Capstone Project – The Battle of Neighborhoods

BEST LOCATION TO OPEN AN JAPANESE RESTAURANT IN TORONTO CANADA

Introduction: Business Problem

- The aim of this project is to find a safe and secure location for opening of an Japanese restaurant in Toronto, Canada.

- The first task would be to choose the **safest area** by analyzing crime data. Second, shortlisting a neighborhood where Japanese restaurants are not amongst the most common venues, and yet as close to the city as possible.

- Also, our Japanese restaurant target customers will have a Average to above average median net household incomes.
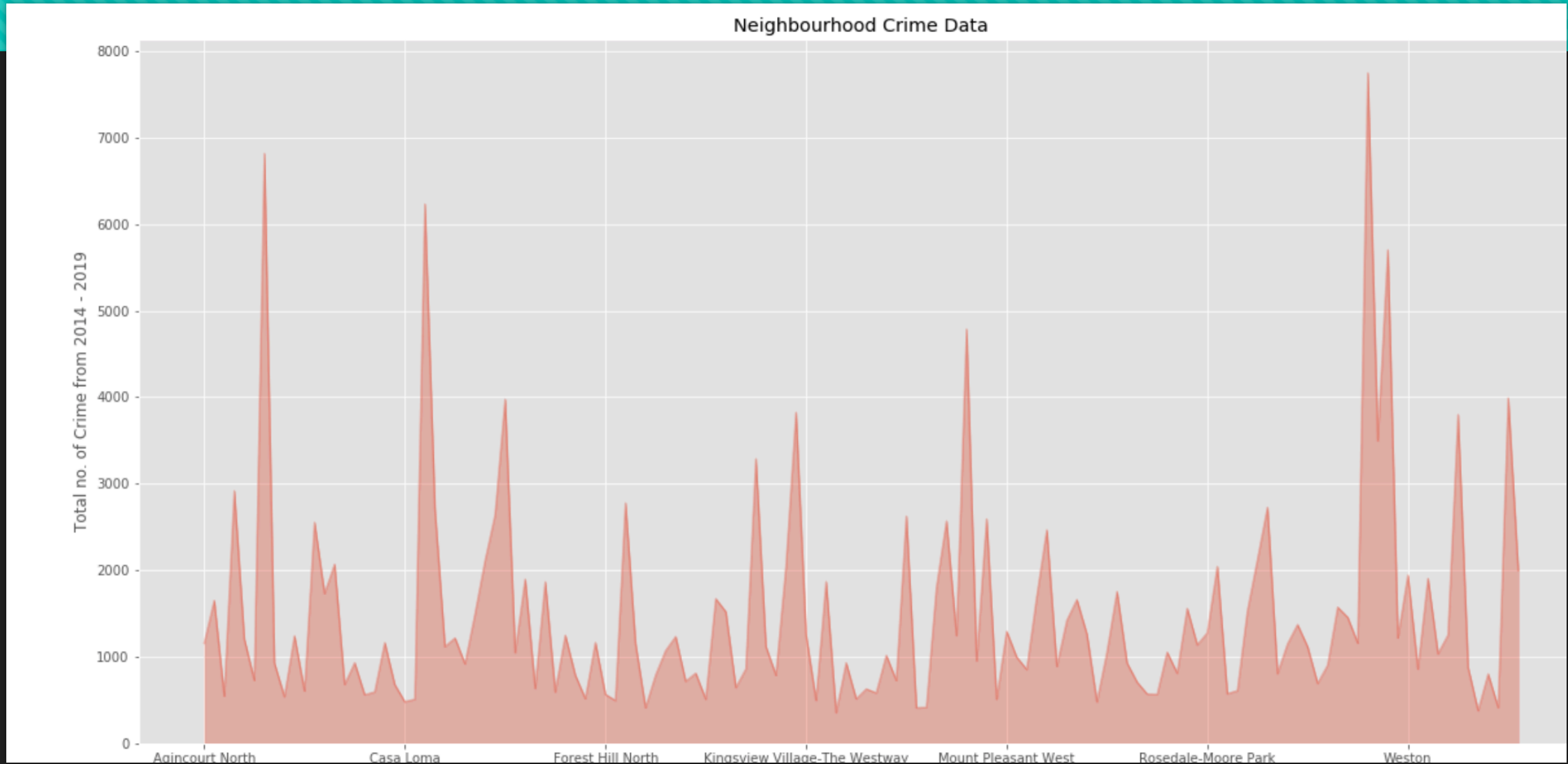
Data Needed & Methodology

