

Business opportunity in Toronto, Canada

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1. Introduction

As a business and entrepreneurship enthusiast, i'd like to look for a business opportunities and gives my thought on: what the people are currently need? is it highly available on the market? if it isnt, what can i do to meet those demands? how should I do it?

1.1. Business Problem

The problem in answering above question, it would take quite sometime to gather information needed in a conventional way. That is why, we are going to need an efficient way to do it, which called data science.

Using data science, we could tackle afore-mentioned problems:

- a. Determine which business opportunity that is/are available
- b. Spending money on investing required detailed and thorough analysis, which take quite some time to be done conventional way

1.2. Potential Stakeholder or Interested Parties

- a. Investor looking for an opportunity to build a business
- b. People that was looking for a preferred neighborhood to live

By knowing what people needs, we can use it to our advantage, to make profit from it. To start it all, first i need to know what are the frequently visited venue category in Toronto? Because to my understanding, the more a venue category is available, the higher demands it has received from the market. not only that, i also need information on who visited those venues? is the population of Toronto can be grouped by ethnics? Is what these ethnics needs already widely available in Toronto?

2. Data

Now that i have defined the question, what data do i need to have in order to answer said question?

- a. Foursquare Location Data
- b. Ethnic demographic population in Toronto

These are the data I needed, where the information i sought were stored. Population & Demographics data of Toronto from Wikipedia will be used to:

1. Maps the majority ethnics that lived in Toronto
2. How many (headcount & percentage) people that belongs in that ethnics?
3. Where the majority ethnics are located (borough & neighborhood)?

the Foursquare Location Data will be used to:

4. maps the available venue category available in Toronto
5. which venue category are amongst the top frequently visited by people of Toronto.

having the information of 1st, 2nd, and 5th data, we could determine what venue category that still has room to grow in Toronto for business opportunity, what business would potentially thrive and where should we build it.

Meanwhile from the 3rd and 4th data, we could predict which neighborhood that potentially be the second "home" for the majority ethnics? by clustering the neighborhood based on its similarity in venue categories.

Foursquare Location & Neighborhood Distribution Data

	Borough	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Scarborough	Malvern / Rouge	43.806686	-79.194353	Wendy's	43.807448	-79.199056	Fast Food Restaurant
5	Scarborough	Guildwood / Morningside / West Hill	43.763573	-79.188711	Big Bite Burrito	43.766299	-79.190720	Mexican Restaurant
14	Scarborough	Woburn	43.770992	-79.216917	Korean Grill House	43.770812	-79.214502	Korean Restaurant
15	Scarborough	Cedarbrae	43.773136	-79.239476	Federick Restaurant	43.774697	-79.241142	Hakka Restaurant
16	Scarborough	Cedarbrae	43.773136	-79.239476	Drupati's Roti & Doubles	43.775222	-79.241678	Caribbean Restaurant

Ethnics demographic population Data in Toronto

	Ethnics	Population (2016)	Population Percentage in Toronto	Riding with Highest Concentration	Percentage in Riding
0	Chinese	332,830	12.5	Scarborough—Agincourt	47.0
1	English	331,890	12.3	Beaches—East York	24.2
2	Canadian	323,175	12.0	Beaches—East York	19.7
3	Irish	262,965	9.8	Parkdale—High Park	20.0
4	Scottish	256,250	9.5	Beaches—East York	18.9
5	East Indian	202,675	7.5	Etobicoke North	22.2
6	Italian	182,495	6.8	Etobicoke Centre	15.1
7	Filipino	162,605	6.0	York Centre	17.0
8	German	130,900	4.9	Parkdale—High Park	9.8
9	French	122,615	4.6	Parkdale—High Park	8.9
10	Polish	114,530	4.3	Eglinton—Lawrence	12.0
11	Portuguese	100,420	3.7	Davenport	22.7
12	Jamaican	90,065	3.3	Humber River—Black Creek	8.5
13	Russian	74,465	2.8	York Centre	9.5
14	Ukrainian	72,340	2.7	Etobicoke Centre	8.1
15	Sri Lankan	58,180	2.2	Scarborough—Rouge Park	11.1
16	Greek	57,425	2.1	Toronto—Danforth	7.3
17	Spanish	56,815	2.1		< 5.0
18	British Isles origins (other)	52,900	2.0		< 5.0
19	Iranian	45,540	1.7	Willowdale	12.1
20	Total population	2,691,665	100		

2016 data shows that the Chinese is the most prevalent ethnics in Toronto, with a total of 332,830 headcounts, which about 12.5% of the entire Toronto population that year. About 47% of them lived in Agincourt, Scarborough.

