Cycling in Toronto
Business Location Assessment

Coursera - Applied Data Science Capstone Project

Where to open up shop?

Within the City of Toronto there is a strong cycling community. Whether using cycling as a means for transportation, recreation or exercise - there is a potential business opportunity to open a new Bike Shop providing services to the community.

However, what would the ideal location to open a new shop look like?

What information and tools are available to a someone looking to open up a shop utilize, and how would it help support their decision?
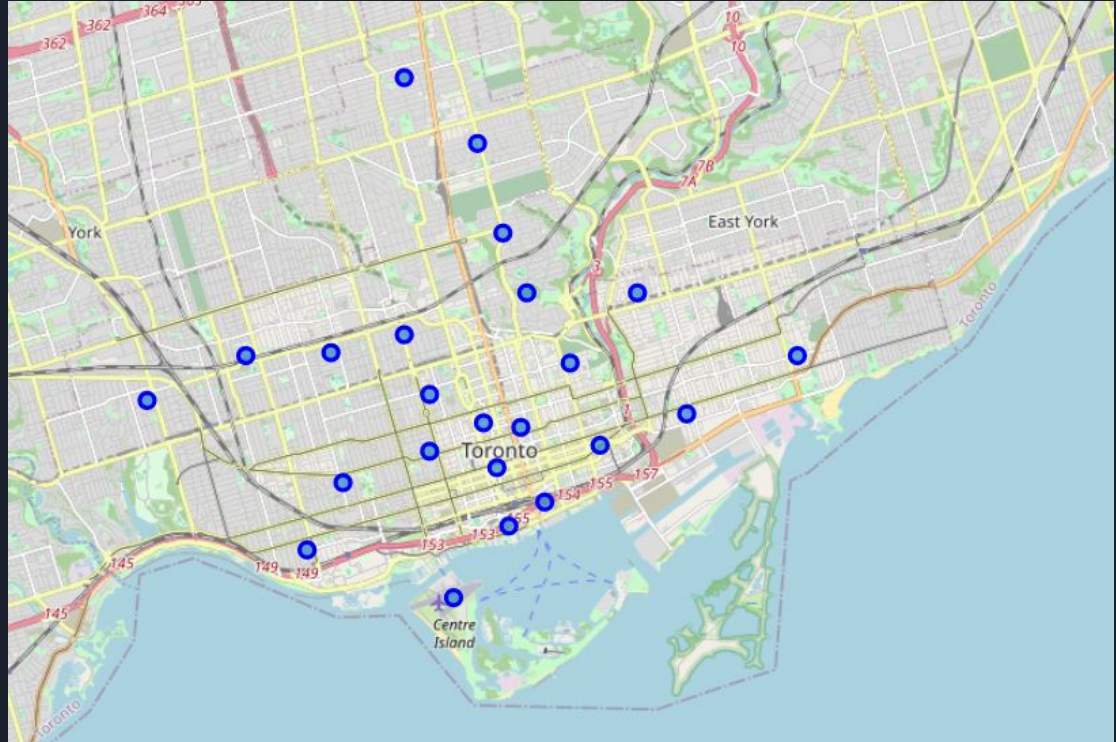
Factors and Considerations?

Let's find some data!

What are our Neighbourhoods?

Within the City of Toronto there are 22 boroughs that we'll focus on. These can be identified and sorted by their Forward Sortation Area values, a part of their postal codes.

On the right is a map showing where our focus neighbourhoods are.

How do we know there are cyclists?

