

**Capstone Project – Final Report**

**<Market Research for Restaurant  
in New York City>**

Nayeong Lee

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# **I. Introduction**

## **I.1. Background**

The project has New York City as a target. New York City is the largest and planned city in the United States in the southern part of New York. It is the busiest and most famous city in the world and is known as the capital of the world as a center of politics, economy, culture, fashion, etc. Also, it is one of the most famous urban tourist destinations in the United States and is loved by many tourists.

## **I.2. Problem and Interest**

If someone wants to run a restaurant in New York City, how should he plan his management? Which of New York City's residents or tourists has the better proportion of potential restaurant customers? Anyone who wants to start a new restaurant business in New York may be interested in this project.

I made my virtual client for this project. My client recently moved to New York City after getting married. He wants to run a new restaurant in the city to maintain his livelihood. He has just moved to the city and has spent most of his life in the eastern part of the United States, so he knows little about the tastes of people in the region.

He wants to find out the 'type' of restaurant that people there prefer and their taste buds. Especially, he wants to avoid being a same kind of restaurant with the other competing restaurants that are overwhelmingly well-received. He gave me his home address and asked me to do market research within a 3 km radius.

## **II. Data acquisition and cleaning**

### **II.1. Data sources**

I only used Foursquare location data for my project. I can get information about what kind of spots is around a specific location, as well as distance, category, address, ratings and reviews of each spot.

I have set up my client's residence as an apartment in downtown New York City. I collected location information for all spots within a radius of 3 km around the location. I set the maximum number of rows of search results to 300, but I got only 100 results, perhaps because I was using a free account.

I obtained data on 100 locations within a radius of 3 km based on the client's location. It was arranged in ascending order of a distance from the location.

### **II.2. Data cleaning**

Scraped data included a variety of spots, including parks, bars, gyms, and merchandise stores as well as restaurants. I've only picked out restaurants from these places.

There were a total of 66 categories of 100 places. I found out on the list that the names of all restaurants either contain the word 'Restaurant' or the name of the food. I created a new dataframe called `rts_df` by extracting only rows containing certain words from raw dataframe.

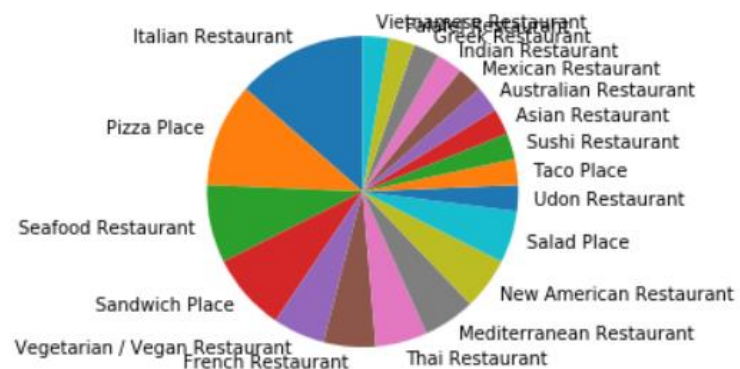
After data cleaning, there was a list of 36 restaurants left in the data.

### III. Methodology

#### III.1. Distribution of the categories

I sorted out the categories of each restaurant to see which kind of restaurants are the most distributed. Although sales at each restaurant are unknown, but I can give my client information about which foods are common and which are rare. Based on the information, he will be able to determine what kind of food he will sell.

categories	count
Italian Restaurant	5
Pizza Place	4
Seafood Restaurant	3
Sandwich Place	3
Vegetarian / Vegan Restaurant	2
French Restaurant	2
Thai Restaurant	2
Mediterranean Restaurant	2
New American Restaurant	2
Salad Place	2
Udon Restaurant	1
Taco Place	1
Sushi Restaurant	1
Asian Restaurant	1
Australian Restaurant	1
Mexican Restaurant	1
Indian Restaurant	1
Greek Restaurant	1
Falafel Restaurant	1
Vietnamese Restaurant	1



### III.2. Restaurants with good ratings

I selected only restaurants with a rating of 9/10 or higher and make a list. The list includes the categories of each restaurant. I can give this information to client to avoid competition with overwhelmingly well-rated restaurants.

