

# Where is The Best Place for Opening a Café in Toronto, ON, Canada?

## 1. Introduction

There are many cafés in Toronto, Canada. But people still consume a lot of coffee. And let's say we are going to start a café. Should we open a café in a place with many cafés already? Or should we open it in a place nearby restaurants? It seems better to open it in a place where there are not many cafés. But then, how about population? What if there aren't many people? So it seems better to open it in a place where there are lots of people. In this project, we will find the best place for opening a café considering these factors. We will present the best 5 places so that best possible final location can be chosen by stakeholders.

## 2. Data

Geographic information of candidate areas will be generated algorithmically and approximate addresses of centers of those areas will be obtained using Google Maps API reverse geocoding. And the information about neighborhoods and their population is from Wikipedia. We scrap Wikipedia page by method called BeautifulSoup. Also the number of cafés and their locations in every neighborhood will be obtained using Foursquare API.

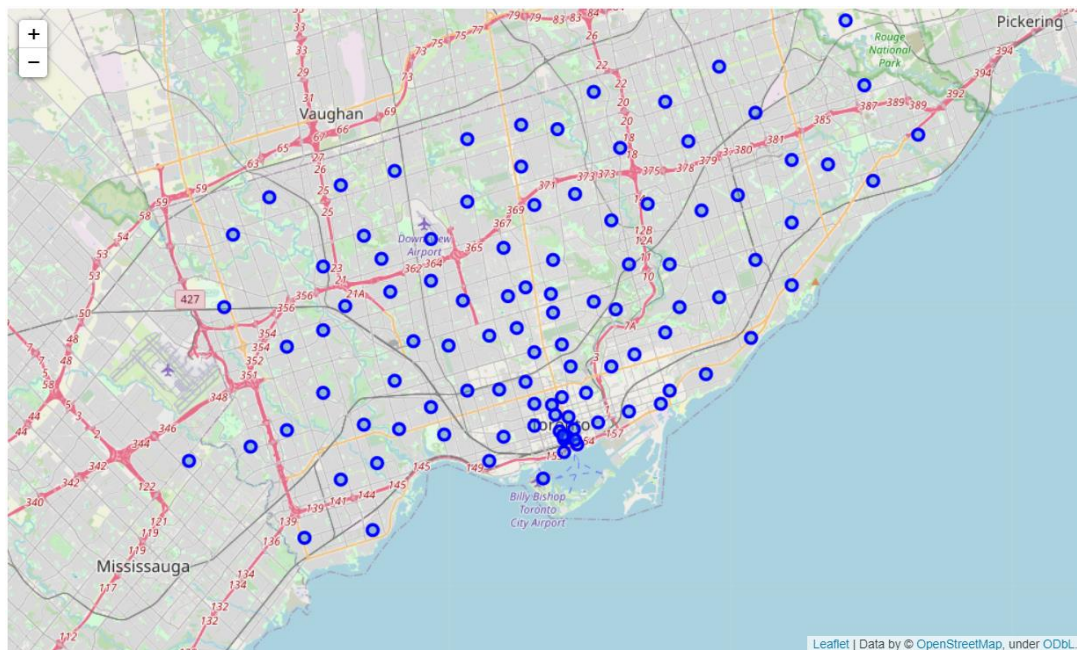
## 2.1 Candidates

First, we have to know the geographic information of Toronto, so using url from Wikipedia and make them dataframe.

[https://en.wikipedia.org/wiki/List\\_of\\_postal\\_codes\\_of\\_Canada:\\_M](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)

	PostalCode	Borough	Neighborhood	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	Queen's Park	Ontario Provincial Government	43.662301	-79.389494

The above dataframe is just 5 head of the geographic information of Toronto: Postal Code, Borough, Neighborhood, Latitude and Longitude. Let's show on the map.



And then get the venues that are in each neighborhood within 300 meters by Foursquare API. The imported information contains neighborhood name, neighborhood latitude, neighborhood longitude, venue, venue latitude, venue longitude, venue category. There are 192 categories in venue category, but since we only need café category, extract only venues which category is café.

### 3. Analysis

#### 3.1 Most common Venue

It is important to find the neighborhoods without a lot of cafés. This means that there are no cafes within 300 meters of the neighborhood. To extract the neighborhoods without a lot of cafés, first, extract the most 5 common venues' categories for each neighborhood. And excludes neighborhoods with cafes in the top 5 common venues' categories. Then grouped by neighborhood and sum numbers of venues up. Lastly, sort by most common venue for each neighborhood.

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Agincourt	Latin American Restaurant	Breakfast Spot	Yoga Studio	Colombian Restaurant	Dumpling Restaurant
1	Berczy Park	Pub	Concert Hall	Breakfast Spot	Belgian Restaurant	Beer Bar
2	Caledonia-Fairbanks	Park	Women's Store	Accessories Store	Design Studio	Electronics Store
3	Cedarbrae	Athletics & Sports	Hakka Restaurant	Bank	Caribbean Restaurant	Thai Restaurant
4	Church and Wellesley	Bubble Tea Shop	Japanese Restaurant	Pizza Place	Ice Cream Shop	Diner
5	Clarks Corners, Tam O'Shanter, Sullivan	Shopping Mall	Bank	Yoga Studio	Escape Room	Dumpling Restaurant
6	Cliffside, Cliffcrest, Scarborough Village West	Skating Rink	Motel	American Restaurant	Yoga Studio	Design Studio
7	Davisville North	Gym / Fitness Center	Breakfast Spot	Convenience Store	Pool	Yoga Studio
8	Del Ray, Mount Dennis, Keelsdale and Silverthorn	Bar	Sandwich Place	Turkish Restaurant	Discount Store	Yoga Studio
9	Don Mills North	Tennis Court	Yoga Studio	Escape Room	Dumpling Restaurant	Donut Shop

#### 3.2 Population

As we say, we need the population information for each neighborhood of Toronto, so bring the csv data file from open data source.

<https://open.toronto.ca/dataset/neighbourhood-profiles/>

We need the most recent population, so extract population in 2016 only. And then merge the population in 2016 for each neighborhood with the data sorted by the most common venue for each neighborhood.

The store's sales are determined by the number of customers. In order for a business to be successful, it should be a place where many customers can come to the store. Therefore, it is advisable to start a business in a densely populated neighborhood. Let's sort them in order of the most population.

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	Population
0	Woburn	Korean BBQ Restaurant	Design Studio	Electronics Store	Dumpling Restaurant	Donut Shop	53,485
1	The Beaches	Park	Trail	Department Store	Dumpling Restaurant	Donut Shop	21,567
2	Weston	Park	Jewelry Store	Escape Room	Dumpling Restaurant	Donut Shop	17,992
3	Hillcrest Village	Golf Course	Athletics & Sports	Dog Run	Fast Food Restaurant	Mediterranean Restaurant	16,934
4	Scarborough Village	Playground	Yoga Studio	Department Store	Dumpling Restaurant	Donut Shop	16,724

## 4. Conclusion

In conclusion, the best locations to opening a café is first, there is no cafés nearby and second, with largest floating population, or consumers. The best 5 locations to start up café business are:

- Woburn
- The Beaches
- Weston
- Hillcrest Village
- Scarborough Village