

The Battle of Neighborhoods

Introduction

Imagine Gordon Ramsay is looking to start a new fancy Italian restaurant in London. However, London is crowded to the brim with restaurants of different kinds and as the owner, he is naturally looking to ensure that the restaurant is profitable. If the restaurant is placed in an area which is already crowded with restaurants catering to the same customer segment, it will be battling the competition for guests. A better placement might be an area which is lacking restaurants (particularly Italian ones). However, besides low competition, Gordon also needs customers who can afford the food – and preferably many of them. A solution to this problem is to use data science to give recommendations of areas (in this case, we choose to limit our fidelity to borough-scale) where the ratio of competition to customer spending proclivity is low compared to other areas. The level of competition can be measured by the number of Italian restaurants in the borough. Customer spending proclivity can be estimated by calculating the median income per square kilometer, which ensures that both the individual income and population density is considered in a way which we can relate to ‘total amount of money that people who live nearby can spend’.

Data

One of the main datasets which will be used to solve the problem is Foursquare location data, which includes any venues – coffee shops, restaurants, shops, markets, hotels, gyms, parks and more – found within a certain specified radius of a set of coordinates [1]. A list of London boroughs and neighborhoods will be scraped from the Wikipedia page ‘List of areas of London’ [2]. Coordinates for each neighborhood will then be acquired through the Geocoder Python package [3]. In order to assess the suitability of each borough, Average Income of Tax Payers [4] and Land Area and Population Density [5] will be combined to calculate a measure of spending power per square km. These two datasets are provided by the Greater London Authority at the London Datastore.

References

[1] <https://developer.foursquare.com/>

[2] https://en.wikipedia.org/wiki/List_of_areas_of_London

[3] <https://geocoder.readthedocs.io/index.html>

[4] <https://data.london.gov.uk/dataset/average-income-tax-payers-borough>

[5] <https://data.london.gov.uk/dataset/land-area-and-population-density-ward-and-borough>