

Open a Chinese Restaurant in Toronto

1. Introduction

Toronto is the capital city of the Canadian province of Ontario. With a recorded population of 2,731,571 in 2016, it is the most populous city in Canada and the fourth most populous city in North America. The city is the anchor of the Golden Horseshoe, an urban agglomeration of 9,245,438 people (as of 2016) surrounding the western end of Lake Ontario, while the Greater Toronto Area (GTA) proper had a 2016 population of 6,417,516. Toronto is an international center of business, finance, arts, and culture, and is recognized as one of the most multicultural and cosmopolitan cities in the world.

In 2016, Toronto's city proper had a population of 2,731,571; the urban area had a population of 5,429,524; the census metropolitan area had a population of 5,928,040; and the Greater Toronto Area metropolitan area had a population of 6,417,516. The city's foreign-born persons made up 47 per cent of the population, compared to 49.9 per cent in 2006. According to the United Nations Development Program, Toronto has the second-highest percentage of constant foreign-born population among world cities, after Miami, Florida. While Miami's foreign-born population has traditionally consisted primarily of Cubans and other Latin Americans, no single nationality or culture dominates Toronto's immigrant population, placing it among the most diverse cities in the world. In 2010, it was estimated over 100,000 immigrants arrive in the Greater Toronto Area each year.

1.1 Project Background

Toronto has a very strong restaurant industry. There are more than 8,100 restaurants, caterers, and bars and they generate \$5.8 billion in revenues, which represents 6.5% of all businesses in Toronto. Torontonians also love to dine out. They dine out at an average of 3.1 times per week putting the city in the same rank as Chicago (2.8), New York City (3.0), and Las Vegas (3.3). The large population of immigrants from all over the globe has also made Toronto one of the most multicultural cities in the world. According to the 2016 census, 51.5% of Toronto's population is composed of visible minorities, compared to 49.1% in 2011, and 13.6% in 1981. In 2016, the

most commonly reported ethnic origins of immigrants in Toronto overall were Chinese (332,830 or 12.5 percent).

1.2 Business Problem

With the information given in the project background, one promising business opportunity is to open a Chinese restaurant in Toronto. Thus, the aim of this report is to find ideal neighborhoods in Toronto to open a Chinese restaurant. There are many important factors when choosing a location to open a restaurant. This report has considered location, population, popularity of Chinese restaurant, income, proportion of Chinese, competitor, crime rate of each neighborhood.

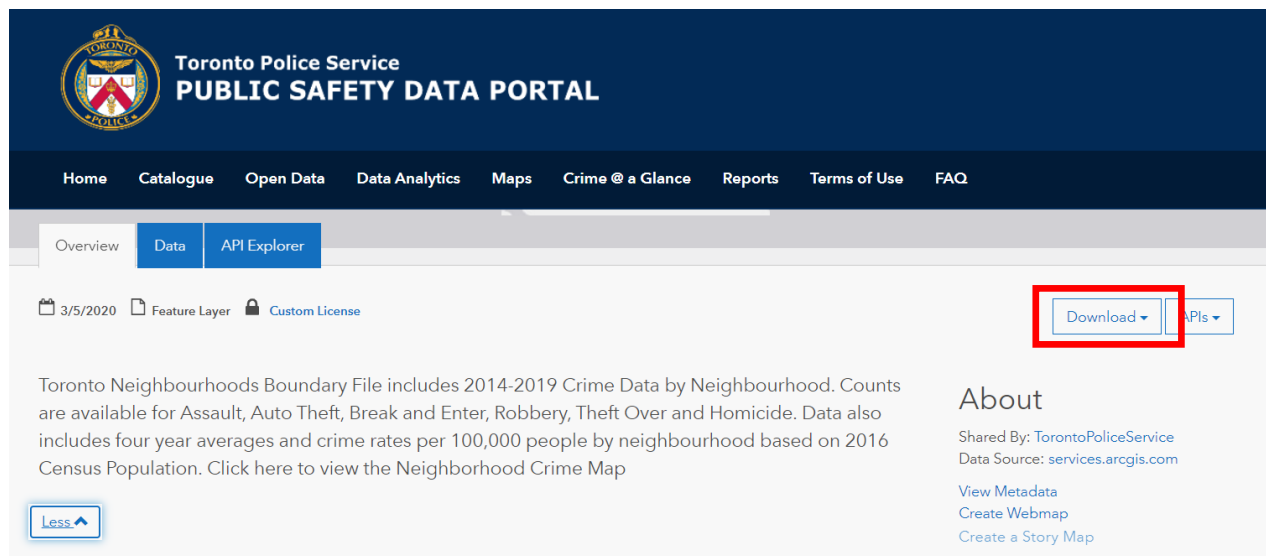
2. Data Sources

This report used five following data sets. The first two data sets are extremely large and cover almost all demographic information required for this report. The third data source provides information for nearby competitive restaurants. The fourth data set provides the coordinates of each neighborhood in Toronto. The fifth data set provides the neighborhood list of Toronto.

