Capstone Assignment

Investing in the Bar Industry in Toronto

An introduction of the problem.

- Toronto is a vibrant city with many diverse cultures and a booming economy.

- The citizens of Toronto work hard, have busy lives, and look forward to time for socializing and relaxing.

- The bars in the Toronto are cater to many in its various neighborhoods.

- Opening a bar in Toronto can be very risky so due diligence and planning is highly recommended to mitigate the risks.

- One of the highest value items in the due diligence review is location.

An introduction of the problem.

- The choice of location will depend on how the bar is to look, what the bar is going to contribute to the community, and the kind of clientele that is expected.

- Bars in Toronto appear to be more popular in certain neighborhoods over others. The type of bars also tend to be close to another.

- This may be due to people preferring alternative choices in the case their first choice is not available, or proximity to their work or residence.

- The higher value Bar locations may also be located in neighborhoods of more affluence.

- We will need to perform some analysis to determine where the best place to open a new bar would be.

A description of the data and how it will be used to solve the problem.

- In order to perform a location due diligence, bars that are of the same type, and grouped by neighbourhood, can be used in an analysis of potential success.

- Since we need access to as many potential paying customers as possible, the demographic of the neighbourhood must be taken into consideration.

- The safety of both the customer and the operation of the business can be associated to crime rate in area as well. This means we need to analyze 4 data sources:

  1. The types of popular bars currently in the neighbourhoods
  2. The population of each neighbourhood
  3. The annual income of the residents of the neighbourhood
  4. The crime rate in the neighbourhood

A description of the data and how it will be used to solve the problem.

- This Capstone Assignment will use the Venue information collected by Foursquare in order to determine the popular bars currently in the neighbourhoods.

- The analysis will also use the Neighbourhood Profiles data available from the City of Toronto Wellbeing Data Catalogue (http://map.toronto.ca/wellbeing/) to analyze the population, affluence and crime rate of each neighbourhood.

- The crime rate is based on robberies since this is the most important issue with owning a bar in Toronto. The boundaries of the Toronto neighbourhoods will be taken from the City of Toronto Open Data Catalogue - Neighbourhoods (https://www.toronto.ca/city-government/data-research-maps/open-data/open-data-catalogue/#a45bd45a-ede8-730e-1abc-93105b2c439f)

- The first step will be to determine the popular bars currently in the neighbourhoods. Then the Wellbeing Data will be used to determine Neighbourhood Profiles.

- A map of Toronto will be created with the neighbourhoods outlined and overlayed with a color coding based on the Neighbourhood Profiles data.

- The popular bars will also be marked on the map.

- The results will be analyzed and the recommendation(s) for the location of a new bar will be provided in the report conclusion.

The Methodology

- Using the Foursquare API, collected all the popular venues for all the neighborhoods in Toronto.

	Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Parkwoods	43.753259	-79.329656	Brookbanks Park	43.751976	-79.332140	Park
1	Parkwoods	43.753259	-79.329656	KFC	43.754387	-79.333021	Fast Food Restaurant
2	Parkwoods	43.753259	-79.329656	Variety Store	43.751974	-79.333114	Food & Drink Shop
3	Victoria Village	43.725882	-79.315572	Victoria Village Arena	43.723481	-79.315635	Hockey Arena
4	Victoria Village	43.725882	-79.315572	Portugril	43.725819	-79.312785	Portuguese Restaurant

- Then, filtered the venues to include bar venues only. Analyzed and grouped each neighborhood by taking the mean of the frequency of occurrence of each bar type.

	Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
15	Harbourfront, Regent Park	43.654260	-79.360636	Dominion Pub and Kitchen	43.656919	-79.358967	Pub
34	Harbourfront, Regent Park	43.654260	-79.360636	Mill St. Brew Pub	43.650353	-79.358489	Pub
47	Harbourfront, Regent Park	43.654260	-79.360636	Ontario Spring Water Sake Company	43.649922	-79.360073	Brewery
90	Queen's Park	43.662301	-79.389494	Buddies In Bad Times Theatre	43.663059	-79.383449	Nightclub
109	Queen's Park	43.662301	-79.389494	SUDS	43.659880	-79.394712	Bar

- Each neighbourhood along with the top 5 most common venues were determined.

Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Adelaide, King, Richmond	10	10	10	10	10	10
Agincourt	1	1	1	1	1	1
Berczy Park	11	11	11	11	11	11
Brockton, Exhibition Place, Parkdale Village	2	2	2	2	2	2

The Methodology

- Calculated the average number of bars, by type, in each neighborhood.

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----Adelaide, King, Richmond----        ----Agincourt----              ----Alderwood, Long Branch----
         venue  freq                        venue  freq                       venue  freq
0          Bar  0.3                 0      Lounge   1.0               0         Pub   1.0
1    Gastropub  0.2                 1    Beer Bar   0.0               1         Bar   0.0
2    Speakeasy  0.1                 2  Strip Club   0.0               2    Beer Bar   0.0
3    Jazz Club  0.1                 3  Sports Bar   0.0               3  Strip Club   0.0
4       Lounge  0.1                 4   Speakeasy   0.0               4  Sports Bar   0.0
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- The venues for each neighbourhood were arranged and sorted by the top 3 bar types.

	Neighbourhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
0	Adelaide, King, Richmond	Bar	Gastropub	Lounge
1	Agincourt	Lounge	Wine Bar	Irish Pub
2	Alderwood, Long Branch	Pub	Wine Bar	Irish Pub
3	Bedford Park, Lawrence Manor East	Pub	Wine Bar	Irish Pub
4	Berczy Park	Cocktail Bar	Beer Bar	Jazz Club
5	Brockton, Exhibition Place, Parkdale Village	Bar	Nightclub	Irish Pub
6	Business reply mail Processing Centre969 Eastern	Brewery	Wine Bar	Strip Club
7	Cabbagetown, St. James Town	Pub	Gastropub	Wine Bar
8	Central Bay Street	Bar	Gastropub	Wine Bar
9	Chinatown, Grange Park, Kensington Market	Bar	Cocktail Bar	Beer Bar

- KMeans was applied to create 4 clusters of bar types. Examined the clusters of bar types and classified each cluster.

Cluster 1 – Upscale/High End Bars

	Borough	Neighbourhood	3rd Most Common Venue	2nd Most Common Venue	1st Most Common Venue
2	Downtown Toronto	Harbourfront, Regent Park	Wine Bar	Brewery	Pub
4	Queen's Park	Queen's Park	Irish Pub	Nightclub	Bar
10	North York	Glencairn	Irish Pub	Wine Bar	Pub
24	Downtown Toronto	Central Bay Street	Wine Bar	Gastropub	Bar
25	Downtown Toronto	Christie	Irish Pub	Wine Bar	Nightclub
30	Downtown Toronto	Adelaide, King, Richmond	Lounge	Gastropub	Bar
36	Downtown Toronto	Harbourfront East, Toronto Islands, Union Station	Bar	Brewery	Sports Bar
42	Downtown Toronto	Design Exchange, Toronto Dominion Centre	Bar	Gastropub	Sports Bar
48	Downtown Toronto	Commerce Court, Victoria Hotel	Cocktail Bar	Bar	Gastropub
65	Scarborough	Dorset Park, Scarborough Town Centre, Wexford …	Strip Club	Wine Bar	Brewery
69	West Toronto	High Park, The Junction South	Gastropub	Speakeasy	Bar
80	Downtown Toronto	Harbord, University of Toronto	Beer Bar	Pub	Bar
84	Downtown Toronto	Chinatown, Grange Park, Kensington Market	Beer Bar	Cocktail Bar	Bar
86	Central Toronto	Deer Park, Forest Hill SE, Rathnelly, South Hi…	Wine Bar	Sports Bar	Pub
92	Downtown Toronto	Stn A PO Boxes 25 The Esplanade	Pub	Cocktail Bar	Beer Bar
99	Downtown Toronto	Church and Wellesley	Pub	Gastropub	Gay Bar
100	East Toronto	Business reply mail Processing Centre969 Eastern	Strip Club	Wine Bar	Brewery
102	Etobicoke	Kingsway Park South West, Mimico NW, The Queen…	Irish Pub	Wine Bar	Social Club

Cluster 2 – Seedy/Lower End Bars

	Borough	Neighbourhood	3rd Most Common Venue	2nd Most Common Venue	1st Most Common Venue
15	Downtown Toronto	St. James Town	Beer Bar	Gastropub	Cocktail Bar
31	West Toronto	Dovercourt Village, Dufferin	Strip Club	Brewery	Bar
37	West Toronto	Little Portugal, Trinity	Pub	Cocktail Bar	Bar

