

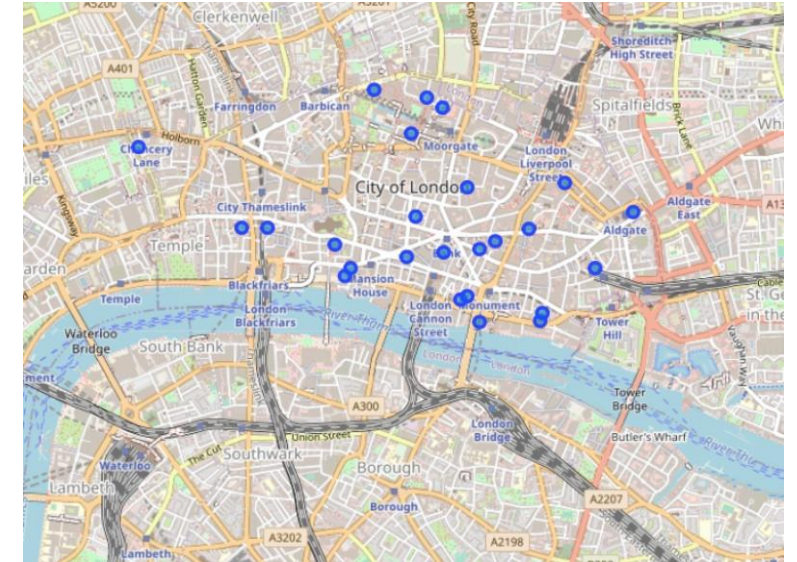
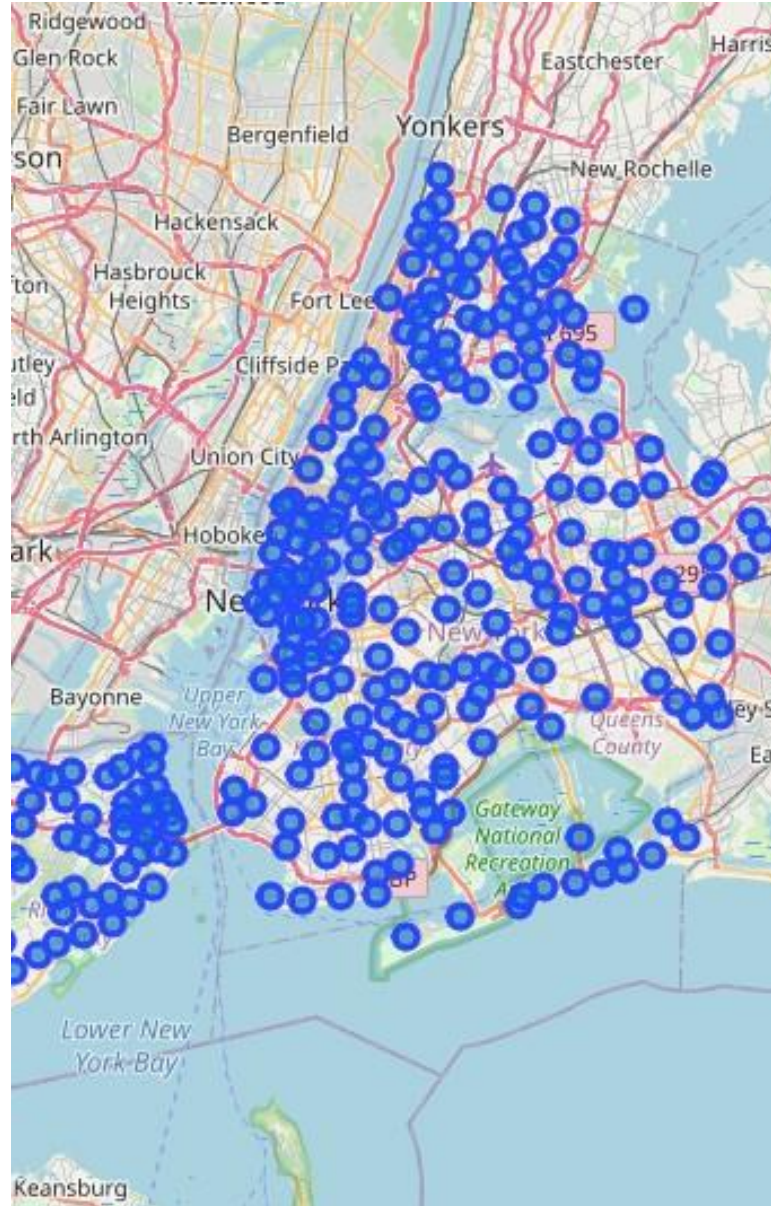
CAPSTONE PROJECT - THE BATTLE OF THE NEIGHBORHOODS

