A New Little Brewery in Toronto Canada

1.0 Introduction

As time passes and technology advances more and more people are beginning to turn their small hobbies into small businesses. Good brew lovers are just one example, but you will be hard pressed to find a more tenacious and resourceful people. In Toronto, as around the world, there is a love of good beer and other brews, and when the hobbyist decides to turn his pastime into a full time career he will be faced with the problem of where to open up his new Brewery. This project will search for the ideal neighborhood/borough in Toronto Canada for this aspiring brew master to setup shop.

2.0 Data

This new brewery will need to be in a location that has good foot traffic, is near pubs or bars that they can potentially collaborate with to get their product out there, and finally in an area that is not already saturated by other breweries. This project will leverage the data found through Foursquare, as well as Wikipedia. A list of neighborhoods and their postal codes will be scrapped from wikipedia, and then the latitude and longitude of those locations will be found using geocoder. Analysis will be done using k-means clustering, and a final result and conclusion delivered.

2.1 Data Sources

- Wikipedia will be used to obtain neighborhoods, boroughs and postal codes of Canada
- Latitude and longitude will be obtained from the following file: http://cocl.us/Geospatial_data
- The Foursquare API will be used to obtain venue information and locate Bars, Breweries and Pubs in Toronto Canada

3.0 Methodology

The postal code information was scrapped from Wikipedia using a python package called beautifulsoup. Similarly the latitude and longitude data was pulled using a package known as geocoder, and all of the information was stored inside of a dataframe. The two dataframes were then formatted, cleaned, parsed and then combined using pandas to obtain the final dataframe in Figure 1.

Venue data was then collected using the Foursquare API, with a specific focus on venues which were categorized as a Bar, Brewery or Pub. This information was parsed and then grouped by neighborhood (Figure 2).

With all of the required information now within the same dataframe, the data was then analyzed by using K-means clustering via the sklearn package. First the clusters were done by Bar, Pub and Brewery individually in order to compare their maps, but the final clustering algorithm was performed using all 3 venue categories at once. This resulted in five clusters displayed in Figure 3 and Table 1.

4.0 Results

	Postal Code	Borough	Neighborhood	Latitude	Longitude
0	M5A	Downtown Toronto	Regent Park / Harbourfront	43.654260	-79.360636
1	M7A	Downtown Toronto	Queen's Park / Ontario Provincial Government	43.662301	-79.389494
2	M5B	Downtown Toronto	Garden District, Ryerson	43.657162	-79.378937
3	M5C	Downtown Toronto	St. James Town	43.651494	-79.375418
4	M4E	East Toronto	The Beaches	43.676357	-79.293031

Figure 1. Dataframe containing Postal Codes, Borough, Neighborhood, Latitude and Longitude data for Canada.

	Neighborhood	Bar	Pub	Brewery
0	Berczy Park	0.000000	0.000000	0.000000
1	Brockton / Parkdale Village / Exhibition Place	0.041667	0.000000	0.000000
2	Business reply mail Processing CentrE	0.000000	0.000000	0.052632
3	CN Tower / King and Spadina / Railway Lands / ...	0.058824	0.000000	0.000000
4	Central Bay Street	0.015385	0.000000	0.000000
5	Christie	0.000000	0.000000	0.000000
6	Church and Wellesley	0.000000	0.027027	0.000000
7	Commerce Court / Victoria Hotel	0.020000	0.010000	0.000000
8	Davisville	0.000000	0.000000	0.029412
9	Davisville North	0.000000	0.000000	0.000000
10	Dufferin / Dovercourt Village	0.066667	0.000000	0.066667
11	First Canadian Place / Underground city	0.030000	0.010000	0.000000

Figure 2. Dataframe containing data for Bars, Pubs and Breweries in Toronto Canada grouped by Neighborhood.