	categories	rating
Ramen Ishida	Asian Restaurant	9.1
Ruby's Café	Australian Restaurant	9.1
Taim Falafel and Smoothie Bar	Falafel Restaurant	9.1
Le Coucou	French Restaurant	9.3
Buvette	French Restaurant	9.3
Kiki's	Greek Restaurant	9.3
Tamarind TriBeCa	Indian Restaurant	9.1
Dante NYC	Italian Restaurant	9.2
Carbone	Italian Restaurant	9.2
Via Carota	Italian Restaurant	9.3
San Carlo Osteria Piemonte	Italian Restaurant	9.1
Rubirosa Ristorante	Italian Restaurant	9.3
19 Cleveland	Mediterranean Restaurant	9.1
CAVA	Mediterranean Restaurant	9.2
La Contenta	Mexican Restaurant	9.1
Hudson Clearwater	New American Restaurant	9.2
Momofuku Ko	New American Restaurant	9.1
Emily West Village	Pizza Place	9.1
Emmy Squared	Pizza Place	9.1
Scarr's Pizza	Pizza Place	9.1
Prince Street Pizza	Pizza Place	9.2
sweetgreen	Salad Place	9.2
Faicco's Italian Specialties	Sandwich Place	9.3
Court Street Grocers	Sandwich Place	9.3
Cheeky Sandwiches	Sandwich Place	9.1
Upstate Craft Beer and Oyster Bar	Seafood Restaurant	9.3
Mermaid Oyster Bar	Seafood Restaurant	9.1
Grand Banks	Seafood Restaurant	9.1
SUGARFISH by sushi nozawa	Sushi Restaurant	9.2
Los Tacos No. 1	Taco Place	9.2
Fish Cheeks	Thai Restaurant	9.3
Wayla	Thai Restaurant	9.4
Raku	Udon Restaurant	9.2

### III.3. Customer review analysis

I have set this section as a plan for my project, but since my account is free, there is a limit to the number of times I can inquire users' reviews. I wanted to pick out the 10 restaurants with the most customer reviews and make a list of only the reviews that include the 'taste', but it was impossible with my account.

So, I only loaded the number of reviews of users in this code. This will allow my client to know which restaurants are popular and popular.

	categories	tips
Rubirosa Ristorante	Italian Restaurant	826
Buvette	French Restaurant	522
Prince Street Pizza	Pizza Place	365
Ruby's Café	Australian Restaurant	365
Mermaid Oyster Bar	Seafood Restaurant	265
Taim Falafel and Smoothie Bar	Falafel Restaurant	243
Carbone	Italian Restaurant	233
Upstate Craft Beer and Oyster Bar	Seafood Restaurant	228
Cheeky Sandwiches	Sandwich Place	217
Kiki's	Greek Restaurant	204
Hudson Clearwater	New American Restaurant	192
Via Carota	Italian Restaurant	155
Tamarind TriBeCa	Indian Restaurant	148
Grand Banks	Seafood Restaurant	141
Dante NYC	Italian Restaurant	134
Emily West Village	Pizza Place	126
Faicco's Italian Specialties	Sandwich Place	121
Fish Cheeks	Thai Restaurant	111
Le Coucou	French Restaurant	90
Court Street Grocers	Sandwich Place	83
La Contenta	Mexican Restaurant	81
Scarr's Pizza	Pizza Place	59
Momofuku Ko	New American Restaurant	49
San Carlo Osteria Piemonte	Italian Restaurant	41
sweetgreen	Salad Place	39
Ginger & Lemongrass	Vietnamese Restaurant	29
Emmy Squared	Pizza Place	27
Wayla	Thai Restaurant	26
Raku	Udon Restaurant	24
19 Cleveland	Mediterranean Restaurant	23
Los Tacos No. 1	Taco Place	22
Ramen Ishida	Asian Restaurant	21
CAVA	Mediterranean Restaurant	12
Juice Press	Vegetarian / Vegan Restaurant	12
SUGARFISH by sushi nozawa	Sushi Restaurant	8
Jajaja Plantas Mexicana	Vegetarian / Vegan Restaurant	6

## **IV. Results**

Foursquare location data were collected within a radius of 3km around the customer's location. As a result, I got information about a total of 36 restaurants.

The restaurants had a total of 20 categories. The category that corresponds to the largest number of restaurants is 'Italian restaurant', with a total of five locations located. Next were four 'pizza places,' three 'sea restaurants' and three 'sandwich places.' In other categories, only one or two restaurants existed.

I looked up the ratings of the restaurants, and they all scored over 9.0. I could see that every restaurant around had a good rating. The criteria and data that I originally designated do not correspond with each other. However, if you change the criteria to 9.5 and interpret the data, the results will change. All of their ratings had values between 9.1 and 9.4. An overwhelmingly high rating of 9.5 or higher did not present. This could be good news for my client.

## **V. Discussion**

There are five Italian restaurants around my client, accounting for the largest number of categories. Also, Italian restaurants are the places where the most post-visit reviews exist. My client said he wanted to avoid competition with the most popular restaurants, so he had better not plan an Italian restaurant.

My client wants to know the taste of his local people. This may be inferred into the categories of restaurants with many post-visit reviews. The five restaurants with the highest number of reviews were Italian, French, pizza, Australian and seafood restaurants. Therefore, other Western foods are more popular in his region than American food.

## **VI. Conclusion**

My project was conducted to conduct a survey of the restaurant market in a New York City area. The limitation of my Foursquare account allowed me to get only information about 36 restaurants, but I seem to have obtained meaningful results through data analysis. I'd like to give a management recommendation based on my results to someone who wants to run a restaurant in New York like my hypothetical client.