Capstone Project

Where Should We Build a Restaurant?

Introduction

Imagine wanting to open up a brand new restaurant in New York City. With a population of 8.6 million people, Surely you will have success. But then you realize that there are roughly 26,000 restaurants in the city with many of them producing the same food as yours as well as potentially failing. How could you make your restaurant stand out to avoid this fate. More specifically, where should you build the restaurant. Do you really want to build a new Chinese restaurant with zero recognition in an area dominated by Chinese restaurant(s) that have years of good reputation? This project is here to help those trying to figure out where to build a restaurant to help get people into their building.

Data

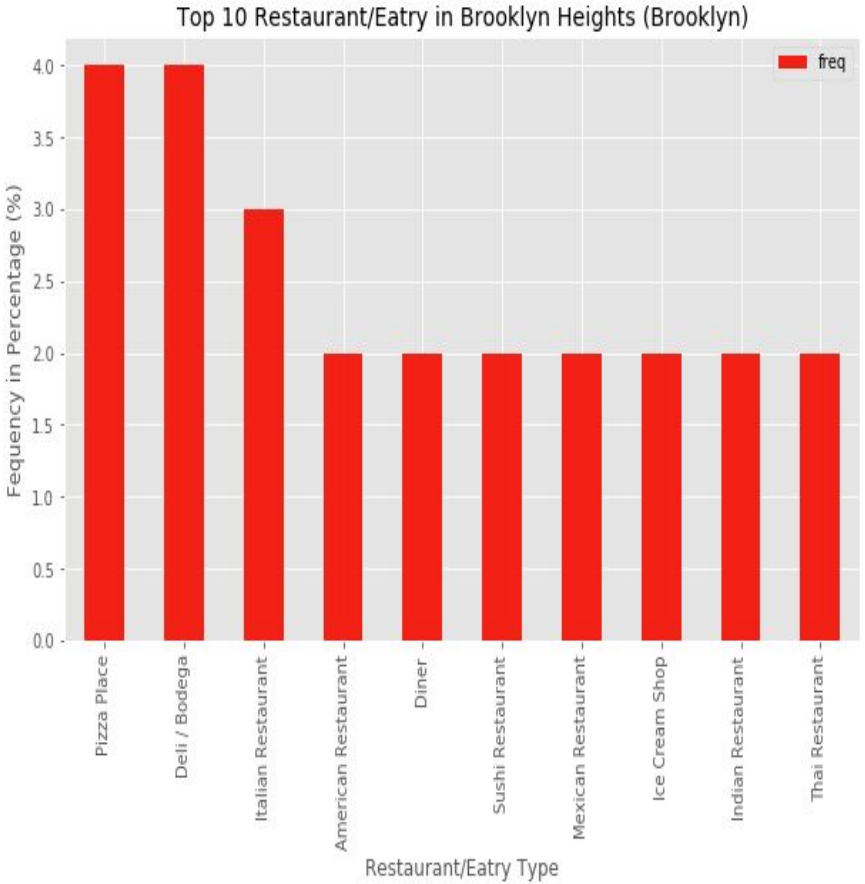
In this project we will be utilizing Foursquare API to get information on the New York City area. This includes geographical location of borough and neighborhoods and the venues within them. From here we will break down what restaurants are in what neighborhood as well as the type of food they serve with how common that type of food is in that area.

