

# The Battle of Neighborhoods: New York vs Toronto

Hanning Gu

1 January 2020

## Introduction and Problem

As an international centre of finance, culture, arts and business and the most populous city of their respective countries, both New York and Toronto are recognized as one of the most cosmopolitan and multicultural cities in the world. Therefore, they have attracted tons of tourists and migrants every year. Despite their similarities, their differences have also been discussed. Which city would you consider as a **migrant**? Where city is a better choice to **open a restaurant** of your own cuisine? With the above questions in mind, I will conduct a comparison study of New York (Manhattan) and Toronto city using the techniques I learnt in the IBM data science course on Coursera. This report can also help **travellers** who are interested in visiting these two cities.

## Data acquisition and pre-processing

Information of neighbourhoods of New York and Toronto were directly obtained from [https://geo.nyu.edu/catalog/nyu\\_2451\\_34572](https://geo.nyu.edu/catalog/nyu_2451_34572) and [https://en.wikipedia.org/wiki/List\\_of\\_postal\\_codes\\_of\\_Canada:\\_M](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M). Then, data of venues of interests of these neighbourhood areas were scraped from Foursquare location data. The venue data not only contains information such as location (i.e. latitude, longitude) but also the category of the venue, which will provide the most important information on differentiating neighbourhoods.

Firstly, neighbourhood data of New York city was loaded to a table with information such as Borough name, Neighbourhood name and its location (Latitude and Longitude). For the sake of simplicity, I selected suburbs in Manhattan for further investigation. Next, for each neighbourhood in

Manhattan, I scraped data of up to 100 venues within a disk centred at its given coordinate with radius=500 from Foursquare. The data collected also tells which category every venue belongs to. Then I grouped all venue entries by their neighbourhoods to have aggregated information of each neighbourhood.

Secondly, neighbourhood data of City of Toronto were processed in a similar way except that I removed cells with missing 'Borough', merged neighbourhoods with same postcode and named neighbourhood as their boroughs if their names are missing. In the end, venues with missing category were removed.

Lastly, the two data frames of two cities were merged into one data frame for machine learning which will be discussed later.

## Methodology

After data pre-processing, I have a data frame containing all neighbourhoods of interest and their numbers of different types of venues each of neighbourhood has. After standardising, this data frame is ready for machine learning. Same as the previous practices and assignment, k-means clustering was chosen to partition all the neighbourhoods into different clusters. K-means clustering was selected because of its simplicity and effectiveness to convert standardised numbers of venues into Euclidean distance for neighbourhood clustering. However, in my first attempt 90% of neighbourhoods from the two cities were classified into one single cluster. This partially explains the similarity between the two cities. However, in order to better understand their differences and features of each city, I increased the number of clusters from 5 to 10 to better differentiate the two cities.

# Exploratory data analysis

After increasing the number of clusters, I performed an exploratory analysis in which the ten most common venues of every neighbourhood was given.

