

The background of the slide is a dense field of 3D-rendered numbers (0-9) in various shades of blue and white. The numbers are of different sizes and are scattered across the entire frame, creating a sense of depth and complexity. A dark blue rectangular box is positioned in the lower-left quadrant, containing the title text.

# Opening a New Coffee Shop Chain

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Data Scientist

# Introduction

My client is a businessman who is looking to open a new coffee shop chain in the city of Toronto. My client is hoping to build a local chain that can stand out in front of the international coffee chains that are everywhere in Toronto and Canada.

In order to eliminate or at least decrease the competition specially in the early stage of the project, my client would like to open in areas where there are no coffee shops or let us say the minimum competition.

We will conduct a case study to analyze different locations / boroughs in Toronto city to help our customer to select the best location for his new coffee shop chain.

# Data



## Neighborhoods in Toronto

We will web scrape the Neighborhoods of Toronto from Wikipedia.



## Latitude and longitude

Dolor Sit Amet  
Consectetur Elit  
Nunc Viverra



## Foursquare

Venue data related to  
coffee shops

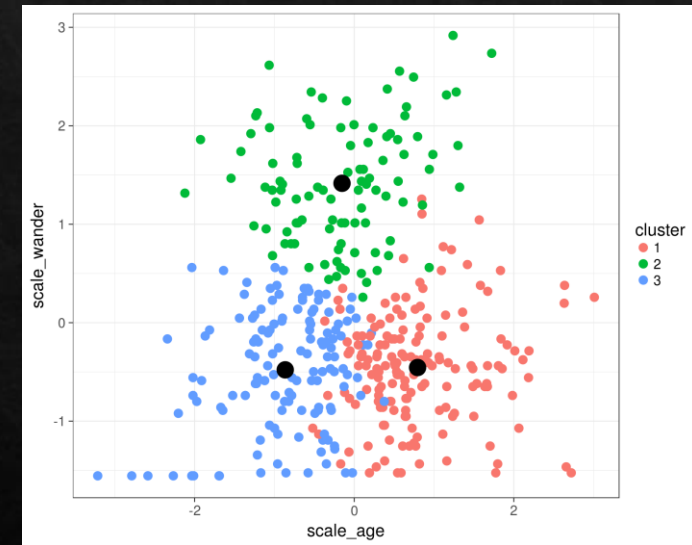


# Data

	Postal Code	Borough	Neighbourhood	Latitude	Longitude
0	M3A	North York	Parkwoods	43.753259	-79.329656
1	M4A	North York	Victoria Village	43.725882	-79.315572
2	M5A	Downtown Toronto	Regent Park, Harbourfront	43.654260	-79.360636
3	M6A	North York	Lawrence Manor, Lawrence Heights	43.718518	-79.464763
4	M7A	Downtown Toronto	Queen's Park, Ontario Provincial Government	43.662301	-79.389494