Top three most frequently visited venue category in Toronto

	Venue Category	count
60	Coffee Shop	188
48	Café	97
217	Restaurant	73

There are 270 unique venue categories, where Coffee Shop & Cafe occupied both first and second place as the most visited venue in Toronto. As you can see, Restaurant still has room grow.

top 9 most frequently visited Restaurant category

	Venue Category	count
40	Restaurant	73
27	Italian Restaurant	48
28	Japanese Restaurant	41
1	American Restaurant	30
18	Fast Food Restaurant	26
42	Sushi Restaurant	26
41	Seafood Restaurant	25
44	Thai Restaurant	25
7	Chinese Restaurant	20

From the list above, the most common restaurant that can be found is "Restaurant", followed by Italian and Japanese Restaurant. What's surprising, Chinese restaurant is at the 9th position of the most common restaurant category here in Toronto, while Chinese Ethnic counted for 12.5% of the whole Toronto Population.

This finding shows that there are a lot of room to grow for Chinese Restaurant in Toronto, for 332,830 people of Chinese Ethnic there are only 20 Chinese Restaurant available in the whole Toronto Area.

count of Chinese restaurant across Toronto

	Borough	Neighborhood	Venue	Venue Category
28	Scarborough	Kennedy Park / Ionview / East Birchmount Park	Hakka No.1	Chinese Restaurant
44	Scarborough	Dorset Park / Wexford Heights / Scarborough To...	Kim Kim restaurant	Chinese Restaurant
60	Scarborough	Clarks Corners / Tam O'Shanter / Sullivan	The Royal Chinese Restaurant 避風塘小炒	Chinese Restaurant
75	Scarborough	Steeles West / L'Amoreaux West	Mr Congee Chinese Cuisine 龍粥記	Chinese Restaurant
76	Scarborough	Steeles West / L'Amoreaux West	Phoenix Restaurant 金鳳餐廳	Chinese Restaurant
150	North York	Fairview / Henry Farm / Oriole	Manchu Wok	Chinese Restaurant
160	North York	Bayview Village	Sun Star Chinese Cuisine 翠景小炒	Chinese Restaurant
236	North York	Don Mills	Congee Star 帝王名粥	Chinese Restaurant
257	North York	Bathurst Manor / Wilson Heights / Downsview North	China Court	Chinese Restaurant
481	Central Toronto	North Toronto West	C'est Bon	Chinese Restaurant
589	Downtown Toronto	St. James Town / Cabbagetown	China Gourmet	Chinese Restaurant
590	Downtown Toronto	St. James Town / Cabbagetown	Tender Trap Restaurant	Chinese Restaurant
793	Downtown Toronto	Garden District, Ryerson	GB Hand-Pulled Noodles	Chinese Restaurant
1004	Downtown Toronto	Central Bay Street	GB Hand-Pulled Noodles	Chinese Restaurant
1185	Downtown Toronto	Harbourfront East / Union Station / Toronto Is...	Pearl Harbourfront	Chinese Restaurant
1344	Downtown Toronto	Toronto Dominion Centre / Design Exchange	Szechuan Express	Chinese Restaurant
1535	Downtown Toronto	University of Toronto / Harbord	River Tai Restaurant	Chinese Restaurant
1584	Downtown Toronto	Kensington Market / Chinatown / Grange Park	Swatow Restaurant 汕頭小食家	Chinese Restaurant
1593	Downtown Toronto	Kensington Market / Chinatown / Grange Park	New Sky Restaurant 小沙田食家	Chinese Restaurant
2174	Etobicoke	Westmount	Mayflower Chinese Food	Chinese Restaurant

Count of Chinese Restaurant per Borough

Neighborhood	
Borough	
Central Toronto	1
Downtown Toronto	9
Etobicoke	1
North York	4
Scarborough	5

Only 4 Chinese Restaurant are available in Scarborough, despite roughly 47% of Chinese people in Toronto are all live there.