	Borough	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
37	East Toronto	The Beaches	43.676367	-79.293031	6.0	Pub	Trail	Other Great Outdoors	Health Food Store	Electronics Store	Dog Run	Doner Restaurant	Donut Shop	Drugstore	Dry Cleaner
41	East Toronto	The Danforth West/Riverdale	43.679567	-79.352188	1.0	Greek Restaurant	Coffee Shop	Italian Restaurant	Ice Cream Shop	Bookstore	Restaurant	Furniture / Home Store	Brewery	Bakery	Liquor Store
42	East Toronto	The Beaches West/Indie Bazaar	43.680949	-79.316572	1.0	Pizza Place	Park	Fish & Chips Shop	Italian Restaurant	Brewery	Movie Theater	Steakhouse	Burger Joint	Burrito Place	Sushi Restaurant
43	East Toronto	Studio District	43.695326	-79.340923	0.0	Café	Coffee Shop	American Restaurant	Gastropub	Bakery	Italian Restaurant	Brewery	Bank	Bar	Latin American Restaurant
44	Central Toronto	Lawrence Park	43.728020	-79.380790	0.0	Photography Studio	Park	Swim School	Bus Line	Women's Store	Doner Restaurant	Donut Shop	Drugstore	Dry Cleaner	Dumping Restaurant
45	Central Toronto	Danville North	43.712751	-79.390197	5.0	Park	Hotel	Breakfast Spot	Food & Drink Shop	Sandwich Place	Asian Restaurant	Gym	Clothing Store	Women's Store	Eastern European Restaurant
46	Central Toronto	North Toronto West	43.715383	-79.405670	4.0	Sporting Goods Shop	Coffee Shop	Clothing Store	Spa	Mexican Restaurant	Burger Joint	Furniture / Home Store	Café	Chinese Restaurant	Salon / Barbershop
47	Central Toronto	Danville	43.704324	-79.380790	1.0	Dessert Shop	Sandwich Place	Café	Gym	Italian Restaurant	Sushi Restaurant	Coffee Shop	Pizza Place	Diner	Fried Chicken Joint
48	Central Toronto	Moore Park Summerhill East	43.689574	-79.302160	3.0	Park	Tennis Court	Playground	Trail	Women's Store	Eastern European Restaurant	Dog Run	Doner Restaurant	Donut Shop	Drugstore
49	Central Toronto	Deer Park Forest Hill SE Rathvely South Hill	43.688412	-79.400049	0.0	Pub	Coffee Shop	Sports Bar	Fried Chicken Joint	Restaurant	Sushi Restaurant	Bagel Shop	American Restaurant	Liquor Store	Supermarket

