

The Locations of Coffee Shop Businesses

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1 Introduction

1.1 Background

Opening up a coffee house business is a challenging and interesting task. People should consider different aspects of the business, for example, start-up budgeting and funding, licenses and insurance, interior and exterior design of the house, planning food and menu, equipment, and supplies. Another important aspect is the location of coffee shop. Business owners need to have useful information about proper locations.

1.2 Problem

The problem is to explore a geographical location, so the business owners can have some ideas where they can open up their coffee shops in Downtown Toronto. Are there any location that has few coffee shops? As a data scientist, I will leverage the Foursquare location data to solve this problem and find appropriate locations.

2 Data

I will use the Wikipedia Neighbourhood data for Toronto and use the Geospatial Coordinates file for the location of each neighbourhood in Toronto. The file includes latitudes and longitudes of each neighbourhood. Then, I will merge these two data sets in Python program. In the next step, I will leverage the Foursquare location data to explore different venues in different neighbourhoods. I will analyze how much neighbourhoods are similar or dissimilar. I particularly look for neighbourhoods with coffee shops and cafe. For example, using the Foursquare location data, I could check coffee shops in the top five venues for each neighborhood. Also, I check with neighbourhoods have few coffee shops and cafe, for example, fewer than five coffee shops.

3 Analysis

3.1 Exploring Neighbourhoods

In this section, I explore and analyze different neighbourhoods. I check what are top five most common venues in each neighbourhoods in Downtown Toronto. The result below indicates that in some neighbourhoods, for example, CN Tower, King and Spadina, Railway Lands and Rosedale, coffee shops and cafe are not included in top five venues.

Table 1: Top five Categories in each neighbourhood in Downtown Toronto

Neighborhood	1th Most Common Venue	2th Most Common Venue	3th Most Common Venue	4th Most Common Venue	5th Most Common Venue
Berczy Park	Cocktail Bar	Sandwich Place	Coffee Shop	Bakery	Beer Bar
CN Tower, King and Spadina, Railway Lands, Har...	Airport Service	Airport Lounge	Sculpture Garden	Boutique	Boat or Ferry
Central Bay Street	Coffee Shop	Sandwich Place	Sushi Restaurant	Italian Restaurant	Japanese Restaurant
Christie	Grocery Store	Café	Park	Restaurant	Baby Store
Church and Wellesley	Sushi Restaurant	Japanese Restaurant	Coffee Shop	Restaurant	Gay Bar
Commerce Court, Victoria Hotel	Coffee Shop	Café	Sandwich Place	Hotel	Restaurant
First Canadian Place, Underground city	Coffee Shop	Sandwich Place	Café	Hotel	Japanese Restaurant
Garden District, Ryerson	Coffee Shop	Clothing Store	Sandwich Place	Café	Japanese Restaurant
Harbourfront East, Union Station, Toronto Islands	Coffee Shop	Café	Hotel	Scenic Lookout	Pizza Place
Kensington Market, Chinatown, Grange Park	Café	Coffee Shop	Vegetarian / Vegan Restaurant	Bakery	Bar
Regent Park, Harbourfront	Coffee Shop	Bakery	Pub	Park	Café
Richmond, Adelaide, King	Coffee Shop	Café	Sandwich Place	Clothing Store	Gym
Rosedale	Park	Playground	Trail	Yoga Studio	Cosmetics Shop
St. James Town	Coffee Shop	Café	Italian Restaurant	Cocktail Bar	Restaurant
St. James Town, Cabbagetown	Coffee Shop	Bakery	Café	Italian Restaurant	Restaurant
Toronto Dominion Centre, Design Exchange	Coffee Shop	Café	Hotel	Sandwich Place	Asian Restaurant
University of Toronto, Harbord	Café	Coffee Shop	Sandwich Place	Pub	Bar

3.2 Clustering Neighbourhoods

The following tables show neighbourhoods in each cluster. Each cluster includes neighbourhoods with similar characters and venues.

Table 2: Each neighbourhood in cluster zero in Downtown Toronto

Neighborhood	Cluster Number	1th Most Common Venue	2th Most Common Venue	3th Most Common Venue	4th Most Common Venue	5th Most Common Venue
Rosedale	0	Park	Playground	Trail	Yoga Studio	Cosmetics Shop

Table 3: Each neighbourhood in cluster one in Downtown Toronto

Neighborhood	Cluster Number	1th Most Common Venue	2th Most Common Venue	3th Most Common Venue	4th Most Common Venue	5th Most Common Venue
Regent Park, Harbourfront	1	Coffee Shop	Bakery	Pub	Park	Café
Garden District, Ryerson	1	Coffee Shop	Clothing Store	Sandwich Place	Café	Japanese Restaurant
Central Bay Street	1	Coffee Shop	Sandwich Place	Sushi Restaurant	Italian Restaurant	Japanese Restaurant
Richmond, Adelaide, King	1	Coffee Shop	Café	Sandwich Place	Clothing Store	Gym
Harbourfront East, Union Station, Toronto Islands	1	Coffee Shop	Café	Hotel	Scenic Lookout	Pizza Place
Toronto Dominion Centre, Design Exchange	1	Coffee Shop	Café	Hotel	Sandwich Place	Asian Restaurant
Commerce Court, Victoria Hotel	1	Coffee Shop	Café	Sandwich Place	Hotel	Restaurant
University of Toronto, Harbord	1	Café	Coffee Shop	Sandwich Place	Pub	Bar
St. James Town, Cabbagetown	1	Coffee Shop	Bakery	Café	Italian Restaurant	Restaurant
First Canadian Place, Underground city	1	Coffee Shop	Sandwich Place	Café	Hotel	Japanese Restaurant
Church and Wellesley	1	Sushi Restaurant	Japanese Restaurant	Coffee Shop	Restaurant	Gay Bar

