

The good location for a coffee&tea store in Ottawa?

Whether it's an on-the-go latte from a neighborhood café or a leisurely afternoon cuppa, Canadians love their coffee and tea. Having a cup of coffee is part of Canadian's lives. With the Canadian Coffee Association reporting 72 percent of Canadians consumed coffee in 2018 (up slightly from 71 percent in 2017), Coffee is a massive industry to explore.

Similarly, the tea segment also continues to experience growth, according to Shabnam Weber, president of the Toronto-based Tea and Herbal Association of Canada (THAC). Weber says the general consumer trend towards healthier food-and-beverage choices is generating increased interest in tea, which has long been positioned as a good-for-you option.

With the development of the potential market of coffee and tea, an increasing number of coffee&tea stores recently opened or will open in Ottawa. When it comes to starting a coffee or tea shop business, the location means a lot. Therefore, It brought with it the question is: **what is a good location for a coffee&tea store in Ottawa?**

After conducting research online, we find there are four factors we should consider when picking up a shop location:

- Demographics: who will purchase coffee and tea?
- Competition: whether there are a lot of competitors around?
- Neighboring: who are your neighborhoods?
- Traffic Situation: how is the traffic situation around your location?

In this report, we will discuss the advantages and disadvantages of each type of location for a coffee & tea shop. Also, we will provide suggestions according to the results of our analysis. This project report will be worthy for people who currently plan to open a new coffee&tea shop in Ottawa, or who attempt to move to another location to increase the revenue of their shops.

Framework, Data and Methodology

- *Demographics: who will purchase coffee and tea?*

There are certain types of people that likely will be looking for coffee more than others. Because of this, people should look for a location that has higher populations of that kind of people. According to the industry report of 2019, the certain types of customers would be college students, parents, shoppers, and lots of work forces. So the locations should be near by the following places:

"College/university campuses: Universities, community colleges, trade schools, and similar places have lots of students who are always writing, studying, and working on projects that, oftentimes, cause them to get little to no sleep. A whopping 92% of students in this study consumed some form of caffeine during the school year, and coffee was the primary source."

Shopping Malls and Centers: Big shopping areas are great locations for coffee shop businesses. Shopping and coffee, whether it is for clothing, gifts, groceries, or other items, go hand-in-hand. It is really a no-brainer to try and find a location that is close to any kind of large shopping area.¹ "

¹ 20 Tips to find the best location for your coffee shop business
<https://startmycoffeeshop.com/20-tips-to-find-the-best-location-for-your-coffee-shop-business/#:~:text=2.,are%20around%20on%20school%20days>.

Therefore, we collected location data of all coffee&tea shops, universities, and colleges in Ottawa via the Yelp Fusion API. In this case, we can mark all locations of universities and colleges and compare the map with the distribution of current locations of coffee and tea shops in Ottawa

"Yelp is an American public company headquartered in San Francisco, California. The company develops, hosts, and markets the Yelp.com website and the Yelp mobile app, which publish crowd-sourced reviews about businesses. It also operates an online reservation service called Yelp Reservations. The Yelp Fusion API provides the best local content and user reviews from millions of businesses across 32 countries.²"

From the Yelp Fusion API, we can obtain the parameters including (Data size: 416):

- Alias: the unique identification for each of the business. For example, "Starbucks-1", "Starbucks-2"
- Name: the name of the business. For example, "Starbucks"
- Latitude&longitude&Zip Codes: the locations of businesses
- Phone: phone numbers of business
- Address: the detailed address of businesses
- Rating: the ratings for each of the business, from 0 to 5
- Review_counts: how many customers provide a review for this business

	alias	name	latitude	longitude	phone	address	rating	review_count	zip_code	tag
0	happy-goat-coffee-company-ottawa	Happy Goat Coffee Company	45.405490	-75.717520	1.613792e+10	35 Laurel Street	4.5	44	K1Y 2E6	coffee
1	the-ministry-of-coffee-ottawa	The Ministry of Coffee	45.417511	-75.689959	1.613255e+10	279 Elgin St	4.0	98	K2P 1M1	coffee, cafes
2	zoes-lounge-ottawa	Zoe's Lounge	45.425316	-75.694489	1.613241e+10	1 Rideau St	4.5	31	K1N 8S7	coffee, breakfast_brunch
3	the-ministry-of-coffee-and-social-affairs-ottawa	The Ministry of Coffee and Social Affairs	45.404961	-75.723534	1.613696e+10	1013 Wellington Street W	4.0	39	K1Y 2Y1	coffee
4	equator-coffee-ottawa	Equator Coffee	45.423313	-75.694315	1.613564e+10	1 Elgin Street	5.0	10	K1P 5W1	coffee