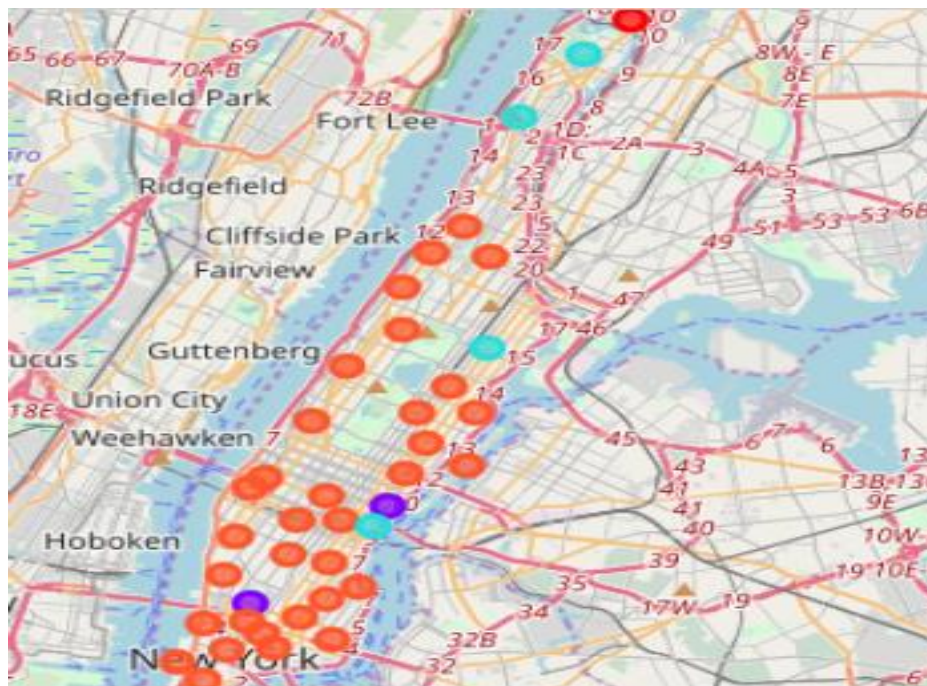
	Borough	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Manhattan	Marble Hill	40.876551	-73.910600	0.0	Coffee Shop	Sandwich Place	Yoga Studio	Gym	Big Box Store	Steakhouse	Supplement Shop	Shopping Mall	Donut Shop	Seafood Restaurant
1	Manhattan	Chinatown	40.715618	-73.942779	9.0	Chinese Restaurant	Cocktail Bar	American Restaurant	Spa	Hotpot Restaurant	Vietnamese Restaurant	Bakery	Salon / Barbershop	Optical Shop	Furniture / Home Store
2	Manhattan	Washington Heights	40.851903	-73.936900	4.0	Café	Bakery	Grocery Store	Chinese Restaurant	Mobile Phone Shop	Spanish Restaurant	Pizza Place	Coffee Shop	Park	New American Restaurant
3	Manhattan	Inwood	40.867684	-73.921210	4.0	Café	Mexican Restaurant	Bakery	Restaurant	Pizza Place	Lounge	American Restaurant	Chinese Restaurant	Pharmacy	Deli / Bodega
4	Manhattan	Hamilton Heights	40.823604	-73.949688	9.0	Pizza Place	Café	Deli / Bodega	Coffee Shop	Mexican Restaurant	Yoga Studio	Caribbean Restaurant	Bakery	Indian Restaurant	School
5	Manhattan	Manhattanville	40.816934	-73.947365	9.0	Coffee Shop	Mexican Restaurant	Italian Restaurant	Seafood Restaurant	Park	Deli / Bodega	Supermarket	BBQ Joint	Climbing Gym	Bakery
6	Manhattan	Central Harlem	40.815976	-73.943211	9.0	Chinese Restaurant	Cosmetics Shop	Seafood Restaurant	Bar	French Restaurant	American Restaurant	African Restaurant	Café	Fried Chicken Joint	Cocktail Bar
7	Manhattan	East Harlem	40.792249	-73.944182	4.0	Mexican Restaurant	Bakery	Thai Restaurant	Deli / Bodega	Latin American Restaurant	Historic Site	Park	French Restaurant	Taco Place	Beer Bar
8	Manhattan	Upper East Side	40.775639	-73.960518	9.0	Italian Restaurant	Exhibit	Coffee Shop	Bakery	Art Gallery	Gym / Fitness Center	Juice Bar	Hotel	French Restaurant	Sushi Restaurant
9	Manhattan	Yorkville	40.773930	-73.947118	9.0	Italian Restaurant	Bar	Gym	Coffee Shop	Pizza Place	Deli / Bodega	Bakery	Japanese Restaurant	Diner	Park