POSTAL_CODE	Borough	Neighbourhood	Latitude	Longitude	BICYCLE_CAPACITY
M5A	Downtown Toronto	Regent Park, Harbourfront	43.654260	-79.360636	78
M5B	Downtown Toronto	Garden District, Ryerson	43.657162	-79.378937	48
M5E	Downtown Toronto	Berczy Park	43.644771	-79.373306	8
M5G	Downtown Toronto	Central Bay Street	43.657952	-79.387383	80
M6G	Downtown Toronto	Christie	43.669542	-79.422564	112
M5H	Downtown Toronto	Richmond, Adelaide, King	43.650571	-79.384568	144
M6H	West Toronto	Dufferin, Dovercourt Village	43.669005	-79.442259	80
M5J	Downtown Toronto	Harbourfront East, Union Station, Toronto Islands	43.640816	-79.381752	102
M6J	West Toronto	Little Portugal, Trinity	43.647927	-79.419750	93
M4K	East Toronto	The Danforth West, Riverdale	43.679557	-79.352188	32
M6K	West Toronto	Brockton, Parkdale Village, Exhibition Place	43.636847	-79.428191	16
M4L	East Toronto	India Bazaar, The Beaches West	43.668999	-79.315572	8
M4M	East Toronto	Studio District	43.659526	-79.340923	40
M6P	West Toronto	High Park, The Junction South	43.661608	-79.464763	42
M4R	Central Toronto	North Toronto West, Lawrence Park	43.715383	-79.405678	16
M5R	Central Toronto	The Annex, North Midtown, Yorkville	43.672710	-79.405678	16
M4S	Central Toronto	Davisville	43.704324	-79.388790	24
M5S	Downtown Toronto	University of Toronto, Harbord	43.662696	-79.400049	32
M4T	Central Toronto	Moore Park, Summerhill East	43.689574	-79.383160	32
M5T	Downtown Toronto	Kensington Market, Chinatown, Grange Park	43.653206	-79.400049	98
M5V	Downtown Toronto	CN Tower, King and Spadina, Railway Lands, Har...	43.628947	-79.394420	150
M4W	Downtown Toronto	Rosedale	43.679563	-79.377529	40
M4X	Downtown Toronto	St. James Town, Cabbagetown	43.667967	-79.367675	8

There are bike racks! The City of Toronto provides open data showing where there is bike infrastructure assets throughout the city and their capacity!

This helps provide some insight of the demand due to there being cyclists.

What's the market competition like?

Using FourSquare, we're able to pull venues which fall under the category of 'Bike Shops'.

The table on the right shows the number of venues operating within a specified radius of each neighbourhood!

Neighbourhood	Venue
Central Bay Street	2
Christie	1
Dufferin, Dovercourt Village	2
Harbourfront East, Union Station, Toronto Islands	1
High Park, The Junction South	3
India Bazaar, The Beaches West	1
Kensington Market, Chinatown, Grange Park	3
Little Portugal, Trinity	2
Studio District	2
The Annex, North Midtown, Yorkville	1
The Danforth West, Riverdale	1
University of Toronto, Harbord	3

FOURSQUARE

Putting it all together!

Putting it all together, there are two neighbourhoods with a large number of available bike parking which have no stores in nearby vicinity!

CN Tower or Richmond neighbourhoods look good!