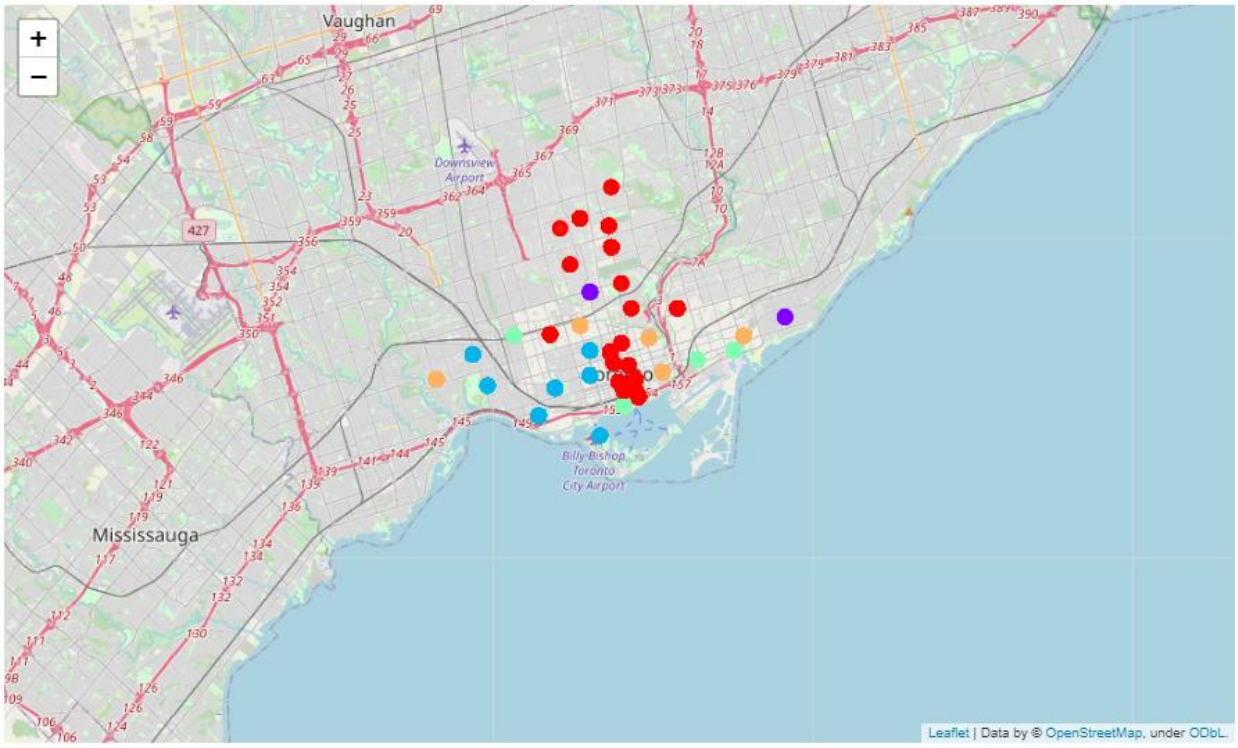

Figure 3. Map of k-means clusters for Bars, Breweries and Pubs in Toronto Canada.

Cluster	Bars	Breweries	Pubs
0 (Red)	11	2	8
1 (Purple)	0	0	3
2 (Blue)	15	1	1
3 (Green)	4	7	0
4 (Orange)	1	1	9

Table 1. Table showing the resulting clusters.

5.0 Discussion

Breweries, especially those that are being just starting, thrive in environments where they can gain exposure for their product quickly and reliably. As such where this new Brewery opens shop is of vital importance. It should be in a place that has relatively high foot traffic, little competition, and opportunities for collaboration with similar yet separate businesses.

Competition in this case can be defined as other Breweries. Breweries, in general, do not often sell their own brews in house, and thus typically partner with other nearby establishments in order to get their products to the public. The most common partnerships tend to be with either Bars or Pubs.

A location with plenty of Bars and Pubs, with few breweries to saturate the menu, would be an ideal location.

Cluster 3 contains 7 Breweries, which means Pubs and Bars local to those clusters are likely already over saturated with products which means anything the newer Brewery puts out will likely be overshadowed. Cluster 1 is also not feasible, as despite there being no other breweries it also only has 3 pubs and no Bars which limits the Brewery's options for partnerships.

The options can be narrowed down further by defining the differences between a Bar and a Pub. A bar is defined as an alcohol retailer, and as such might be much more restrictive when it comes to having new items put on its menu. Pubs on the other hand are establishments where locals of the area tend to collect and hang out, which also is idea for a new Brewery who is wanting to create a loyal customer base. With this information in mind cluster 2 can also be eliminated as it has an overabundance of Bars and only one singular Pub.

The two remaining clusters, Cluster 0 and Cluster 4 at first glance seem to make the final decision obvious. Of the two Cluster 8 has the most Bars, as well as Pubs, and based on Figure 3 it is likely in an area with heavy foot traffic, all of which seem to match our desired criteria. The goal of this new Brewery though is to establish a loyal customer base, however, not simply to gain a large number of customers that may come and go. It is true that any of the neighborhoods in Cluster 0 might on average yield higher short-term results, but the opportunities for relationship building are by far greater in Cluster 4. In addition, if a neighborhood is close from Cluster 4 that is close to the cost or one of the other neighborhoods in Cluster 0 there is also the chance of runover foot traffic coming their way. This would allow the brewery to reap the benefits of being close to a high foot traffic area without sacrificing the close community bonds they can establish by being only one of two local breweries providing their wares to nine Pubs.

6.0 Conclusion

Though it is difficult to be the new guy on the block, if a new Brewery were to try their hand at starting their own business in Toronto it is recommended they choose an area where they can gain exposure through beneficial partnerships, and where they can establish themselves a loyal following with locals of the area. The table below lists the recommended neighborhoods where such a Brewery might thrive.

Neighborhood
Runnymede/Swansea
India Bazarr/The Beaches West
Regent Park/Harbourfront
St. James Town/Cabbagetown
The Annex/North Midtown/Yorkville