Table 4: Each neighbourhood in cluster two in Downtown Toronto

Neighborhood	Cluster Number	1th Most Common Venue	2th Most Common Venue	3th Most Common Venue	4th Most Common Venue	5th Most Common Venue
Christie	2	Grocery Store	Café	Park	Restaurant	Baby Store

Table 5: Each neighbourhood in cluster three in Downtown Toronto

Neighborhood	Cluster Number	1th Most Common Venue	2th Most Common Venue	3th Most Common Venue	4th Most Common Venue	5th Most Common Venue
St. James Town	3	Coffee Shop	Café	Italian Restaurant	Cocktail Bar	Restaurant
Berczy Park	3	Cocktail Bar	Sandwich Place	Coffee Shop	Bakery	Beer Bar
Kensington Market, Chinatown, Grange Park	3	Café	Coffee Shop	Vegetarian / Vegan Restaurant	Bakery	Bar

Table 6: Each neighbourhood in cluster four in Downtown Toronto

Neighborhood	Cluster Number	1th Most Common Venue	2th Most Common Venue	3th Most Common Venue	4th Most Common Venue	5th Most Common Venue
CN Tower, King and Spadina, Railway Lands, Har...	4	Airport Service	Airport Lounge	Sculpture Garden	Boutique	Boat or Ferry

3.3 Coffee Shops and Cafe in Neighbourhoods

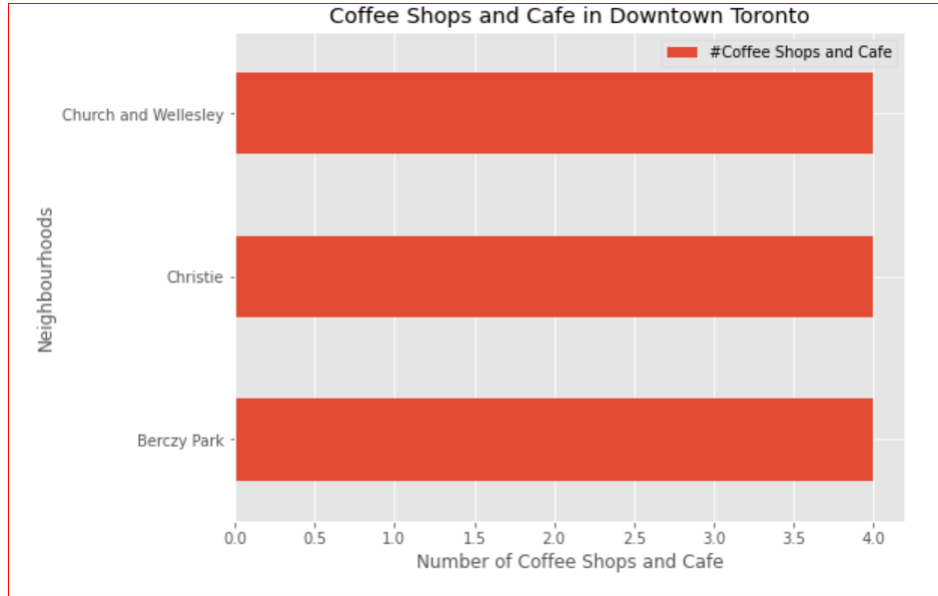
Here, I look at the number of coffee shops and cafe in each neighbourhood. This gives me an idea which neighbourhoods have few coffee shops and cafe and opening up new coffee shops could be profitable. The results show the number of coffee shops are high in some neighbourhoods, for example, Commerce Court, Victoria Hotel,

Table 7: Number of coffee shops and cafe in each neighbourhood in Downtown Toronto

#Coffee Shops and Cafe	
Neighborhood	
Berczy Park	4
Central Bay Street	13
Christie	4
Church and Wellesley	4
Commerce Court, Victoria Hotel	20
First Canadian Place, Underground city	21
Garden District, Ryerson	18
Harbourfront East, Union Station, Toronto Islands	21
Kensington Market, Chinatown, Grange Park	8
Regent Park, Harbourfront	9
Richmond, Adelaide, King	23
St. James Town	12
St. James Town, Cabbagetown	6
Toronto Dominion Centre, Design Exchange	21
University of Toronto, Harbord	9

The following figure shows the neighbourhoods with less than five coffee shops and cafe. Results show that some neighbourhoods, for example, Church and Wellesley, Christie, and Berczy Park, have four or less coffee shops and cafe.

Figure 1: Four coffee shops and cafe in each neighbourhood in Downtown Toronto



4 Results and Discussion

The analysis shows that Downtown Toronto's neighbourhoods could be clustered in five groups based on their similarity. There are several different coffee shops and restaurants. Results show that there are three neighbourhoods, Church and Wellesley, Christie, Berczy Park, where there are no or fewer than 5 coffee shops and cafe. These neighbourhood can be proper locations to open up a new coffee shop. Of course, there should be other considerations, for example, the budgeting and funding for the coffee shop. In some neighbourhoods, rents are higher than other locations.

5 Conclusion

The purpose of this project was to find proper locations to open up a coffee shop. After using different data sets and Foursquare API. Using and analysing data, I could identify some proper locations. Final decision on optimal coffee shop location will be made by stakeholders based on specific characteristics of neighbourhoods and locations in every recommended location, taking into consideration additional factors like budgeting and funding, equipment, licenses, and insurance.