

NYC MARKET ANALYSIS FOR ABC INSPECTION MITIGATION SERVICES INC

BACKGROUND

- ❖ **Food and Drug Administration does regular inspections of all the restaurants to ensure that safety regulations are followed for food preparation and facility maintenance**
- ❖ **A failure of inspection can result in issuance of a violation that can result in temporary closure and affect revenue**
- ❖ **New York city has thriving restaurant business due to its 8 million visitors every year**
- ❖ **ABC Inspection Mitigation Services Inc sees opportunity in NYC. It wants to open 3 branches that cover the NYC areas and want to tailor its services to address the common violations**
- ❖ **ABC has employed us to do analysis and provide recommendation on 3 optimal locations for its branches and services**

SOME KEY STATS OF NYC

Population of ~8.3 million and ~68 million visitors every year

5 Boroughs in NYC. *Manhattan, Brooklyn, Queen, Bronx and Staten Island*

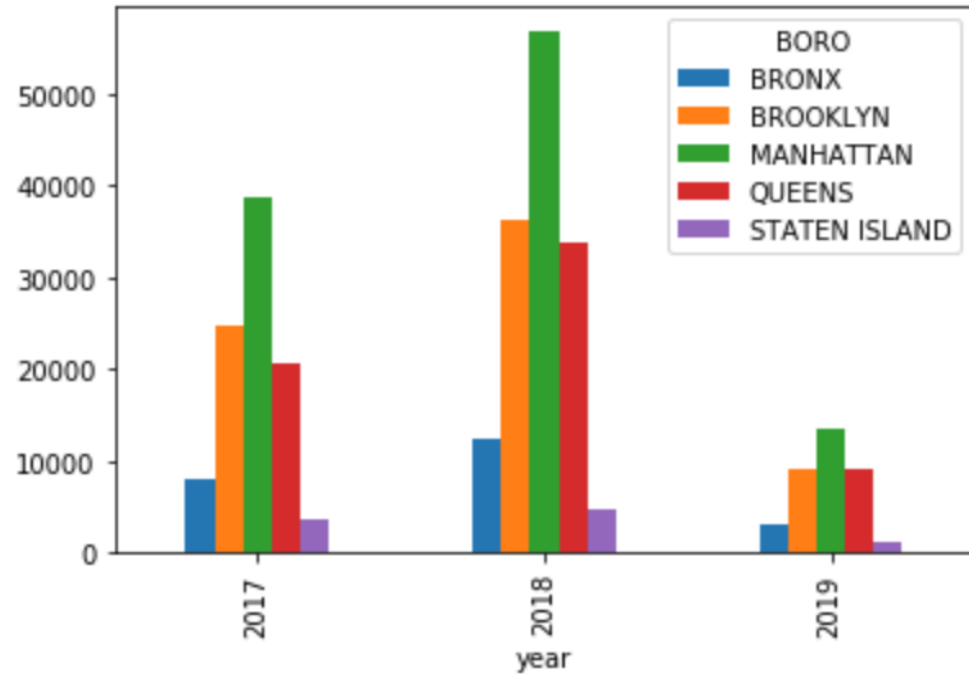
380K violations issued by FDA to restaurants in NYC in the last 10 years

