Capstone Project

Analysis of London Boroughs to Locate Suitable location for Healthy Nutrition Store

Introduction Business Objective and Problem

Suitable Locations for New Retail store for Health Nutrition in City of London

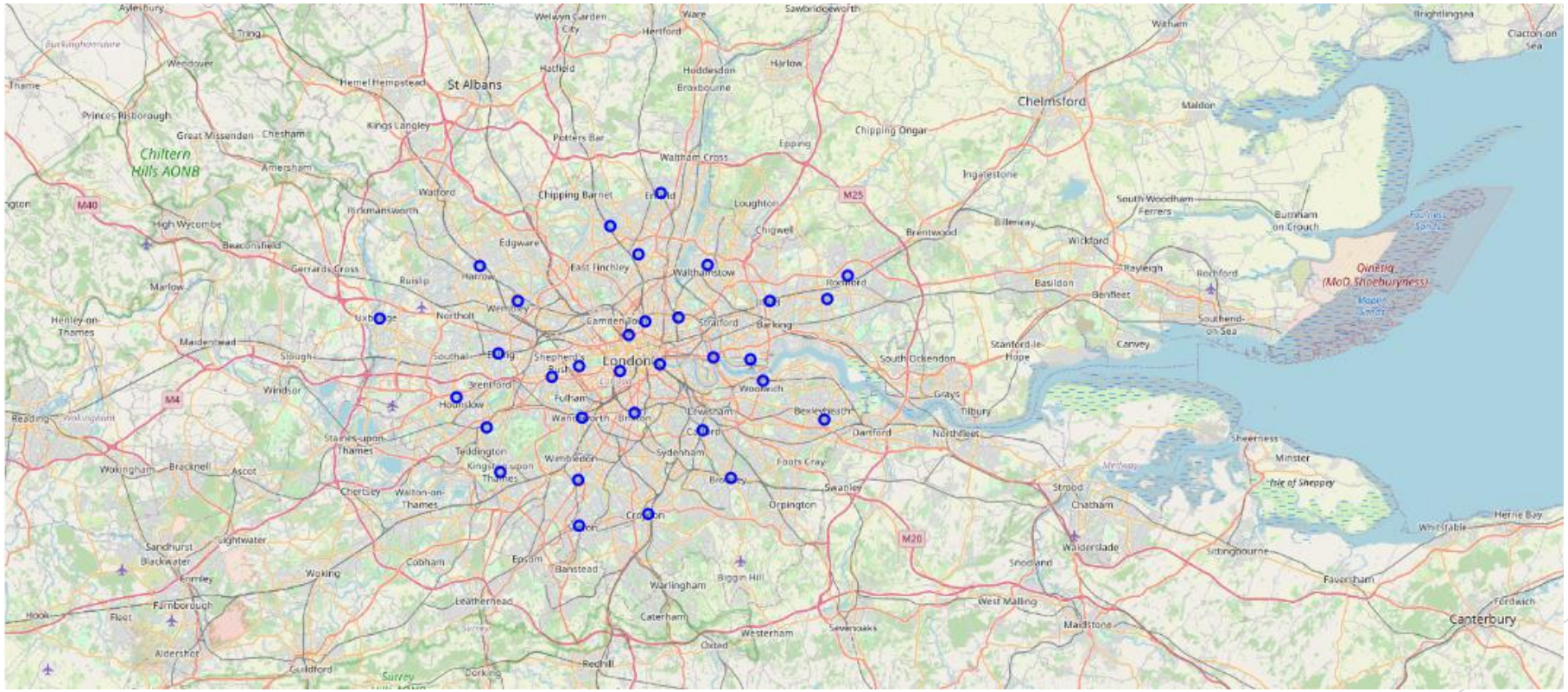
- ### Description of Problem
  A client is planning to introduce their chain of stores which specializes in health based nutrition products, ranging from food supplements, vitamins, meal plans, juices, etc. They will be carrying out detail on ground market research activity to decide the exact target location of their stores, but for initial feasibility they need to narrow down the broader target neighborhood where they can start their kick start their detail market sizing/feasibility activity. For this purpose they have request to identify the neighborhoods in London which have higher concentration of population which will be interested in their product offering. Without utilizing existing public data the company could end up spending a large amount of money on ground market research encompassing the whole city.

- ### Criteria
  The client has already communicated that generally their stores are located in proximity to areas which have higher concentration of other facilities providing services to health/fitness enthusiasts. For this purpose we will be using London City Borough data (available on Wikipedia) and map it through FOURSQUARE to find out concentration of facilities which are of interest to health/fitness conscious people. And based on this analysis the suitable neighborhoods will be recommended to the client to initiate their detail on-ground market research.

Data Collection and Cleaning

- **In this project, I will be using the following dataset to help solve problem - List of London Boroughs, and Foursquare API.**
- **List of London Boroughs**
  - Information on boroughs and their population & coordinates
    -Coordinates can be used to get neighborhood data from Foursquare. source: Wikipedia url: https://en.wikipedia.org/wiki/List_of_London_boroughs