Location of Chinese Restaurant across Toronto

		Venue	Venue Category
Borough	Neighborhood		
Central Toronto	North Toronto West	1	1
Downtown Toronto	Central Bay Street	1	1
	Garden District, Ryerson	1	1
	Harbourfront East / Union Station / Toronto Islands	1	1
	Kensington Market / Chinatown / Grange Park	2	2
	St. James Town / Cabbagetown	2	2
	Toronto Dominion Centre / Design Exchange	1	1
	University of Toronto / Harbord	1	1
Etobicoke	Westmount	1	1
North York	Bathurst Manor / Wilson Heights / Downsview North	1	1
	Bayview Village	1	1
	Don Mills	1	1
	Fairview / Henry Farm / Oriole	1	1
Scarborough	Clarks Corners / Tam O'Shanter / Sullivan	1	1
	Dorset Park / Wexford Heights / Scarborough Town Centre	1	1
	Kennedy Park / Ionview / East Birchmount Park	1	1
	Steeles West / L'Amoreaux West	2	2

None of the Chinese Restaurant are available in Agincourt! home to roughly 156,430 Chinese people in Toronto. This mean they have to travel to other neighborhoods in Scarborough, or even further to Downtown Toronto to get any Chinese dishes.

3. Discussion #1

3.1. What kind of business is potential in Toronto and where is the best place to build it?

With this revelation, now we know that Chinese Restaurant still has a lot of room to grow, which is based on the fact that:

- a. Chinese Ethnic has the most population in Toronto compared to any other Ethnic (12.5% of Toronto, or about 332,830 people), where majority of the Chinese are lived in Agincourt – Scarborough
- b. There are lack of Chinese Restaurants available, only 20 Chinese Restaurant can be found in whole Toronto, pale in comparison against Italian Restaurant.
- c. There are only 4 Chinese Restaurants available in Scarborough,
- d. None of the Chinese Restaurant are located within Agincourt.

Thus, if I want to build a restaurant in Toronto, based on the data that i have, it would be a Chinese Restaurant in Agincourt, home of 47% (156,430 headcounts) Chinese people in Toronto.

4. Next opportunity

4.1. Potential area to build next restaurant

If I want to set up another Chinese Restaurant in Toronto, i would pick a neighborhood where it will likely to be the second Agincourt:

a. Why Agincourt?

because as the above data suggest majority of Chinese People lived in Agincourt, that means there are some things that made Agincourt are preferred for them to live

b. How?

What makes Agincourt is a desired place to be called a home by Chinese Ethnic could be determined by the availability and variety of Venue Category there. Therefore, I should find similar neighborhoods by clustering the neighborhoods based on the most common venue category for each neighborhood.

4.2. Next opportunity – top 10 most frequently visited venues in each neighborhood (5 samples)

	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	Borough
0	Davisville	Sandwich Place	Dessert Shop	Pizza Place	Gym	Italian Restaurant	Café	Coffee Shop	Sushi Restaurant	Thai Restaurant	Seafood Restaurant	Central Toronto
1	Davisville North	Gym	Park	Breakfast Spot	Department Store	Hotel	Sandwich Place	Food & Drink Shop	Donut Shop	Distribution Center	Dog Run	Central Toronto
2	Forest Hill North & West	Jewelry Store	Sushi Restaurant	Trail	Mexican Restaurant	Diner	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Yoga Studio	Central Toronto
3	Lawrence Park	Park	Photography Studio	Swim School	Bus Line	Donut Shop	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Drugstore	Central Toronto
4	Moore Park / Summerhill East	Tennis Court	Drugstore	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Yoga Studio	Fast Food Restaurant	Central Toronto

