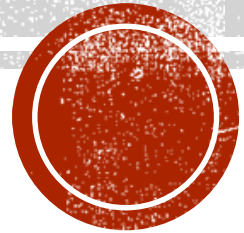
WHERE TO MOVE IN?

(Toronto vs NYC neighborhoods)



PROBLEM STATEMENT

- In these times of globalization is very usual that people move from one city to another
- For some, this decision is pleasant and a choice, but for some others is hard and stressful

Make this decision easier

Comparing multiple cities and find similarities of their neighborhoods

Then you can choose the one that will make you feel more comfortable

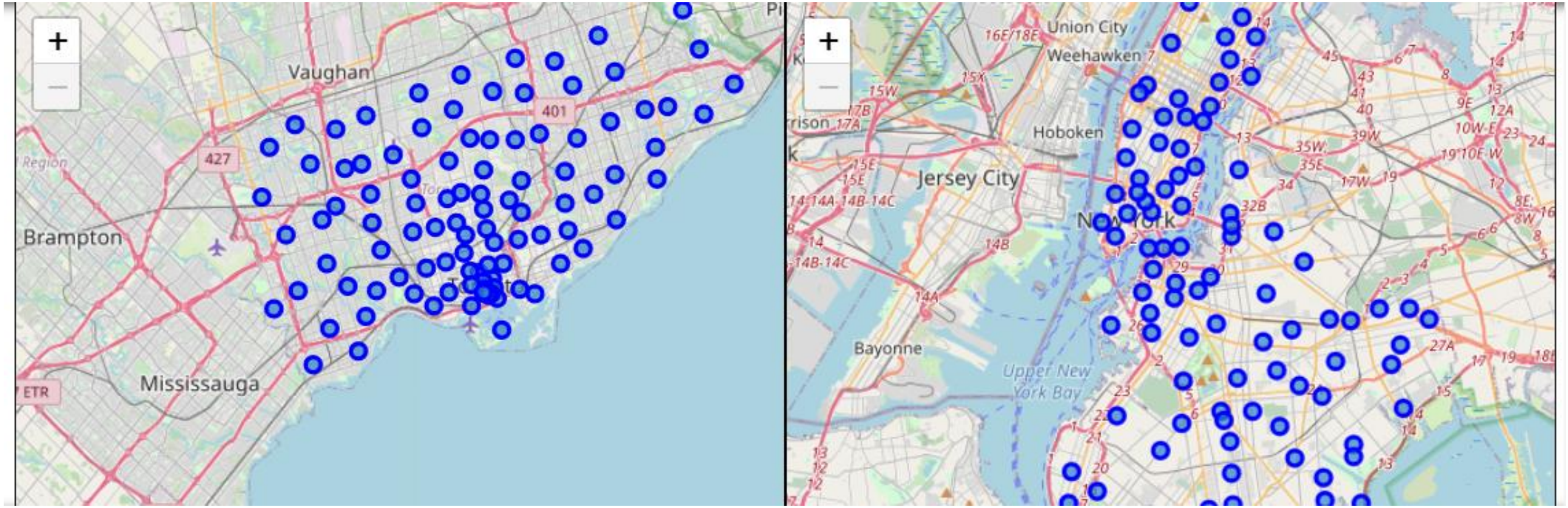
DATA ACQUISITION AND CLEANING

- To get NYC neighborhoods and coordinates I have used from **NYU** (IBM downloaded version) *'2014 New York City Neighborhood Names'* (here). I kept Manhattan and Brooklyn neighborhoods only, that gave a total of 110 for NYC.
- From **Wikipedia** *'List of postal codes of Canada: M.'* It contains full list of the neighborhoods around Toronto by Postal Code (here).
- **Geocoder API** was used to get the coordinates of Toronto neighborhoods and NYC

  After merging Wikipedia and location data we got a total of 103 neighborhoods around Toronto.