By Pegah Aziziyanesfahani



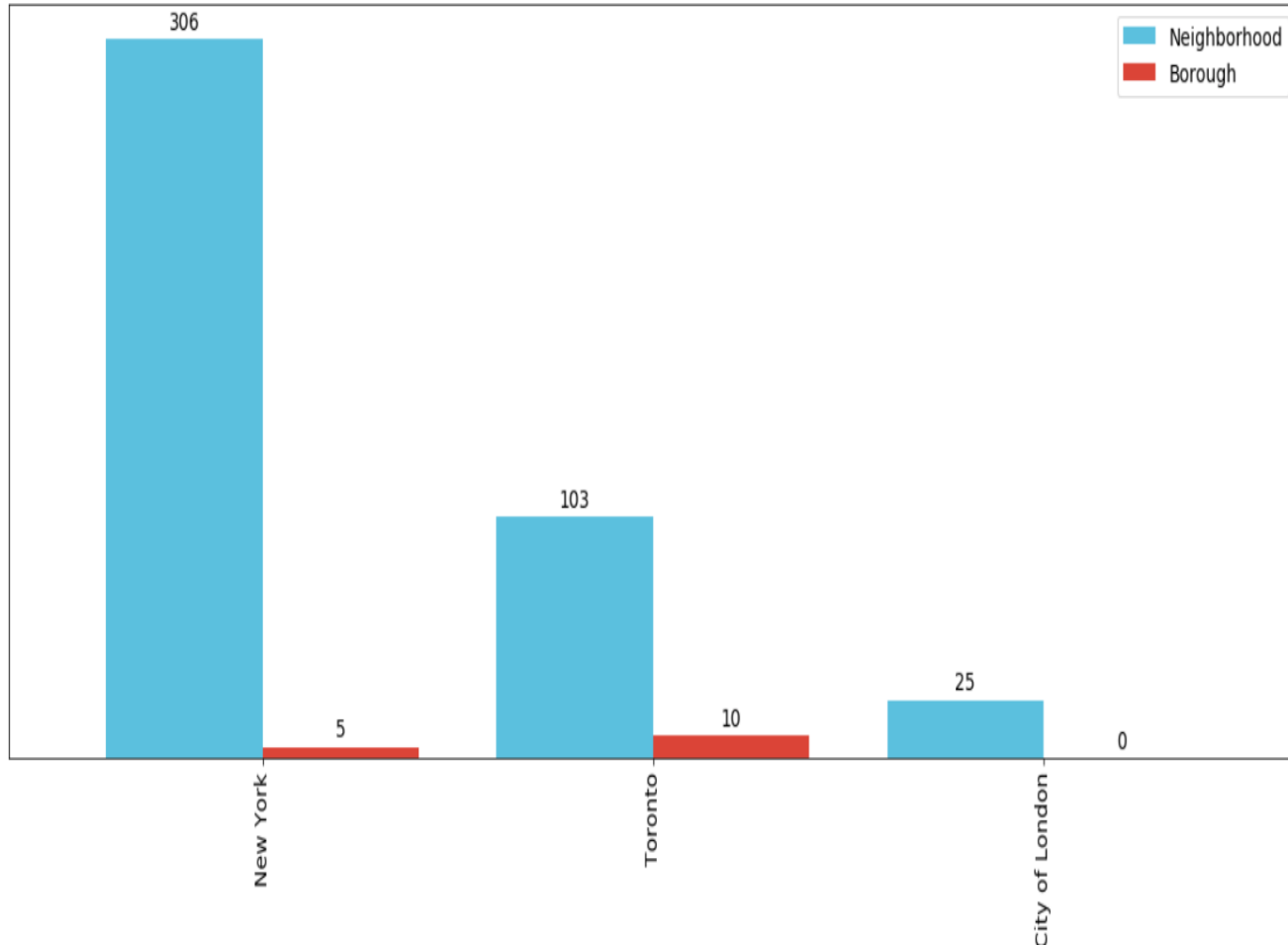
IS NEW YORK CITY MORE LIKE TORONTO OR CITY OF LONDON?

- i Toronto, New York and City of London are one of the most visited cities in the world
- i The goal of this project: figure out similarity or dissimilarity between these three cities according to information of their neighborhoods