4.3. Cluster the neighborhood based on its similarities

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
Scarborough	Malvern / Rouge	43.806686	-79.194353	2	Fast Food Restaurant	Drugstore	Diner	Discount Store	Distribution Center	Dog Run	Doner Restaurant	Donut Shop		
Scarborough	Rouge Hill / Port Union / Highland Creek	43.784535	-79.160497	16	Bar	History Museum	Yoga Studio	Dumpling Restaurant	Distribution Center	Dog Run	Doner Restaurant	Donut Shop		
Scarborough	Guildwood / Morningside / West Hill	43.763573	-79.188711	3	Moving Target	Spa	Breakfast Spot	Rental Car Location	Electronics Store	Bank	Intersection	Medical Center		
Scarborough	Woburn	43.770992	-79.216917	6	Coffee Shop	Korean Restaurant	Eastern European Restaurant	Distribution Center	Dog Run	Doner Restaurant	Donut Shop	Drugstore		
Scarborough	Cedarbrae	43.773136	-79.239476	0	Caribbean Restaurant	Bakery	Thai Restaurant	Fried Chicken Joint	Athletics & Sports	Gas Station	Bank	Hakkis Restaurant		
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
Scarborough	Agincourt	43.7942	-79.262029	3	Lounge	Skating Rink	Latin American Restaurant	Clothing Store	Breakfast Spot	Falafel Restaurant	Event Space	Ethiopian Restaurant	Empanada Restaurant	Dis

As you can see, Agincourt included in Cluster Label number 3.

4.4. Cluster the neighborhood based on its similarities

Other neighborhoods that fall into the same Cluster Label as Agincourt but still within the same Borough (Agincourt belongs in Scarborough)

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
Scarborough	Guildwood / Morningside / West Hill	43.763573	-79.188711	3	Moving Target	Spa	Breakfast Spot	Rental Car Location	Electronics Store	Bank	Intersection	Medical Center	Medical Center	Medical Center
Scarborough	Kennedy Park / Ionview / East Birchmount Park	43.727929	-79.262029	3	Department Store	Convenience Store	Chinese Restaurant	Hobby Shop	Coffee Shop	Yoga Studio	Dumpling Restaurant	Dog Run	Restaurant	Restaurant
Scarborough	Golden Mile / Clairlea / Oakridge	43.711112	-79.284577	3	Bakery	Park	Ice Cream Shop	Bus Line	Metro Station	Intersection	Soccer Field	Coworking Space	Coworking Space	Coworking Space
Scarborough	Dorset Park / Wexford Heights / Scarborough To...	43.757410	-79.273304	3	Indian Restaurant	Pet Store	Light Rail Station	Vietnamese Restaurant	Chinese Restaurant	Donut Shop	Diner	Discount Store	Discount Store	Discount Store
Scarborough	Agincourt	43.794200	-79.262029	3	Lounge	Skating Rink	Latin American Restaurant	Clothing Store	Breakfast Spot	Falafel Restaurant	Event Space	Ethiopian Restaurant	Empanada Restaurant	Empanada Restaurant