- *Competition: whether there are a lot of competitors around?*
- *Neighboring: who are your neighborhoods?*

What kind of competition is in the area that you select is very important for any coffee&tea shops. If people open a coffee shop or other type of coffee business in an overly saturated market then the likelihood that the business will succeed will be much lower. For example, we should choose the location where is no or few chain store coffee shops, such as Starbucks and Tim Horton. The heavy-hitters account for about 70% of the profits made across the whole coffee industry, according to "chron.com". Other tips such as no existing locally-owned coffee shops are also important to consider. Except for those competitors, coffee&tea shops are more likely to become successful if they are close to some specific business, such as bakeries, sandwich shops, gyms, or boutique stores. So it is important to get the information of neighbors around coffee&tea shops.

Here, we use Foursquare API to collect all venues around the coffee&tea shops that we retrieved from the Yelp API previously. We count the top-ten venues around the coffee&tea shops, attempting to find out the distribution patterns of neighbors for the coffee&tea shops who are successful (high ranking and more popular).

"Foursquare Labs Inc., commonly known as Foursquare, is an American technology company. The company's location platform is the foundation of several business and consumer products, including the Foursquare City Guide and Foursquare Swarm apps. Places API is one of the products, offering real-time access to Foursquare's global database of rich venue data and user content to power your location-based experiences in your app or website.³"

² Yelp Fusion API: https://www.yelp.com/developers/documentation/v3/get_started

³ Foursquare Places API: <https://developer.foursquare.com/docs/places-api/>

From the Foursquare API, we can obtain the parameters including (Data size: 14774):

- a. Alias: the unique identification for each of the business. For example, “Starbucks-1”, “Starbucks-2”
- b. Latitude&longitude&Zip Codes: the locations of businesses
- c. Venues: the name of the businesses around the coffee&tea shops
- d. Venues Latitude&longitude: the locations of the neighbors
- e. Venue Category: what kind of shops the neighbors are

	Store	Latitude	Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Happy Goat Coffee Co	45.405177	-75.717360	Coffee Shop
1	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Art-Is-In Bakery	45.408011	-75.718406	Bakery
2	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Beyond the Pale Brewing Company	45.407957	-75.718398	Brewery
3	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Bridgehead Roastery	45.407369	-75.713265	Coffee Shop
4	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Luciano Foods	45.408577	-75.714493	Deli / Bodega

- *Traffic Situation: how is the traffic situation around your location?*

People are more willing to have a cup of coffee or tea before or after working hours. Therefore, the traffic flowing is an important factor when selecting a location of coffee&tea shop. People perhaps will buy one on the way to working office or back to home. If the location has a high level of traffic flows during those hours, it might face a greater possibility to become successful.

“Busy Morning Commute Routes: It makes sense for a coffee shop to be open early in the morning when people are getting out and about for their days. There are certainly people who drink coffee at all hours of the day, but the morning is, by far, the time when the majority of people have their coffee. Choose a location that is conveniently situated on a busy morning commute route.