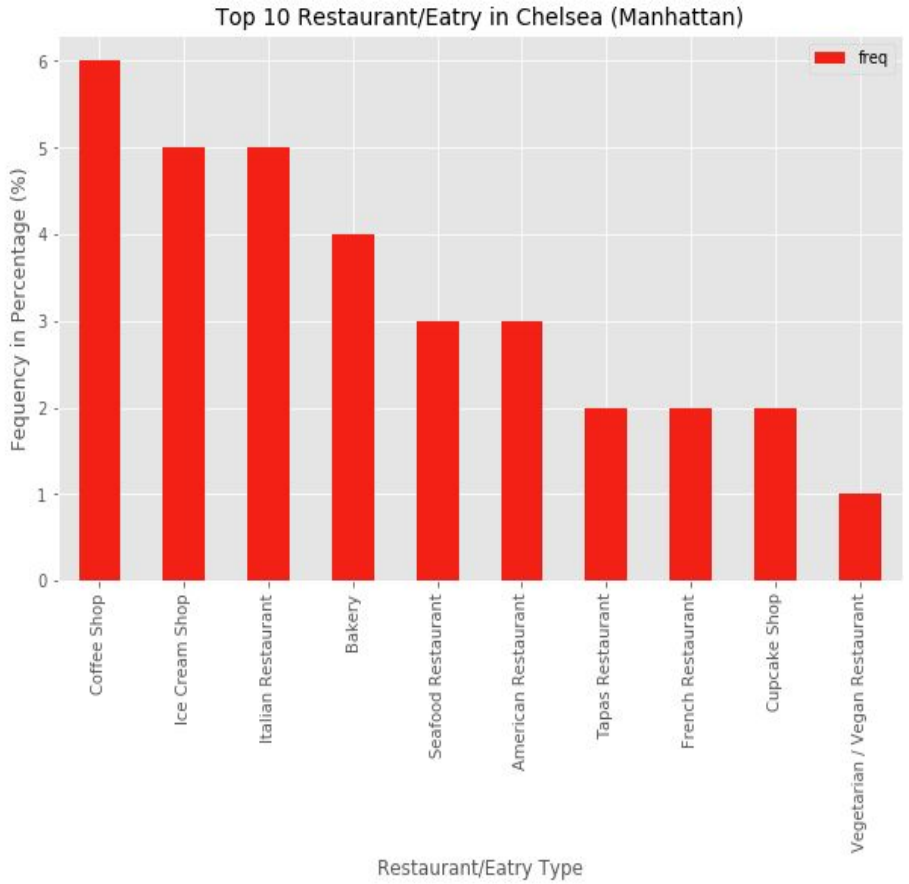
Methodology

We will be using this dataset- https://geo.nyu.edu/catalog/nyu_2451_34572 - which is from the week 3 lab, Segmenting and Clustering Neighborhoods in New York City, which will give us the data we need to use. We will also be using k-means clustering later in order to get similar restaurants to be grouped together so we can see the frequency of that type of restaurant in that area. Below is a small example of our clustering data where we can see a neighborhood and its most common venues.