2.1 Neighborhood Crime Rate, Toronto Police Service

Toronto neighborhood crime rate data can be downloaded in Toronto police service website.

[Neighborhood Crime Rates \(Boundary File\) | Toronto Police Service Public Safety Data Portal](#)



2.2 2016 Neighborhood Profiles, Statistics Canada

Toronto 2016 Neighborhood Profiles data can be downloaded in CKAN Prod Toronto website.


[Neighborhood Profiles - Datasets - CKAN \(prod-toronto.ca\)](#)

Neighbourhood Profiles

Followers

0

Organisation



City of Toronto

There is no description for this organisation

Social

Twitter

Facebook

License

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Dataset Groups Activity Stream

Neighbourhood Profiles

The Census of Population is held across Canada every 5 years and collects data about age and sex, families and households, language, immigration and internal migration, ethnocultural diversity, Aboriginal peoples, housing, education, income, and labour. City of Toronto Neighbourhood Profiles use this Census data to provide a portrait of the demographic, social and economic characteristics of the people and households in each City of Toronto neighbourhood. The profiles present selected highlights from the data, but these accompanying data files provide the full data set assembled for each neighbourhood.

For more information, visit the [Neighbourhood Profiles webpage](#).

In these profiles, "neighbourhood" refers to the City of Toronto's 140 social planning neighbourhoods. These social planning neighbourhoods were developed by the City of Toronto to help government and community organizations with local planning by providing socio-economic data at a meaningful geographic area. The boundaries of these social planning neighbourhoods are consistent over time, allowing for comparison between Census years. Neighbourhood level data from a variety of other sources are also available through the City's Wellbeing Toronto mapping application and here on the Open Data portal.

Each data point in this file is presented for the City's 140 neighbourhoods, as well as for the City of Toronto as a whole. The data is sourced from a number of Census tables released by Statistics Canada. The general Census Profile is the main source table for this data, but other Census tables have also been used to provide additional information.

For definitions of terms and concepts referenced in this data set, users should consult the reference materials produced by Statistics Canada for the 2016 Census, available online at: <http://www12.statcan.gc.ca/census-recensement/2016/ref/index-eng.cfm>.

PLEASE NOTE: Statistics Canada does not release data at the level of Toronto's social planning neighbourhoods. Neighbourhood level data for 2016 are initially calculated by summing data for the Census Tracts which comprise each neighbourhood. Statistics Canada's random rounding reporting practices may have a compounded effect on the totals. These figures should be interpreted with caution where there are relatively few observations, such as for 5 year age groups by sex, or language groups with a small number of speakers. Certain values such as median values (and in some cases percentages and means) cannot yet be calculated at the neighbourhood level from available data. Where possible, these data will be updated when custom data at the neighbourhood level has been acquired from Statistics Canada.

Data and Resources

CSV

neighbourhood-profiles-2016-csv

Explore

2.3 Foursquare Developer API

I used Foursquare developer API to search nearby venues. Below is the document for Foursquare developer.

[Search for Venues | Places API Reference \(foursquare.com\)](#)

FOURSQUARE /developers

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Documentation Places API Reference

Search Documentation

Places API Reference

Venues

Search for Venues

Description

Request

Authentication

Parameters

Response Fields

Response

Get Venue Recommendations

Get Details of a Venue

Report Venue Selection

Get a Venue's Photos

Get a Venue's Tips

Venue Search

Description

Returns a list of venues near the current location, optionally matching a search term.

Note that most of the fields returned inside a venue can be optional. The user may create a venue that has no address, city, or state (the venue is created instead at the lat/long specified). Your client should handle these conditions safely. For more robust venue information (photos/tips/etc.), please see our [venue details](#) endpoint.

Request

```
GET https://api.foursquare.com/v2/venues/search
```


2.4 Geo-spatial coordinates of neighborhoods in Toronto

Geo-spatial coordinates of neighborhoods in Toronto can be downloaded in Mapping Glossary – City of Toronto website or Coursera Peer-graded Assignment: Segmenting and Clustering Neighborhoods in Toronto.