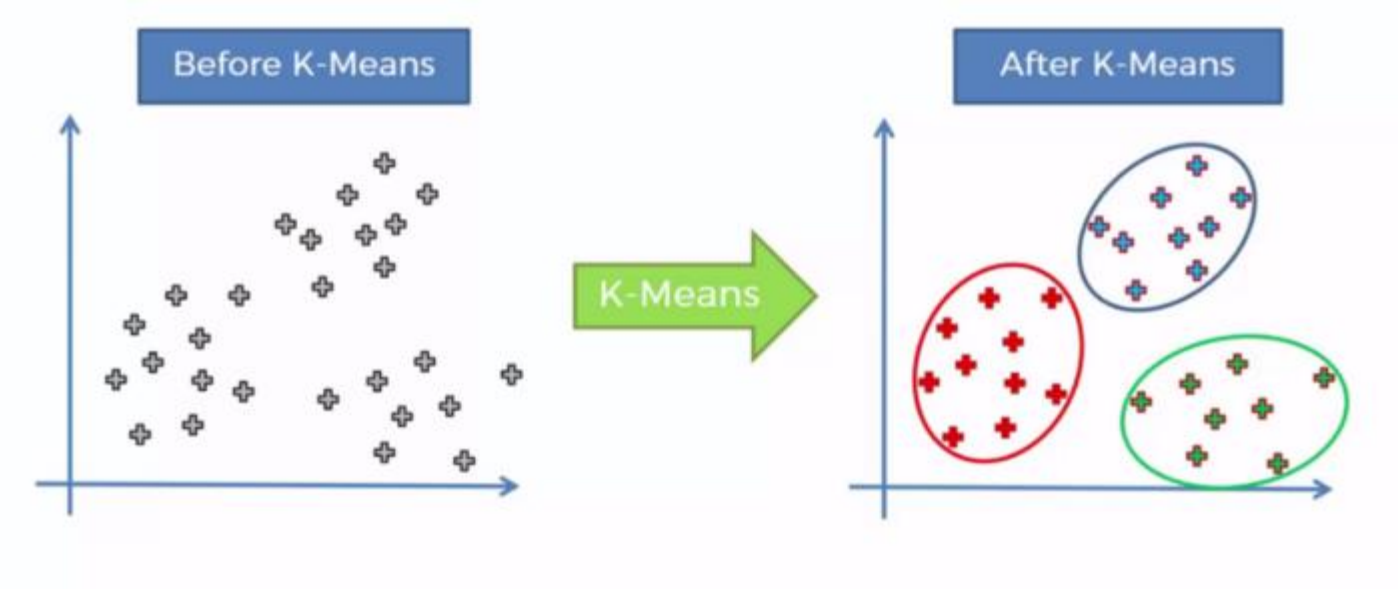
- Lastly **Foursquare** venues and categories APIs gave us the list of venues for each neighborhood in order to make the comparison between them and a list of categories to group the venues. (If no venues were found for a neighborhood, we kept it out of scope). After all, we got 65 distinct categories.

MAP OF THE LOCATIONS ANALYSED

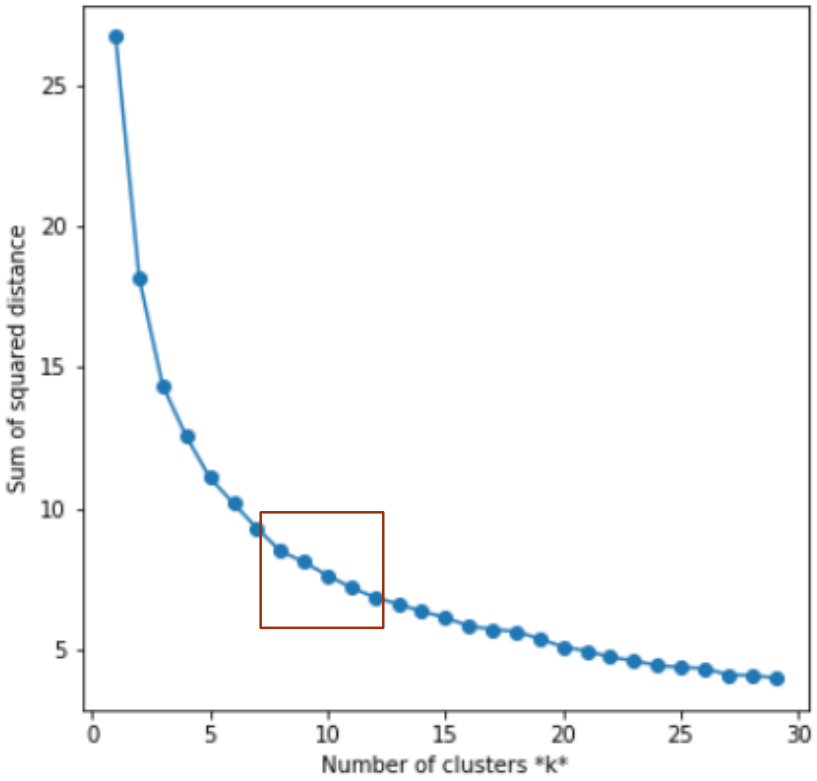


MODELLING

- For this analysis we only wanted to investigate the structure of the data by grouping the data points into distinct subgroups trying to find similarities in the neighborhoods. Therefore I used an unsupervised learning method of clustering as k-means.

