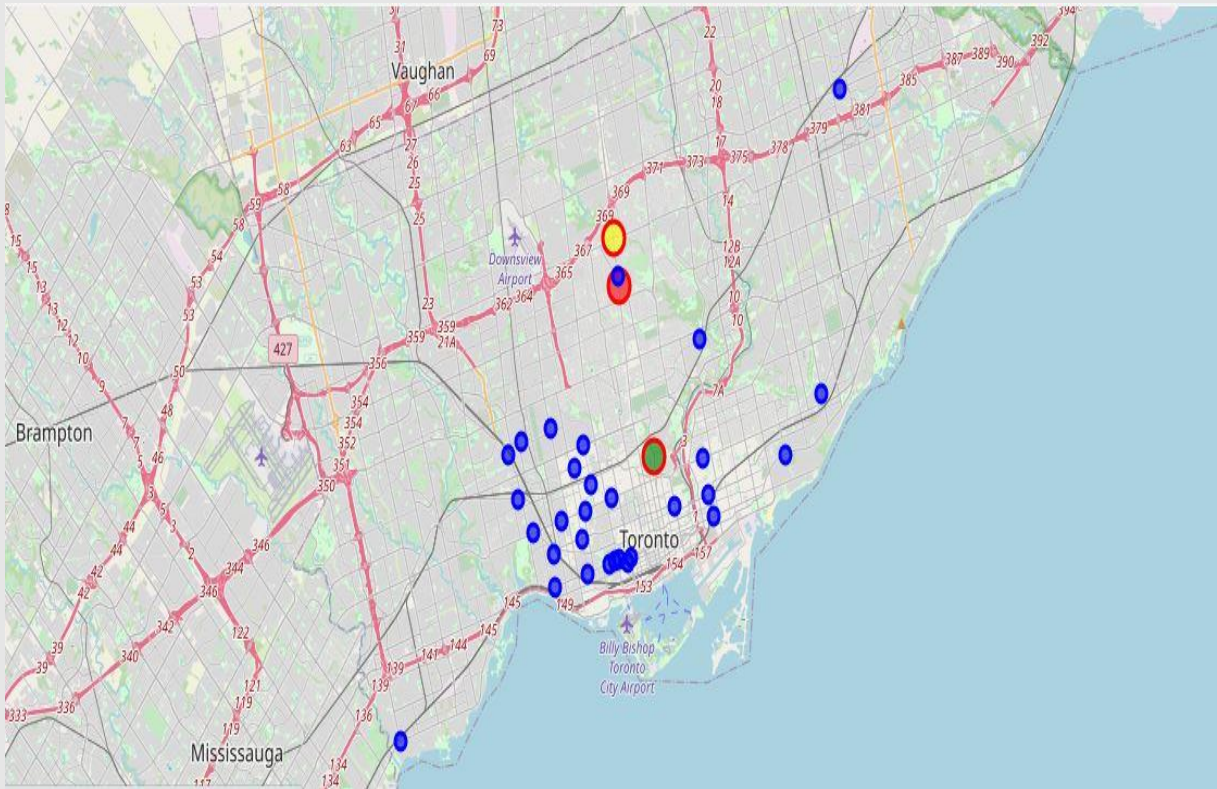
Population Choropleth map



Income Choropleth map



Location map



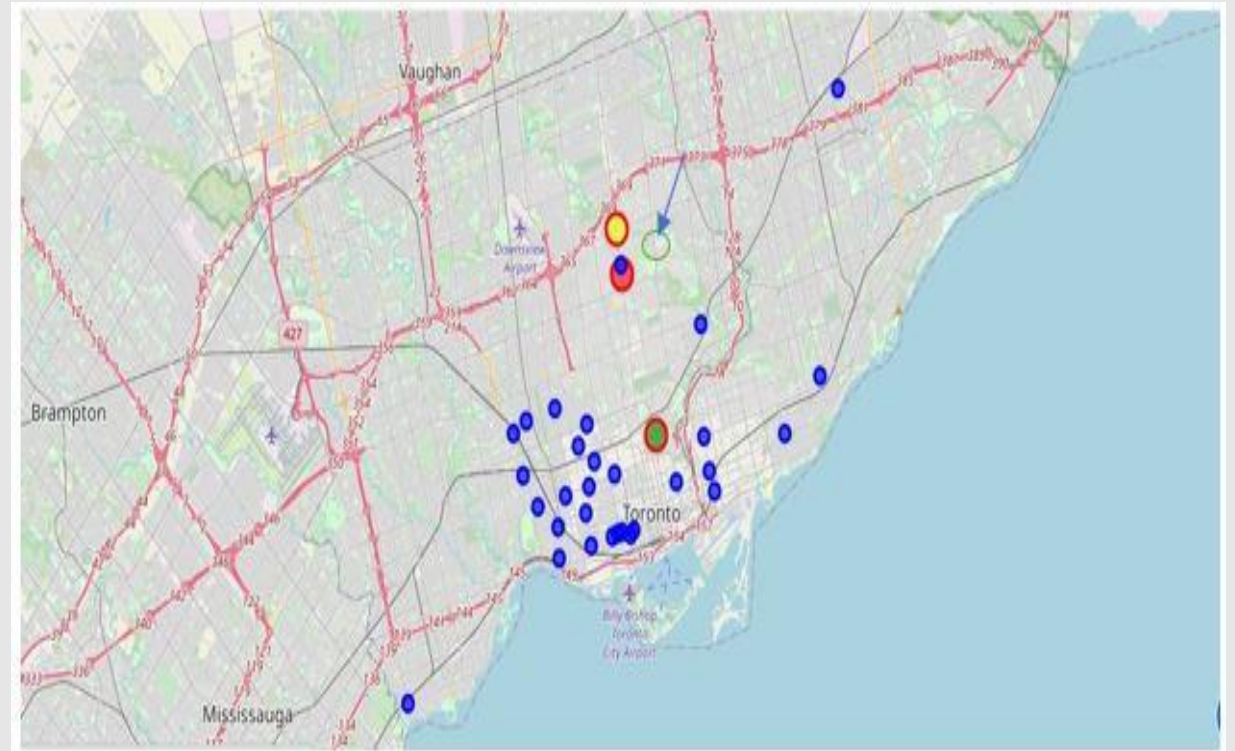
- Top three wealthiest neighbourhoods were tested (York-Mills, Rosedale and Lawrence Park South)
- Neighbourhoods
 - Yellow York-Mills
 - Red Rosedale
 - Green Lawrence Park South
- Blue Bike shop competitors

Results

- Choropleth figures the densities were unable to be visualized in the neighbourhoods effectively all though no error was produced and the correct data was entered, as seen by the legend.
- Through further inspection of the data, in general the income in a community and population size were inversely related and as a result a higher population with lower income.
- In location map higher number of cycle shops closer to the downtown core and less in the northern sections leading away from downtown
- Busier neighbourhoods and a tightly situated downtown core, biking to and from locations may be a preferred method of travel when compared to vehicles for commuting, based on the amount of cycling shops present.

Discussion

- Very few bike shops located in near the Rosedale and York-Mills communities while a highly populated area in the Lawrence Park South location
- Large park surrounding the Rosedale and York-Mills with likely bike paths present in each
- Highway and airport located in the north western region of York-Mills as well as an airport, community travel to this region would be less prominent and a less profitable region
- Due to these factors; low population, located near park/bike path and more affluent neighbourhood, the suggested location would be on the eastern region
- The choice of type of bike store would be a boutique shop



Conclusion

- The desire for this project was to determine a potentially profitable region for a bike store to open in the Toronto region and to determine whether a boutique or large chain store would be a better choice
- A map was created based on using the Toronto census data and API four square technology
- Data showed the most profitable region to be located between the Rosedale and York-Mills neighbourhoods near the York-Mills Valley park.