

Best Neighbourhood to Open a Japanese Restaurant

1. Introduction – Background and Business Problem

My client would like to open a Japanese restaurant in a neighbourhood in North York, Toronto. North York, formerly a municipal city, amalgamated with Toronto in 1998 and became a borough of Toronto.¹ According to the 2016 census, North York had a population of 644,685 as of 2016.² North York consists of 32 neighbourhoods, which are provided in the following figure:³

<u>Banbury-Don Mills</u>	<u>Humber Summit</u>
<u>Bathurst Manor</u>	<u>Humbermede</u>
<u>Bedford Park-Nortown</u>	<u>Lansing-Westgate</u>
<u>Black Creek</u>	<u>Maple Leaf</u>
<u>Bayview Village</u>	<u>Newtonbrook East</u>
<u>Bayview Woods-Steeles</u>	<u>Newtonbrook West</u>
<u>Bridle Path-Sunnybrook-York Mills</u>	<u>Parkwoods-Donalda</u>
<u>Brookhaven-Amesbury</u>	<u>Pleasant View</u>
<u>Clanton Park</u>	<u>Rustic</u>
<u>Don Valley Village</u>	<u>St. Andrew-Windfields</u>
<u>Downsview-Roding-CFB</u>	<u>Victoria Village</u>
<u>Englemount-Lawrence</u>	<u>Westminster-Branson</u>
<u>Flemingdon Park</u>	<u>Willowdale East</u>
<u>Glenfield-Jane Heights</u>	<u>Willowdale West</u>
<u>Henry Farm</u>	<u>York University Heights</u>
<u>Hillcrest Village</u>	<u>Yorkdale-Glen Park</u>

Figure 1. Neighbourhoods in North York

My client, who is planning to open a Japanese restaurant in North York, has approached me for advice as to where he should establish his new restaurant. The client would like to pick a neighbourhood which has relatively fewer restaurants. The client believes that a neighbourhood with fewer restaurants would mean less competition for his new business and bring in more customers for his new establishment.

¹ <https://www.neighbourhoodguide.com/toronto/north-york/>

² https://www.toronto.ca/wp-content/uploads/2019/01/9710-City_Planning_2016_Census_Profile_2018_CCA_NorthYork.pdf

³ <https://www.toronto.com/community-static/4541015-neighbourhoods-north-york/>

Therefore, this report aims to answer the following question: Which neighbourhood in North York has the least number of restaurants/eateries as a common venue?

2. Data acquisition and cleaning

To answer the question, certain data needs to be obtained. First, we would need a list of neighbourhoods in North York and their relevant geographical information. Second, we would require data regarding characteristics of these neighbourhoods in North York.

Neighbourhoods in North York

The following URL provides a list of boroughs and neighbourhoods in Toronto:

https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

Through Python, the data in the Wikipedia page was scraped, wrangled, and cleaned. I also used the Geocoder Python package to obtain the latitudes and longitudes of each neighbourhood. The result was the following table, which contains all the neighbourhoods in North York, as well as their postal codes and coordinates:

Table 1: Neighbourhoods in North York and geographical information.

	Postal Code	Latitude	Longitude	Borough	Neighborhood
0	M2H	43.803762	-79.363452	North York	Hillcrest Village
1	M2J	43.778517	-79.346556	North York	Fairview, Henry Farm, Oriole
2	M2K	43.786947	-79.385975	North York	Bayview Village
3	M2L	43.757490	-79.374714	North York	York Mills, Silver Hills
4	M2M	43.789053	-79.408493	North York	Willowdale, Newtonbrook

Foursquare data

I then utilized location data on Foursquare to explore and cluster the neighbourhoods in North York. In particular, I was interested in the top 10 most common venues for each neighbourhood in North York. By applying relevant Python codes, I obtained the following table:

Table 2: Most common venues in each neighbourhood of North York.