○ Following data sources will be needed to extract/generate the required information:

  ○ 1. Toronto crime data from 2014 - 2019.
  https://www.kaggle.com/kapastor/toronto-police-data-crime-rates-by-neighbourhood

  ○ 2. City of Toronto Neighborhood Profiles for providing an overview of the neighborhoods in Toronto.
  https://www.toronto.ca/city-government/data-research-maps/neighbourhoods-communities/neighbourhood-profiles/

  ○ 3. City of Toronto Open Data Catalogue.
  https://open.toronto.ca/#8c732154-5012-9afe-d0cd-ba3ffc813d5a

  ○ 4. Foursquare API to collect information on other venues/competitors in the neighborhoods of Toronto.

  ○ We will extract all the needed data from the above url, and analyze them with the requirement listed in the introduction session.

Python Libraries

- Numpy
- Pandas
- Beautifulsoup4
- OpenCage Geocoder
- matplotlib

Toronto Crime Data 2014-2019

Neighbourhood Crime Data

Average after-tax income among all Toronto Household in 2015

[22]:

	_id	Category	Topic	Data Source	Characteristic	City of Toronto	Agincourt North	Agincourt South-Malvern West	Alderwood	Annex	...	Willowdale West	Willowridge-Martingrove-Richview
1029	1030	Income	Income of households in 2015	Census Profile 98-316-X2016001	Average after-tax income of households in 20...	81,495	427,037	278,390	168,602	792,507	...	272,986	412,302

1 rows × 146 columns

Safest Neighbourhood Ranked by Household Income

[24]:

	Neighbourhood	Income
9	Kingsway South	900624
8	Forest Hill South	784645
7	Casa Loma	545338
4	Yonge-St.Clair	541217
6	Old East York	257522
0	Lambton Baby Point	214945
5	Markland Wood	195412
3	Guildwood	177062
1	Woodbine-Lumsden	147462
2	Maple Leaf	144062

Try to explore the surrounded venue in our targeted neighbourhood

[36]:

	Neighborhood	American Restaurant	Bagel Shop	Bakery	Bank	Bar	Breakfast Spot	Burger Joint	Café	Cantonese Restaurant	...	Steakhouse	Supermarket
0	Casa Loma	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.045455	0.090909	0.000000	...	0.045455	0.000000
1	Forest Hill South	0.000000	0.000000	0.000000	0.250000	0.000000	0.000000	0.000000	0.000000	0.000000	...	0.000000	0.000000
2	Kingsway South	0.000000	0.000000	0.029412	0.058824	0.029412	0.058824	0.029412	0.029412	0.000000	...	0.000000	0.000000
3	Yonge-St.Clair	0.016667	0.033333	0.016667	0.033333	0.000000	0.016667	0.016667	0.066667	0.016667	...	0.000000	0.016667

4 rows × 59 columns

10 Most Common Venue

[38]:

	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
0	Casa Loma	Sandwich Place	Café	History Museum	Coffee Shop	Burger Joint	Museum	Middle Eastern Restaurant	Donut Shop	Pharmacy	Castle
1	Forest Hill South	Playground	Bank	Mediterranean Restaurant	Park	Yoga Studio	Indian Restaurant	History Museum	Historic Site	Gym	Grocery Store
2	Kingsway South	Coffee Shop	Breakfast Spot	Pub	Bank	Dessert Shop	Italian Restaurant	Sushi Restaurant	Gastropub	Mobile Phone Shop	French Restaurant
3	Yonge-St.Clair	Coffee Shop	Café	Italian Restaurant	Thai Restaurant	Grocery Store	Sushi Restaurant	Gym	Pub	Sandwich Place	Restaurant

Limitation

➤ Some limitation may affect the result of this study,

➤ The accuracy of data depends purely depends on the data provided by FourSquare.

➤ The household data and the crime data is not the most updated records.

Conclusion

- We can see that Kingsway South, Forest Hill South, Casa Loma, Yonge-St.Clair, are the top 4 highest income neighbourhoods among the safest neighbourhoods.

- The Forest Hill South & Casa Loma maybe are the better options for opening a Japanese Sushi Restaurant, given all the restriction filtering as listed in the beginning.

- Questions that can be asked using the above mentioned datasets,

  - What is best location in Toronto for Japanese Cuisine ?

  - Which areas have potential Japanese Restaurant Market (among the richest household in Toronto)