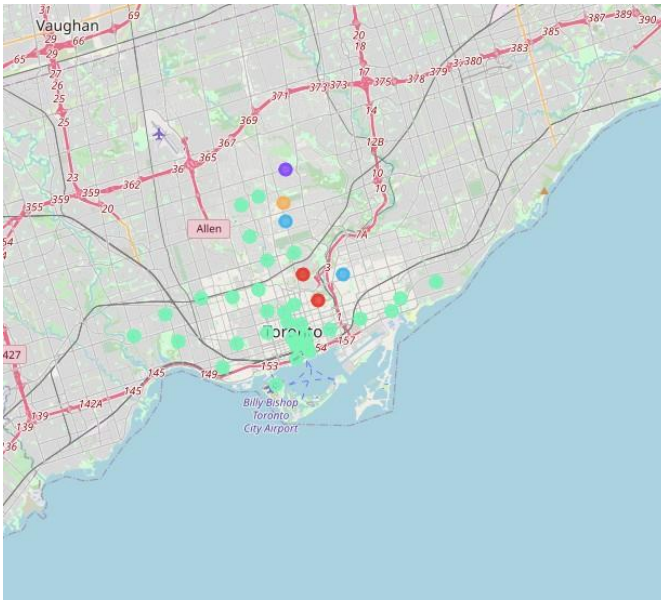
DATA ACQUISITION AND CLEANING

Number of Neighborhoods and Boroughs between cities

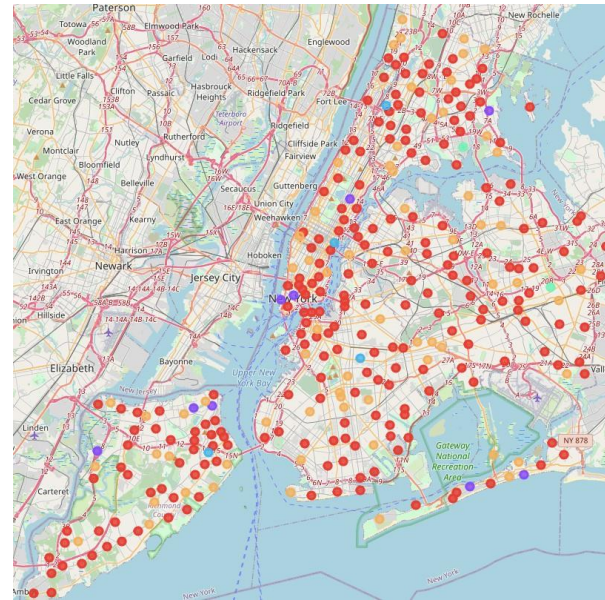


i Data resources:

- City of London data were obtained from Doogal website which covers UK postcodes and map tools.
- New-york city information is extracted from json dataset
- Canada post code lists were extracted from Wikipedia list and geo information of each neighborhoods were merged
- Using Foursquare API to get the venues records for all three cities