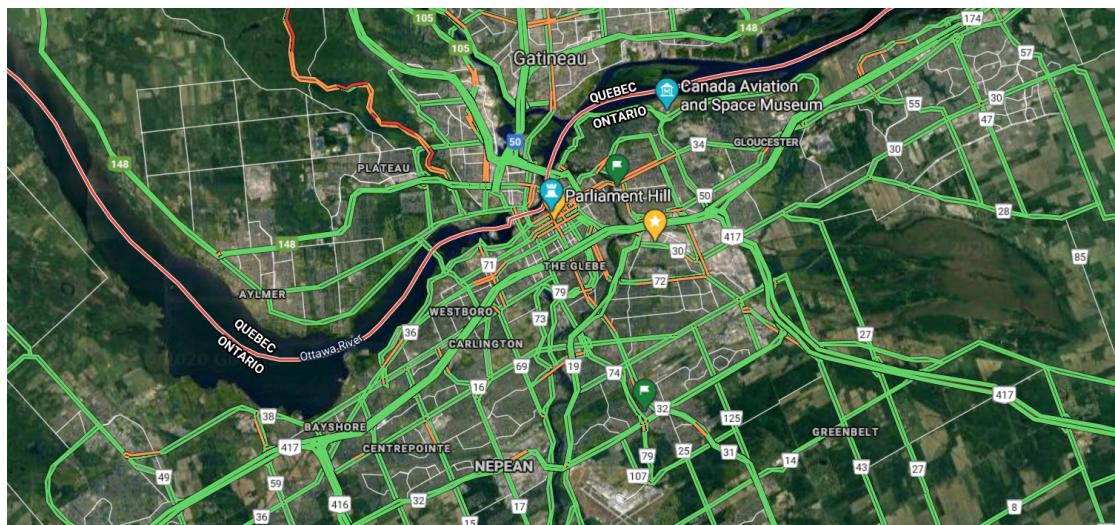
Lunch Rush Areas: Anyone who gets out during the lunch hours knows that there is a lunch rush associated with areas that have good food options. Think about it though. This is also a good time for anyone who didn’t get much sleep, or for people who like to take in caffeine all day to re-up their energy with a hot cup of or a cold coffee beverage. Set up shop in a location like this to give those people what they want.

Busy Evening Routes: Sometimes the way people get to work in the morning isn’t the same way they get home from work in the afternoon or evening. Locations along the route home might be good choices too.⁴

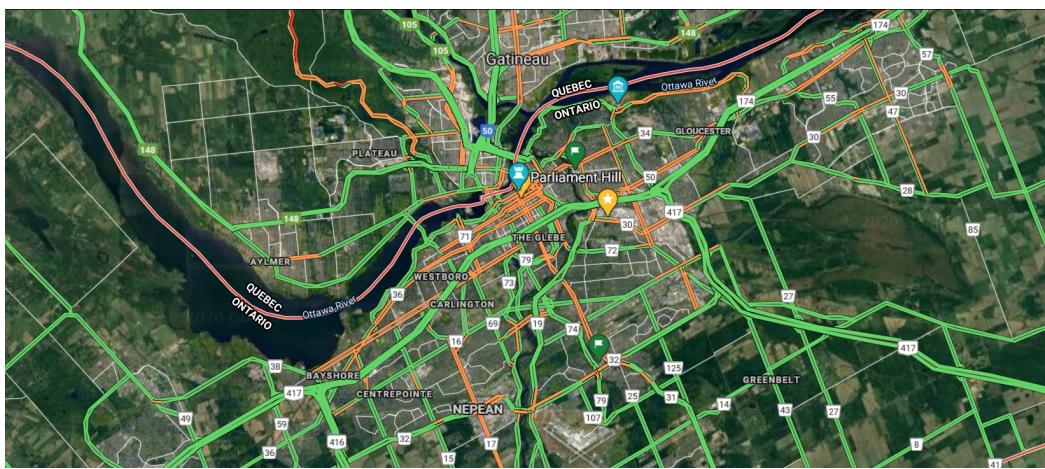
Therefore, we choose to use Google Map to have a look at the traffic flows at 9 a.m., 12 p.m. and 5 p.m. during work day and weekends⁵.

⁴ 20 Tips to find the best location for your coffee shop business
<https://startmycoffeeshop.com/20-tips-to-find-the-best-location-for-your-coffee-shop-business/#:~:text=2.,are%20around%20on%20sc,hool%20days.>