Neighbourhood	Postal_Code	Borough	Latitude	Longitude	Bike_Rack_Capacity	Store_Count
Regent Park, Harbourfront	M5A	Downtown Toronto	43.654260	-79.360636	78	0.0
Garden District, Ryerson	M5B	Downtown Toronto	43.657162	-79.378937	48	0.0
Berczy Park	M5E	Downtown Toronto	43.644771	-79.373306	8	0.0
Central Bay Street	M5G	Downtown Toronto	43.657952	-79.387383	80	2.0
Christie	M6G	Downtown Toronto	43.669542	-79.422564	112	1.0
Richmond, Adelaide, King	M5H	Downtown Toronto	43.650571	-79.384568	144	0.0
Dufferin, Dovercourt Village	M6H	West Toronto	43.669005	-79.442259	80	2.0
Harbourfront East, Union Station, Toronto Islands	M5J	Downtown Toronto	43.640816	-79.381752	102	1.0
Little Portugal, Trinity	M6J	West Toronto	43.647927	-79.419750	93	2.0
The Danforth West, Riverdale	M4K	East Toronto	43.679557	-79.352188	32	1.0
Brockton, Parkdale Village, Exhibition Place	M6K	West Toronto	43.636847	-79.428191	16	0.0
India Bazaar, The Beaches West	M4L	East Toronto	43.668999	-79.315572	8	1.0
Studio District	M4M	East Toronto	43.659526	-79.340923	40	2.0
High Park, The Junction South	M6P	West Toronto	43.661608	-79.464763	42	3.0
North Toronto West, Lawrence Park	M4R	Central Toronto	43.715383	-79.405678	16	0.0
The Annex, North Midtown, Yorkville	M5R	Central Toronto	43.672710	-79.405678	16	1.0
Davisville	M4S	Central Toronto	43.704324	-79.388790	24	0.0
University of Toronto, Harbord	M5S	Downtown Toronto	43.662696	-79.400049	32	3.0
Moore Park, Summerhill East	M4T	Central Toronto	43.689574	-79.383160	32	0.0
Kensington Market, Chinatown, Grange Park	M5T	Downtown Toronto	43.653206	-79.400049	98	3.0
CN Tower, King and Spadina, Railway Lands, Har...	M5V	Downtown Toronto	43.628947	-79.394420	150	0.0
Rosedale	M4W	Downtown Toronto	43.679563	-79.377529	40	0.0
St. James Town, Cabbagetown	M4X	Downtown Toronto	43.667967	-79.367675	8	0.0

Pull the brakes, not so fast!

	Bike_Rack_Capacity	Store_Count
Cluster Labels		
0	166	4.0
1	678	10.0
2	112	0.0
3	343	8.0

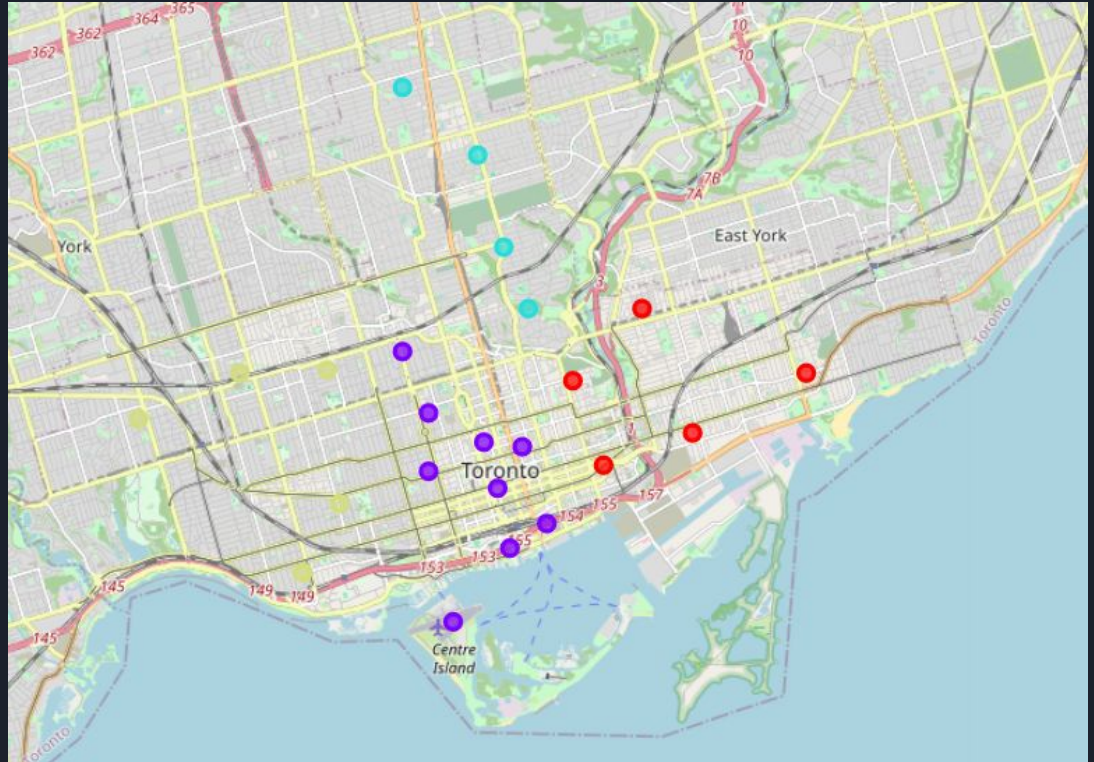Clustering nearby neighbourhoods gives us a bigger picture of the area!