Clusters in Toronto



Clusters in New York



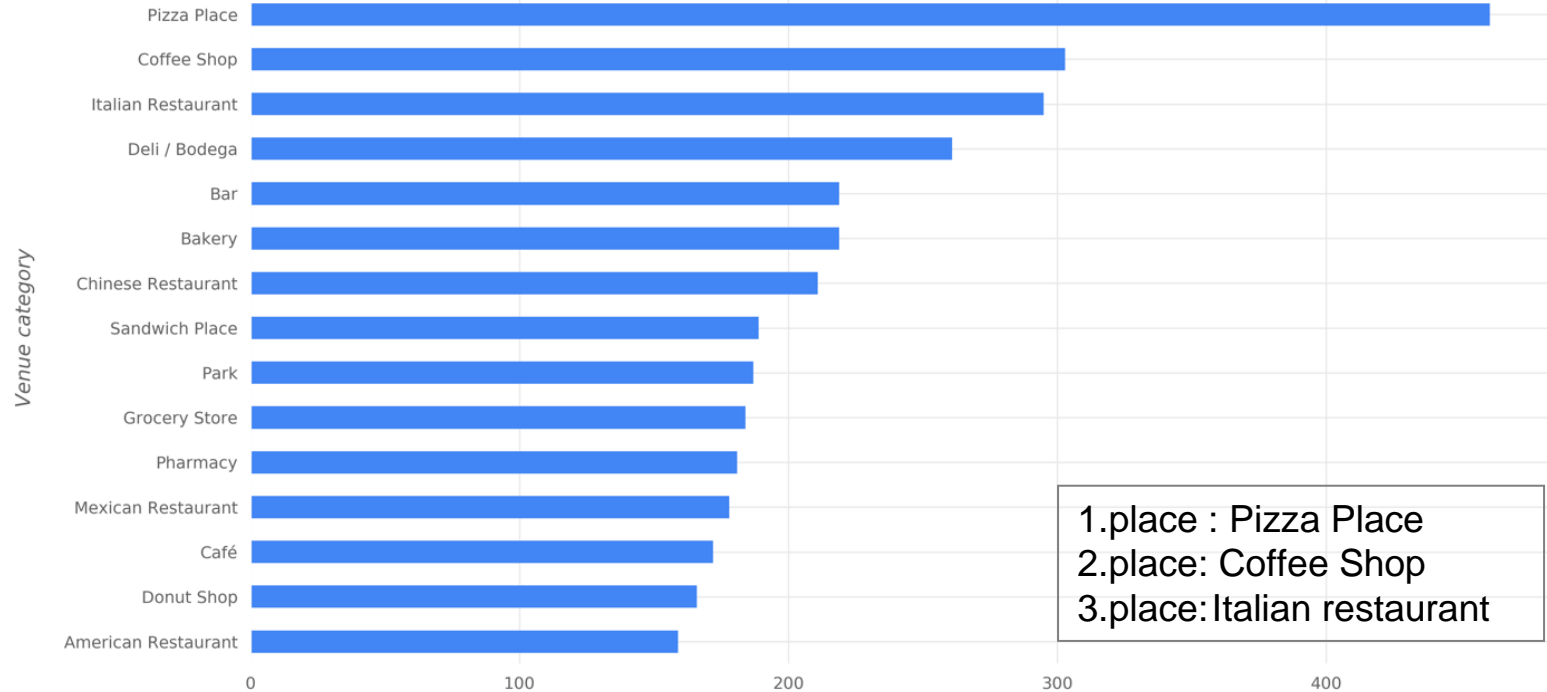
Clusters in City of London

EXPLORATORY DATA ANALYSIS

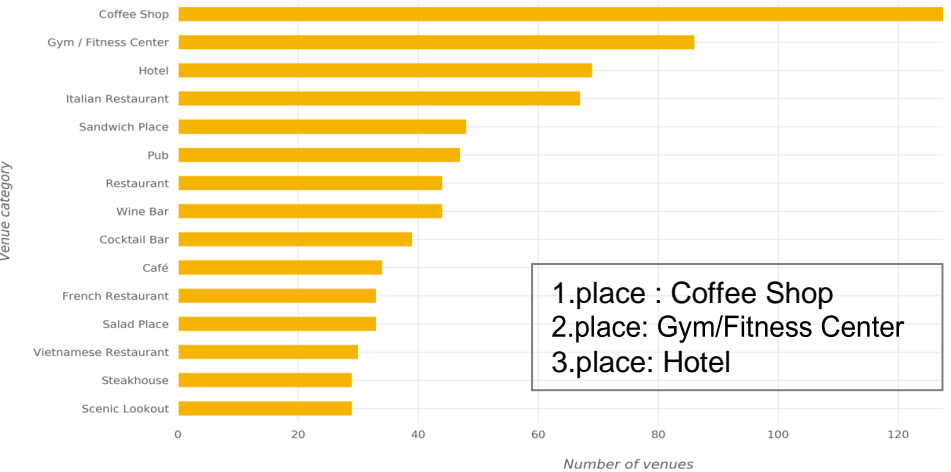
- ❖ Using K-Mean Clustering as methodology
- ❖ Clustering neighborhoods for each city according to venues data (5 Clusters)
- ❖ Discover the most common venue categories in each city and widespread venues in neighborhoods of each city
- ❖ Clustering neighborhoods of two cities based on similar venue categories (NYC and Toronto, NYC and City of London)