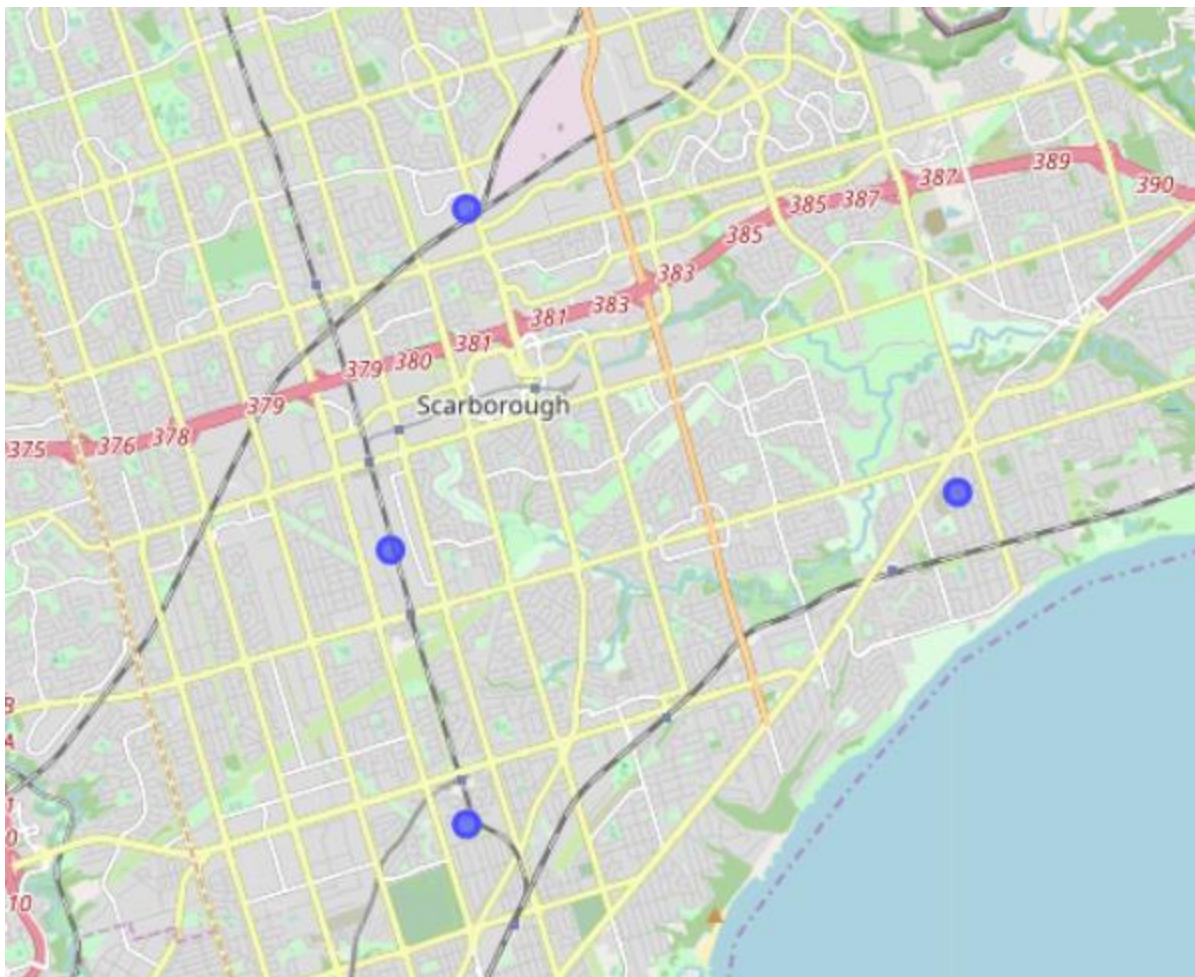
There are 4 other Neighborhoods that are similar with Agincourt in terms of top 10 Most Common Venue. To narrow the options, let's see how many Venue Category available in each Neighborhood?

Restaurant available in each neighborhood that belongs in the same cluster label as Agincourt

	Borough	Neighborhood	Venue Category
0	Scarborough	Agincourt	1
2	Scarborough	Clarks Corners / Tam O'Shanter / Sullivan	4
5	Scarborough	Guildwood / Morningside / West Hill	1
7	Scarborough	Malvern / Rouge	1
10	Scarborough	Woburn	1

