

# Capstone Project

Rating Impact on Food Restaurants

Ibrahim albatly

# Introduction/Business Problem

- This study is to analyze the impact of multiple independent variables on rating a restaurant, and what are the influential degree of each variable, this is to help businesses to focus on certain features before opening a restaurant to achieve a targeted/future rating in FOURSQUARE.
- Furthermore, I wanted to show the different consumer preferences on multinational restaurants (Italian, Asian, Japan, etc ) in New York and Toronto.

# Data Elements

- From FOURSQUARE I pulled the following data features of all venues in New York(Manhattan) and Toronto on 500 m radios from center, and I added it to the neighborhoods locations on each city:
  - Neighborhood Name
  - Neighborhood Latitude, and Longitude
  - Venue ID, Name, and Category
  - Venue Latitude, ,and Longitude
  - Price (Cheap, Moderate, Expensive, Very Expensive)
  - Rating (from 1 to 10)
  - Rating Counts
  - Open Days, Open Hours
  - Venue Features (Parking, Wi-Fi, Reservation, Outdoor-Seating)

## Data Set Size

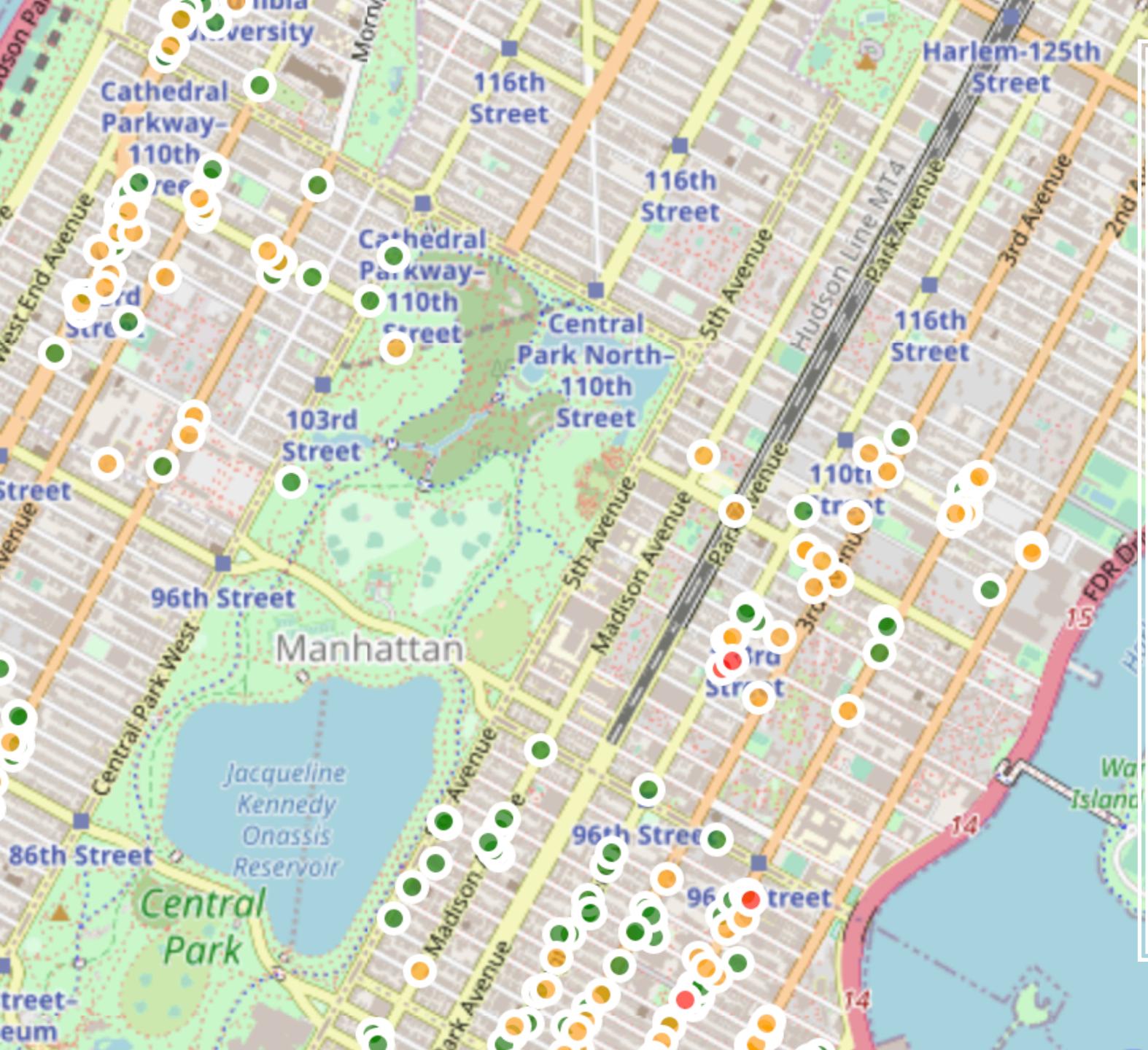
- 3,017 Manhatten
- 1,841 Toronto

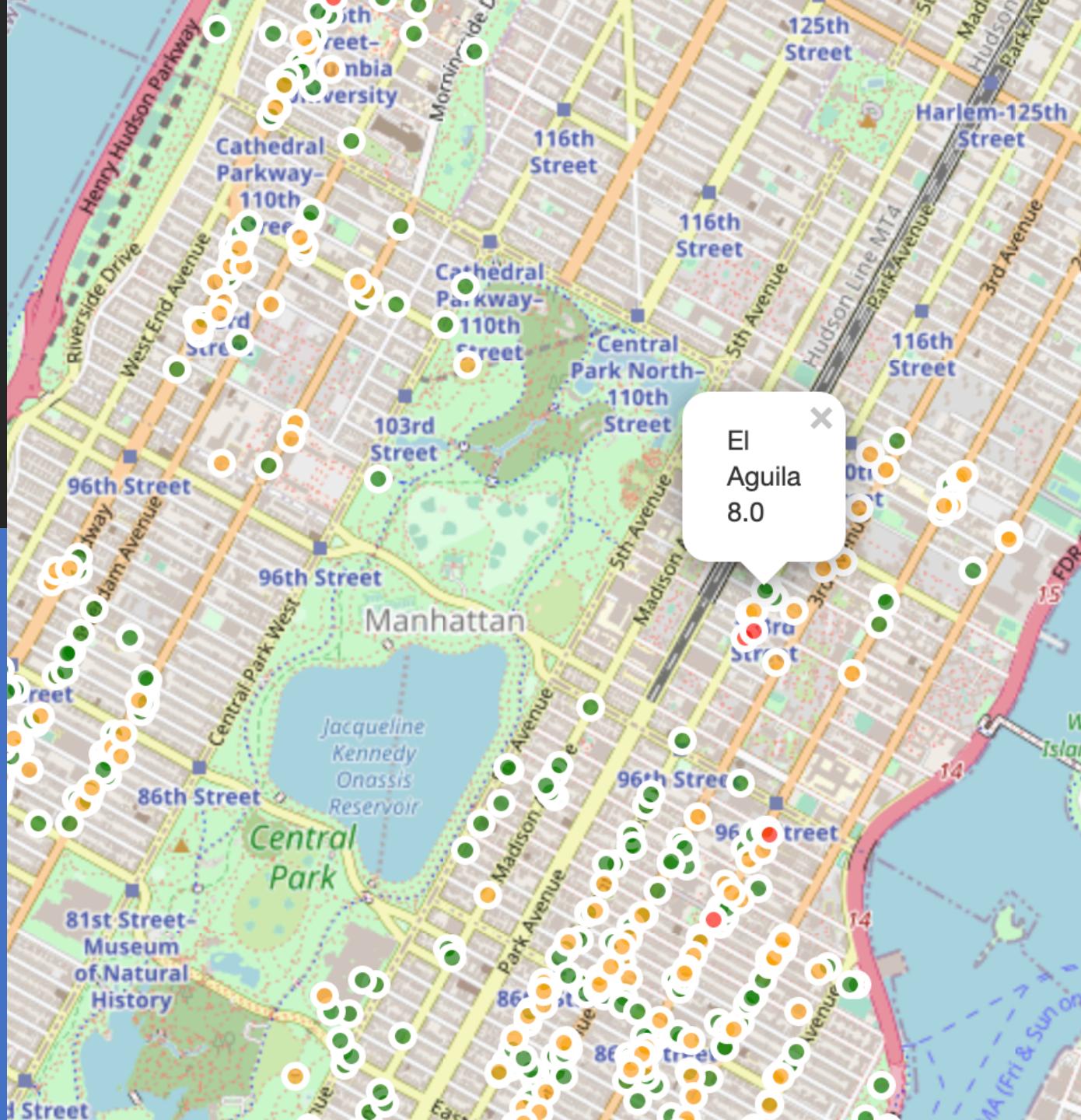
# Methodology

- The objective is to find the degrss of influence of the following features on a consumer rating(FourSquare Rating):
  - Availability of parking
  - Availability of outdoor seating
  - Availability of Wi-Fi on a venue
  - Acceptance or not of a reservation
  - Price
- This is to use multiple linera regression method, to build a model to predict the rating of a venue based on the above features

# Data Exploratory (Manhateen)

- 3,017 Venues
- Color Rating
  - Green is more than 8
  - Orange is between than 6 to 7
  - Red is below 6
- Price
  - Cheap 22%
  - Moderate 67%
  - Expensive 9%
  - Very Expensive 2%
- Price
  - 10.8 % venues accept reservation
  - 13.35 % venues has Wi-Fi
  - 11.89% venues has outdoor seating