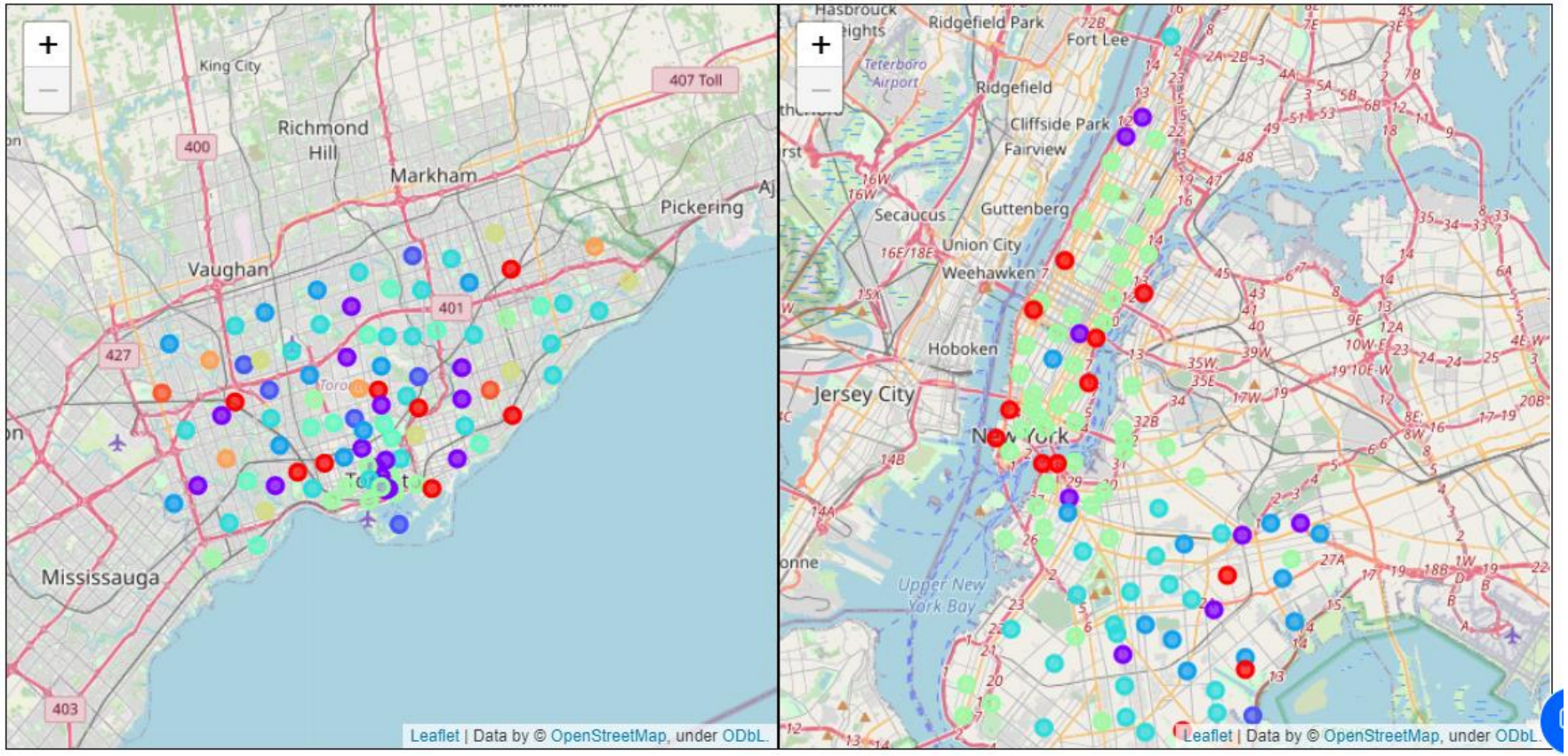


MODELLING (CONT)



- Elbow method, gives an idea on what a good k number of clusters would be, based on the sum of squared distance (SSE) between data points and their assigned clusters' centroids.
- It was a bit hard to figure out a good number of clusters to use, because the curve was monotonically decreasing and there was no obvious point where the curve started flattening out.
- It seemed that the number was around 8 and 12. For this reason I applied the k-means cluster method with a k = 10.

VISUALIZING THE RESULTS



CONCLUSION

So if you are planning to move from NYC to Toronto or viceversa:

- Almost always there's a chance to find a neighborhood that resembles to your current
- If you live in Toronto's city centre you might probably want to move to Manhattan and viceversa
- If you live outside Toronto, then you should look for something in Brooklyn
- If you live in Brooklyn, depending on the neighborhood, you could find places inside Toronto or in the outskirts of the city