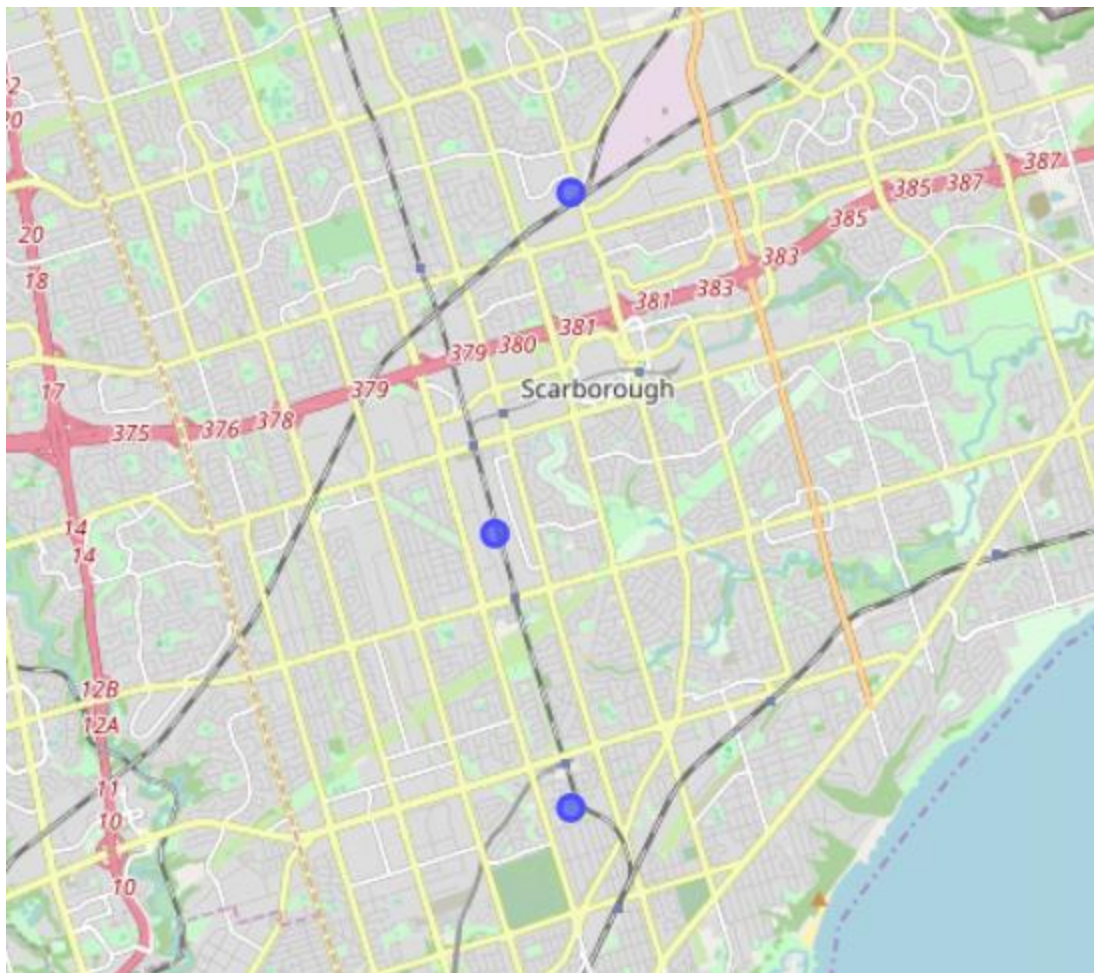
4.4.1. Neighborhoods within Scarborough that have any restaurant available, but share the same similarity with Agincourt

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
Scarborough	Guildwood / Morningside / West Hill	43.763573	-79.188711	3	Moving Target	Spa	Breakfast Spot	Rental Car Location	Electronics Store	Bank	Intersection	Medical Center	IV Res
Scarborough	Kennedy Park / Ionview / East Birchmount Park	43.727929	-79.262029	3	Department Store	Convenience Store	Chinese Restaurant	Hobby Shop	Coffee Shop	Yoga Studio	Dumpling Restaurant	Dog Run	Res
Scarborough	Dorset Park / Wexford Heights / Scarborough To...	43.757410	-79.273304	3	Indian Restaurant	Pet Store	Light Rail Station	Vietnamese Restaurant	Chinese Restaurant	Donut Shop	Diner	Discount Store	Distr
Scarborough	Agincourt	43.794200	-79.262029	3	Lounge	Skating Rink	Latin American Restaurant	Clothing Store	Breakfast Spot	Falafel Restaurant	Event Space	Ethiopian Restaurant	Emp Res



