

# Analyzing an optimal spot to open an Italian or Japanese restaurant in Toronto, ON, Canada

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## 1. INTRODUCTION

### 1.1 Background

Nowadays, foodservice Market is more competitive than it ever has been. There a lot of factors causing this. Increased competitions means that restaurants' owners have to study and analyze the best strategies to gain strength in the market. Specially when you are opening a new restaurant, many factors will influence in your result. Toronto is one of the biggest cities in Canada and it is the economic center of the country. This makes any market there even more competitive. Based on data, we could minimize mistakes and optimize profits. Strategies such as: constantly using social media as a marketing and advertising tool, special events, good dishes to attract clientes, and limited-time offers are not enough to guarantee success. For example, using data can generate competitive advantage for new investments in this market.

### 1.2 Problem

In this project we will show some points that will help to find an optimal location for a new restaurant. The questions that we are looking for answers are: **Should we open an Japanese restaurant or an Italian restaurant?** **Where should we open it?**

Since there are lots of restaurants in Toronto, we detected locations that are common avenues or streets that the people go to eat. We will show which type of restaurant is better to open and where is the best sector to open it in Toronto. In addition to offering quality service, a restaurant must have a good location, where it can attract attention and despite the market being competitive, avoid places with a high concentration of offer.

We would also prefer locations **as close to city center as possible** or **the locations where there is a large flow of people**. We will try to show which type of restaurant is better to open and where is the best place to open it.

### 1.3 Interest

This report will be targeted to stakeholders interested in opening an **Italian restaurant** or an **Japanese restaurant**, in **Toronto**, Canada.

## 2. DATA ACQUISITION AND CLEANING

### 2.1 Data Sources

Centers of candidate areas will be generated algorithmically and approximate addresses of centers of those areas will be obtained using **Foursquare API**. Based on our business problem, factors that will influence on our decision are:

- number of existing restaurants;
- number of and distance to Italian/Japanese restaurants in the neighborhood, if any;
- distance of the restaurant from city center or an location where is a large flow of people.

### 2.2 Data Cleaning

First of all, we plotted a map of Toronto with all neighborhoods, streets and avenues. We used a radius of 1500. We also used some libraries to get the geographical coordinate of Toronto City. This way it would be easier to create the maps we need for the analysis. After that we had to put our credentials from Foursquare to be able to get the coordinates of the restaurants we were supposed to analyze.