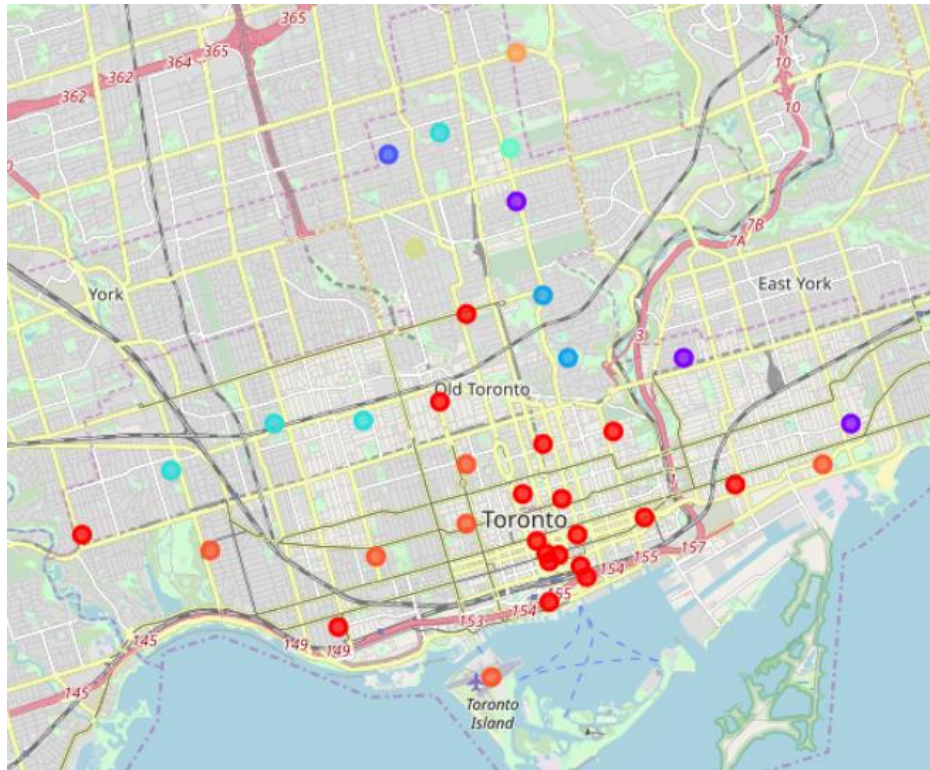
In the first table above, we can see the 10 selected neighborhoods in Toronto have a more diverse set of clusters than Manhantan. Furthermore, one can tell that Torontonians like indoor and outdoor activities more than New Yorkers as per the second table. In addition, in Manhantan restaurant is the most popular venue in most neighborhoods. An interesting oberservation is that coffee shops and cafes are popular in both cities.