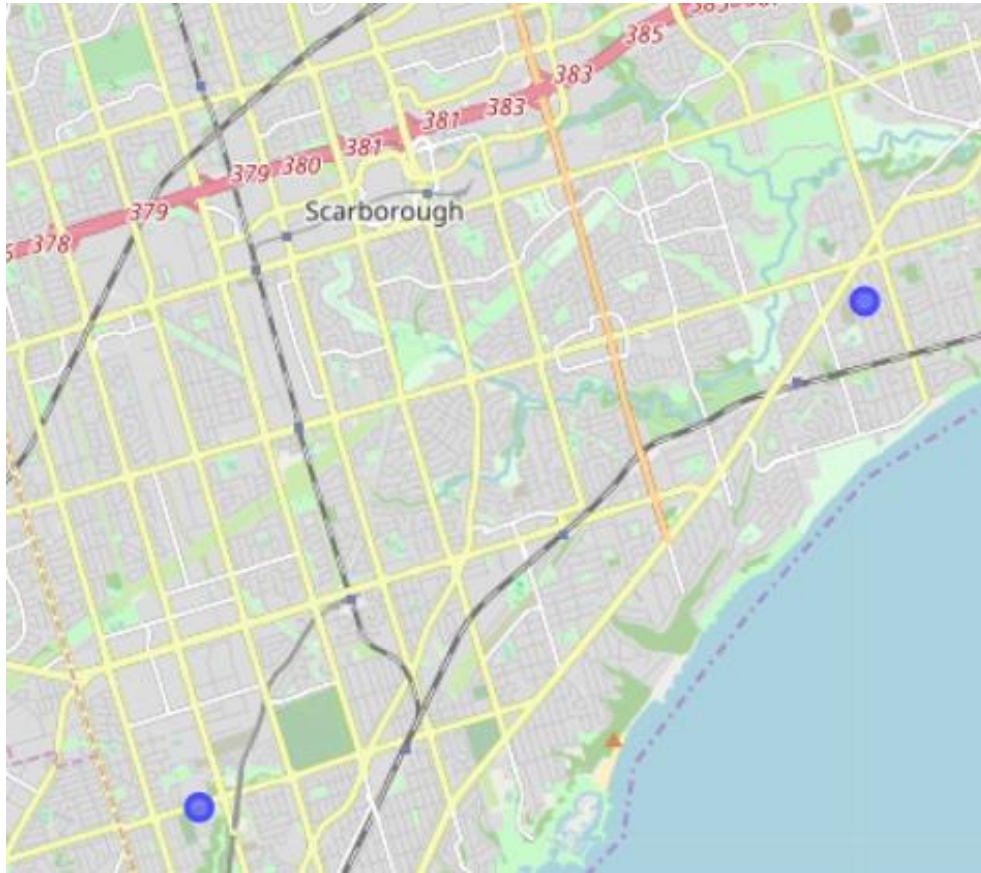
4.4.2. Neighborhoods within Scarborough that have Chinese restaurant available, but share the same similarity with Agincourt.

