The Battel of Neighborhood REPORT

Customer: ABC Corporation

Prepared by: XYZ Company

Contents

Report Versioning

Item Number	Name	Activities	Date
01	Mr. Ashraf Alam Mr. Z. Matrine	Report Creation	05-May-2020
02	Nr. Ashraf Alam	Final Review	08-May-2020
03	Mr. MD	Final Approval	10-May-202

Report Change Management

Item Number	Name	Activities	Date

Problem Statement

Mr. TNM , Managing Director of ABC Corporation wants to open new restaurant in New York City , USA.

Objectives

ABC Corporation is a big chain company with different business domain. They have lots of restaurant across the globe. Now they contact with us to support them for opening restaurant in New York City.

Fig01: Birds Eyes view for New York City

Introductions:

- The City of New York is famous for its excellent cuisine. It's food culture includes an array of international cuisines influenced by the city's immigrant history / and mixture of people culture and test.
    1. Central and Eastern European people (bagels, cheesecake, hot dogs, knishes, and delicatessens)
    2. Italian People (New York-style pizza and Italian cuisine)
    3. Chinese and other Asian restaurants, sandwich joints, trattorias, diners, and coffeehouses are ubiquitous throughout the city
    4. Mobile food vendors - Some 4,000 licensed by the city
    5. Middle Eastern foods such as falafel and kebabs examples of modern New York street food
    6. It is famous for not just Pizzerias, Cafe's but also for fine dining Michelin starred restaurants. The city is home to "nearly one thousand of the finest and most diverse haute cuisine restaurants in the world", according to Michelin.
- At the circumstances in New York (USA) , need very strong and visionary plan to survive in restaurant business . There has he level of plans
    1. Pre Plan : Analysis the location , demographic information , population and cultures
    2. Short Term Plan: Based on the analysis short term plan needs to take.
    3. Mid Term Plan
    4. Long term plan
    5. Backup Plan
    6. Exit Plan
- The Acceptance criteria of the project will be a good recommendation of borough/Neighborhood choice to ABC Corporation based Analysis and evidences. Our suggestion or recommendations should be accepted by higher management of ABC Corporation

Fig 02: Verities of Foods

The New York City

City facts:

1. A little over 8 million people live in New York City
2. High Density of population
3. At a certain, unnamed "successful restaurant" downtown, weekly dinner revenue adds up to about $100,000.
4. Verities of people and different food test
5. Restaurant Business in highly competitive
6. Street Foods and Fast foods are popular
7. Global hub for Business

Business Environment :

1. Markets are highly competitive
2. Well establish and highly developed city cost of business will be high
3. Target Customer should be analysis more carefully
4. Return of Investment (ROI) will be slow

Fig 03: Neighborhood and Venus points of NY

Recommended place

Below factor will be study in to choose the location

1. Density of the population in the area
2. New York City Demographic / area borough/Neighborhood
3. Operational cost of the business
4. Available supplier (Vegetable firs, whole sales market, short term supplier)
5. Land mark of the area (Gym , Any big enterprise , any school , university , community halls etc)
6. Possible competitor in the Restaurant Business in this area
7. Segmentation of borough

DATA SOURCE

Neighborhood:

- Our Data set has 5 boroughs and 306 neighborhood. To make clustering and segmentations we need complete dataset where we can find all boroughs (5) along with its associated neighborhoods. This data set also need Latitude and Longitude coordinate of each neighborhoods. We will use blow link to collect data. https://geo.nyu.edu/catalog/nyu_2451_34572

	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

Fig: 04: Neighborhood data for NY

Supply Market Data:

This dataset will show the all supplying material to the restaurant. Example vegetables, dairy products, fish, meat, baked goods, and other processed foods. We also analysis the data where supplier cost is lesser than traditional market price . Data set links

https://data.cityofnewyork.us/dataset/DOHMH-Farmers-Markets-and-Food-Boxes/8vwk-6iz2

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

	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	-73.918827	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

Fig 05 : Supplier market data

Demographic Data:

- Demographic data will be collected from Wikipedia. Example Population, Cuisine and demographic of NY City Bellow will be links
- 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

- https://en.wikipedia.org/wiki/Cuisine_of_New_York_City
- https://en.wikipedia.org/wiki/List_of_Michelin_starred_restaurants_in_New_York_City

	Racialcomposition	2010	1990	1970	1940
0	White	44.0%	52.3%	76.6%	93.6%
1	—Non-Hispanic	33.3%	43.2%	62.9%	92.0%
2	Black or African American	25.5%	28.7%	21.1%	6.1%
3	Hispanic or Latino (of any race)	28.6%	24.4%	16.2%	1.6%
4	Asian	12.7%	7.0%	1.2%	–

Fig 06: Demographic Data

The Foursquare API:

New York City geographical coordinate's data will be utilized as input for the Foursquare API. This will be shows us venues information for each neighborhoods. Foursquare API will be used to explore neighborhoods in NY City.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Wakefield	40.894705	-73.847201	Lollipops Gelato	40.894123	-73.845892	Dessert Shop
1	Wakefield	40.894705	-73.847201	Rite Aid	40.895521	-73.844680	Pharmacy
2	Wakefield	40.894705	-73.847201	Cooler Runnings Jamaican Restaurant Inc	40.898283	-73.850478	Caribbean Restaurant
3	Wakefield	40.894705	-73.847201	Carvel Ice Cream	40.890487	-73.848568	Ice Cream Shop
4	Wakefield	40.894705	-73.847201	Dunkin Donuts	40.890631	-73.849027	Donut Shop

Fig 07: NY City Coordinate from foursquare.com

Methodology

Approach

Analysis New York City data (Neighborhoods)

Clustering Of Manhattan and Brooklyn

Clustering of Bronx , Queens & Staten Island

Only Restaurant , coffee house related data will be considered

New York City Geographical coordinate

Load & Explore data for NY city (newyork_data.josn)

Analysis data using Python and R

Create DataFrame from the foursquare data

Perform necessary data regaling

Use Geopy & Folium Library to create maps

Supplier data :

- Based on the available information in websites, internment and our data source
- There are totally 144 Farmers Market in NY
- Height number are in Brooklyn and Lowest in Staten island . Also Queen island and Bronx island is manageable for getting supplier
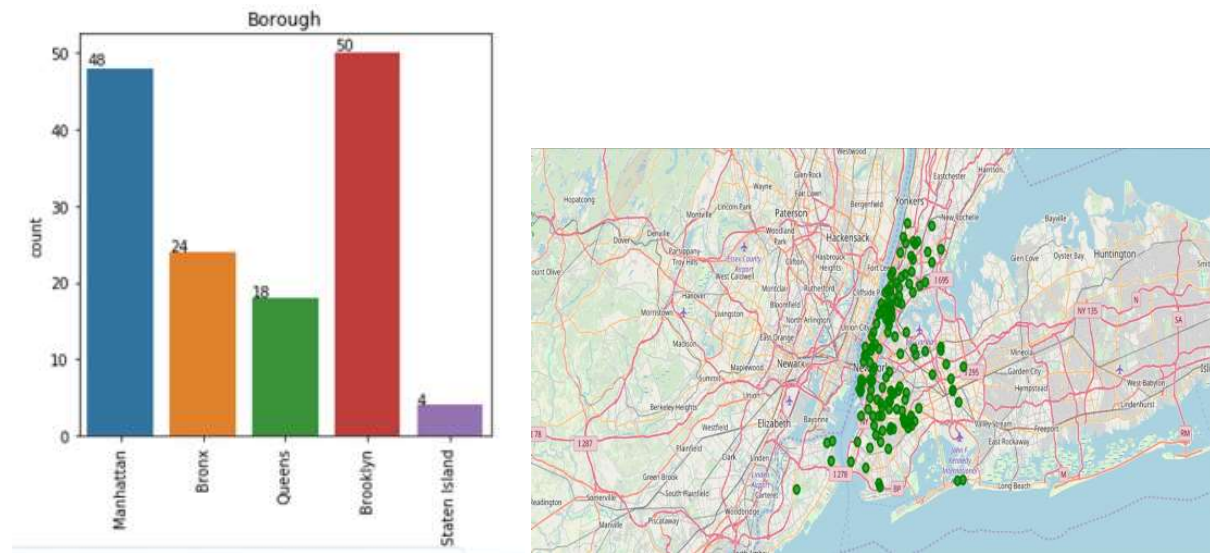- Suppliers are offering Door step delivery but in high price

Fig 08: Number of Borough

New York Population :

- Manhattan city is the geographically smallest but most populated city borough.
- Manhattan's has highest density in all US sates. It Almost 27, 00 + /Square KM
- Brooklyn on the western tip of long island .This city is the most populated borough
- Queens , on long Island north and east of Brooklyn , is geographically largest borough
- Due to verities of population NY is good place for restaurant. It has many types of restaurant like Indian , African , Chinses , Italian , Bangladeshi etc.

	Borough	County	Estimate_2017	square_miles	square_km	persons_sq_mi	persons_sq_km
0	Manhattan	New York	1,664,727	22.83	59.13	72,033	27,826
1	The Bronx	Bronx	1,471,160	42.10	109.04	34,653	13,231
2	Brooklyn	Kings	2,648,771	70.82	183.42	37,137	14,649
3	Queens	Queens	2,358,582	108.53	281.09	21,460	8,354
4	Staten Island	Richmond	479,458	58.37	151.18	8,112	3,132
5		City of New York	8,622,698	302.64	783.83	28,188	10,947
6		State of New York	19,849,399	47,214	122,284	416.4	159

Fig 09: Density of population

Cuisine in NY:

- Cuisines data collected from https://en.wikipedia.org/wiki/Cuisine_of_New_York_City
- Data use to create work cloud
- Most popular Foods are Italian , Mexican , Purto Rican etc

Fig 10: Word Cloud for Chose of Cuisines in New York UA

Brooklyn Cuisines:

Most popular foods are Italian , Mexican and Puerto Rican

Fog 11: Word Cloud for Brooklyn Cuisines

Queens Cuisines:

Most popular food test are Indian & Irish

Fig 12: Word cloud for Queens Island Cuisines

The Bronx foods are Italian , Albanian

Manhattan cuisines are Italian , Indian , American



Analyzing Data with Foursquare.com

- Input New York City coordinated to Foursquare API in order to pull venues information
- Use same data to find out neighborhoods , also identified top 100 venues
- Part 1 : Brooklyn and Manhattan (Venus data and visualization)
  - There are 9708 Venus & 397unique Venue types

	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
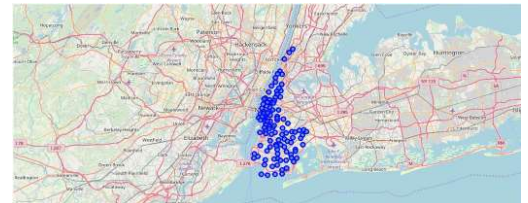
- Part2: Bronex Queens & Staten Island (Venus data and visualization)
 - There are 10805 Venus & 387 unique Venue types

|	Neighborhood	NeighborhoodLatitude	NeighborhoodLongitude	Venue	VenueLatitude	VenueLongitude	VenueCategory
0	Wakefield	40.894705	-73.847201	Lollipops Gelato	40.894123	-73.845892	Dessert Shop
1	Wakefield	40.894705	-73.847201	Ripe Kitchen & Bar	40.898152	-73.838875	Caribbean Restaurant
2	Wakefield	40.894705	-73.847201	Jackie's West Indian Bakery	40.889283	-73.843310	Caribbean Restaurant
3	Wakefield	40.894705	-73.847201	Ali's Roti Shop	40.894036	-73.856935	Caribbean Restaurant
4	Wakefield	40.894705	-73.847201	Rite Aid	40.896521	-73.844680	Pharmacy
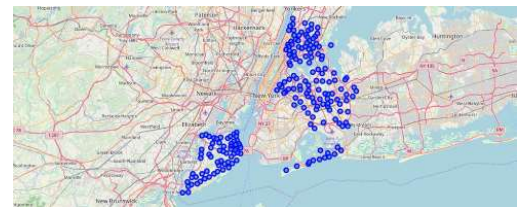
Decision / Recommendation:

Brooklyn and Manhattan:

- Segmentation and clustering of Neighborhoods (cluster0 , Cluster1)
    1. Cluster0 : Cluster summation value is smallest which shows there is opportunity
    2. Cluster1: Summation value of this Cluster is high which represent competition will be high & ROI will less
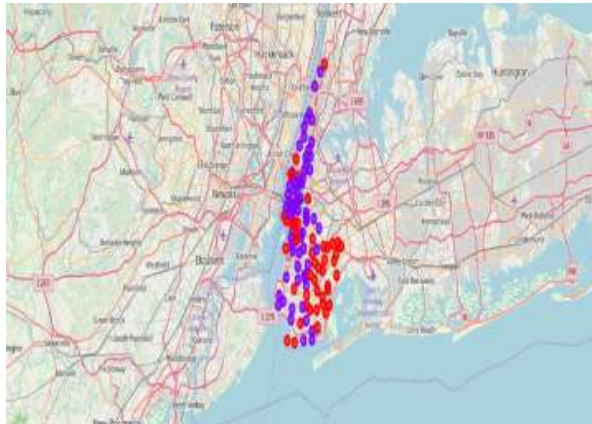
Bronx, queens & Stanton Island (cluster0 , Cluster1)

1. Cluster0 : Cluster summation value is smallest which shows market is still with in control and ROL will be high
2. Cluster1: Summation value of this Cluster is high which represent competition will be high & ROI will less
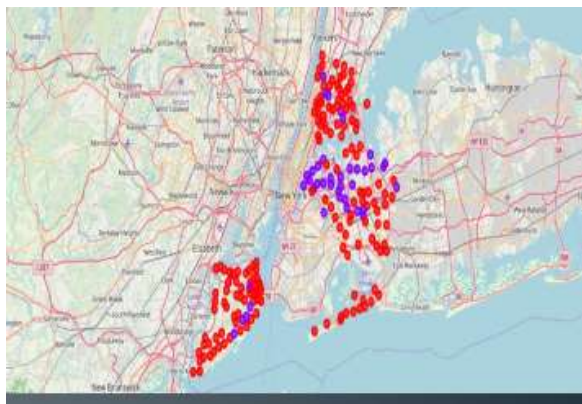
Conclusion

1. Analysis perform of data collected from internet and data sets are limited in size
2. Periodic Analysis needed with updated data
3. Brooklyn and Manhattan is highly density and it has huge number of restaurants. Restaurant business is quite challenging their.
4. Although there is good number of Restaurant Available in Queens , Staten Island and Bronx but it is not like other part. Doing restaurant business in these area will face less competition than Brooklyn & Manhattan.
5. In restaurant business Indian / Italian restaurant can be explored.
6. It needs to work more in food items and regular research with food and test needed

Final Touch

It was great opportunity to work with ABC Corporation and we are looking forward more business. We are ready to answer or feedback any queries arise.

Name : _____

Signature : _____

Representative : ABC Corporation

Name : _____

Signature : _____

Representative : XYZ Company