	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	Bathurst Manor, Wilson Heights, Downsview North	Coffee Shop	Bank	Gas Station	Restaurant	Fried Chicken Joint	Frozen Yogurt Shop	Gift Shop	Diner	Grocery Store	Deli / Bodega
1	Bayview Village	Chinese Restaurant	Café	Bank	Japanese Restaurant	Women's Store	Discount Store	Construction & Landscaping	Convenience Store	Cosmetics Shop	Cupcake Shop
2	Bedford Park, Lawrence Manor East	Coffee Shop	Thai Restaurant	Italian Restaurant	Pizza Place	Sandwich Place	Butcher	Restaurant	Juice Bar	Café	Japanese Restaurant
3	Don Mills	Gym	Coffee Shop	Japanese Restaurant	Beer Store	Restaurant	Sandwich Place	Clothing Store	Chinese Restaurant	Caribbean Restaurant	Café
4	Downsview	Grocery Store	Park	Bank	Athletics & Sports	Liquor Store	Shopping Mall	Baseball Field	Discount Store	Food Truck	Airport

3. Data Analysis

After acquiring and cleaning the aforementioned data, I then examined the top 10 most common venues in each neighbourhood of North York. For example, among Don Mills' top 10 most common venues, there are "coffee shop", "Japanese restaurant", "restaurant", "sandwich place", "Chinese restaurant", "Caribbean restaurant", and "café", which gives Don Mills a count of seven different types of eateries among its top 10 most common venues. Among Bayview Village's top 10 most common venues, there are "Chinese restaurant", "café", "Japanese restaurant", and "cupcake shop", which gives Bayview Village a count of four.

By applying the same method of calculation to all the different neighbourhoods in North York, I determined the following count for various neighbourhoods:

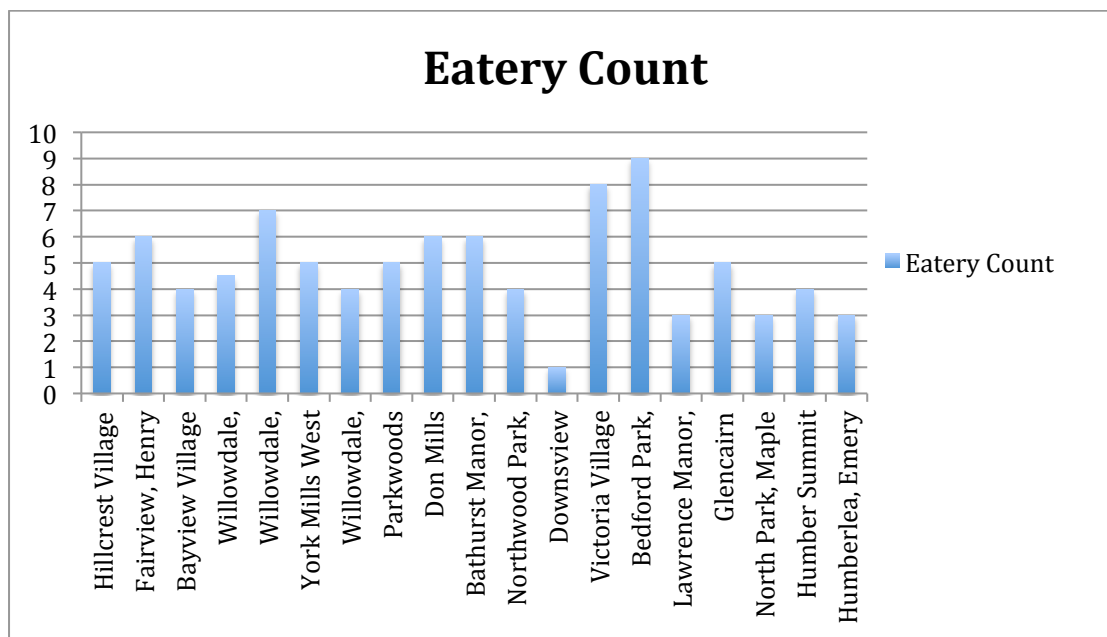


Figure 2. Count of eateries as top 10 most common venues in North York neighbourhoods.

4. Solution to the problem

As illustrated in Figure 2, Downsview has the least number of eatery among its top 10 most common venues. Therefore, the client should open his Japanese restaurant in Downsview.