[Mapping Glossary – City of Toronto](#)

COVID-19

Toronto is subject to a province-wide Stay-at-Home order. Stay home except for essential reasons and get health updates and information about COVID-19 vaccines at toronto.ca/covid19.



Q

A+

A-

I want to...

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Community & People

Business & Economy

Explore & Enjoy

City Government

City of Toronto

City Government

Data, Research & Maps

Maps

Purchase Maps & Data

Mapping Glossary

Mapping Glossary

Share  Print 

Aerial Photograph

+

Basemap

+

Blueline

+

In This Section

Purchase Maps & Data

Orthoimagery Specifications


Mapping Glossary

Contact Information

2.5 Wikipedia-List of postal codes of Canada: M

Toronto neighborhood data can be crawled in Wikipedia-List of postal codes of Canada: M.

[List of postal codes of Canada: M - Wikipedia](#)



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Read

View source

View history

List of postal codes of Canada: M



From Wikipedia, the free encyclopedia

This is a list of [postal codes](#) in [Canada](#) where the first letter is M. Postal codes beginning with M are located within the city of [Toronto](#) in the province of [Ontario](#). Only the first three characters are listed, corresponding to the Forward Sortation Area.

[Canada Post](#) provides a free postal code look-up tool on its website,^[1] via its [applications](#) for such [smartphones](#) as the [iPhone](#) and [BlackBerry](#),^[2] and sells hard-copy directories and [CD-ROMs](#). Many vendors also sell validation tools, which allow customers to properly match addresses and postal codes. Hard-copy directories can also be consulted in all post offices, and some libraries.

Toronto - 103 FSAs

Note: There are no rural FSAs in Toronto, hence no postal codes should start with M0. However, the postal code M0R 8T0 is assigned to an [Amazon](#) warehouse in Mississauga, and the postal code M0R 2A2 is used for the Gateway postal facility in Mississauga, suggesting that Canada Post may have reserved the M0 FSA for high volume addresses.

M1A <i>Not assigned</i>	M2A <i>Not assigned</i>	M3A North York (Parkwoods)	M4A North York (Victoria Village)	M5A Downtown Toronto (Regent Park / Harbourfront)	M6A North York (Lawrence Manor / Lawrence Heights)	M7A Queen's Park (Ontario Provincial Government)	M8A <i>Not assigned</i>	M9A Etobicoke (Islington Avenue)
M1B Scarborough (Malvern / Rouge)	M2B <i>Not assigned</i>	M3B North York (Don Mills) North	M4B East York (Parkview Hill / Woodbine Gardens)	M5B Downtown Toronto (Garden District, Ryerson)	M6B North York (Glencairn)	M7B <i>Not assigned</i>	M8B <i>Not assigned</i>	M9B Etobicoke (West Deane Park / Princess Gardens / Martin Grove / Islington / Cloverdale)

3. Feature Engineering

3.1 Data Collection and Cleaning

Toronto neighborhood crime rate data, Toronto 2016 Neighborhood Profiles data and Geo-spatial coordinates of neighborhoods in Toronto are downloaded from csv files. Nearby venues data are acquired through Foursquare developer API and Toronto neighborhood data are crawled in Wikipedia-List of postal codes of Canada: M. All data mentioned above are well present in Python Pandas Data Frames.

1. Toronto 2016 Neighborhood Profiles contains massive amount of detailed information for each neighborhood in respect of population, families, language, labor, housing, income, ethnic origin, education, and mobility. However, this report only requires information in respect of population, income, ethnic, and ethnic origin. Thus, certain data are extracted by Python Pandas to pull out useful information.
2. Neighborhood Crime Rate data also contains massive amount of detailed information for each neighborhood. Similarly, only crime types that frequently happen in restaurants are considered. These crimes types are assault, auto theft, break and enter, robbery and theft over. These data are extracted and calculated by Python Pandas.
3. Foursquare API also return massive unique categories of nearby venues. However, not all these categories can be considered. As the objective is to open a Chinese restaurant, only categories related to Chinese restaurant and similar competitors are considered. Python Pandas are used to extract these certain data.

3.2 Feature Selection

In this report, below features are considered to decide where to open a restaurant in Toronto.

1. Population
2. Income
3. Crime rate
4. Proportion of Chinese Income
5. Competitor
6. Popularity of Chinese restaurant