THE BATTLE OF NEIGHBORHOODS

CASE STUDY – RESTAURANTS OF NEW YORK _FIRST PART

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- Please note this section contains only Introduction Business Problem and Data
- Because all the three are in same the same file is being uploaded twice.

1. Introduction

1.1 Background

The **City of New York** is the most populous city in the United States. New York is the most densely populated major city in the United States. New York City has been described as the cultural, financial, and media capital of the world, and exerts a significant impact upon commerce, entertainment, research, technology, education, politics, tourism, art, fashion, and sports. Situated on one of the world's largest natural harbors, New York City consists of five boroughs, each of which is a separate county of the State of New York.

The five boroughs – **Brooklyn, Queens, Manhattan, The Bronx, and Staten Island** – were consolidated into a single city in 1898. The city and its metropolitan area constitute the premier gateway for legal immigration to the United States. 800 languages are spoken in New York, making it the most linguistically diverse city in the world. New York City is home to more than 3.2 million residents born outside the United States, the largest foreign-born population of any city in the world.

As on July 11, 2019 the population of New York is 19.49 million. The more the population the more is the requirement of food hence restaurants. But at the same time the competitiveness also increases

With all this background about New York, we can infer that the potential of any business is New York is immense. **Here case study will focus on Restaurants in New York**.

1.2 Business Problem

Restaurant is a place where people pay to sit and eat meals that are cooked and served on the premises. The bill can be pre-paid or post-paid. New York is a hub of all sorts of international cuisines because of the diverse population & immigrants in this city. The cuisine broadly consists of Greek, Italian, Eastern European, Brazilian, Egyptian, Arabic, Indian, Pakistani, Chinese, Korean, Jewish, Russian, Uzbek, Jamaican, West Indian, Irish, Puerto Rican, Dominican, Bengali, German and Polish, Bangladeshi, Colombian, Ecuadorian, Peruvian, Korean, Filipino , Mexican, Sea food, African-American, Jamaican, Haitian, Creole, Polish, Ukrainian, mobile food vendors etc.
Finding an optimum location for set up of a New Indian Restaurant depending on the following two factors: -

1. Cuisine Preference of the people residing in that Borough
2. Saturation rate of restaurants at the location

Now while analysing the above problem we need to take into consideration the following also -

- Population of New York City
- Demographics of New York City
- Farmers Markets, Wholesale markets etc. nearby so that the ingredients can be purchased fresh to maintain quality and cost?
- Are there any Shopping places, Gyms, Entertainment zones, Parks etc. nearby where floating population is high etc.
- Who are the competitors in that location?
- Cuisine served / Menu of the competitors
- Segmentation of the Borough
- Untapped markets
- Saturated markets etc.

1.3 Interest

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

2 Data Acquisition & Cleaning

Data 1

New York City Neighborhood Names

NY Spatial Data - https://geo.nyu.edu/catalog/nyu_2451_34572

Description: Neighborhood has a total of 5 boroughs and 306 neighborhoods. In order to segement the neighborhoods and explore them, we will essentially need a dataset that contains the 5 boroughs and the neighborhoods that exist in each borough as well as the latitude and logitude coordinates of each neighborhood.
Publisher: New York (City). Department of City Planning

GeoJSON file is readily available it is to be converted to .**csv** & used.

	Borough	Neighborhood	Latitude	Longitude
0	Bronx	Wakefield	40.894705	-73.847201
1	Bronx	Co-op City	40.874294	-73.829939
2	Bronx	Eastchester	40.887556	-73.827806
3	Bronx	Fieldston	40.895437	-73.905643
4	Bronx	Riverdale	40.890834	-73.912585

Data 2

Farmer Markets - A farmers' market is a physical retail marketplace intended to sell foods directly by farmers to consumers. Farmers' markets may be indoors or outdoors and typically consisting of booths, tables or stands where farmers sell their homegrown produce, live animals and plants, and sometimes prepared foods and beverages.
https://data.cityofnewyork.us/dataset/DOHMH-Farmers-Markets/8vwk-6iz2/data
https://en.wikipedia.org/wiki/Cuisine_of_New_York_City

