Finding business opportunity in Toronto neighborhoods.

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Introduction and Business Problem :

Which business will be recommended to do in the Toronto neighborhood,

Why it will profitable?

What is the target customer group?

Using data to solve problem.

Which data do you need to solve the problem?
We need data sets that contain the category of venues in Toronto as much as possible.

Where are the data sources?
· Postcode, neighborhood of each borough from Wikipedia to specified which neighborhood is in the Toronto Neighborhood.
· Foursquare API to get venues in each neighborhood.

Which format of data set we need?
-Rows of each neighborhood in Toronto and the columns of the Top 10 most common venues in each neighborhood(rows).
-Rows of each neighborhood in Toronto and the columns of frequent of each venue to use to train a model.

How data will use to solve the problem?
Once we know the cluster of other venues we will find inside of the data that why in that cluster has the most common venues.
when we know the reason we can use that reason to find out which business will be profitable.

	Neighborhood	Adult Boutique	Airport	Airport Food Court	Airport Gate	Airport Lounge	Airport Service	Airport Terminal	American Restaurant	Antique Shop	Aquarium	Art Gallery	Art Museum	Arts & Crafts Store	Asian Restaurant
0	Berczy Park	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0	0.0	0.0	0.017241	0.000000	0.0	0.0
1	Brockton, Parkdale Village, Exhibition Place	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.000000	0.0	0.0
2	CN Tower, King and Spadina, Railway Lands, Har...	0.0	0.055556	0.055556	0.055556	0.111111	0.166667	0.111111	0.0	0.0	0.0	0.000000	0.000000	0.0	0.0
3	Central Bay Street	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.015625	0.0	0.0
4	Christie	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.000000	0.0	0.0

Data Preparation

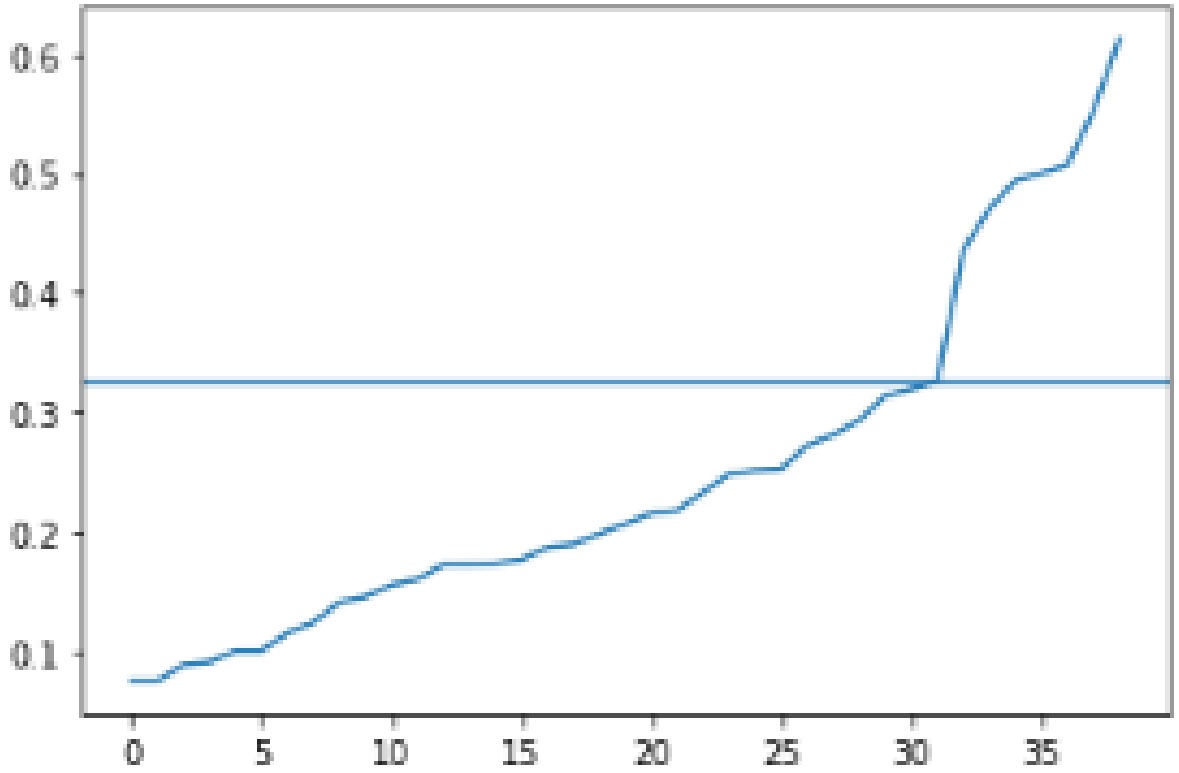
Scrape from Wikipedia , Fetch from FourSquare API ,Merge ,adjust data to this format.