The above exploratory data analysis confirms the existences of similarities and dissimilarities between New York and Toronto. In the next section I will show and discuss the K-means clustering results.

## Results

I aggregated venue data frames of the two cities and performed K-means clustering, then plotted the clustering of all the neighbourhoods on separate maps as per below. The first figure shows the clusters of Manhattan and the second figure shows the results of City of Toronto. Each represents a cluster in both figures.





One can notice that the orange cluster (cluster 9) is the the most dominant cluster in Manhattan and it is also an important cluster in Toronto. Different from Manhattan, Toronto is more diverse and has more significant clusters than Manhattan. Other than the aforementioned orange cluster (cluster 9), the red (cluster 0), green and purple clusters are also an important part of the Toronto community with the red cluster being the largest cluster in terms of neighborhood quantity. Now let's the features of these clusters.

## Cluster 9:

```
toronto_manhattan_merged.loc[toronto_manhattan_merged['Cluster_Labels'] == 9, toronto_manhattan_merged.columns[[1] + list(range(5, toronto_manhattan_merged.shape[1]))]]
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
66	Harbord/University of Toronto	Cafe	Japanese Restaurant	Bookstore	Restaurant	Italian Restaurant	Bakery	Bar	Noodle House	Chinese Restaurant	Nightclub
67	Chinatown/Grange Park/Kensington Market	Cafe	Vietnamese Restaurant	Vegetarian / Vegan Restaurant	Coffee Shop	Chinese Restaurant	Dumpling Restaurant	Bar	Bakery	Mexican Restaurant	Grocery Store
68	CN Tower/Bathurst Quay/Island airport/Hartcourt	Airport Service	Airport Terminal	Airport Lounge	Rental Car Location	Airport Gate	Harbor / Marina	Coffee Shop	But or Ferry	Sculpture Garden	Airport Food Court
77	Little Portugal/Toronto	Bar	Asian Restaurant	Restaurant	Vegetarian / Vegan Restaurant	Vietnamese Restaurant	New American Restaurant	Cafe	Coffee Shop	Pizza Place	Man's Store
83	Parkdale/Roncesvalles	Gift Shop	Bookstore	Italian Restaurant	Dog Run	Bar	Eastern European Restaurant	Dessert Shop	Restaurant	Coffee Shop	Movie Theater
87	Business Bay/ Mid Processing Centre 969 Eastern	Light Rail Station	Farmers Market	Recording Studio	Auto Workshop	Skate Park	Park	Smoke Shop	Gym / Fitness Center	Burrito Place	Restaurant
1	Chinatown	Chinese Restaurant	Cocktail Bar	American Restaurant	Spa	Hotel Restaurant	Vietnamese Restaurant	Bakery	Salon / Barbershop	Optical Shop	Furniture / Home Store
4	Hamilton Heights	Pizza Place	Cafe	Deli / Bodega	Coffee Shop	Mexican Restaurant	Yoga Studio	Caribbean Restaurant	Bakery	Indian Restaurant	School
5	Manhattanville	Coffee Shop	Mexican Restaurant	Italian Restaurant	Seafood Restaurant	Park	Supermarket	Bakery	BBQ Joint	Climbing Gym	Bakery
6	Central Harlem	Chinese Restaurant	Cosmetics Shop	Seafood Restaurant	Bar	French Restaurant	American Restaurant	African Restaurant	Cafe	Fried Chicken Joint	Cocktail Bar
8	Upper East Side	Italian Restaurant	Exhibit	Coffee Shop	Bakery	Art Gallery	Gym / Fitness Center	Joia Bar	Hotel	French Restaurant	Swish Restaurant
9	Yorkville	Italian Restaurant	Bar	Gym	Coffee Shop	Pizza Place	Deli / Bodega	Bakery	Japanese Restaurant	Diner	Park
10	Lenox Hill	Coffee Shop	Italian Restaurant	Pizza Place	Cocktail Bar	Sushi Restaurant	Cafe	Gym / Fitness Center	Gym	Sporting Goods Shop	Burger Joint
11	Roosevelt Island	Sandwich Place	Park	Coffee Shop	Pizza Place	Gym	Scenic Lookout	Dog Run	Liquor Store	Outdoor / Recreation	Deli / Bodega
12	Upper West Side	Italian Restaurant	Coffee Shop	Bar	Wine Bar	Mediterranean Restaurant	Cafe	Bakery	Middle Eastern Restaurant	Dessert Shop	Thai Restaurant
13	Lincoln Square	Plaza	Theater	Cafe	Concert Hall	Italian Restaurant	Performing Arts Venue	Gym / Fitness Center	French Restaurant	Park	India Movie Theater
14	Cleiton	Theater	Italian Restaurant	Coffee Shop	Gym / Fitness Center	American Restaurant	Gym	Wine Shop	Hotel	Spa	Sandwich Place
15	Midtown	Hotel	Clothing Store	Food Truck	Coffee Shop	Theater	Sporting Goods Shop	Japanese Restaurant	Spa	Bakery	Bookstore
16	Murray Hill	Coffee Shop	Hotel	Sandwich Place	American Restaurant	Japanese Restaurant	Gym / Fitness Center	Bar	Italian Restaurant	Gym	Jewish Restaurant
17	Chelsea	Coffee Shop	Bakery	Italian Restaurant	Ice Cream Shop	Nightclub	American Restaurant	Theater	Seafood Restaurant	Hotel	Tapas Restaurant
19	East Village	Bar	Wine Bar	Ice Cream Shop	Mexican Restaurant	Cocktail Bar	Pizza Place	Chinese Restaurant	Vegetarian / Vegan Restaurant	Coffee Shop	Ramen Restaurant
20	Lower East Side	Park	Pizza Place	Cafe	Cocktail Bar	Art Gallery	Ramen Restaurant	Bakery	Chinese Restaurant	Japanese Restaurant	Coffee Shop
21	Tribecca	American Restaurant	Park	Italian Restaurant	Spa	Cafe	Wine Shop	Coffee Shop	Greek Restaurant	Scenic Lookout	
22	Little Italy	Bakery	Italian Restaurant	Cafe	Mediterranean Restaurant	Bubble Tea Shop	Clothing Store	Cocktail Bar	Salon / Barbershop	Women's Store	

Restaurants are the most common and popular venues of neighbourhoods in cluster 9. New Yorkers and Torontonians all like food.

## Cluster 0:

```
In [37]: toronto_manhattan_merged.loc[toronto_manhattan_merged['Cluster_Labels'] == 0, toronto_manhattan_merged.columns[[1] + list(range(5, toronto_manhattan_merged.shape[1]))]]
```

