

Capstone Project - The Battle of Neighborhoods

Introduction/Business Problem

A description of the problem and a discussion of the background.

For my final project in this IBM Data Science specialization, I want to explore more about Vietnamese restaurants in Toronto, Canada. As the most populous city in Canada, it is a world leader in business, finance and technology. Toronto is also the most multiculturally diverse city on the planet: over 140 languages are spoken. It's estimated that over half of Toronto's residents were born outside Canada. Toronto's motto is "Diversity Our Strength"; hence, Toronto provides wide range of cultures, languages, and especially food items. There are numerous restaurants in Toronto with many world cooking styles represented from China, Japan, India, etc, which reflects Toronto's cosmopolitan atmosphere. Since the city has over 240 distinct neighborhoods within its boundaries, I will list and visualize all major parts of Toronto that has great Vietnamese restaurants. This report will be a reference for any people want to enjoy Vietnamese cuisine regularly or people who looks for a neighborhood with good Vietnamese restaurants to live.

Data Description

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

For this project we need the following data :

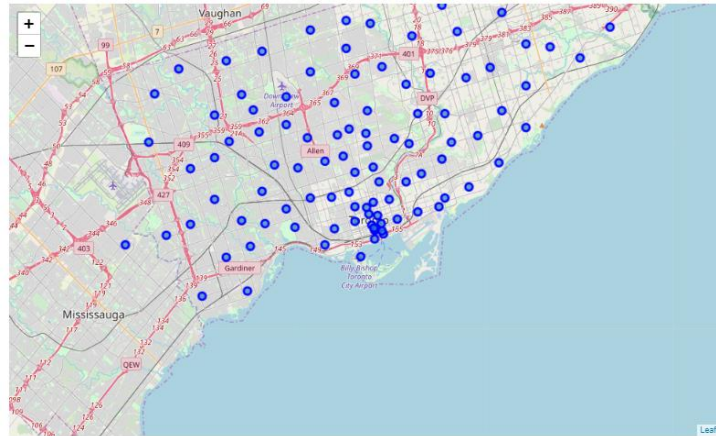
1. Toronto data that contains list Boroughs, Neighborhoods along with their latitude and longitude. https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M, Foursquare API
2. Vietnamese restaurants in Toronto. Foursquare API
3. GeoSpace data
4. City of Toronto Neighborhood Shapes for mapping : GeoJSON File

Data Methodology

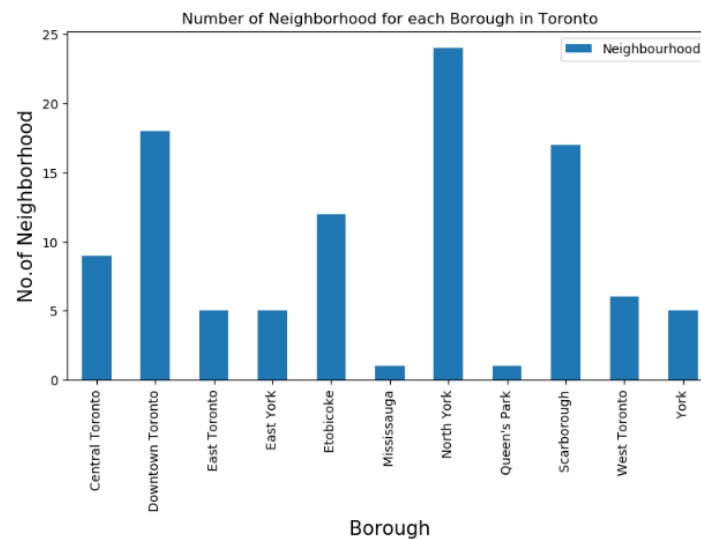
Collect the Toronto information about neighbourhood and boroughs. Using FourSquare API finds all venues for each neighborhood. Filter out all venues that are Vietnamese Restaurants. Find rating , tips and like count for each Vietnamese Restaurant using FourSquare API. With average rating for each neighbourhood, I will sort and visualize the ranking of neighborhoods.