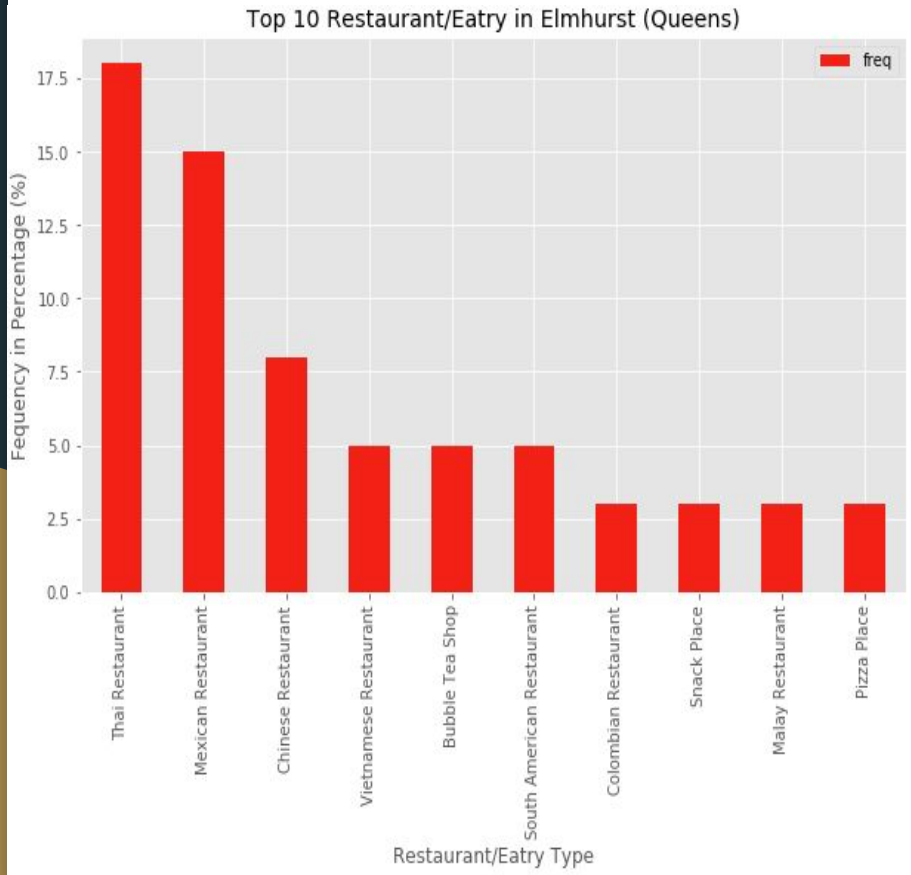
Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue
Bay Ridge	Italian Restaurant	Pizza Place	Greek Restaurant	Bagel Shop	American Restaurant	Ice Cream Shop	Thai Restaurant	Sandwich Place	Seafood Restaurar
Bensonhurst	Chinese Restaurant	Pizza Place	Ice Cream Shop	Donut Shop	Sushi Restaurant	Shabu-Shabu Restaurant	Vietnamese Restaurant	Hotpot Restaurant	Italian Restaurar