A total of 24000 restaurants in New York city

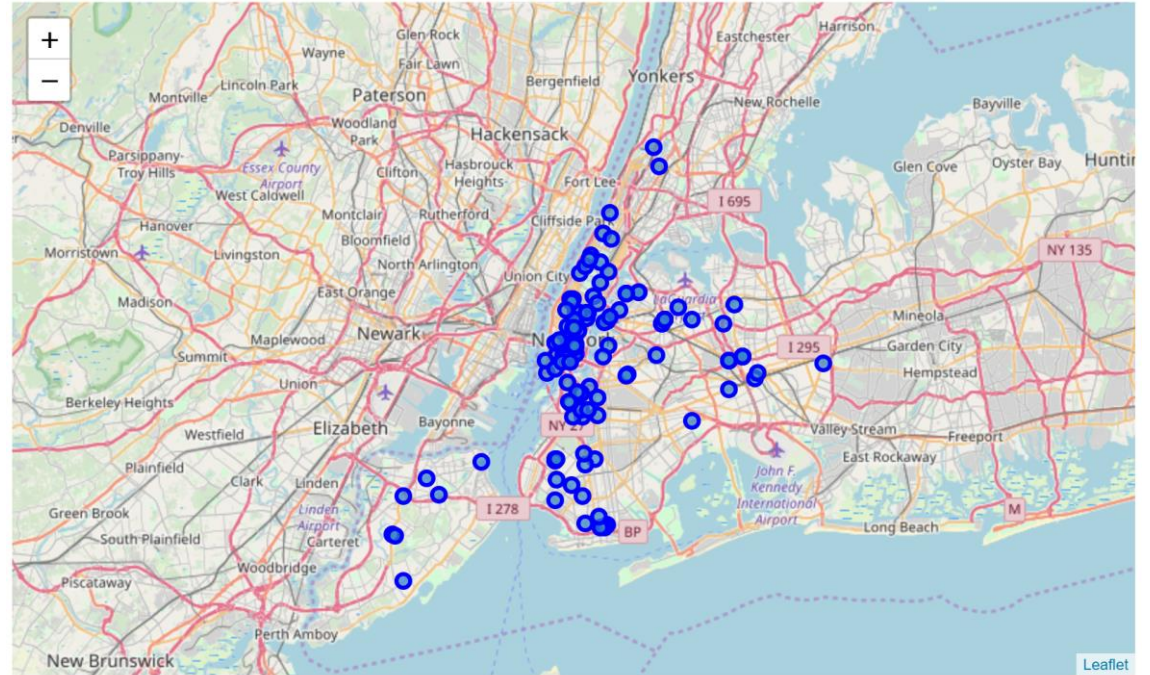
DATA ACQUISITION AND CLEANING

- Restaurant inspection data from NYC
<https://data.cityofnewyork.us/Health/DOHMH-New-York-City-Restaurant-Inspection-Results/43nn-pn8j>
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- Contains total of 384k records which very cleaned
- Master List of restaurants with violations and Geo co-ordinates for targeted restaurants
- Violation code master list (99)

KEY ANALYSIS AND VISUALIZATIONS



Inspection Violations by Borough. As you can see, Manhattan has the most violations



Concentration of restaurants in NYC

Note: Only a subset are shown due to restrictions on number of calls by google api

TOP 10 VIOLATIONS BY BOROUGH

BORO	1st Most Common inspection failure	2nd Most Common inspection failure	3rd Most Common inspection failure	4th Most Common inspection failure	5th Most Common inspection failure	6th Most Common inspection failure	7th Most Common inspection failure	8th Most Common inspection failure	9th Most Common inspection failure	10th Most Common inspection failure
BRONX	10F	08A	04L	02B	10B	04N	06C	06D	02G	04M
BROOKLYN	10F	08A	04L	06D	06C	10B	02B	02G	04N	04M
MANHATTAN	10F	08A	06D	04L	10B	06C	02G	04N	02B	04H
QUEENS	10F	08A	04L	06C	06D	02B	02G	10B	04N	04A
STATEN ISLAND	10F	08A	06D	04L	10B	02G	06C	02B	04N	04H

Method:

- Applied hot coding on violation codes
- Group by Boroughs and apply mean to get the frequency of violation occurrences

APPLYING K-MEAN CLUSTERING TO DETERMINE COVERAGE AREAS

Cluster 1: Brooklyn, Manhattan and Queens

	BORO	1st Most Common inspection failure	2nd Most Common inspection failure	3rd Most Common inspection failure	4th Most Common inspection failure	5th Most Common inspection failure	6th Most Common inspection failure	7th Most Common inspection failure	8th Most Common inspection failure	9th Most Common inspection failure	10th Most Common inspection failure
1	BROOKLYN	10F	08A	04L	06D	06C	10B	02B	02G	04N	04M
2	MANHATTAN	10F	08A	06D	04L	10B	06C	02G	04N	02B	04H
3	QUEENS	10F	08A	04L	06C	06D	02B	02G	10B	04N	04A

Cluster 2: Staten Island

	BORO	1st Most Common inspection failure	2nd Most Common inspection failure	3rd Most Common inspection failure	4th Most Common inspection failure	5th Most Common inspection failure	6th Most Common inspection failure	7th Most Common inspection failure	8th Most Common inspection failure	9th Most Common inspection failure	10th Most Common inspection failure
4	STATEN ISLAND	10F	08A	06D	04L	10B	02G	06C	02B	04N	04H

Cluster 3: Bronx

	BORO	1st Most Common inspection failure	2nd Most Common inspection failure	3rd Most Common inspection failure	4th Most Common inspection failure	5th Most Common inspection failure	6th Most Common inspection failure	7th Most Common inspection failure	8th Most Common inspection failure	9th Most Common inspection failure	10th Most Common inspection failure
	BRONX	10F	08A	04L	02B	10B	04N	06C	06D	02G	04M

CONCLUSIONS

- Most common violation codes are 10F, 08A, 04L/6D
- Manhattan has the most code violations followed by Brooklyn and Queen

We recommend **ABC Inspection Mitigation Services Inc** should focus in *Manhattan, Brooklyn and Queen* and offer services to mitigate *10A,08A,04L and 06D* violation