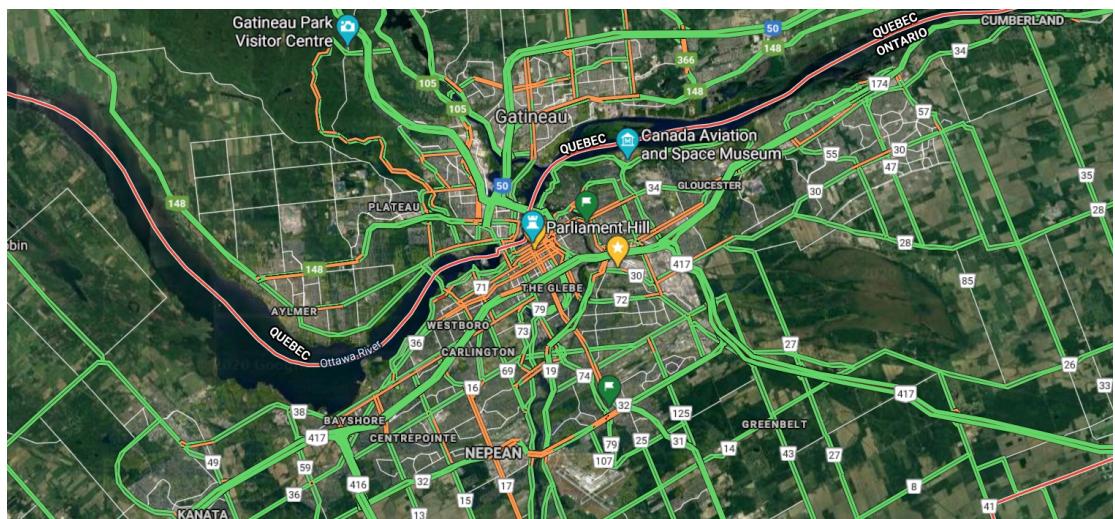
⁵ Google Map API:
<https://www.google.com/maps/place/Ottawa,+ON/@45.3796359,-75.7047719,30998m/data=!3m1!1e3!4m5!3m4!1s0x4cce05b25f5113af:0x8a6a51e131dd15ed!8m2!3d45.4215296!4d-75.6971931!5m1!1e1>



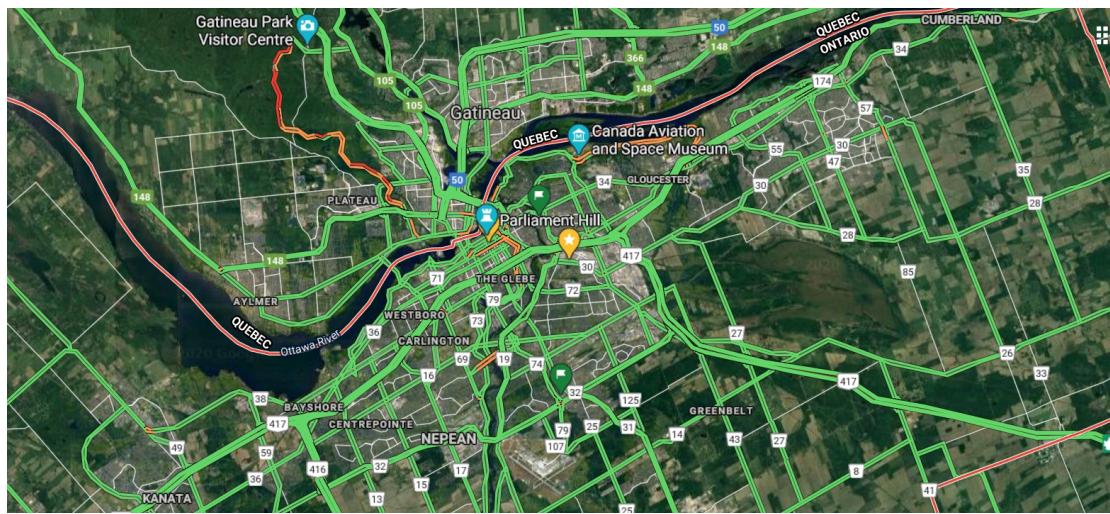
Monday, 9:00 a.m.



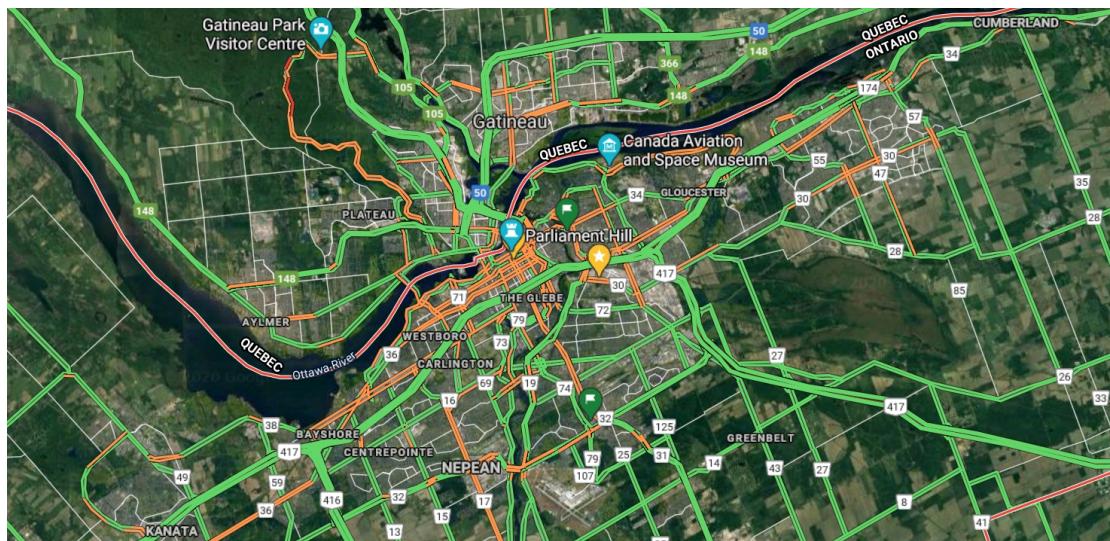
Monday, 12:00 p.m.