THE MOST COMMON VENUE CATEGORIES IN EACH CITY

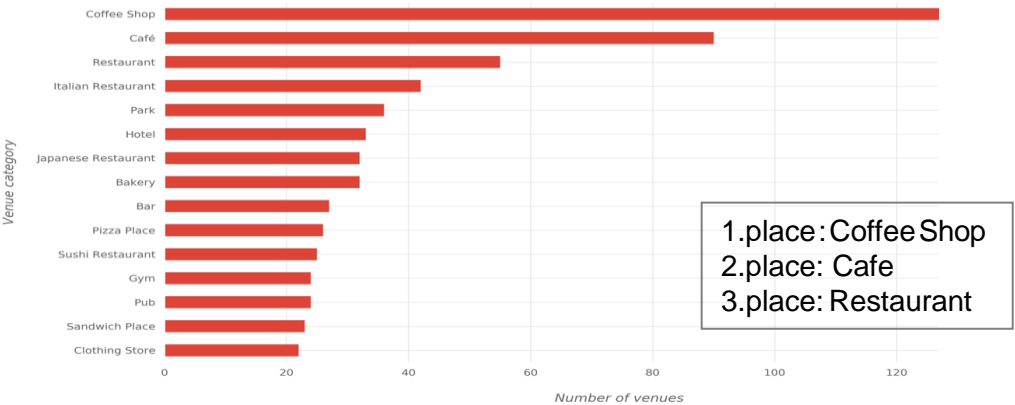
NEW YORK



CITY OF LONDON

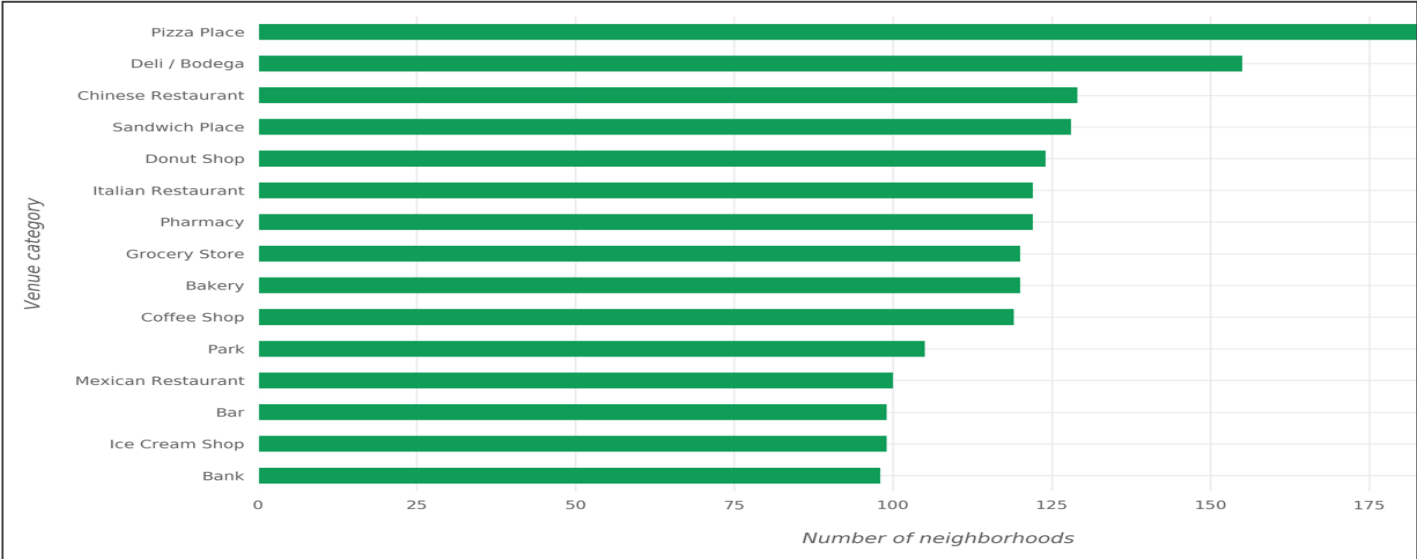


TORONTO

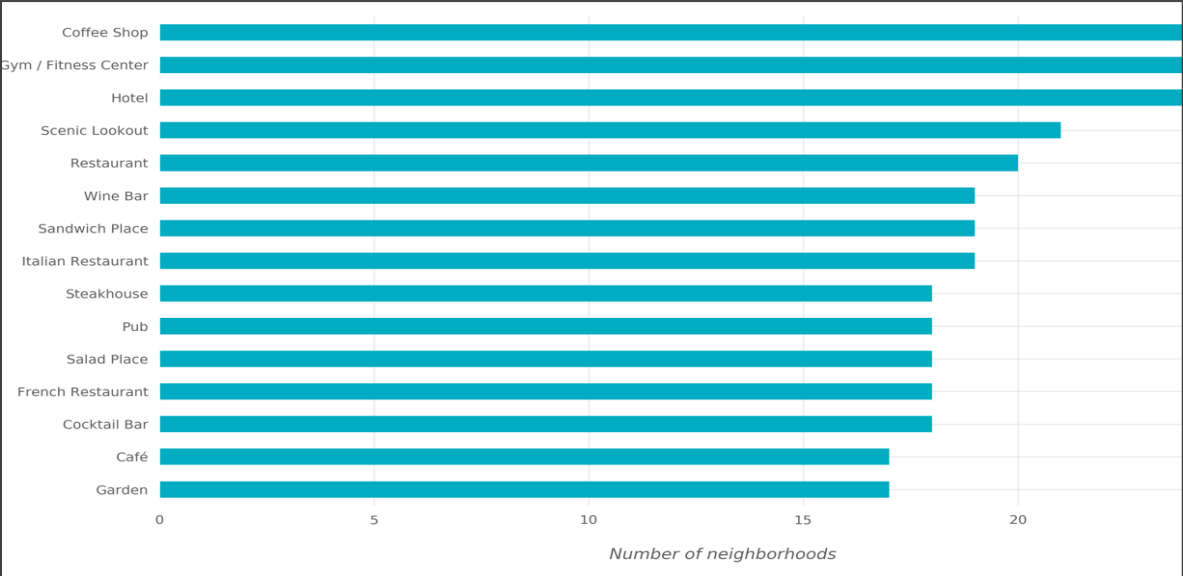


Widespread Venue Categories in Neighborhoods of Cities