# Methodology

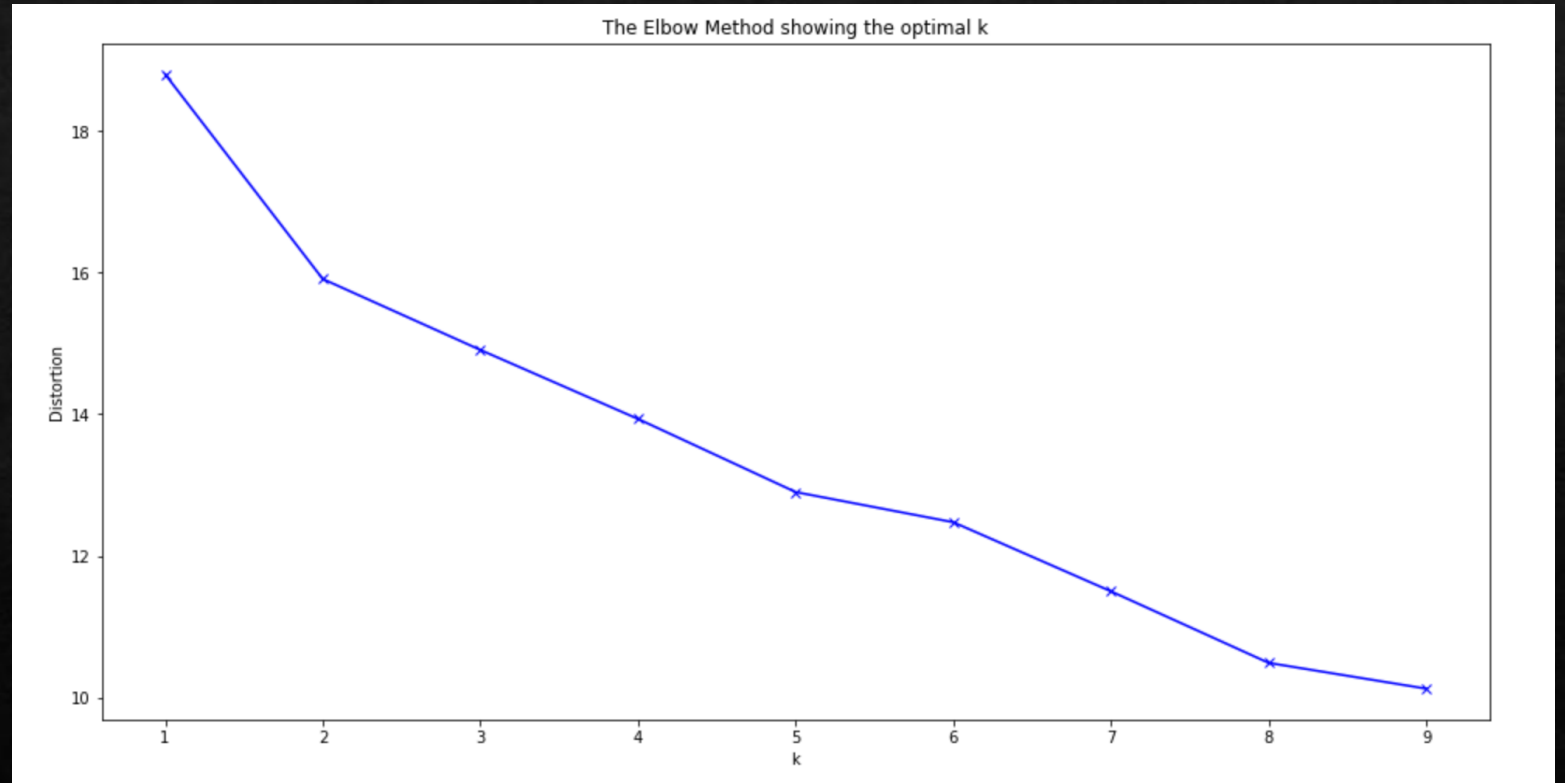
## K-Means Clustering Algorithm



# K-Means Clustering Algorithm

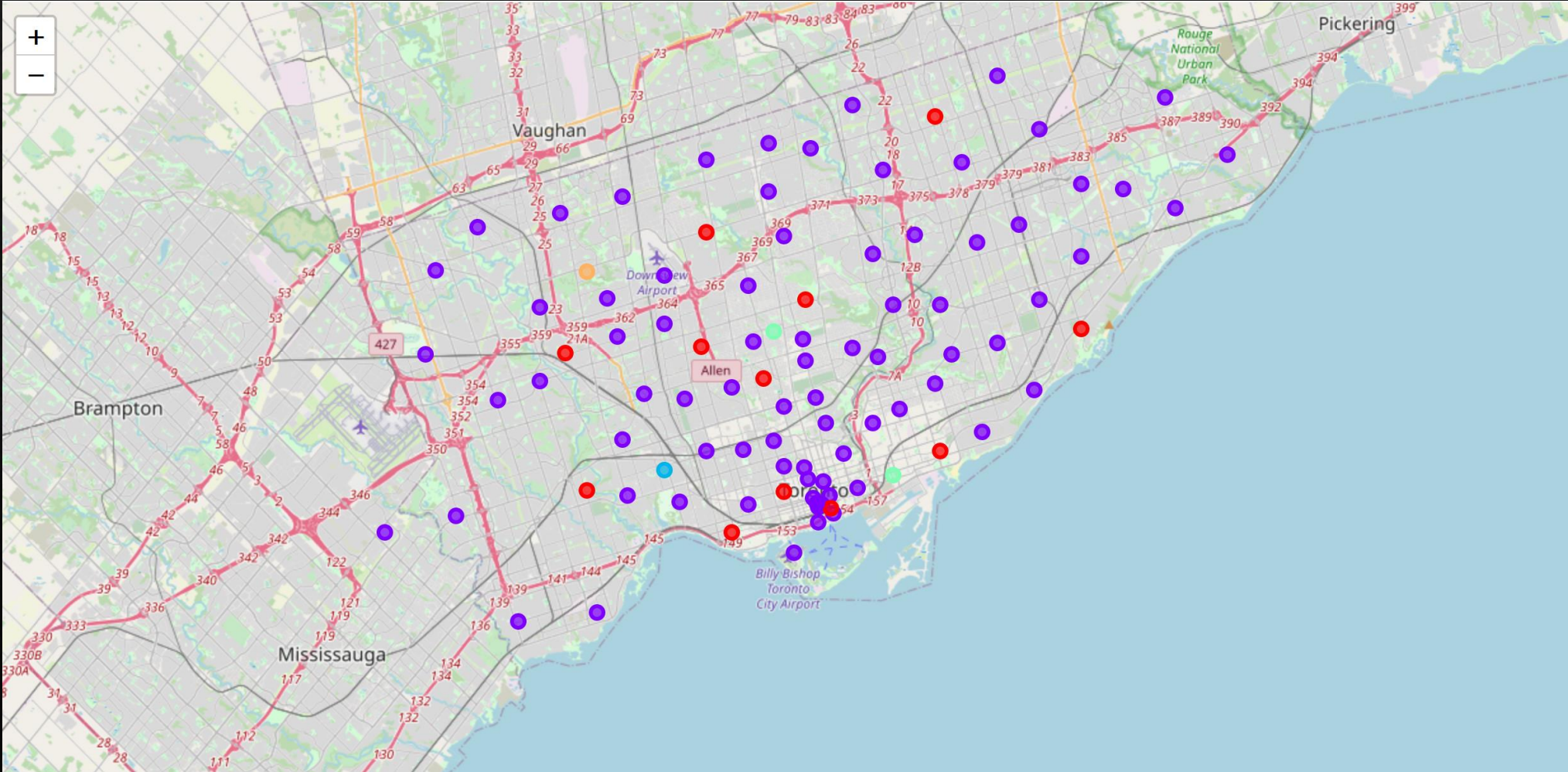
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(5)





