The Battle of Neighborhoods Report

Introduction

Background

New York City is one of the most popular cities in the United States, and it comprises 5 boroughs. This international city is the leading cultural center and economic center of the world. It hosts many landmarks, including Time Square, Central Park, Empire State Building, and etc. Manhattan, the core of New York City, is the most densely populated borough in New York City, and it serves as the city's economic and administrative center.

Problem

Since Manhattan is the core borough of the New York City, many cultures will be combined in this city, and it appears food diversity as well as people diversity. The market is also highly competitive, so this analysis will provide a good understanding of food market environment which will show which type of food is most popular in Manhattan, and it will also helps the new business starters related to restaurant/food identify which type of restaurant/food they will open. This will help in reduction of risks from competitive power.

Interest

Obviously, starters who want to open a restaurant in Manhattan will be interested in understanding the food market environment for competitive power. And others who travel to Manhattan and who want to get touch in local culture can also be very interested in the most popular types of food in Manhattan.

Data

I will use the following dataset to show the analysis of food market environment in Manhattan:

First, I will use the New York City Dataset, with the link below:

https://geo.nyu.edu/catalog/nyu 2451 34572

This dataset shows the neighborhoods that exist in each of five boroughs in New York with its latitude and longitude, including Manhattan.

The view of the data would be:

```
{ 'type': 'FeatureCollection',
 'totalFeatures': 306,
 'features': [{'type': 'Feature',
   'id': 'nyu 2451 34572.1',
   'geometry': {'type': 'Point'
    'coordinates': [-73.84720052054902, 40.89470517661]},
   'geometry_name': 'geom',
   'properties': {'name': 'Wakefield',
    'stacked': 1,
'annolinel': 'Wakefield',
    'annoline2': None,
    'annoline3': None,
    'annoangle': 0.0,
    'borough': 'Bronx',
    'bbox': [-73.84720052054902,
    40.89470517661,
    -73.84720052054902,
    40.89470517661]}},
```

Second, I will use the Foursquare API database, with the link below:

https://developer.foursquare.com/doc

I searched the food category in Foursquare API dataset. Venues retrieved from all the neighborhoods in New York City are categorized into 'American Restaurant', 'Butcher', 'Chinese Restaurant', 'Deli/Bodega', 'Food Court', 'Food Truck', Frozen Yogurt Shop', 'Gourmet Shop', 'Grocery Store', 'Italian Restaurant', 'Museum', 'Organic Grocery', 'Other Repair Shop', 'Restaurant', 'Southern/Soul Food Restaurant', and 'Supermarket.'

I will use groupby function to only focus on Manhattan data, so the view of the data for Manhattan (the first 5 lines) would be:

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Marble Hill	40.876551	-73.91066	PeraBell Food Bar	40.765781	-73.013731	American Restaurant
1	Marble Hill	40.876551	-73.91066	Aldi Food Market	40.778311	-73.033230	Supermarket
2	Marble Hill	40.876551	-73.91066	Delfiore Pizza & Food Co.	40.765692	-73.013344	Italian Restaurant
3	Marble Hill	40.876551	-73.91066	Best Meal Chinese Food	40.765382	-73.013084	Chinese Restaurant
4	Marble Hill	40.876551	-73.91066	Smith Haven Mall Food Court	40.863369	-73.129668	Food Court