Capstone Project – Launching Mexican Restaurant in New York City

## Introduction & Business Problem:

### Problem Background:

The City of New York, is the most populated city in the United States. New York City is very diverse and highly multicultural. It provides lots of business opportunities. It has attracted many different players into the market. It is a global hub of business and commerce.

This also means that the market is highly competitive. Therefore, any new business venture or expansion needs to be analyzed carefully. The insights derived from analysis will give good understanding of the business environment and give a new establish an opportunity to position itself strategically good in the market.

### Problem Description:

A restaurant is a business which prepares and serves food and drink to customers in return for money, either paid before the meal, after the meal, or with an open account. The City of New York is famous for its excellent cuisine. Its food culture includes an array of international cuisines influenced by the city's immigrant history.

My client, Company A is a successful restaurant chain in Mexico that is looking to expand business into USA through New York City.

So it is evident that to survive in such competitive market it is very important to strategically plan. Various factors need to be studied in order to decide on the Location such as:

New York Population New York City Demographics Are there any venues like Gyms, Entertainment zones, Parks etc nearby where floating population is high etc Who are the competitors in that location? Segmentation of the Borough etc.

Thus, Company A need to choose the correct location to start its first venture. First move is very important, thereby choice of location is very important.

### Target Audience:

To recommend the correct location, Company A has appointed me to lead the necessary Data analysis. The objective is to recommend to the management which neighborhood of New York City will be best choice to start a restaurant. The Management also expects to understand the rationale of the recommendations made.

This would interest anyone who wants to start a New Mexican restaurant in New York City.

## Data[¶](https://render.githubusercontent.com/view/ipynb?commit=8b15cf86eeef9ebca1649dbec504a1053c2a5ead&enc_url=68747470733a2f2f7261772e67697468756275736572636f6e74656e742e636f6d2f45737261616b73616e2f436f7572736572615f43617073746f6e652f386231356366383665656566396562636131363439646265633530346131303533633261356561642f426174746c656f664e65696768626f7572686f6f64735f446174612e6970796e62&nwo=Esraaksan%2FCoursera_Capstone&path=BattleofNeighbourhoods_Data.ipynb&repository_id=245849370&repository_type=Repository#DATA)

For this project we need to analyse the following data;

* New York City data that contains list of Boroughs, Neighborhoods along with their latitude and longitude. Data source : <https://cocl.us/new_york_dataset> This data set contains the required information. And we will use this data set to explore various neighborhoods of new york city.
* Mexican restaurants in each neighborhood of new york city. Data source : Fousquare API By using this api we will get all the venues in each neighborhood. We can filter these venues to get only Mexican resturants.
* GeoSpace data Data source : <https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm> Description : By using this geo space data we will get the New york Borough boundaries that will help us visualize choropleth map.

## Methodology

I used BeautifulSoup to scrape boroughs from Wikipedia and organize a table containing Neighborhoods information of New York City.

And I used Geopy to get the geological location of each neighborhoods.

I utilized the Foursquare API to explore the boroughs and segment them. I designed the limit as 100 venues and the radius 1000 meters for each borough from their given latitude and longitude information. Here is the header of the result, adding venue id, venue name, and category, latitude, and longitude information from Foursquare API.

It returns with 171 records. I graphed the Mexican Restaurants by borough and by neighborhood. I utilized the Foursquare API again by Mexican Restaurants’ ID to explore the detailed record of these pizza places. Select out Rating, Likes, Tips into a data frame.

## Results

* Bronx has the highest number of Mexican Restaurants in New York City, however it has the lowest average rating compared with the other Boroughs.

|  | **Borough** | **Average Rating** |
| --- | --- | --- |
| **2** | Manhattan | 8.159574 |
| **1** | Brooklyn | 7.631148 |
| **0** | Bronx | 6.711111 |

* Within Bronx; Kingsbridge and Melrose neighborhoods has the highest number of Mexican Restaurants.
* Within Brooklyn; Sunset Park and Flatbush neighborhoods has the highest number of Mexican Restaurants.
* Within Manhattan; East Harlem has the highest number of Mexican Restaurants.
* While interpreting the data we cleaned the data with 0 rating since they could be newly launched Restaurants that does not have a meaningful data. After this cleaning we saw that all the neighborhoods that has lowest average rating are located in Bronx. These neighborhoods in Bronx are; Schuylerville, Spuyten Duyvil, Fieldston, University Heights and Olinville.
* All the neighborhoods that has highest average rating are located in either Brooklyn or Manhattan. These neighborhoods in Brooklyn are; Greenpoint, Windsor Terrace, East Williamsburg and Buschwick; and in Manhattan; Little Italy, Soho, Chinatown, West Village, East Village and Lower Eastside.

1. Discussion

* As a result, Manhattan is found to be the most competitive market for launching new Mexican restaurant due to its relatively higher rating. If you are launching a high segment restaurant than it is recommendable to locate it in Manhattan; otherwise it is not reasonable to start it in Manhattan.
* Further analysis on the neighborhoods of Bronx is recommended. Especially Schuylerville, Spuyten Duyvil, Fieldston, University Heights and Olinville neighborhoods as they have the lowest average rating restaurants in New York City
* If launching the restaurant in Brooklyn is a matter of choice then do not launch in the Greenpoint, Windsor Terrace, East Williamsburg and Buschwick neighborhoods as they have these has the highest average rating within borough.
* To get insights from good examples, have further analysis on these Restaurants;
* Restaurant La Esquina; Little Italy, Manhattan; since it has both the maximum likes and maximum tips.
* Restaurant La Loncheria; Bushwick, Brooklyn; since it has the highest rating.

## Conclusion

* As a recommendation to those who plan to operate a restaurant, location selection is only one fundamental problem to think over. It will not solve the problem of whether a type of restaurant is the most popular type and how many customers will visit every day. And as for location suggestion, it offers an opportunity analysis but lacks risk analysis, like the cost of the location and competition in that area.
* Although in this report, it demonstrates the relations between location and ratings, but ratings might not reflect the operation status of the restaurant. A restaurant with a high rating could still be unprofitable, which is unsuccessful from a business perspective. So the suggestion is relatively narrow. To suggest more practical and profitable ideas, the relationship between customer reactions and financial performance should be evaluated.
* With all these analyses done, the report finally becomes constructive for a restaurant owner in the real business world.