# Clusters Map



# Results

## ◆ Cluster 0

	Borough	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	North York	0	Park	Food & Drink Shop	Yoga Studio	Drugstore	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Eastern European Restaurant
21	York	0	Park	Women's Store	Pool	Event Space	Ethiopian Restaurant	Electronics Store	Eastern European Restaurant	Dumpling Restaurant	Drugstore	Department Store
35	East York	0	Park	Convenience Store	Intersection	Yoga Studio	Donut Shop	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant
52	North York	0	Park	Yoga Studio	Drugstore	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Dumpling Restaurant
61	Central Toronto	0	Park	Bus Line	Swim School	Doner Restaurant	Diner	Discount Store	Distribution Center	Dog Run	Donut Shop	Farmers Market
64	York	0	Park	Convenience Store	Yoga Studio	Drugstore	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Eastern European Restaurant
66	North York	0	Park	Convenience Store	Yoga Studio	Drugstore	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Eastern European Restaurant
77	Etobicoke	0	Park	Mobile Phone Shop	Sandwich Place	Doner Restaurant	Diner	Discount Store	Distribution Center	Dog Run	Donut Shop	College Stadium
85	Scarborough	0	Park	Coffee Shop	Playground	Donut Shop	Dim Sum Restaurant	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant
91	Downtown Toronto	0	Park	Playground	Trail	Doner Restaurant	Dim Sum Restaurant	Diner	Discount Store	Distribution Center	Dog Run	Donut Shop



# Results

## ◆ Cluster 1

	Borough	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
1	North York	1	Intersection	Pizza Place	Coffee Shop	Hockey Arena	Portuguese Restaurant	Doner Restaurant	Dessert Shop	Dim Sum Restaurant	Diner	Discount Store
2	Downtown Toronto	1	Coffee Shop	Park	Bakery	Café	Pub	Breakfast Spot	Restaurant	Theater	Spa	Shoe Store
3	North York	1	Clothing Store	Accessories Store	Event Space	Boutique	Furniture / Home Store	Coffee Shop	Vietnamese Restaurant	Donut Shop	Discount Store	Distribution Center
4	Downtown Toronto	1	Coffee Shop	Yoga Studio	Sushi Restaurant	Bar	Beer Bar	Smoothie Shop	Sandwich Place	Café	Portuguese Restaurant	Chinese Restaurant
6	Scarborough	1	Fast Food Restaurant	Donut Shop	Dim Sum Restaurant	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Yoga Studio	Dessert Shop
7	North York	1	Gym	Restaurant	Coffee Shop	Japanese Restaurant	Beer Store	Italian Restaurant	Sporting Goods Shop	Bike Shop	Sandwich Place	Café
13	North York	1	Gym	Restaurant	Coffee Shop	Japanese Restaurant	Beer Store	Italian Restaurant	Sporting Goods Shop	Bike Shop	Sandwich Place	Café
8	East York	1	Pizza Place	Gym / Fitness Center	Café	Athletics & Sports	Gastropub	Bank	Intersection	Pharmacy	Pet Store	Breakfast Spot
9	Downtown Toronto	1	Coffee Shop	Clothing Store	Café	Bubble Tea Shop	Cosmetics Shop	Japanese Restaurant	Middle Eastern Restaurant	Lingerie Store	Italian Restaurant	Pizza Place
10	North York	1	Sushi Restaurant	Japanese Restaurant	Pizza Place	Asian Restaurant	Pub	Yoga Studio	Dog Run	Diner	Discount Store	Distribution Center
12	Scarborough	1	Bar	Yoga Studio	Drugstore	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Dumpling Restaurant	Field