	FacilityName	Service Category	Service_Type	Address	Address 2	Borough	ZipCode	Latitude	Longitude	AdditionalInfo	StartDate	EndDate	Monday	Tuesday	Wednesday	Thursday
0	Inwood Park Greenmarket	Farmers Markets and Food Boxes	Farmers Markets	Isham St bet Seaman & Cooper	NaN	Manhattan	10034	40.869009	-73.920320	Open year-round	NaN	NaN	NaN	NaN	NaN	NaN
1	82nd Street Greenmarket	Farmers Markets and Food Boxes	Farmers Markets	82nd St bet 1st & York Aves	NaN	Manhattan	10028	40.773448	-73.948954	Open year-round	NaN	NaN	NaN	NaN	NaN	NaN
3	125th Street Farmers Market	Farmers Markets and Food Boxes	Farmers Markets	125th St & Adam Clayton Powell Jr Blvd	NaN	Manhattan	10027	40.808981	-73.948327	Market open dates: 6/13/2017 to 11/21/2017	06/13/2017	11/21/2017	NaN	10am-7pm	NaN	NaN
4	170 Farm Stand	Farmers Markets and Food Boxes	Farmers Markets	170th St & Townsend Ave	NaN	Bronx	10452	40.840095	-73.916827	Market open dates: 7/5/2017 to 11/22/2017	07/05/2017	11/22/2017	NaN	NaN	2:30pm-6:30pm	NaN
5	175th Street Greenmarket	Farmers Markets and Food Boxes	Farmers Markets	175th St bet Wadsworth Ave & Broadway	NaN	Manhattan	10033	40.845956	-73.937813	Market open dates: 6/29/2017 to 11/30/2017	06/29/2017	11/30/2017	NaN	NaN	NaN	8am-5pm

Food Boxes - Grow NYC's Fresh Food Box Program is a food access initiative that enables under-served communities to purchase fresh, healthy, and primarily

regionally grown produce well below traditional retail prices.

https://www.grownyc.org/greenmarketco/foodbox

Data 3

- New York Population
- New York City Economy

https://en.wikipedia.org/wiki/New_York_City
https://en.wikipedia.org/wiki/Economy_of_New_York_City
https://en.wikipedia.org/wiki/Portal:New_York_City

	NewYorkCity'sfiveboroughsvte	Jurisdiction	Population	GrossDomesticProduct	Landarea	Density	Borough	County	Estimate(2017)[207]
0	The Bronx	Bronx	1,471,160	28.787	19,570	42.10	109.04	34,653	13,231
1	Brooklyn	Kings	2,648,771	63.303	23,900	70.82	183.42	37,137	14,649
2	Manhattan	New York	1,664,727	629.682	378,250	22.83	59.13	72,033	27,826
3	Queens	Queens	2,358,582	73.842	31,310	108.53	281.09	21,460	8,354
4	Staten Island	Richmond	479,458	11.249	23,460	58.37	151.18	8,112	3,132

Data 4

Newyork city geographical coordinates data will be utilized as input for the Foursquare API, that will be leveraged to provision venues information for each neighborhood.We will use the Foursquare API to explore neighborhoods in New York City. The below is image of the Foursquare API data.

	Neighborhood	NeighborhoodLatitude	NeighborhoodLongitude	Venue	VenueLatitude	VenueLongitude	VenueCategory
0	Marble Hill	40.876551	-73.91066	Arturo's	40.874412	-73.910271	Pizza Place
1	Marble Hill	40.876551	-73.91066	Bikram Yoga	40.876844	-73.906204	Yoga Studio
2	Marble Hill	40.876551	-73.91066	Tibbett Diner	40.880404	-73.908937	Diner
3	Marble Hill	40.876551	-73.91066	Sam's Pizza	40.879435	-73.905859	Pizza Place
4	Marble Hill	40.876551	-73.91066	Loeser's Delicatessen	40.879242	-73.905471	Sandwich Place

2.2 Data Cleaning

Data downloaded or scraped from multiple sources were combined into one table. There were a lot of missing values, for some data it was removed and for the other it was substituted with NAN for calculation purpose. Some features from the data were removed because they were not required for the analysis. Some data was imported into the excel from Wikipedia and then formatted properly and converted to csv.