Cluster 3 – Live Music Bars

	Borough	Neighbourhood	3rd Most Common Venue	2nd Most Common Venue	1st Most Common Venue
12	Scarborough	Highland Creek, Rouge Hill, Port Union	Beer Bar	Strip Club	Bar
20	Downtown Toronto	Berczy Park	Jazz Club	Beer Bar	Cocktail Bar
23	East York	Leaside	Wine Bar	Gastropub	Brewery
41	East Toronto	The Danforth West, Riverdale	Lounge	Pub	Brewery
47	East Toronto	The Beaches West, India Bazaar	Wine Bar	Pub	Brewery
55	North York	Bedford Park, Lawrence Manor East	Irish Pub	Wine Bar	Pub
59	North York	Willowdale South	Irish Pub	Wine Bar	Lounge
74	Central Toronto	The Annex, North Midtown, Yorkville	Irish Pub	Wine Bar	Pub
75	West Toronto	Parkdale, Roncesvalles	Irish Pub	Piano Bar	Bar
78	Scarborough	Agincourt	Irish Pub	Wine Bar	Lounge
79	Central Toronto	Davisville	Strip Club	Wine Bar	Brewery
81	West Toronto	Runnymede, Swansea	Gastropub	Pub	Bar

Cluster 4 – Casual Bars

	Borough	Neighbourhood	3rd Most Common Venue	2nd Most Common Venue	1st Most Common Venue
8	East York	Woodbine Gardens, Parkview Hill	Strip Club	Wine Bar	Gastropub
9	Downtown Toronto	Ryerson, Garden District	Beer Bar	Pub	Bar
19	East Toronto	The Beaches	Irish Pub	Wine Bar	Pub
34	North York	Northwood Park, York University	Beer Bar	Strip Club	Bar
43	West Toronto	Brockton, Exhibition Place, Parkdale Village	Irish Pub	Nightclub	Bar
54	East Toronto	Studio District	Brewery	Bar	Gastropub
93	Etobicoke	Alderwood, Long Branch	Irish Pub	Wine Bar	Pub
96	Downtown Toronto	Cabbagetown, St. James Town	Wine Bar	Gastropub	Pub
97	Downtown Toronto	First Canadian Place, Underground city	Pub	Gastropub	Bar