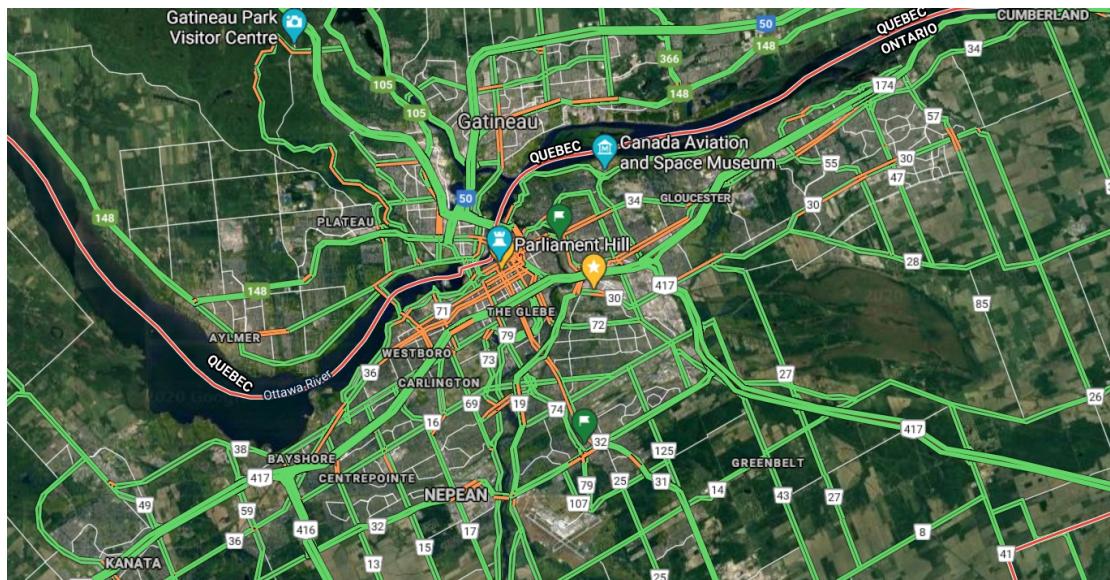
Monday, 5:00 p.m.



Saturday, 9:00 a.m.



Saturday, 12:00 p.m.



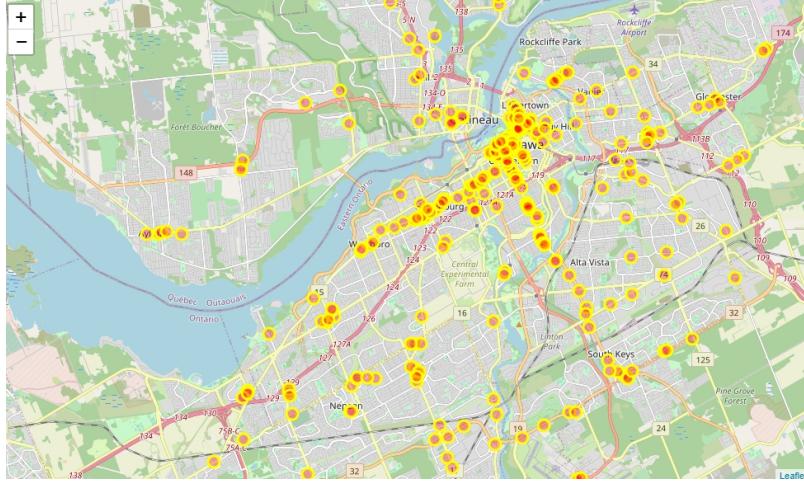
Saturday, 5:00 p.m.

