

Opening a Coffee Shop, Location Analysis: London, UK

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IBM Data Science Capstone Project

Overview:

The United Kingdom (UK) is traditionally known as a *tea-drinking* nation. But, in 2018, the UK became the *fourth*-largest coffee markets in Europe (EU28 countries) after Germany, France, and Italy, with annual market value worth 1.9 billion euros. This value is translated to a total coffee consumption volume of 74.600 tonnes (1). In terms of coffee consumption per capita however, the UK's number is at 1.09 kilogram (kg), which ranked far below Finland, the Europe's number one country in terms of per capita coffee consumption at 8.54 kg. This fact tells us about the UK coffee market upside potential in comparison with the other European markets. The increasing trend of coffee consumption as part of modern urban lifestyle in major cities contributed heavily to this trend.

London is the capital and largest metropolis city of England and the UK. The city is divided into 33 districts which consist of 32 boroughs and the City of London Corporation (2). Currently there are more than 9 million people who live in London. The city has a population density around 5,900 people per km² (3). London is also an attractive city to invest in consumer-oriented business such as coffee shop. First of all, it is one of the top financial and business centres in Europe and UK that housed headquarters of many global corporations, which means there are a large number of people working in the city that can be accessed as customers. Second, the city has an investor friendly regulatory framework and tax regime, in addition to business property market that is geared to the investor.

In the perspective of an investor who is interested to open a coffee shop in London, it is important to consider the ideal location to establish the future coffee shop. This project will start with simple analysis such as finding the number of coffee shop per borough, determining which borough has the highest number of workday population as I'd mainly like to target workers and employees in addition to student and other type of consumers, finding the level of average income per borough, and so on. To help answering these questions, I will create maps and charts that will support the analysis of numerical, categorical, and geospatial data.

Problem statement:

I narrowed the problems down into two important points which will be answered with the analysis:

- **How to determine the most potential location to open a specialty coffee shop in London?**
- **Where is the most potential location to open a specialty coffee shop in London?**

Description of the data & how it will be used:

To support the analysis, I used data from the following sources:

- The London Datastore by the Greater London Authority or GLA (3): GLA data will be the main source data for this analysis. Data such as information on boroughs, population data, income, workday population, and information on London businesses.
- I use the London geo spatial data in the format of JSON file format which sourced from the London Data Store created by Stuart Grange (4).
- Nominatim API from Python's GeoPy is used to obtain the coordinates of London (5).
- Foursquare API will be used to show the location of venues in London based on the coordinates and to calculate the number of coffee shops in London. The data from the API will be use further in the analysis and in the creation of choropleth maps to visualize the data (6).

References

1. **European Coffee Federation.** *European Coffee Report 2018-2019*. Brussels : European Coffee Federation, 2019. p. 20, Market Report.
2. **Wikipedia.** *London*. San Fransisco : Wikimedia Foundation Inc., 2021.
3. **Greater London Authority.** *Population Density (GLA Estimates/Projections)*. London : Greater London Authority, 2021.
4. **Grange, Stuart.** *London Boroughs Boundaries*. Zurich : Stuart Grange, 2021.
5. **pypi.org.** *geopy 2.1.0*.
6. **Foursquare.** *Developers API*. 2021.