```
Out[38]:
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
43	St. James Town	Café	Coffee Shop	American Restaurant	Gastropub	Bakery	Italian Restaurant	Brewery	Bar	Latin American Restaurant	
49	Deer Park Forest Hill SE, Rathenly South Hill	Pub	Coffee Shop	Sports Bar	Fried Chicken Joint	Restaurant	Sushi Restaurant	Bagel Shop	American Restaurant	Liquor Store	Supermarket
51	Cabbagetown St. James Town	Coffee Shop	Bakery	Pizza Place	Pharmacy	Italian Restaurant	Café	Restaurant	Pub	General Entertainment	Del / Bodega
52	Church and Wilesey	Coffee Shop	Japanese Restaurant	Sushi Restaurant	Gay Bar	Restaurant	Pub	Café	Men's Store	Mediterranean Restaurant	Yoga Studio
53	Harbourfront	Coffee Shop	Bakery	Pub	Park	Breakfast Spot	Mexican Restaurant	Brewery	Event Space	Café	Theater
54	Ryerson Garden District	Coffee Shop	Clothing Store	Cosmetics Shop	Café	Bakery	Middle Eastern Restaurant	Pizza Place	Bookstore	Tea Room	Theater
55	St. James Town	Café	Coffee Shop	Restaurant	Hotel	Diner	Breakfast Spot	Beer Bar	Bakery	Cocktail Bar	Clothing Store
56	Berzly Park	Coffee Shop	Cocktail Bar	Cheese Shop	Seafood Restaurant	Farmers Market	Steakhouse	Beer Bar	Café	Bakery	Croquette
57	Central Bay Street	Coffee Shop	Sandwich Place	Italian Restaurant	Café	Ice Cream Shop	Burger Joint	Bubble Tea Shop	Juice Bar	Gym / Fitness Center	Salad Place
58	Adelaide King Richmond	Coffee Shop	Café	Steakhouse	Bar	Asian Restaurant	Sushi Restaurant	Burger Joint	Thai Restaurant	Restaurant	American Restaurant
59	Harbourfront East Toronto Islands Union Station	Coffee Shop	Aquarium	Café	Hotel	Italian Restaurant	Brewery	Scenic Lookout	Fried Chicken Joint	Restaurant	Pizza Place
60	Design Exchange Toronto Dominion Centre	Coffee Shop	Hotel	Café	Restaurant	Bar	Del / Bodega	Italian Restaurant	Seafood Restaurant	Gastropub	Steakhouse
61	Commerce Court Victoria Hotel	Coffee Shop	Café	Hotel	Restaurant	American Restaurant	Steakhouse	Gym	Del / Bodega	Italian Restaurant	Gastropub
65	The Annex North Midtown Yorkville	Sandwich Place	Café	Coffee Shop	American Restaurant	Convenience Store	Metro Station	Burger Joint	Liquor Store	BBQ Joint	Park
66	St. APO Boxes 26 The Esplanade	Coffee Shop	Café	Restaurant	Beer Bar	Hotel	Japanese Restaurant	Cocktail Bar	Seafood Restaurant	Bakery	Farmers Market
70	First Canadian Place Underground City	Coffee Shop	Café	Hotel	Restaurant	Steakhouse	Gym	Burger Joint	Del / Bodega	Gastropub	
74	Brookton Exhibition Place Parkdale Village	Café	Coffee Shop	Breakfast Spot	Pet Store	Bakery	Furniture / Home Store	Climbing Gym	Performing Arts Venue	Grocery Store	Gym
80	Runnymede Swansea	Coffee Shop	Café	Pizza Place	Italian Restaurant	Sushi Restaurant	Bookstore	Tea Room	Latin American Restaurant	Bar	French Restaurant
9	Marble Hill	Coffee Shop	Sandwich Place	Yoga Studio	Gym	Big Box Store	Steakhouse	Supplement Shop	Shopping Mall	Donut Shop	Seafood Restaurant

Being the largest cluster in the City of Toronto, cluster 0 has coffee shop and café as the most important venue followed by Bakery and Sandwich Place.

## Other important clusters (1,3,4) in Toronto:

```
In [37]: toronto_manhattan_merged.loc[toronto_manhattan_merged['Cluster_Labels'] == 1, toronto_manhattan_merged.columns[[1] + list(range(5, toronto_manhattan_merged.shape[1]))]]
```

```
Out[37]:
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
41	The Danforth West/Riverdale	Greek Restaurant	Coffee Shop	Italian Restaurant	Ice Cream Shop	Bookstore	Restaurant	Furniture / Home Store	Brewery	Bakery	Liquor Store
42	The Beaches West/India Bazaar	Pizza Place	Park	Fish & Chips Shop	Italian Restaurant	Brewery	Movie Theater	Steakhouse	Burger Joint	Burrito Place	Sushi Restaurant
47	Davisville	Dessert Shop	Sandwich Place	Café	Gym	Italian Restaurant	Sushi Restaurant	Coffee Shop	Pizza Place	Diner	Fried Chicken Joint
18	Greenwich Village	Italian Restaurant	Clothing Store	Sushi Restaurant	Indian Restaurant	Café	French Restaurant	Seafood Restaurant	Chinese Restaurant	Gym	Burger Joint
35	Turtle Bay	Italian Restaurant	Sushi Restaurant	Coffee Shop	Steakhouse	Wine Bar	Park	Café	Japanese Restaurant	French Restaurant	Indian Restaurant

