

The Battle of Neighborhoods

Choose a Greater Toronto Area neighborhood to start business under the coronavirus pandemic in year 2020

1. Introduction:

Greater Toronto Area



Greater Toronto Area (GTA) is the most populous area in Canada, it has a population of around 6.5 million that occupies more than 20% of Canada's total population. From economy aspect, GTA produces nearly 20% of the entire nation's GDP with \$323 billion. Due to its large population and developed economy activities, the Greater Toronto Area is one of the worthiest places to live and start business in North America.

However, in an ongoing pandemic of COVID-19, Greater Toronto Area is also the most severely affected areas. According to the CBC News, by 27 May 2020, Toronto and its neighborhoods account for 76% of all confirmed cases in Ontario.

For new immigrants and business owners, it is important for them to find a place in Canada where is not far away from the GTA and have less confirmed cases of coronavirus.

2. Data Selection:

In order to find out the city near GTA that has less confirmed cases, the csv file "Confirmed Positive Cases of COVID-19 in Ontario" is downloaded from the official website of the Ontario Government with url: <https://data.ontario.ca/dataset/f4112442-bdc8-45d2-be3c-12efae72fb27/resource/455fd63b-603d-4608-8216-7d8647f43350/download/conposcovidloc.csv>

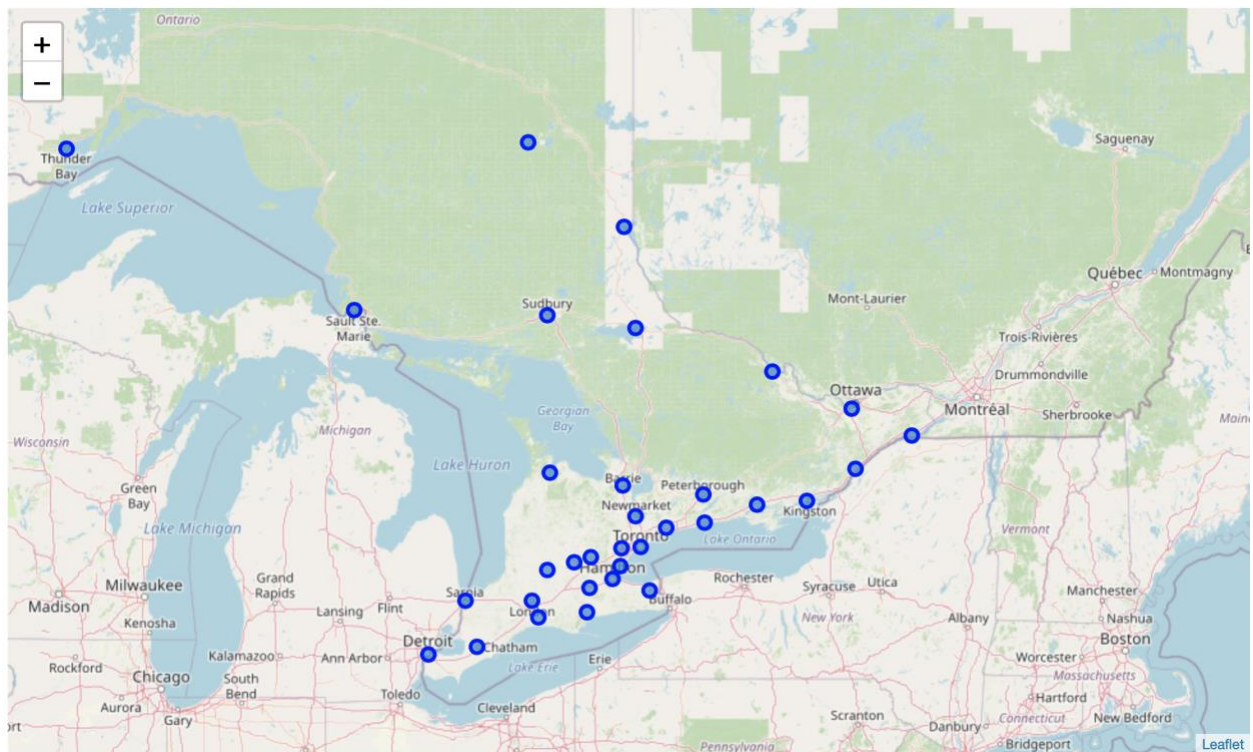
The dataset constitutes the following features: approximation of onset date, age group, patient gender, case acquisition information, patient outcome, reporting Public Health Unit (PHU), postal code, website, longitude, and latitude of PHU. It looks like:

Row_ID	Accurate_Episode_Date	Age_Group	Client_Gender	Case_AcquisitionInfo	Outcome1	Outbreak_Related	Reporting_PHU	Reporting_PHU_Address	Reporting_PHU_City	Reporting_PHU_Postal_Code	Reporting_PHU_Website	Reporting_PHU_Latitude	Reporting_PHU_Longitude
1	2020-04-29	50s	FEMALE	Neither	Resolved	Yes	Peel Public Health	7120 Hurontario Street	Mississauga	L5W 1N4	www.peelregion.ca/health/	43.647471	-79.708893
2	2020-05-09	20s	FEMALE	Information pending	Resolved	Yes	Peel Public Health	7120 Hurontario Street	Mississauga	L5W 1N4	www.peelregion.ca/health/	43.647471	-79.708893
3	2020-05-23	50s	MALE	Information pending	Not Resolved	Yes	York Region Public Health Services	17250 Yonge Street	Newmarket	L3Y 6Z1	www.york.ca/wps/portal/yorkhome/health/	44.048023	-79.480239
4	2020-05-17	30s	FEMALE	Contact of a confirmed case	Not Resolved	Yes	Renfrew County and District Health Unit	7 International Drive	Pembroke	K8A 6W5	www.rcdhu.com	45.799406	-77.118727
5	2020-05-17	30s	FEMALE	Contact of a confirmed case	Not Resolved	Yes	Toronto Public Health	277 Victoria Street, 5th Floor	Toronto	M5B 1W2	www.toronto.ca/community-people/health-wellnes...	43.656591	-79.379358

The following table shows top 10 cities in Ontario have the most confirmed coronavirus cases:

	Reporting_PHU_City	Number of Cases
0	Toronto	9555
1	Mississauga	4054
2	Newmarket	2285
3	Ottawa	1917
4	Whitby	1399
5	Waterloo	1050
6	Windsor	910
7	Hamilton	642
8	Thorold	630
9	Oakville	623

And the following map shows cities in Ontario that have confirmed coronavirus cases:



3. Interest:

After the ideal neighborhood(s) is found from the previous analysis, we are going to find the venues near that neighborhood and conduct the cluster analysis.

People who decide to start a business or begin a new life need to know which common venues and different business activities are around them.