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
Scarborough	Kennedy Park / Ionview / East Birchmount Park	43.727929	-79.262029	3	Department Store	Convenience Store	Chinese Restaurant	Hobby Shop	Coffee Shop	Yoga Studio	Dumpling Restaurant	Dog Run
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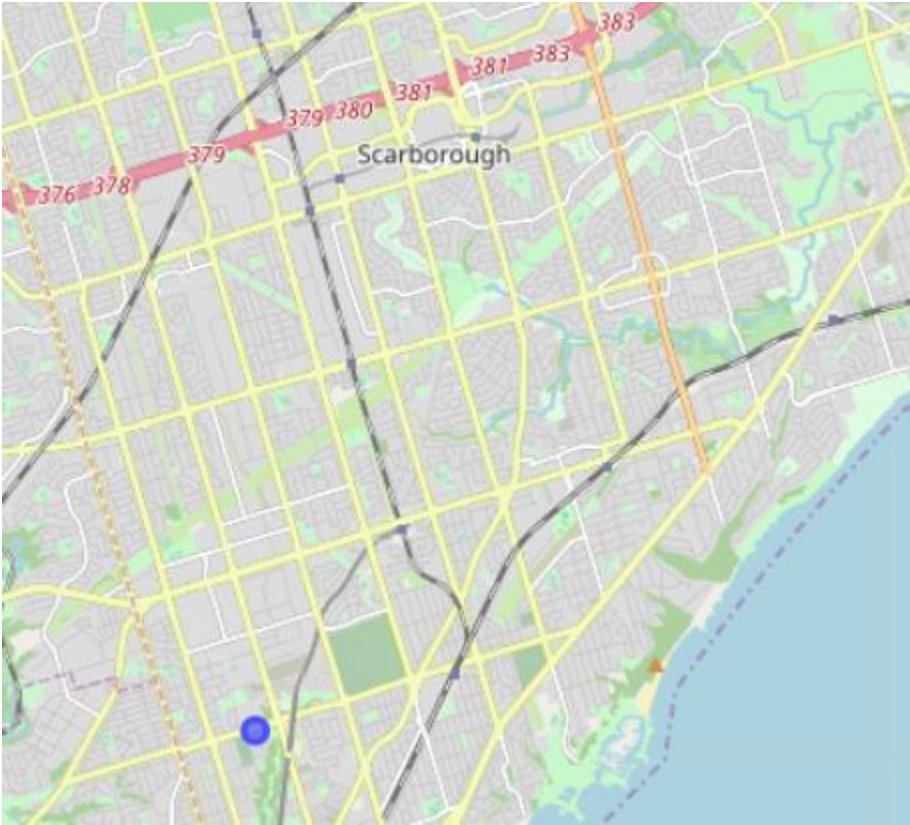
4.4.3. Neighborhoods within Scarborough that don't have any Chinese restaurant available, but share the same similarity with Agincourt.

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
Scarborough	Guildwood / Morningside / West Hill	43.763573	-79.188711	3	Moving Target	Spa	Breakfast Spot	Rental Car Location	Electronics Store	Bank	Intersection	Medical Center	Mexican Restaurant
Scarborough	Golden Mile / Clairlea / Oakridge	43.711112	-79.284577	3	Bakery	Park	Ice Cream Shop	Bus Line	Metro Station	Intersection	Soccer Field	Coworking Space	Creperie



4.4.4. Neighborhoods within Scarborough that don't have any restaurant available, but share the same similarity with Agincourt

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
Scarborough	Golden Mile / Clairlea / Oakridge	43.711112	-79.284577	3	Bakery	Park	Ice Cream Shop	Bus Line	Metro Station	Intersection	Soccer Field	Coworking Space	Creperie



5. Discussion #2

With above data, now i know where should i build my next Chinese Restaurant outside of Agincourt, but still within Scarborough where no Chinese Restaurant are currently available. It would be:

- a. Guildwood, Morningside, West Hill

Meanwhile, I also know where should i build my next Chinese Restaurant outside of Agincourt, but still within Scarborough where no restaurant are currently available at all, it would be:

- a. Golden Mile / Clairlea / Oakridge

6. Conclusion

- a. If i want to **build a new business in Toronto**, that would be a **Chinese Restaurant in Agincourt, Scarborough**.

Why? because Chinese people are the most prevalent ethnics in Toronto (12.5% of Toronto population or 332,830 people), where most of them lived in Scarborough - Agincourt (47 % of total Chinese population or 156,430 people) while not even one Chinese Restaurant can be found in Agincourt.

- b. For **potential area to build my next Chinese Restaurant**, I have potential places that I can pick that i grouped based on:
 - i. Outside of Agincourt, but still within Scarborough where **no restaurants are currently available**: *Golden Mile / Clairlea / Oakridge*
 - ii. Outside of Agincourt, but still within Scarborough where there are **several non-Chinese Restaurant already established**: *Guildwood / Morningside / West Hill*