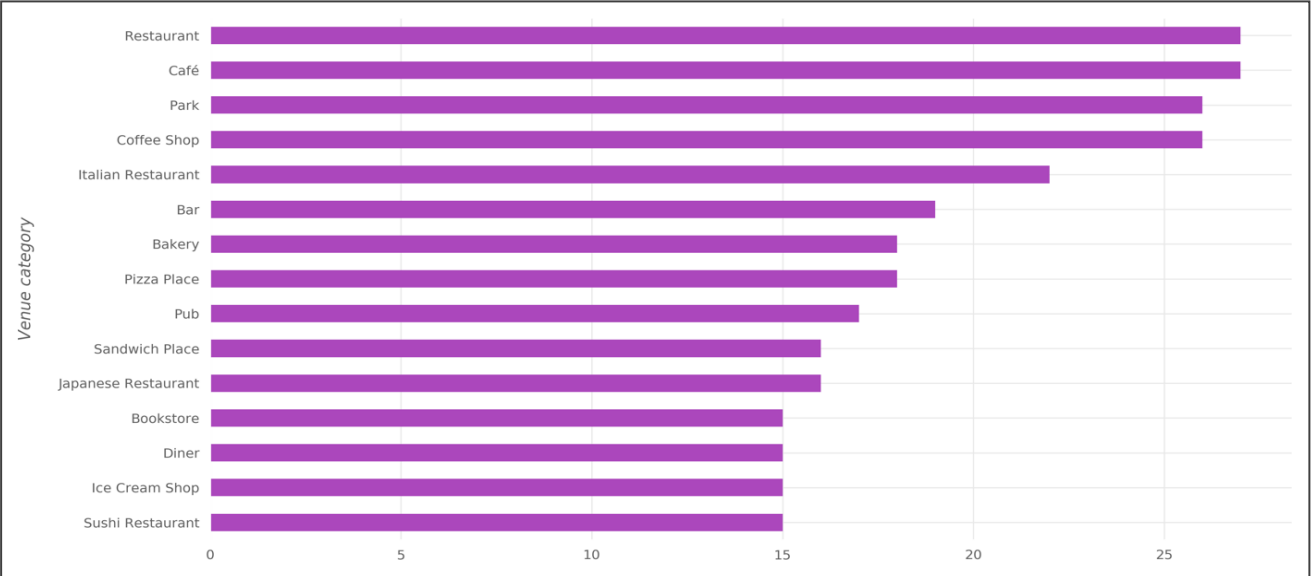
NEW YORK



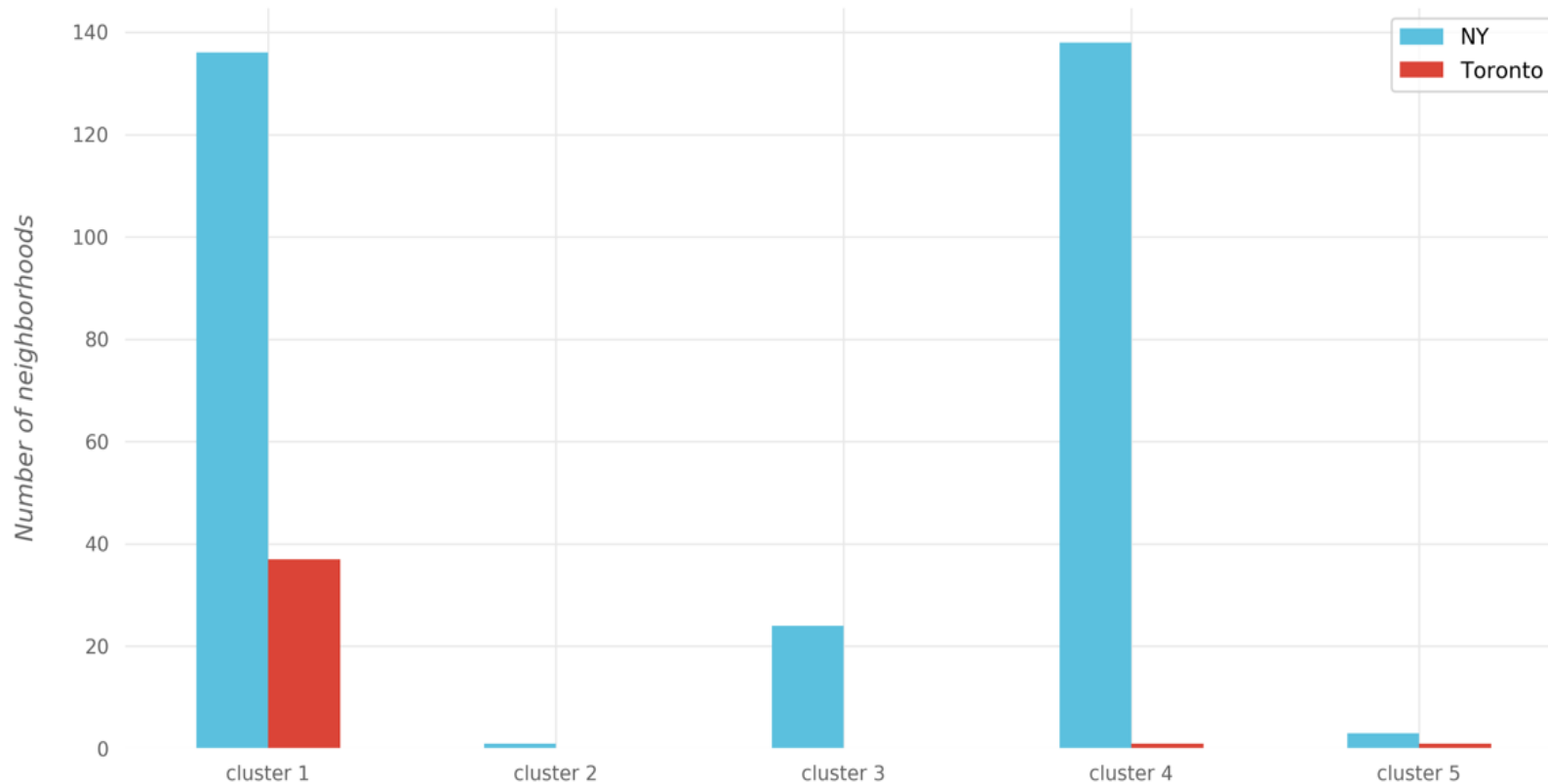
CITY OF LONDON



TORONTO



RESULTS AND DISCUSSION

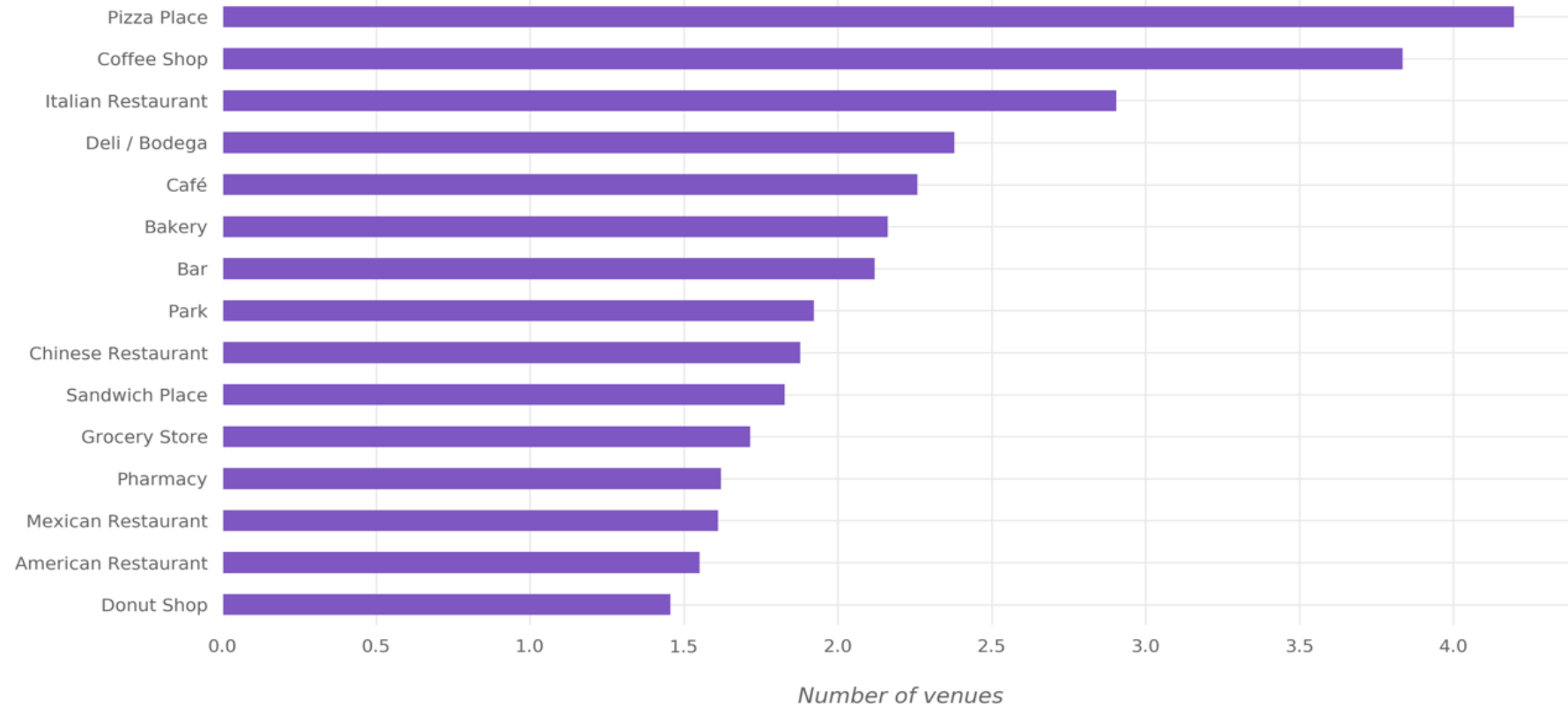


- Cluster 1: 136 Neighborhoods of NYC and 37 of Toronto
- Cluster 4: 138 Neighborhoods of NYC and one neighborhood of Toronto
- Cluster 5: 3 Neighborhoods of NYC and one neighborhood of Toronto

	NY	Toronto
cluster 1	136	37
cluster 2	1	0
cluster 3	24	0
cluster 4	138	1
cluster 5	3	1