- Then, loaded in the Wellbeing information and calculated the overall score with a weighted crime value.
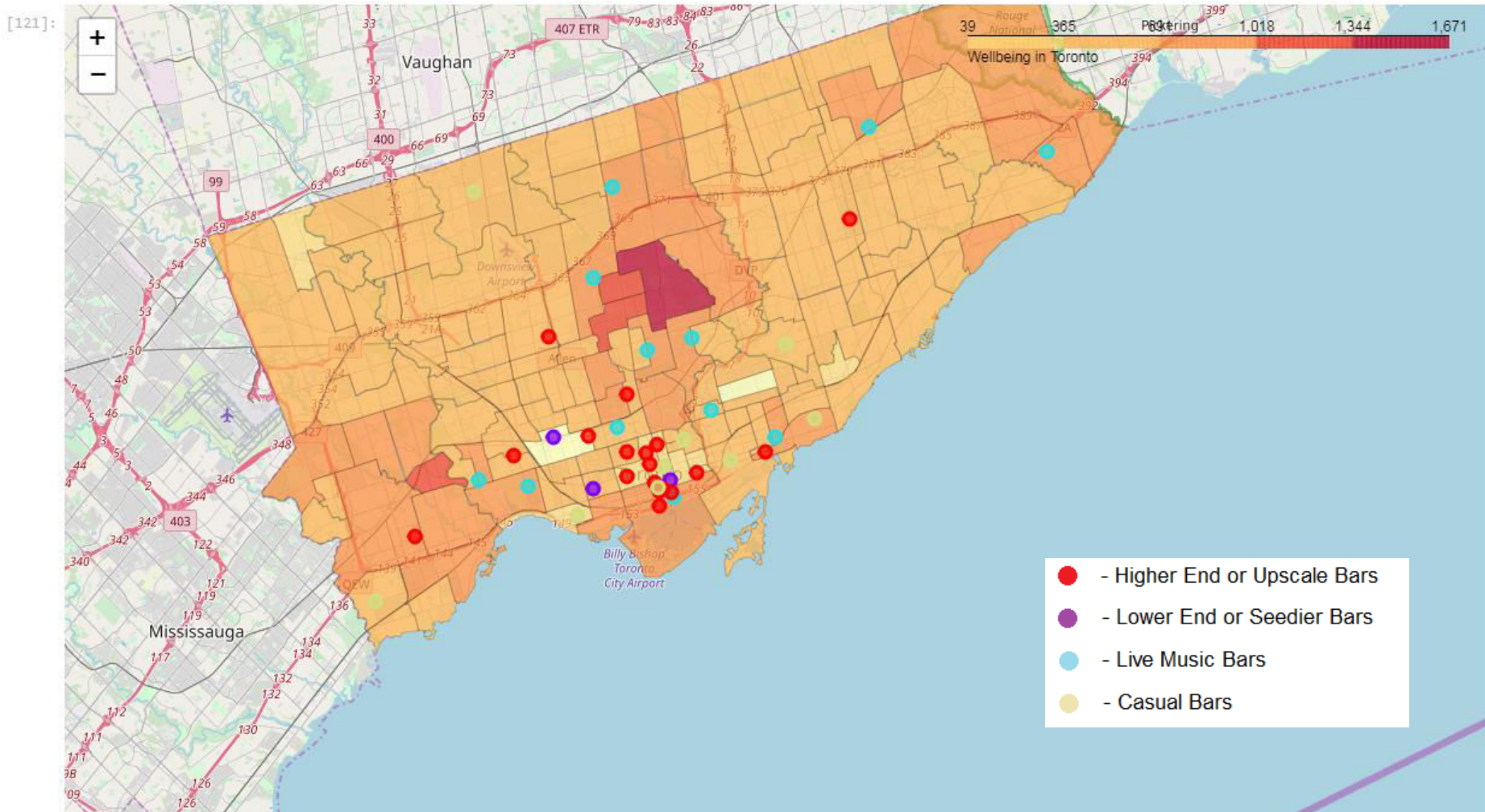
	Neighbourhood	Neighbourhood Id	After-Tax Household Income	Pop 15 - 64 years	Robberies	Total
0	West Humber-Clairville	1	59703	23285	82	460.88
1	Mount Olive-Silverstone-Jamestown	2	46986	22300	81	328.36
2	Thistletown-Beaumond Heights	3	57522	6760	12	588.82
3	Rexdale-Kipling	4	51194	7165	15	516.09
4	Elms-Old Rexdale	5	49425	6370	14	494.95

Results and Recommendations

- The map displays the Neighbourhood perimeters with color coding based on the Wellbeing score and markers for the bar types in the neighbourhoods.

- The lightest shaded neighbourhoods offer the safest communities with a large affluent population.

- The darkest (red) neighbourhoods offer the least in safety, population and affluence.

- Based on the map, there are some clear options on locations to open a new bar. They are:

    1. Lawrence Park and York Mills are of the lightest shaded neighbourhoods (in the Borough of East York) and there are no popular bars currently in that area.
       An entrepreneur willing to be the first kid in town, with an upscale bar, may do well there.

    2. The neighbourhoods of Dovercourt Village and Christie are also of the lightest shaded neighbourhoods.
       There are seedier type bars and upscale bars in the area so a casual bar or one with live music would do well there.

    3. The downtown neighbourhoods have a high population and affluence.
       Although there are many bars of many types, the Waterfront and Regent Park neighbourhoods do not have any popular bars. This would be a prime location for any type of bar.

Map of Toronto Neighbourhoods

- Color coded by Wellbeing and Bar Cluster Markers

Conclusion

- Toronto is a city with a booming economy and thriving neighbourhoods.

- Although there are many citizens that could be potential customer, there is already a lot of competition in the bar and entertainment industry.

- It is very prudent to analyze the neighbourhoods thoroughly for a location before making any investment in this industry.

- The notebook report generated for this problem was successful in performing the analysis required and identified high value neighbourhoods for bar investments.

- I highly recommend reviewing the details of this report before investing any capital into a bar in the Toronto area.