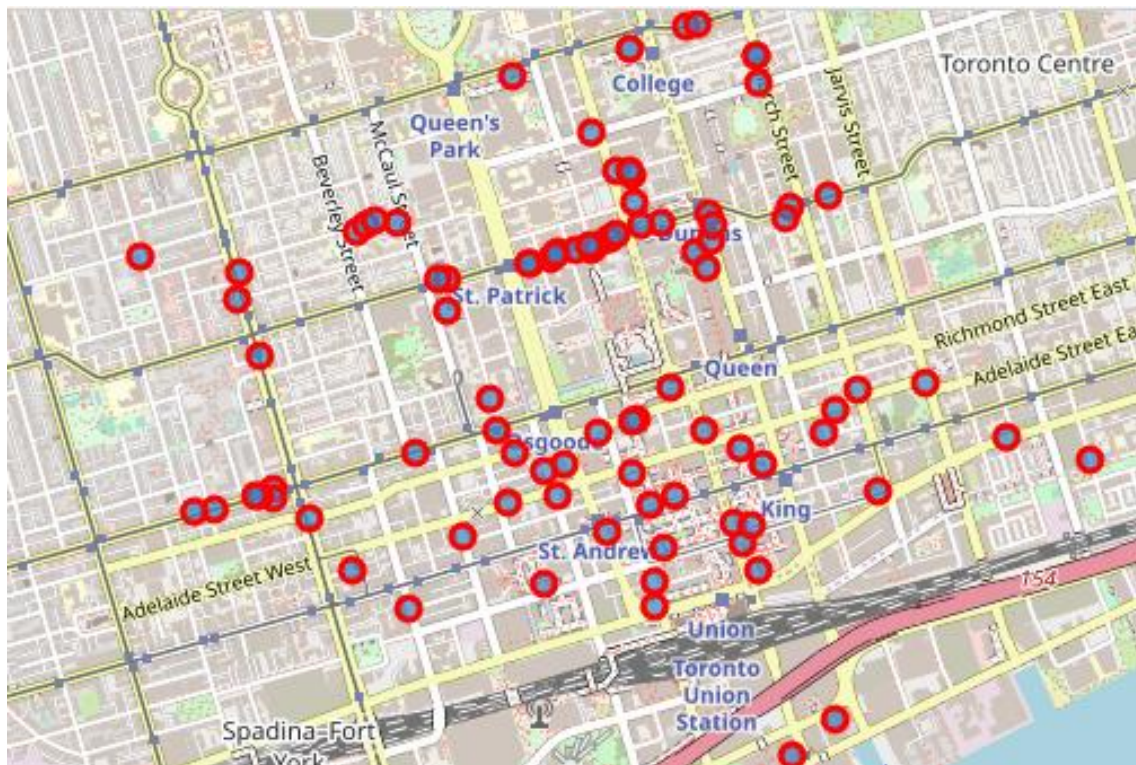
Starting with Japanese restaurants, we created the URL of Foursquare to get the coordinates of all the restaurants that are within the radius that we determined. We use the explore function to obtain the necessary information. We created a query to filter only Japanese places. After taking the necessary data from the Foursquare database, we needed to transform JSON into a Pandas data frame format. For that, we determined a function to get the category of the restaurants and we used some codes to be able to deserialize JSON and get the data we needed, which are: restaurant name, category, latitude and longitude. We repeat this same process to get data from Italian restaurants and also from all other restaurants.

### 3. EXPLORATORY DATA ANALYSIS

After cleaning the data we created 3 maps to see how distributed were the restaurants and to get some insights.

#### 3.1 Japanese Restaurants

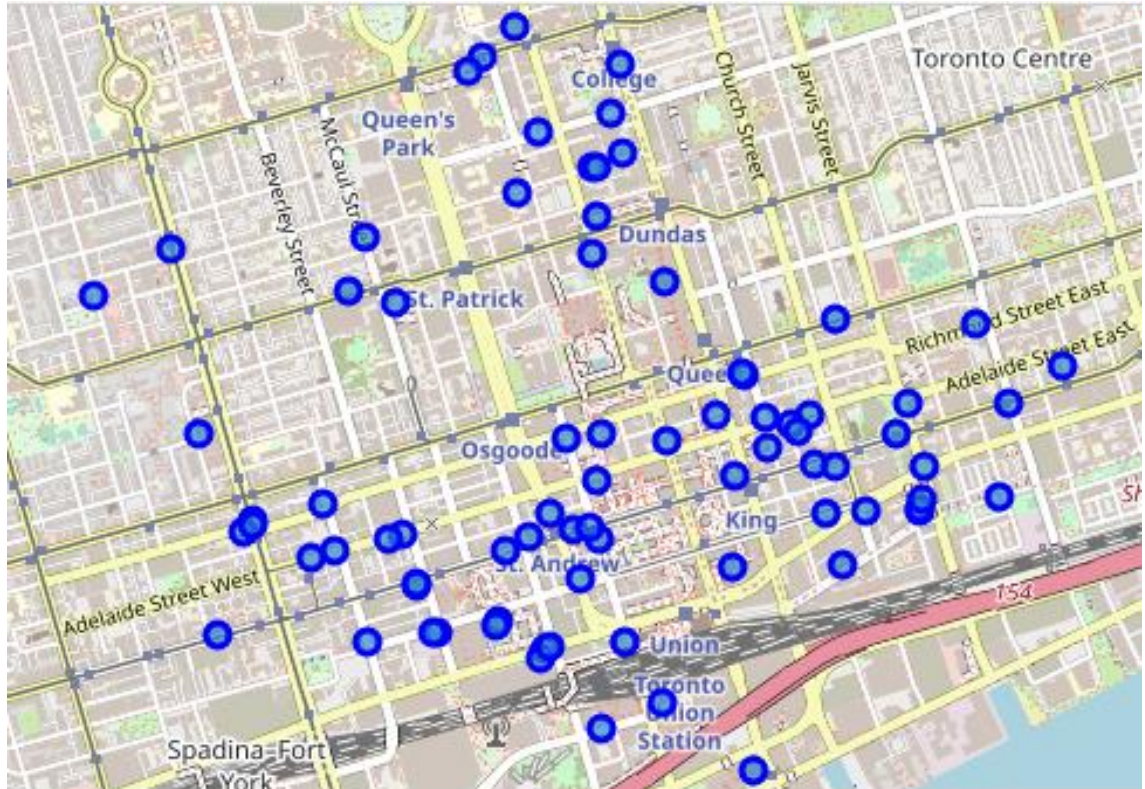
Below we will see, the distribution of Japanese restaurants.