# Results

## ◆ Cluster 1

	Borough	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
1	North York	1	Intersection	Pizza Place	Coffee Shop	Hockey Arena	Portuguese Restaurant	Doner Restaurant	Dessert Shop	Dim Sum Restaurant	Diner	Discount Store
2	Downtown Toronto	1	Coffee Shop	Park	Bakery	Café	Pub	Breakfast Spot	Restaurant	Theater	Spa	Shoe Store
3	North York	1	Clothing Store	Accessories Store	Event Space	Boutique	Furniture / Home Store	Coffee Shop	Vietnamese Restaurant	Donut Shop	Discount Store	Distribution Center
4	Downtown Toronto	1	Coffee Shop	Yoga Studio	Sushi Restaurant	Bar	Beer Bar	Smoothie Shop	Sandwich Place	Café	Portuguese Restaurant	Chinese Restaurant
6	Scarborough	1	Fast Food Restaurant	Donut Shop	Dim Sum Restaurant	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Yoga Studio	Dessert Shop
7	North York	1	Gym	Restaurant	Coffee Shop	Japanese Restaurant	Beer Store	Italian Restaurant	Sporting Goods Shop	Bike Shop	Sandwich Place	Café
13	North York	1	Gym	Restaurant	Coffee Shop	Japanese Restaurant	Beer Store	Italian Restaurant	Sporting Goods Shop	Bike Shop	Sandwich Place	Café
8	East York	1	Pizza Place	Gym / Fitness Center	Café	Athletics & Sports	Gastropub	Bank	Intersection	Pharmacy	Pet Store	Breakfast Spot
9	Downtown Toronto	1	Coffee Shop	Clothing Store	Café	Bubble Tea Shop	Cosmetics Shop	Japanese Restaurant	Middle Eastern Restaurant	Lingerie Store	Italian Restaurant	Pizza Place
10	North York	1	Sushi Restaurant	Japanese Restaurant	Pizza Place	Asian Restaurant	Pub	Yoga Studio	Dog Run	Diner	Discount Store	Distribution Center
12	Scarborough	1	Bar	Yoga Studio	Drugstore	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Dumpling Restaurant	Field

# Results

## ◆ Cluster 2

	Borough	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
62	Central Toronto	2	Garden	Donut Shop	Dim Sum Restaurant	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Yoga Studio	Fast Food Restaurant

## ◆ Cluster 3

	Borough	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
32	Scarborough	3	Playground	Yoga Studio	Drugstore	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Dumpling Restaurant
83	Central Toronto	3	Park	Lawyer	Playground	Donut Shop	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Dumpling Restaurant

## ◆ Cluster 4

	Borough	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
57	North York	4	Baseball Field	Yoga Studio	Drugstore	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Dumpling Restaurant	Field



# Conclusion

- ◆ The analysis of coffee shop venues around the Toronto during this project showed that some districts are highly active and contains too many venues like cluster 0 and 1. The coffee shops are among the top 10 venues in the districts of these clusters.
- ◆ While other clusters like 2, 3 and 4 are less active. In fact, some of these districts does not even have coffee shops among the top 10 categories of venues.
- ◆ So if the goal of our customer is to stay away from the competition, He should utilize the information in this analysis to decide which districts should be used to start the new coffee shop chain to minimize the competition.

**All districts in clusters 2, 3 and 4 can be a good location to start.**

# Conclusion

- ◆ A complementary analysis to further explore this subject in the future could include the consideration of the population and demographic distribution for the people living in these districts in order to give more clear idea about the potential customers for the new coffee shop chain and their spending habits.