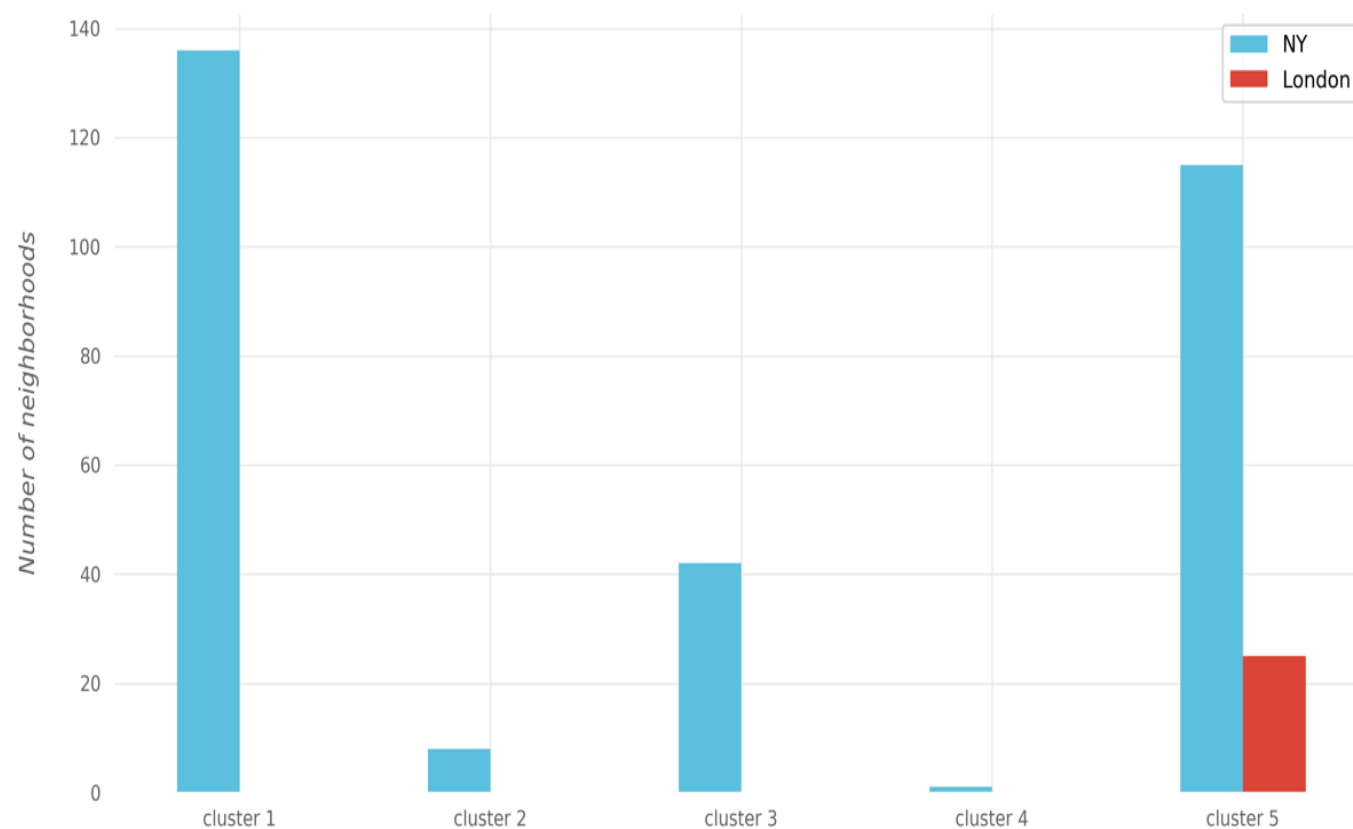
RESULTS AND DISCUSSION

i THE MOST COMMON CATEGORIES BETWEEN NEW YORK AND TORONTO CITY



RESULTS AND DISCUSSION

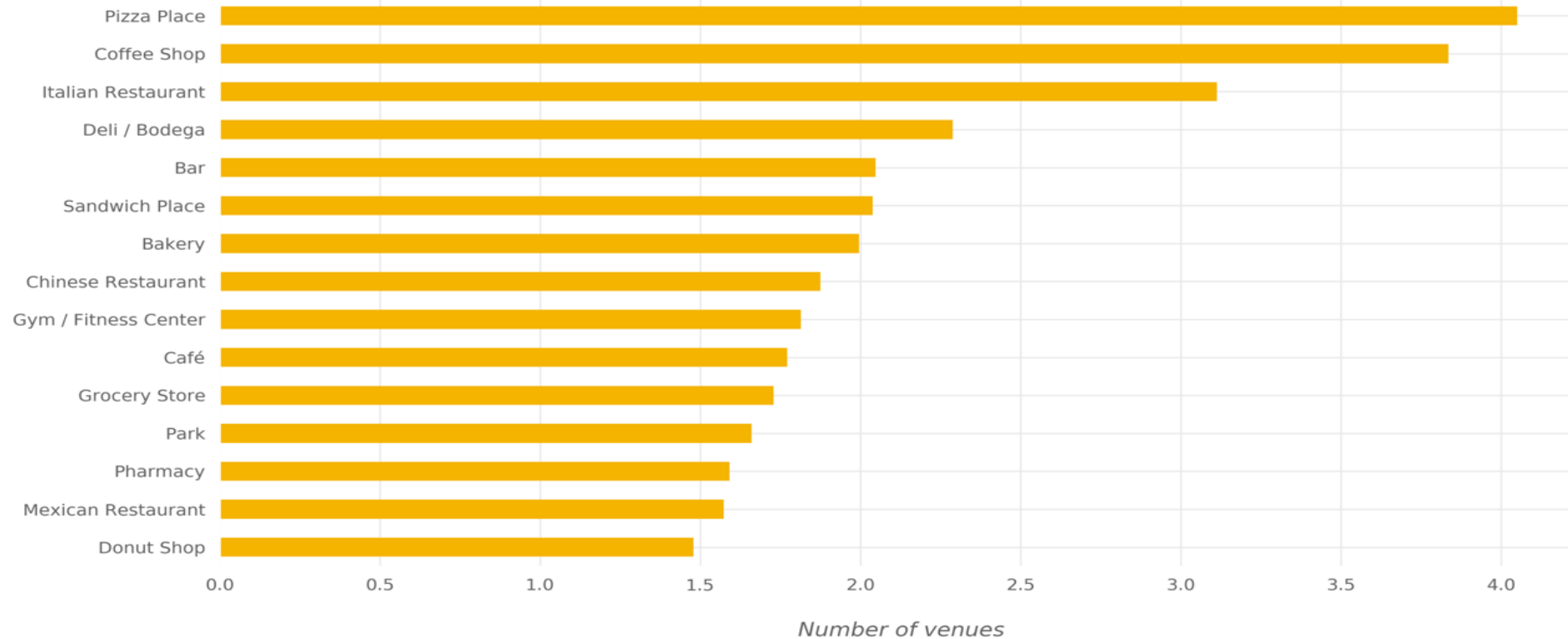
- Cluster 5: 115 Neighborhoods of NYC and 25 neighborhoods of City of London



	NY	London
cluster 1	136	0
cluster 2	8	0
cluster 3	42	0
cluster 4	1	0
cluster 5	115	25

RESULTS AND DISCUSSION

i THE MOST COMMON CATEGORIES BETWEEN NEW YORK AND CITY OF LONDON



CONCLUSION

- i In this project, the neighborhoods of New York City , Toronto and City of London were clustered into various groups based on the venue categories in their neighborhoods. The results shows that there are similar venue categories that are more common in some clusters than others
- i There are more common venues in neighborhoods of New York City and Toronto
- i There is similarity between New York City and City of London according to their neighborhoods too
- i All 25 neighborhoods within City of London were clustered with 115 neighborhoods in New York City
- i There are common venues categories between these three cities (Coffee Shops, Pizza Place, Italian Restaurant)