Here we can see that we have a big concentration of Japanese restaurants in Downtown and most of them are located on the same street, which is Dundas Street. Also, near to the financial district we have the 2nd most common neighborhood of restaurants. Basically, we have many options of restaurants in the city. Usually, no matter where, they are always very close. The competition between Japanese restaurants is very large, as they have many options and are located very close.

### 3.2 Italian restaurants

Below we will see, the distribution of Italian restaurants.

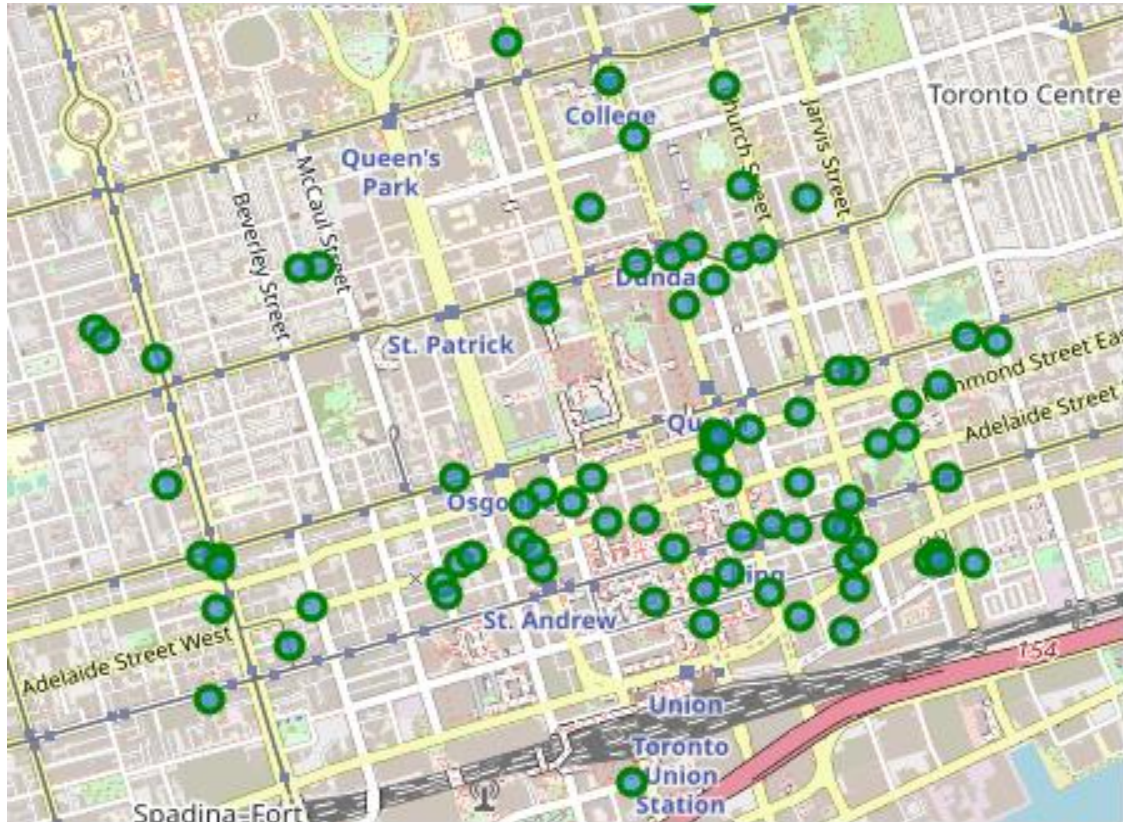


For the Italian restaurants, we can see that they are not equally distributed. We have some options Downtown Toronto, but most of them are in the south, in the sector where is the financial district. We could say that these 2 areas are the most common places where the restaurants are. For sure, these are the areas where there is a large flow of people. The distance between Italian restaurants is greater than the distance between Japanese restaurants, what is good. Another point in favor of Italian restaurants is that there are fewer options, so the competition tends to be less.



### 3.3 All restaurants, excluding Japaneses and Italians

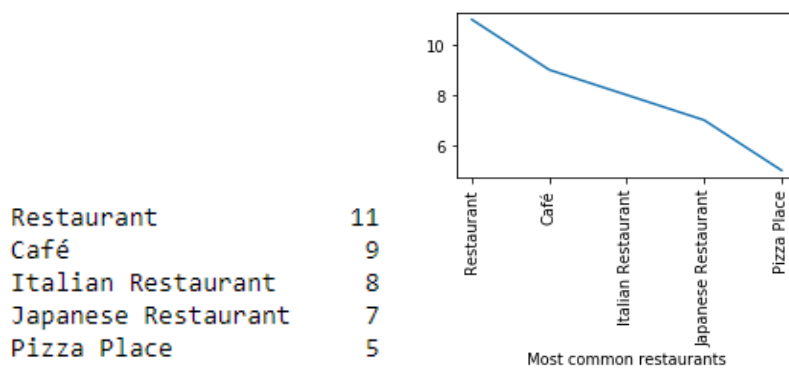
Below we will see, the distribution of the rest of the restaurants.



For the rest kinds of restaurant, we can state that the sector near to the financial district have a very high concentration of restaurants. . So, considering all restaurants, the competition there will be greater than the competition Downtown.

### 3.4 Most common restaurants in Toronto

We also created a new data frame using only 100 spots with the categories of restaurants to see the ones that are the most common in Toronto. After this, we plotted a graph to show it.



- Top 1, restaurant, represents places where they offer several kinds of food;