Results

An overview map of Toronto neighbourhood



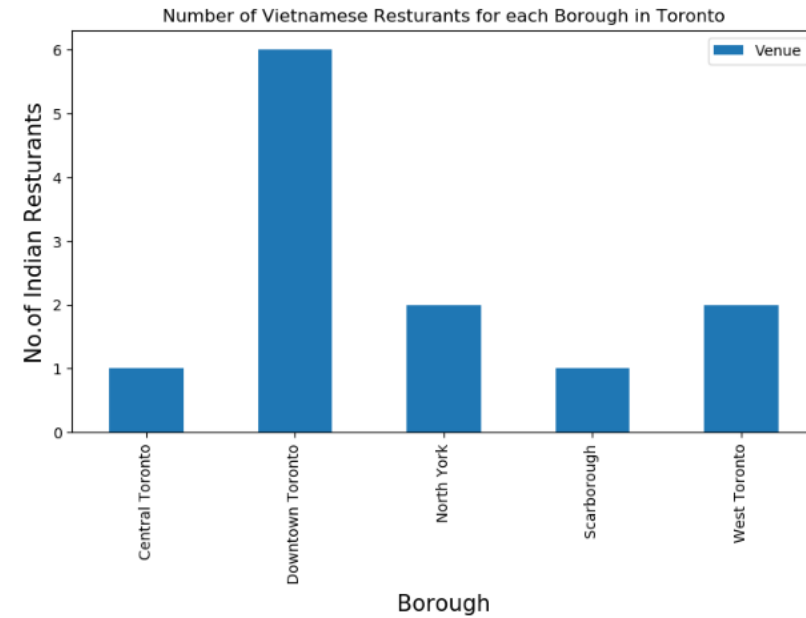
As can be seen from the chart, North York has highest number of neighbourhoods.



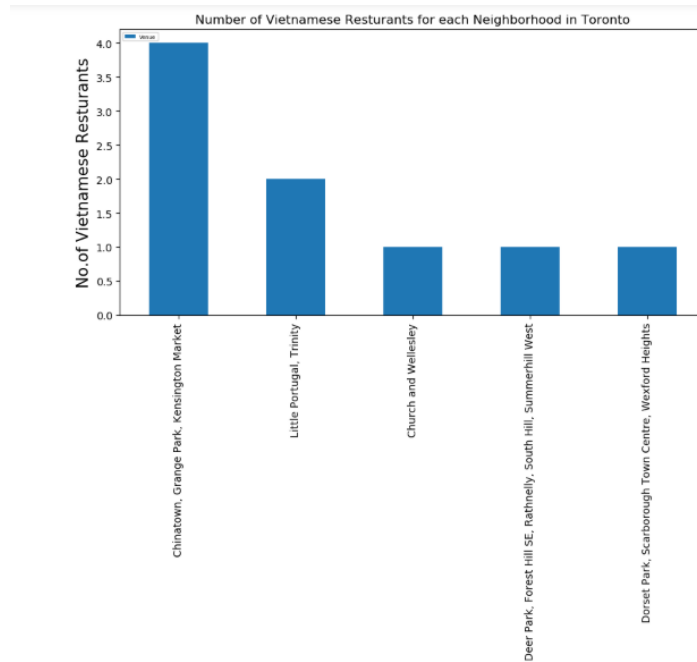
However, Toronto only has 12 Vietnamese restaurants. Most of them are served Pho, a famous traditional dish in Vietnam.

	Borough	Neighbourhood	ID	Name	Likes	Rating	Tips
0	Scarborough	Dorset Park, Scarborough Town Centre, Wexford...	4bc75a3c6501c9b630433e29	Pho Vietnam	23	6.5	20
1	North York	Willowdale South	4b4779f0f964a520543326e3	Pho 88 Vietnamese Cuisine	28	6.5	26
2	Central Toronto	Deer Park, Forest Hill SE, Rathnelly, South H...	4ae9c951f964a5206bb21e3	Sprout	3	5.8	7
3	Downtown Toronto	Church and Wellesley	4af36863f964a52053ed21e3	Ginger	55	8.0	32
4	Downtown Toronto	Ryerson, Garden District	4aea2b14f964a520ebb921e3	Fine Asian Bowl	27	7.0	21
5	Downtown Toronto	Chinatown, Grange Park, Kensington Market	4af45a8af964a52097f121e3	Banh Mi Nguyen Huong	43	8.6	24
6	Downtown Toronto	Chinatown, Grange Park, Kensington Market	58a7c100076be13f60d1df5	Saigon Lotus Restaurant	9	8.4	3
7	Downtown Toronto	Chinatown, Grange Park, Kensington Market	4ad4c06f964a52058f720e3	Pho Hung	157	7.7	77
8	Downtown Toronto	Chinatown, Grange Park, Kensington Market	4b61f9c1f964a520812e2ae3	Anh Dao	13	7.7	7
9	North York	Lawrence Heights, Lawrence Manor	4ccc5aeebe23a14370591ea8	Lac Vien Vietnamese Restaurant	28	7.8	11
10	West Toronto	Little Portugal, Trinity	4ae86cb3f964a5203eaf21e3	Pho Rua Vang (Golden Turtle)	130	8.6	79
11	West Toronto	Little Portugal, Trinity	4ad87544f964a520841121e3	Pho Tien Thanh	132	8.5	74