Data Analysis, Results and Discussion

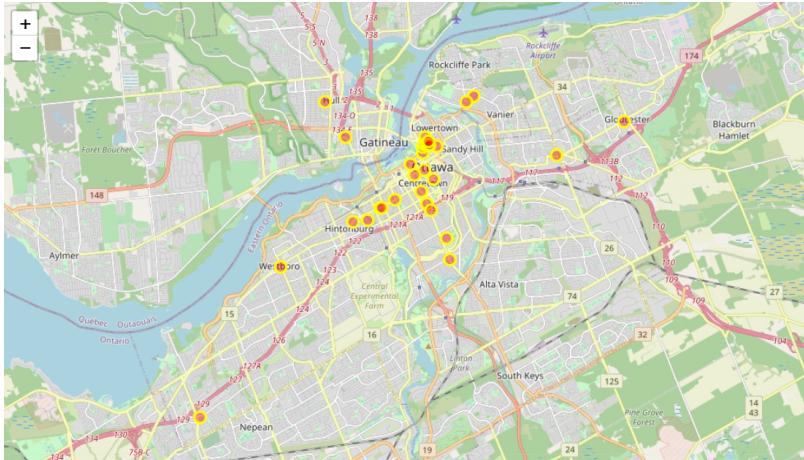
We selected the shops with more than 30 reviews as a popular one, and a ranking score greater than 4.5 is regarded as a ranked shop.

	alias	name	latitude	longitude	phone	address	rating	review_count	zip_code	tag	if_popular	if_ranked
0	happy-goat-coffee-company-ottawa	Happy Goat Coffee Company	45.405490	-75.717520	1.613792e+10	35 Laurel Street	4.5	44	K1Y 2E6	coffee	Yes	Yes
1	the-ministry-of-coffee-ottawa	The Ministry of Coffee	45.417511	-75.689959	1.613255e+10	279 Elgin St	4.0	98	K2P 1M1	coffee, cafes	Yes	No
2	zoes-lounge-ottawa	Zoe's Lounge	45.425316	-75.694489	1.613241e+10	1 Rideau St	4.5	31	K1N 8S7	coffee, breakfast_brunch	Yes	Yes
3	the-ministry-of-coffee-and-social-affairs-ottawa	The Ministry of Coffee and Social Affairs	45.404961	-75.723534	1.613696e+10	1013 Wellington Street W	4.0	39	K1Y 2Y1	coffee	Yes	No
4	equator-coffee-ottawa	Equator Coffee	45.423313	-75.694315	1.613564e+10	1 Elgin Street	5.0	10	K1P 5W1	coffee	No	Yes

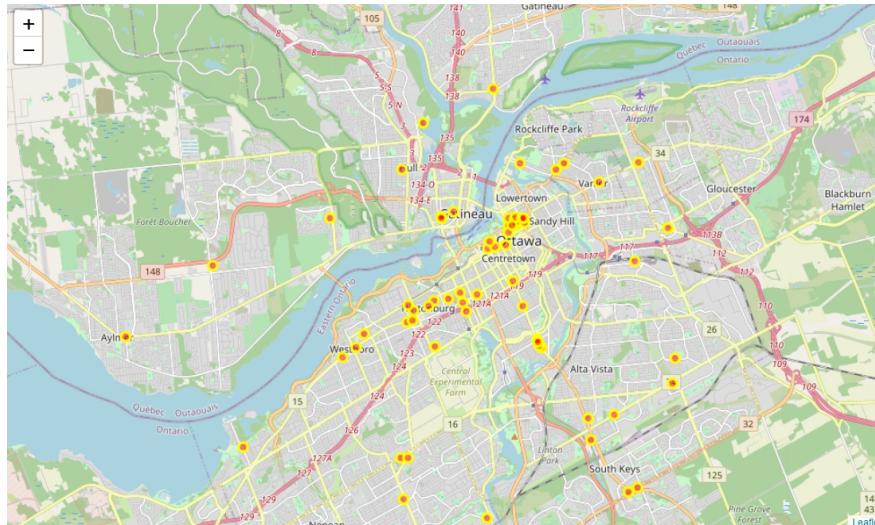
After importing the data into Jupyter Notebook, we use folium package to draw a map of the distribution of coffee&tea shops.