Clustering

- Using DBSCAN to deal with outliers .

- Use epsilon = 0.35 (see more detail in report or jupyter notebook)

- Fit model



According to graph above we choose epsilon = 0.325

Cluster result .

From the DBSCAN we got only one cluster (31 components) and 8 outliers(ignored).

	Neighborhood	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	label
0	Berczy Park	Cocktail Bar	Coffee Shop	Bakery	Pharmacy	Beer Bar	Restaurant	Seafood Restaurant	Cheese Shop	Farmers Market	Pub	0
1	Brockton, Parkdale Village, Exhibition Place	Café	Breakfast Spot	Coffee Shop	Bakery	Italian Restaurant	Stadium	Furniture / Home Store	Nightclub	Office	Climbing Gym	0
2	CN Tower, King and Spadina, Railway Lands, Har...	Airport Service	Airport Lounge	Airport Terminal	Harbor / Marina	Airport	Rental Car Location	Coffee Shop	Sculpture Garden	Boat or Ferry	Bar	0
3	Central Bay Street	Coffee Shop	Italian Restaurant	Café	Sandwich Place	Burger Joint	Salad Place	Restaurant	Japanese Restaurant	Bubble Tea Shop	Comic Shop	0
4	Church and Wellesley	Coffee Shop	Japanese Restaurant	Sushi Restaurant	Restaurant	Gay Bar	Bubble Tea Shop	Fast Food Restaurant	Hotel	Mediterranean Restaurant	Men's Store	0
5	Commerce Court, Victoria Hotel	Coffee Shop	Restaurant	Café	Hotel	Gym	Seafood Restaurant	Deli / Bodega	Bakery	Japanese Restaurant	Italian Restaurant	0
6	Davisville	Pizza Place	Dessert Shop	Sandwich Place	Italian Restaurant	Café	Gym	Sushi Restaurant	Coffee Shop	Thai Restaurant	Pharmacy	0
7	Davisville North	Breakfast Spot	Playground	Convenience Store	Sandwich Place	Gym / Fitness Center	Gym	Food & Drink Shop	Hotel	Park	Department Store	0
8	Dufferin, Dovercourt Village	Bakery	Pharmacy	Brewery	Park	Bank	Music Venue	Supermarket	Café	Bar	Grocery Store	0
9	Enclave of M4L	Light Rail Station	Pizza Place	Auto Workshop	Skate Park	Burrito Place	Spa	Fast Food Restaurant	Farmers Market	Garden	Garden Center	0
10	Enclave of M5E	Coffee Shop	Seafood Restaurant	Italian Restaurant	Pub	Bakery	Café	Cocktail Bar	Restaurant	Japanese Restaurant	Park	0

Identify the cluster

The only one cluster that we got is neighborhood of food and beverage venues .

What information we get form data cluster?

There are a lot of food venues in the neighborhood which maybe there are a lot of people (or tourism) in the area.

The area crowded with food and beverage venues so it is the red ocean area for restaurant business