Visualization of Neighborhoods



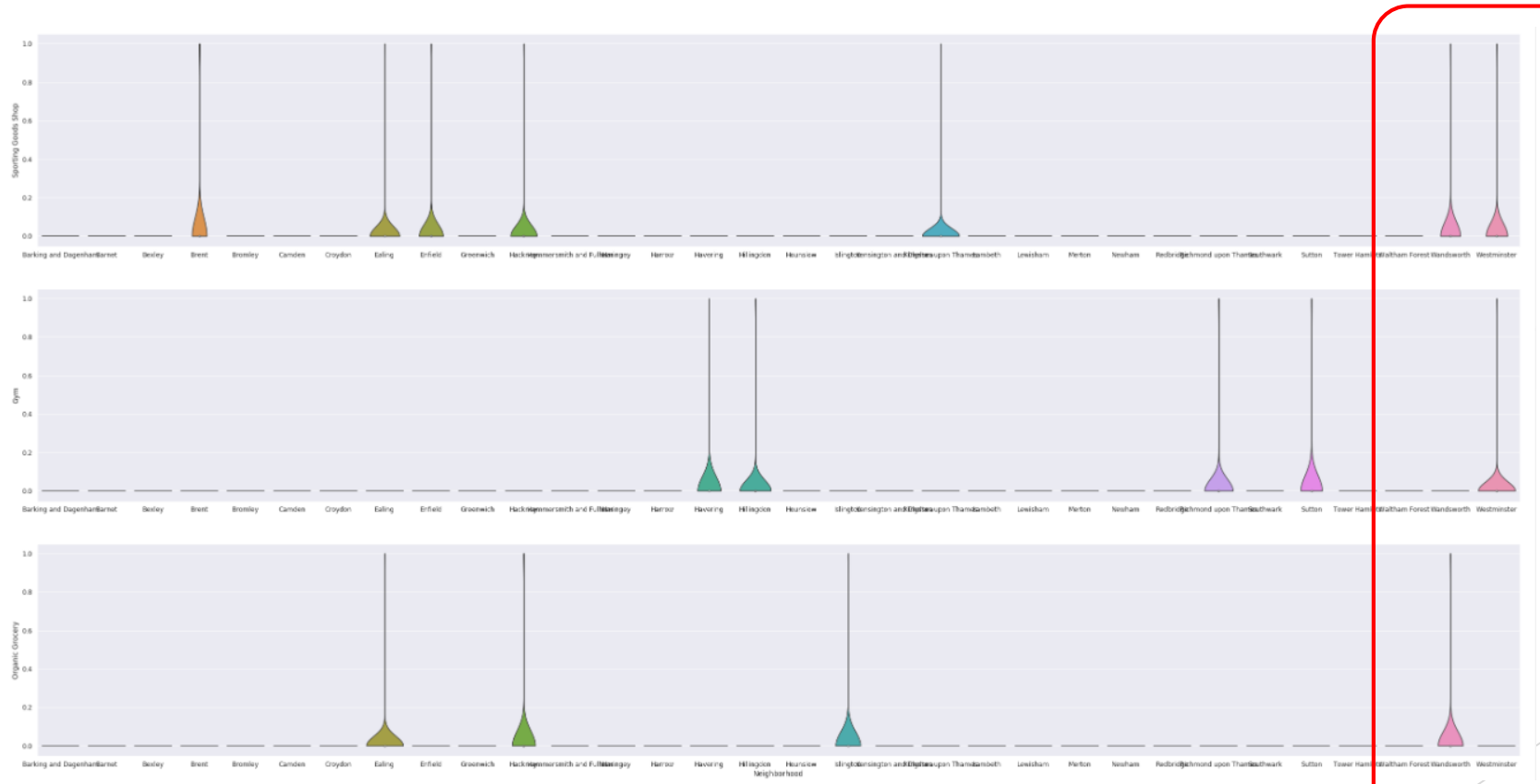
Analysis of Neighborhoods using Foursquare

- **Top 100 venues that are in the neighborhood**
- **Clean Json Structure and convert it in dataframe**
- **Analyze each Neighborhood**
- Find Frequency of each venue category
- Find suitable Boroughs by finding frequency of categories addressing health conscious individuals i.e GYMs, Organic Grocery, Sporting Goods

Analyze each neighborhood through frequency of each value category

	Neighborhood	African Restaurant	Airport	Airport Lounge	Airport Service	American Restaurant	Antique Shop	Argentinian Restaurant	Art Gallery	Art Museum	Arts & Crafts Store	Asian Restaurant
0	Barking and Dagenham	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.000000
1	Barnet	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.000000
2	Bexley	0.0	0.0	0.0	0.0	0.033333	0.0	0.0	0.0	0.0	0.0	0.000000
3	Brent	0.0	0.0	0.0	0.0	0.026667	0.0	0.0	0.0	0.0	0.0	0.013333
4	Bromley	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.025641

Selected neighborhoods with 2 of 3 target facilities in higher frequency



The Neighborhoods
So as we can see from the analysis there are 2 neighborhoods to open new stores - according to the criteria that they have the 2 of the 3 specified venues in a great frequency (Gyms and Organic Grocery). They are as follows:

Neighborhoods
Wandsworth and Westminister

- **Results**
  - I guess it's not a surprise that these districts are all very centrally located in London. Locations fitting the criteria for popular venues would normally be in central locations in many cities of the world.
  - From this visualization it is clear that on a practical level, with no data to base decisions on, the circle of the 31 borough is very large, and researching and then visiting them all would be a daunting and time consuming task. We have narrowed the search area to suit the client's retail business.
- **Discussion**
  - this is the initial recommendations look for the initial stores locations, however after the on ground research, we could learn of additional insights and relevance for target market which can be used to rerun this analysis with additional parameter and help to locate suitable venues for additional stores.
- **Conclusions**
  - we have narrowed down the target locations for the customer to carry out the on ground research to further help in pinpointing the location of new healthy nutrition stores.
  - Without leveraging data to make focused decisions, the process could have been drawn out and resulted in new stores opening in sub-standard areas for this retailer. Data has helped to provide a better strategy and way forward, these data-driven decisions will lead to a better solution in the end.