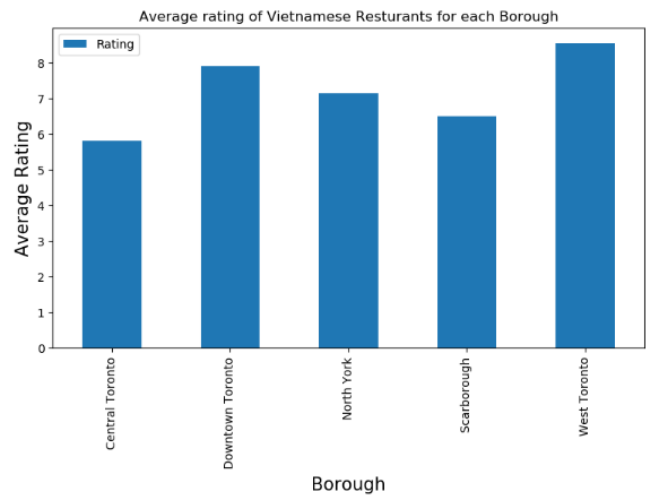
Downtown has the highest number of Vietnamese Restaurants with 6 restaurants.



Chinatown has the highest number of Vietnamese Restaurants with a total count of 4.



West Toronto has the highest average rating for Vietnamese Restaurants.



Few neighbourhoods in Toronto that have Vietnamese Restaurants.



Pho Hung in Downtown Toronto has the highest likes with the number of 157 likes.

	Borough	Neighbourhood	ID	Name	Likes	Rating	Tips
7	Downtown Toronto	Chinatown, Grange Park, Kensington Market	4ad4c060f964a52056f720e3	Pho Hung	157	7.7	77

There are 2 restaurants with highest rating of 8.6: Banh Mi Nguyen Huong and Pho Rua Vang

	Borough	Neighbourhood	ID	Name	Likes	Rating	Tips
5	Downtown Toronto	Chinatown, Grange Park, Kensington Market	4af45a8af964a52097f121e3	Banh Mi Nguyen Huong	43	8.6	24
10	West Toronto	Little Portugal, Trinity	4ae86cb3f964a5203eaf21e3	Pho Rua Vang (Golden Turtle)	130	8.6	79

Pho Rua Vang in West Toronto has the highest tips

	Borough	Neighbourhood	ID	Name	Likes	Rating	Tips
10	West Toronto	Little Portugal, Trinity	4ae86cb3f964a5203eaf21e3	Pho Rua Vang (Golden Turtle)	130	8.6	79

Discussion

There are only 12 Vietnamese restaurants in Toronto. This is a small number compared to large population of Toronto. Investors can look for investment opportunities when opening Vietnamese restaurants here.

Furthermore, most of those restaurants are served Pho, a traditional dish of Vietnam. Thus, investors can think of another famous dishes to invest.

Conclusion

- Only 12 Vietnamese Restaurants in Toronto
- Manhattan have potential Indian Restaurant Market/
- Downtown Toronto is the best place to stay if you prefer Vietnam Cuisine, since it has 6 Vietnamese restaurants (accounted 50% of the Vietnamese restaurants in Toronto).
- It is possible to open Vietnamese restaurants in other neighbourhood in this city where there aren't any Vietnamese restaurant here.

Limitations

- The ranking is purely on basis of rating of restaurants by FourSquare.
- The accuracy of data depends purely depends on the data provided by FourSquare.