```
In [38]: toronto_manhattan_merged.loc[toronto_manhattan_merged['Cluster_Labels'] == 3, toronto_manhattan_merged.columns[[1] + list(range(5, toronto_manhattan_merged.shape[1]))]]
```

```
Out[38]:
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
48	Moore Park Summerhill East	Park	Tennis Court	Playground	Trail	Women's Store	Eastern European Restaurant	Dog Run	Doner Restaurant	Donut Shop	Drugstore
50	Rosedale	Park	Trail	Playground	Electronics Store	Doctor's Office	Dog Run	Doner Restaurant	Donut Shop	Drugstore	Dry Cleaner

```
In [39]: toronto_manhattan_merged.loc[toronto_manhattan_merged['Cluster_Labels'] == 4, toronto_manhattan_merged.columns[[1] + list(range(5, toronto_manhattan_merged.shape[1]))]]
```

```
Out[39]:
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
46	North Toronto West	Sporting Goods Shop	Coffee Shop	Clothing Store	Spa	Mexican Restaurant	Burger Joint	Furniture / Home Store	Café	Chinese Restaurant	Salon / Barber Shop
75	Christie	Café	Grocery Store	Park	Italian Restaurant	Nightclub	Candy Store	Baby Store	Diner	Athletics & Sports	Coffee Shop
76	Overcourt Village/Dufferin	Bakery	Supermarket	Pharmacy	Gym / Fitness Center	Park	Music Venue	Café	Recording Studio	Bar	Middle Eastern Restaurant
82	High Park The Junction South	Thai Restaurant	Bar	Mexican Restaurant	Café	Cajun / Creole Restaurant	Arts & Crafts Store	Park	Furniture / Home Store	Fried Chicken Joint	
2	Washington Heights	Café	Bakery	Grocery Store	Chinese Restaurant	Mobile Phone Shop	Spanish Restaurant	Pizza Place	Coffee Shop	Park	New American Restaurant
3	Inwood	Café	Mexican Restaurant	Bakery	Restaurant	Pizza Place	Lounge	American Restaurant	Chinese Restaurant	Pharmacy	Del / Bodega
7	East Harlem	Mexican Restaurant	Bakery	Thai Restaurant	Del / Bodega	Latin American Restaurant	Historic Site	Park	French Restaurant	Taco Place	Beer Bar
36	Tutor City	Café	Park	Mexican Restaurant	Pizza Place	Greek Restaurant	Del / Bodega	Thai Restaurant	Diner	Dog Run	Coffee Shop

As expected, there are other crucial clusters that contribute to the multicultural of Toronto. For example, in cluster 1 there are many Greek and Italian restaurants while Mexico and Asian restaurants are also common in cluster 4. Another interesting observation is that cluster 3 has lots of places for indoor and outdoor activities.

## Discussions and Recommendations

Toronto and New York have lots of things in common but are also quite different in some ways. For someone who is looking to start a business or considering travelling to either of the cities, it

will ultimately come down to what you want to do or what you like. If you want to open a restaurant or want to try a variety of cuisines then New York could be a better choice for you. If your business plan is to open a coffee shop or you want to have a relaxing morning sitting in a coffee shop reading your favourite then Toronto would be the right choice for you. If you love work-out then Toronto is also a nice choice. In summary, it is a life-style choice.

#### Conclusion:

In this report, I presented a comparison study of Manhattan and City of Toronto using data collected from NYU Spatial Data Repository, Wikipedia and Foursquare location data. K-means clustering was used to divide neighbourhoods of the two cities into different groups. Analysis of the similarities and dissimilarities of the two cities were conducted. In the end, business plan and travelling recommendations were given.