

Predicting A Better Location for a New Food Business

Introduction

A new wholesale business will be established in New York. The business will particularly target other businesses that have many employees in offices, and also restaurants, coffee shops where people are expected to eat their meals and use single-use disposable utensils.

Problem

The client is looking for the most suitable location that will be located close to potential customers and be able to deliver ordered products with same day delivery service option. 📍

Data Acquisition – Feature Selection

Data will be mainly scraped via Foursquare API location data from the city of New York. Scrape data will include but not limited to, longitude, latitude of neighborhoods, zip codes, business names, business types. Data will be used to explore businesses, cluster and rank neighborhoods which may have a high potential customer such as restaurants, cafes, bars, bakeries and etc.

	Unnamed: 0	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	0	Wakefield	40.894705	-73.847201	Lollipops Gelato	40.894123	-73.845892	Dessert Shop
1	1	Wakefield	40.894705	-73.847201	Rite Aid	40.896649	-73.844846	Pharmacy
2	2	Wakefield	40.894705	-73.847201	Carvel Ice Cream	40.890487	-73.848568	Ice Cream Shop
3	3	Wakefield	40.894705	-73.847201	Walgreens	40.896528	-73.844700	Pharmacy
4	4	Wakefield	40.894705	-73.847201	Dunkin'	40.890459	-73.849089	Donut Shop

Data acquisition from Foursquare

	Neighborhood	Rest_Total	Bakery	Bar	Cafe	CShop	Deli
0	Allerton	4	1	0	0	0	2
1	Annadale	2	0	0	0	0	1
2	Arden Heights	0	0	0	0	1	0
3	Arlington	1	0	0	0	0	1
4	Arrochar	5	0	0	0	0	2

Feature selection – Interested businesses from acquired data

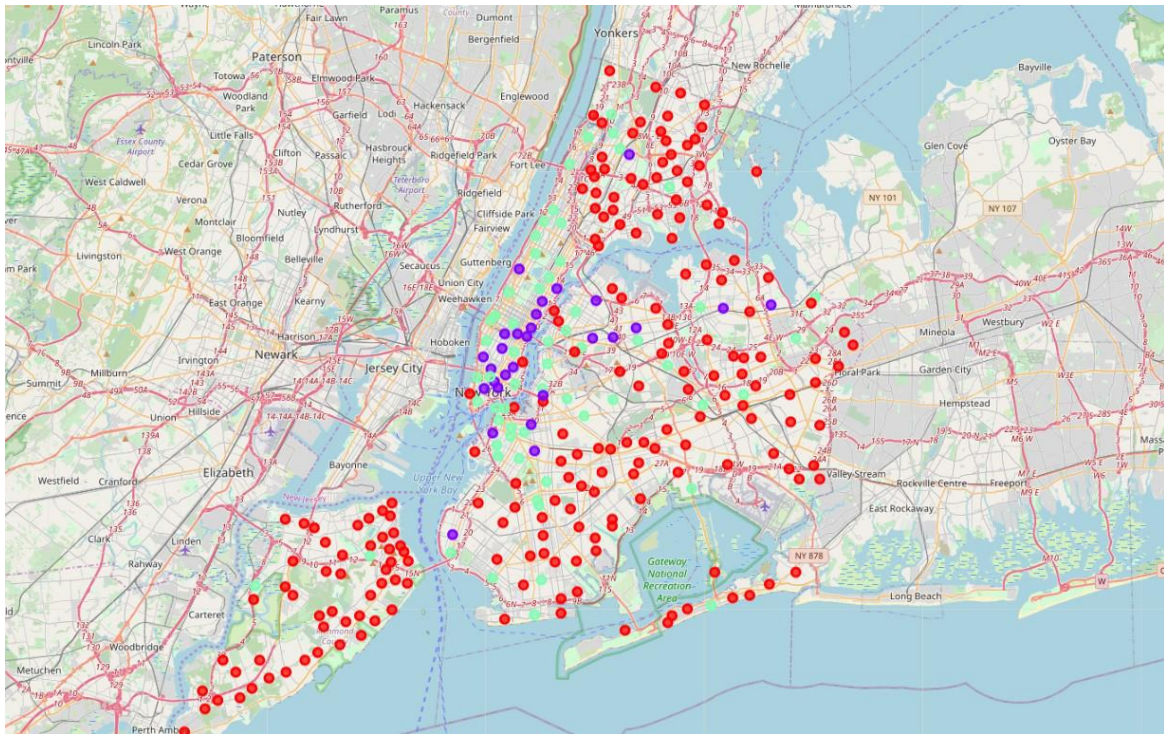
Observations

Restaurants are the most common food serving business in New York. They appear to be spread and not concentrated in a particular neighborhood. Deli and Coffee Shops appear to be the second most popular food serving business. Coffee Shops and Bars are populated in Manhattan area.

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
274	Woodhaven	Rest_Total	Deli	CShop	Cafe	Bar
275	Woodlawn	Deli	Bar	Rest_Total	CShop	Cafe
276	Woodrow	Rest_Total	CShop	Bakery	Deli	Cafe
277	Woodside	Rest_Total	Bar	Bakery	Deli	CShop
278	Yorkville	Rest_Total	CShop	Bar	Deli	Cafe

Most Common Food Venues per Neighborhood

K-Means clustering is used to discover insights from our unlabeled data. The purpose of running cluster analysis is to observe segmentation of different type of food service businesses and reveal patterns in New York area.



K-means Cluster Mapping for Food Businesses in New York

Conclusions

Restaurants are far the most common food serving business in NY, however they are spread over a large area. This makes daily order deliveries difficult for the new business. Because, Manhattan area densely populated, and more importantly, Deli and Coffee Shops are found at high numbers at close distance. This will make daily delivery much more cost effective. Since the new business is targeting mostly single-use disposable utensils and also deliver orders in the same day, Manhattan area appears to be a suitable place. Deli and Coffee Shops type of food serving businesses will need single disposables more than restaurants.