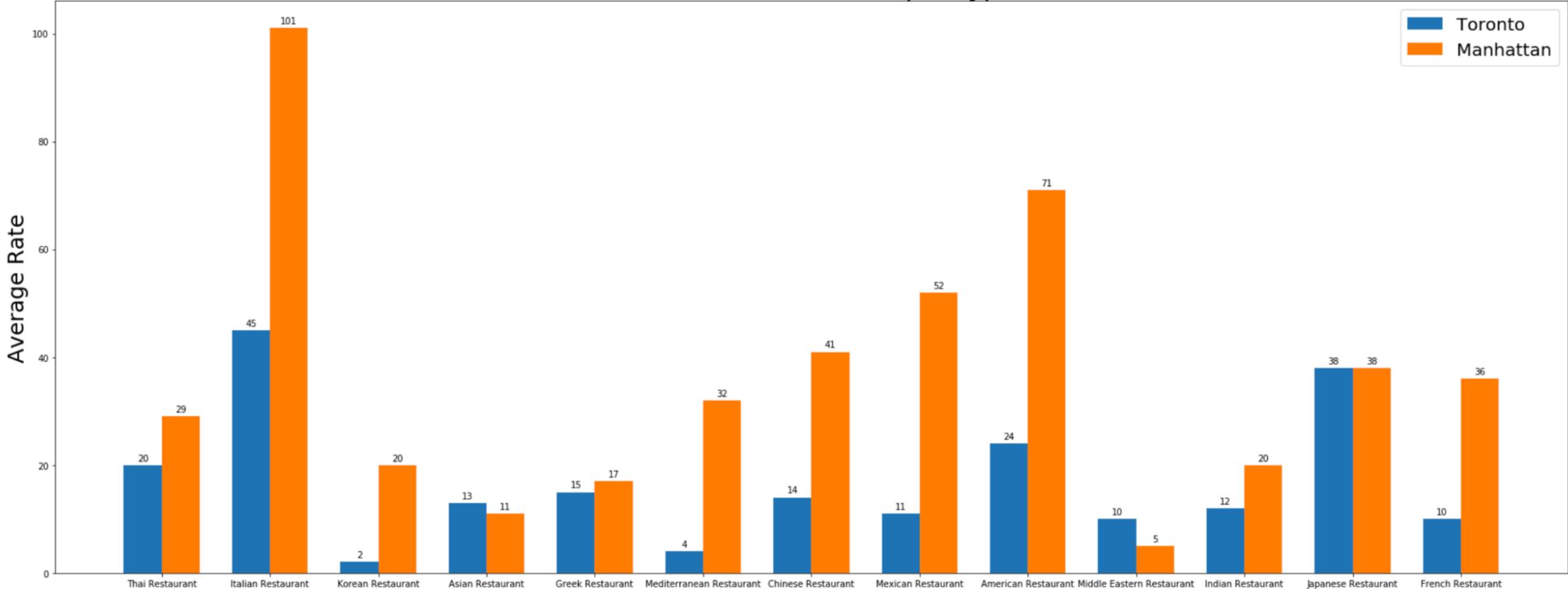




# Data Exploratory (Toronto)

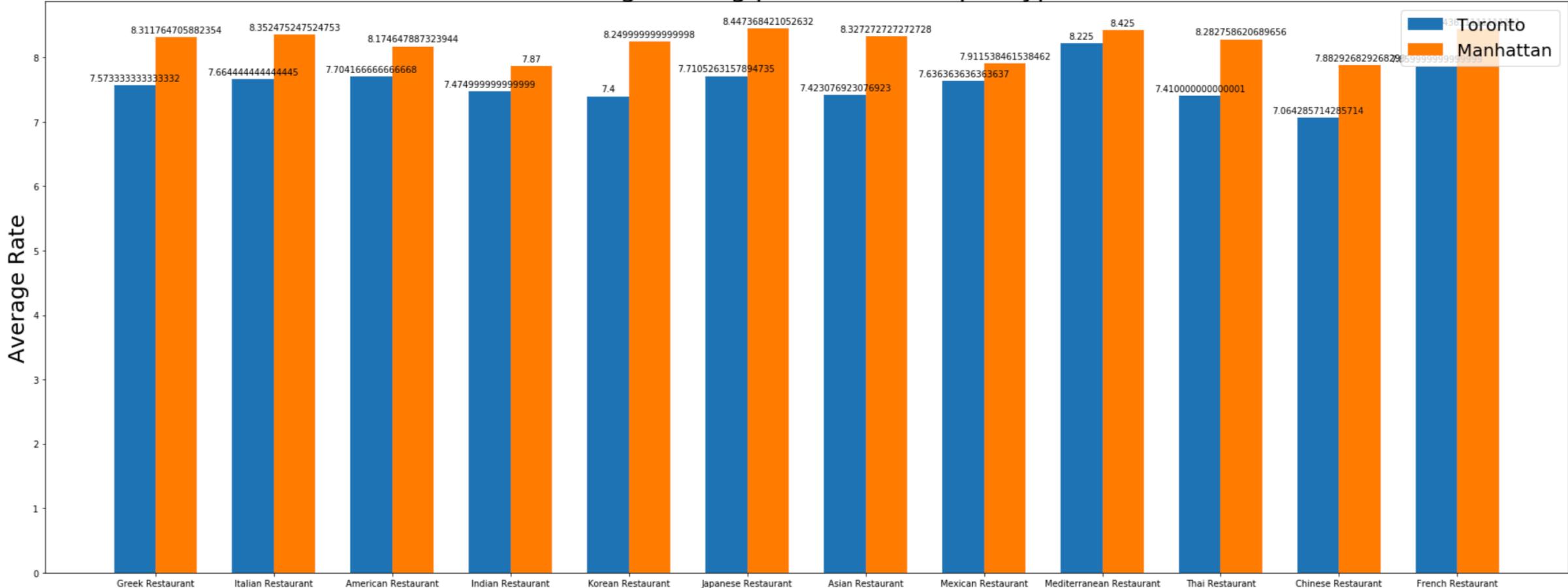
- 1,841 Venues
- Color Rating
  - Green is more than 8
  - Orange is between than 6 to 7
  - Red is below 6
- Price
  - Cheap 30%
  - Moderate 62%
  - Expensive 6%
  - Very Expensive 2%
- Price
  - 13 % venues accept reservation
  - 16.3% venues has Wi-Fi
  - 19.6% venues has outdoor seating

Number of Restaurants per type



Landscape of Multinational Restaurants in  
Toronto and Manhattan

AVERAGE RATING PER RESTAURANTS PER TYPE



# Rating Difference between Different Restaurant Type in Toronto and Manhattan

# Results

- Manhattan has a larger number of venues comparing to Toronto
- Rating is higher in Manhattan comparing to Toronto
- Multiple Linear Regression Model :

**Rating(Y) = 8.12269879 + 1.02price + 6.9parking + 1.3Wi-Fi +  
5.6reservation + 6.4outdoor seating**

**R^2 = 72%**

# Discussion

- Parking and outdoor seating is very important factor on the venue rating
- Price is important but come on the second.
- Wi-Fi and reservation is less important.

# Conclusion

- More data features will be needed to reach more insights, but not available on FOURSQUARE
- Facilities is very important to get better rating
- Price is a subjective measurement, because the difference of menu items, selections, and consumer preferences