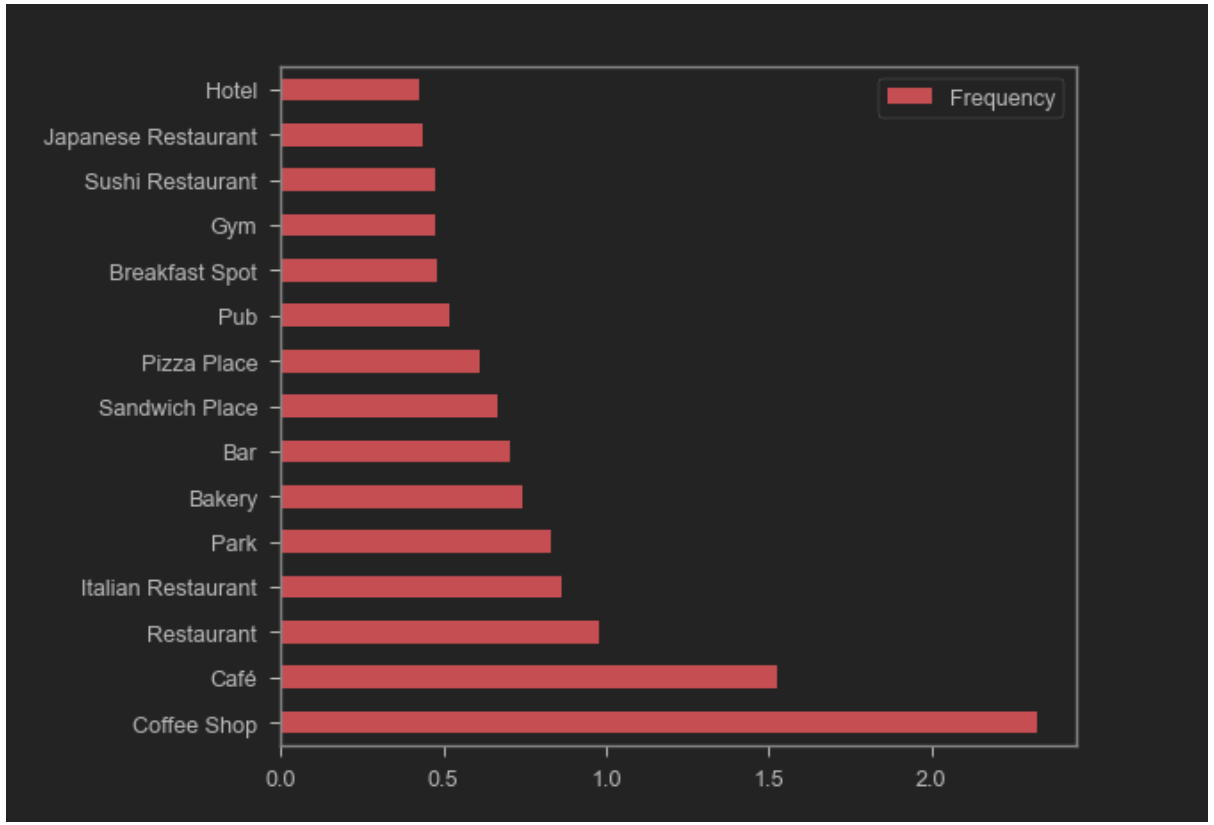
How we can take advantage from this information ?

THE ANSWER IS DOING BUSINESS TO BUSINESS (B2B) WHOLESALE SUCH AS INGREDIENT WHOLESALE.

BUT WHY ? THE REASON IS THE AREA IS CROWDED WITH BUSINESS WHICH MEAN IT IS THE RED OCEAN.

SO IT BETTER TO SELL SHOVES FOR MINERS THAN MINE WITH THE CROWD.

But which ingredient is suitable ?



The food in these venues have some ingredient in common which is **“Flour”**

because of there a lot of

bakery , pizza place, sandwich place and even coffee shop

(coffee shop need some bakery which mean

They our prospect’s customer)

Benefit of doing Flour wholesale business.

Repeatable profit because of food’s shelf - life.

Lot of demand so we don’t need depend to much in on either one category of venues.

This is prospect's neighborhood

0	Berczy Park
1	Brockton, Parkdale Village, Exhibition Place
2	CN Tower, King and Spadina, Railway Lands, Har...
3	Central Bay Street
4	Church and Wellesley
5	Commerce Court, Victoria Hotel
6	Davisville
7	Davisville North
8	Dufferin, Dovercourt Village
9	Enclave of M4L
10	Enclave of M5E
11	First Canadian Place, Underground city
12	Garden District, Ryerson
13	Harbourfront East, Union Station, Toronto Islands
14	High Park, The Junction South
15	India Bazaar, The Beaches West
16	Kensington Market, Chinatown, Grange Park
17	Little Portugal, Trinity
18	North Toronto West
19	Parkdale, Roncesvalles
20	Regent Park, Harbourfront
21	Richmond, Adelaide, King
22	Runnymede, Swansea
23	St. James Town
24	St. James Town, Cabbagetown
25	Studio District
26	Summerhill West, Rathnelly, South Hill, Forest...
27	The Annex, North Midtown, Yorkville
28	The Danforth West, Riverdale
29	Toronto Dominion Centre, Design Exchange
30	University of Toronto, Harbord

Conclusion and recommendation

According to data set we used , If you want to do business in Toronto

(in prospect list above) .

I recommend your business should be flour wholesale business which is can make repeatable profit and high demand .

but if you don’t want to do flour business , I still recommend you to do other ingredient wholesale or other B2B business

I don’t recommend you to do restaurant business in the area because it has been already red ocean right now.