We can see most of the coffee&tea stores are located around the streets with high traffic flows, according to the map of Google Map. But for the most popular shops, they are more locating on the downtown section.



On the other contrary, the high-ranked shops are more scattered.



For further analyzing the neighbors, we import the neighbors of all coffee&tea shops in Ottawa.

	Store	Latitude	Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Happy Goat Coffee Co	45.405177	-75.717360	Coffee Shop
1	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Art-Is-In Bakery	45.408011	-75.718406	Bakery
2	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Beyond the Pale Brewing Company	45.407957	-75.718398	Brewery
3	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Bridgehead Roastery	45.407369	-75.713265	Coffee Shop
4	happy-goat-coffee-company-ottawa	45.40549	-75.71752	Luciano Foods	45.408577	-75.714493	Deli / Bodega

After importing, we count the frequency of venues and pick up the top-ten common venues.

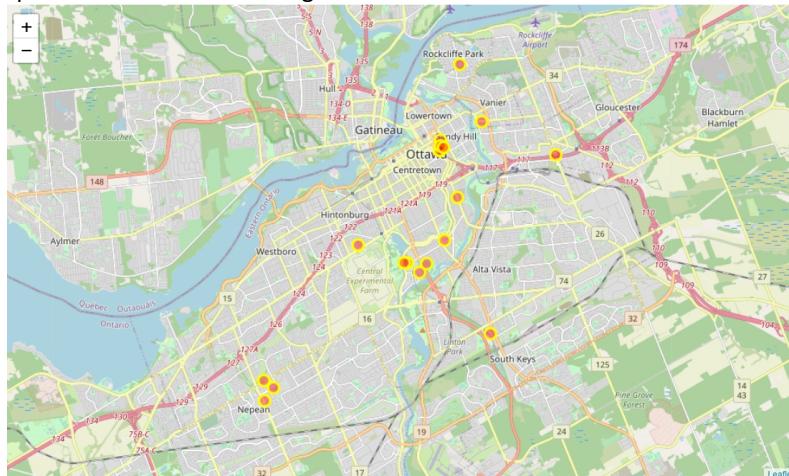
	alias	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	3-sisters-bakeshop-ottawa-2	Hockey Arena	Bakery	Pizza Place	Yoga Studio	Fast Food Restaurant	Event Service	Event Space	Falafel Restaurant	Farm	Farmers Market
1	3cents2-ottawa	Restaurant	Athletics & Sports	Pizza Place	Gas Station	Beer Store	Sandwich Place	Chinese Restaurant	Liquor Store	Auto Dealership	Bus Station
2	a-thing-for-chocolate-ottawa	Coffee Shop	Italian Restaurant	New American Restaurant	Boutique	Art Gallery	Pub	Bakery	Diner	Pizza Place	Butcher
3	alices-village-cafe-ottawa	Brewery	Farmers Market	New American Restaurant	Café	Hockey Arena	Sports Club	Ice Cream Shop	Flower Shop	Flea Market	Fish Market
4	anabia-cupcakery-café-ottawa-2	Coffee Shop	Grocery Store	Pizza Place	Restaurant	Fast Food Restaurant	Pet Store	Sporting Goods Shop	Smoothie Shop	Paper / Office Supplies Store	Food Truck

Based on the top-ten common venues, we run a clustering analysis and identify different types of clustering for each shop.