- Italian restaurants represents 8% of the market followed by Japanese restaurants with 7%.

#### 4. CONCLUSIONS AND FUTURE DIRECTIONS

After plotting the three maps, first one only for Japanese Restaurants, second one for Italian Restaurants and the last one for the rest kinds of restaurants, we got some insights that could help the stakeholders to take the decision. The questions for our problem are: **Should we open an Japanese restaurant or an Italian restaurant? Where should we open it?**

For the first question, considering the data we had, the maps, the foodservice competition and the type of food the city consumes, we choose to open an Italian restaurant. Firstly, the competition between this kind of restaurant is less and the distance between them is greater. The concentration is not as great as that of a Japanese restaurant. Secondly, Italian food is among the 5 most consumed in the city.

For the second question, considering the two sectors, financial district and downtown, we can state some interesting points. If we are looking for a place to open a new restaurant, we have to consider the flow of people including residents and non-residents. There are a lot of companies located in the financial sector. During the week, monday to friday, the restaurants could sell more than the restaurants located Downtown. But considering the constancy of consumption, downtown would be the best option. First of all, there are few Italian restaurant options downtown and the distance between them is relatively large. Also, the financial district has a large volume of people during the week and on working days, but if we take into account the holidays, and weekends, the volume of people and consumption there falls a lot. Another point is that, in addition to the normal flow of people downtown, tourists increase this even more. Few tourists visit the financial district.

Based on this report the final decision would be to open an Italian restaurant downtown Toronto.