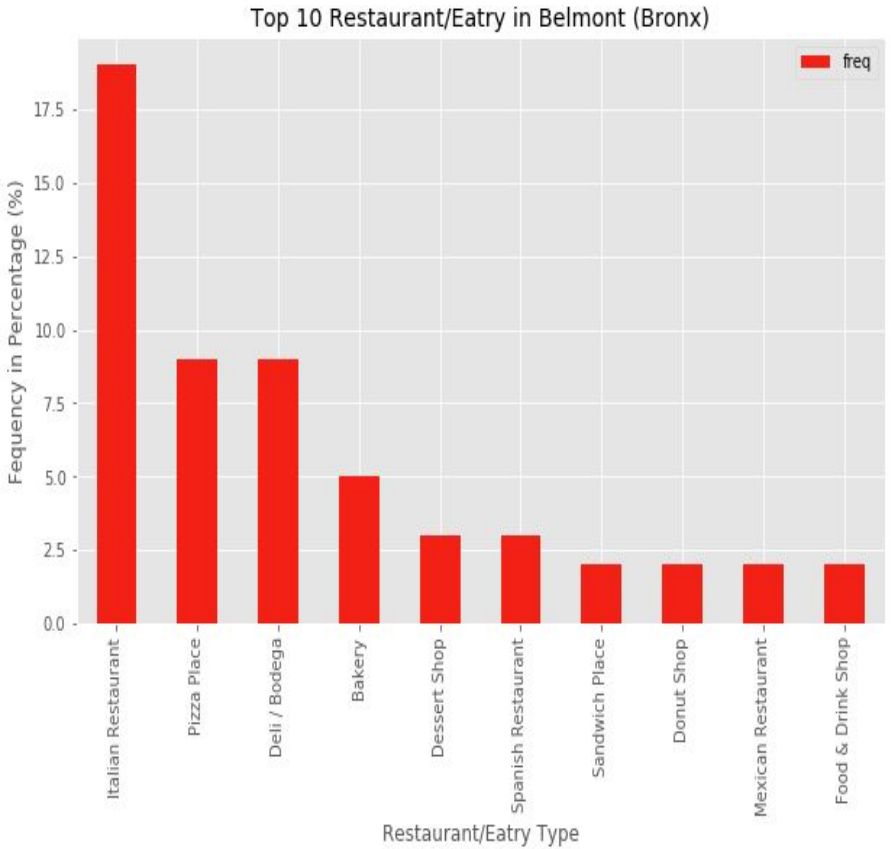
Results/Discussion



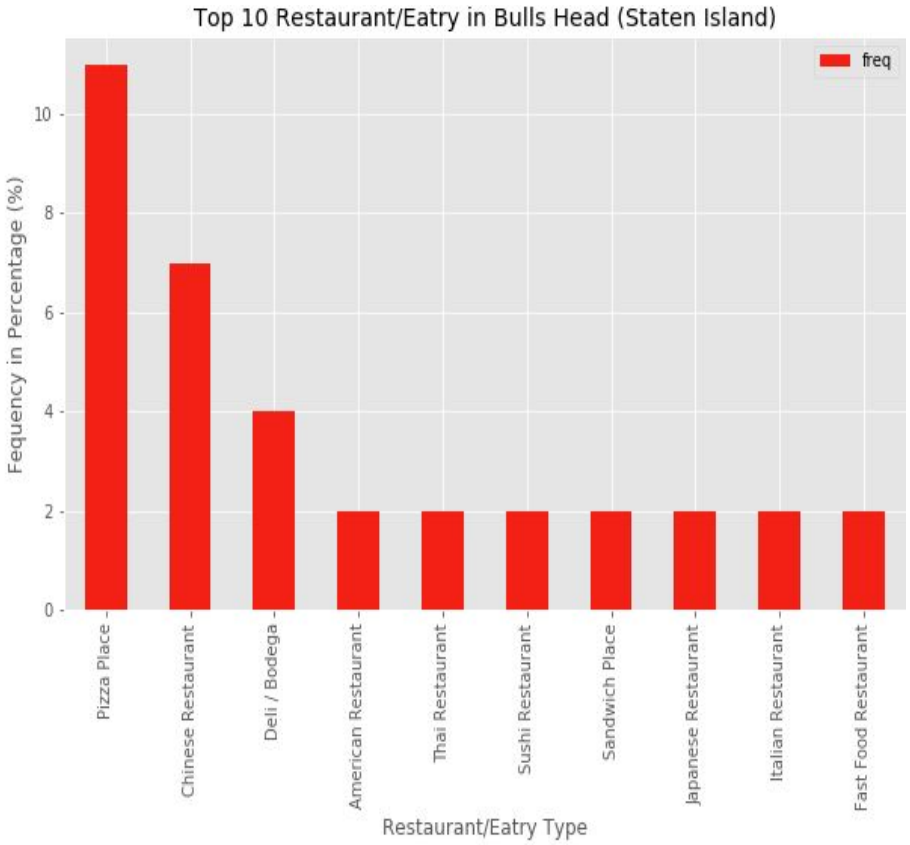


Results/Discussion





Results/Discussion



The five graphs we have here in this section shows us the frequency(%) at which a type of restaurant/eatery appear in a certain neighborhood. For example, if we wanted to build a pizza place, we can see here that the only neighborhood that doesn't have it ranked in its top 10 is Chelsea, Manhattan. Now these graphs are based on the top 10 most common types in the area; however, it does mean we would have less competition (for that type) in the local area. This would give us an advantage because if someone in the neighborhood wanted pizza, we would have a higher chance of being chosen because there are less options (i.e. competition). Having less competition (and some grand opening promotions) would help the restaurant get off to a potentially good start and succeed in the long run.

Conclusion

With this information, people who are interested in making a restaurant in the New York City area will be able to look at the frequency of certain types of restaurants in an area to help choose a location to give them a foundation to potentially succeed in a volatile business adventure.