Under this, would neighbourhoods clustered into the second group be better picks?

Cluster Labels	Neighbourhood	Postal_Code	Borough	Latitude	Longitude	Bike_Rack_Capacity	Store_Count
0	Regent Park, Harbourfront	M5A	Downtown Toronto	43.654260	-79.360636	78	0.0
1	Garden District, Ryerson	M5B	Downtown Toronto	43.657162	-79.378937	48	0.0
1	Berczy Park	M5E	Downtown Toronto	43.644771	-79.373306	8	0.0
1	Central Bay Street	M5G	Downtown Toronto	43.657952	-79.387383	80	2.0
3	Christie	M6G	Downtown Toronto	43.669542	-79.422564	112	1.0
1	Richmond, Adelaide, King	M5H	Downtown Toronto	43.650571	-79.384568	144	0.0
3	Dufferin, Dovercourt Village	M6H	West Toronto	43.669005	-79.442259	80	2.0
1	Harbourfront East, Union Station, Toronto Islands	M5J	Downtown Toronto	43.640816	-79.381752	102	1.0
3	Little Portugal, Trinity	M6J	West Toronto	43.647927	-79.419750	93	2.0
0	The Danforth West, Riverdale	M4K	East Toronto	43.679557	-79.352188	32	1.0
3	Brockton, Parkdale Village, Exhibition Place	M6K	West Toronto	43.636847	-79.428191	16	0.0
0	India Bazaar, The Beaches West	M4L	East Toronto	43.668999	-79.315572	8	1.0
0	Studio District	M4M	East Toronto	43.659526	-79.340923	40	2.0
3	High Park, The Junction South	M6P	West Toronto	43.661608	-79.464763	42	3.0
2	North Toronto West, Lawrence Park	M4R	Central Toronto	43.715383	-79.405678	16	0.0
1	The Annex, North Midtown, Yorkville	M5R	Central Toronto	43.672710	-79.405678	16	1.0
2	Davisville	M4S	Central Toronto	43.704324	-79.388790	24	0.0
1	University of Toronto, Harbord	M5S	Downtown Toronto	43.662696	-79.400049	32	3.0
2	Moore Park, Summerhill East	M4T	Central Toronto	43.689574	-79.383160	32	0.0
1	Kensington Market, Chinatown, Grange Park	M5T	Downtown Toronto	43.653206	-79.400049	98	3.0
1	CN Tower, King and Spadina, Railway Lands, Har...	M5V	Downtown Toronto	43.628947	-79.394420	150	0.0
2	Rosedale	M4W	Downtown Toronto	43.679563	-79.377529	40	0.0
0	St. James Town, Cabbagetown	M4X	Downtown Toronto	43.667967	-79.367675	8	0.0

Which neighbourhoods are in the 2nd cluster?

Cluster 2 Neighbourhoods are presented in cyan in the map to the right. All of those neighbourhoods have zero competing businesses in the nearby neighbourhoods. There's also a significant amount of bike rack capacity indicating commuter demand.

The Rosedale neighbourhood in this zone would have the highest capacity and maybe the ideal location

So...Open in Rosedale?

Maybe!   Based on the information used in this assessment, Rosedale appears to be a good candidate.   However, there are more factors that someone looking to open a business may want to investigate into.

This presentation demonstrates how to utilize some of the data available online to support critical business decisions. It demonstrates how to data from various sources can be merged into a single environment to help provide both visual and numerical supporting data. It also helps show, that a single approach may be misleading depending and multiple assessments and tools may need to be utilized to help broaden the review.

Hope this helps and ride on!