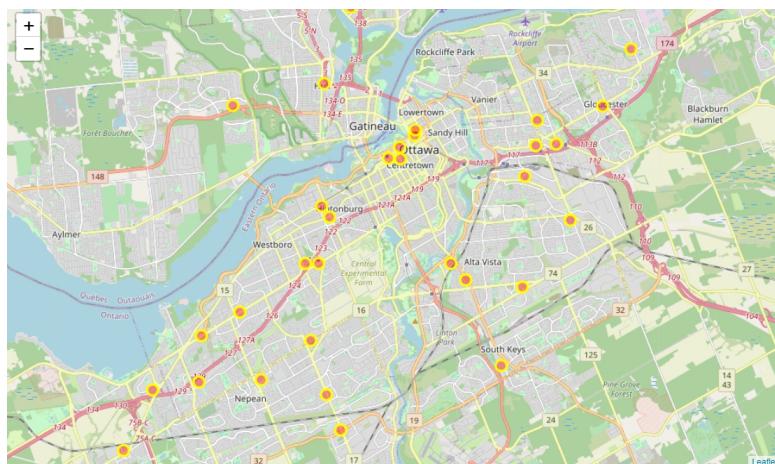
	alias	name	latitude	longitude	phone	address	rating	review_count	zip_code	tag	...	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
0	happy-goat-coffee-company-ottawa	Happy Goat Coffee Company	45.405490	-75.717520	1.613792e+10	35 Laurel Street	4.5	44	K1Y 2E6	coffee	...	Coffee Shop	Brewery	Bar
1	the-ministry-of-coffee-ottawa	The Ministry of Coffee	45.417511	-75.689959	1.613255e+10	279 Elgin St	4.0	98	K2P 1M1	coffee, cafes	...	Coffee Shop	Restaurant	Pub
2	zoes-lounge-ottawa	Zoe's Lounge	45.425316	-75.694489	1.613241e+10	1 Rideau St	4.5	31	K1N 8S7	coffee, breakfast_brunch	...	Coffee Shop	New American Restaurant	Restaurant
3	the-ministry-of-coffee-and-social-affairs-ottawa	The Ministry of Coffee and Social Affairs	45.404961	-75.723534	1.613696e+10	1013 Wellington Street W	4.0	39	K1Y 2Y1	coffee	...	Coffee Shop	Discount Store	Sandwich Place
4	equator-coffee-ottawa	Equator Coffee	45.423313	-75.694315	1.613564e+10	1 Elgin Street	5.0	10	K1P 5W1	coffee	...	Coffee Shop	Restaurant	Clothing Store

We do the same thing for the location data of universities, colleges, and shopping centers. There are the distributions for each of them.

Distribution map for universities and colleges



Distribution map for shopping malls and centers



To run a correlation analysis for all of the variables, we combine the key performance index and transfer the categorical variables into numerical ones. As a result, we get a table like this:

		alias	tag	if_popular	if_ranked	if_close_university	if_close_shopping	if_competitor	Cluster Labels
0		happy-goat-coffee-company-ottawa	0	1	1	0	0	1.0	2.0
1		the-ministry-of-coffee-ottawa	1	1	0	0	0	1.0	2.0
2		zoes-lounge-ottawa	1	1	1	0	1	1.0	2.0
3		the-ministry-of-coffee-and-social-affairs-ottawa	0	1	0	0	0	1.0	2.0
4		equator-coffee-ottawa	0	0	1	0	1	1.0	3.0

	variable_pair	correlation	p-value
0	tag_if_popular	0.163983	0.000861
1	if_competitor_if_ranked	-0.120523	0.014313
2	if_close_shopping_if_ranked	-0.113456	0.021127
3	Cluster Labels_if_popular	0.089615	0.048362
4	Cluster Labels_if_ranked	0.053380	0.239620
5	tag_if_ranked	0.051938	0.291195
6	if_competitor_if_popular	0.046124	0.348581
7	if_close_university_if_ranked	0.033022	0.502171
8	if_close_shopping_if_popular	0.025239	0.608007
9	if_close_university_if_popular	-0.022437	0.648404

It is interesting to find that the p values of “product diversities”, “competitors”, “close_to_shopping centers”, and “neighbors” are less than 0.05, indicating that these variables play a important role for coffee&tea shops to become popular or ranked in a statistical sense.

Discussion

1. Coffee&Tea shops are more locating in the places where the traffic flows are busy during all the day, especially the shops with high rankings and more popular in Ottawa.
2. Successful coffee&tea shops with higher rankings are less influenced by the location, while the most popular shops are majorly within the area of downtown.
3. Whether providing diverse products is an important factor for coffee&tea shops to become popular. People are more willing to purchase in a shop with many different types of products. The type of neighbors is also an important factor to become popular. For examples, shops around bars, bakeries and restaurants will more likely to become popular.
4. For the high-ranked shops, they must get away from other competitors, and if possible, from any shopping centers. A guessing here is that “shopping centers always have more similar competitors so it is harder to get a higher ranking in such a area”.

Conclusion

Therefore, a good location for a coffee&tea shop should: 1) be close to neighbors such as bars and restaurants, 2) get away from other competitors, 3) have a diversity of different products/services (here, different types of drinks), 4) around the areas with a high level of traffic flows during morning, afternoon, and evening.