Study case: opportunity of establishment for a deluxe coffee place in Paris

Jordi Brines

April 24, 2020

1. Introduction

1.1. Background

Paris is the capital of France and a city renowned for its abundance of coffee places. As such, entering the coffee places market in this city for a new stakeholder, or increasing one's market for an already established coffee place share may be difficult due to the high competitiveness of the market. As such, a data analytics and segmentation approach may result interesting for any person wishing to enter the market, or already in the market. This may allow for a better understanding of local potential customer base, in order to better adapt its offer to the targeted spot in the city, or inversely to have some insights to facilitate the choosing of a spot for the opening of a new coffee place targeted to a certain market share.

1.2. Problem

Supposing an entrepreneur or a chain is interested in opening a coffee shop or a café in Paris, data might be helpful in order to determine the best spots in the city in order to open such a place, based on the number of potential customers, the market saturation, and also the demographics of the local population if a specific market segment is targeted.

2. Data acquisition and cleaning

2.1. Data acquisition

Most demographic data for Paris can be found on the INSEE (French national institute for statistical studies) website accessible [here](#) *(reference [1])*. We can find them at a district level ("arrondissement"),

of which Paris is made of twenty, as such we will use that detail level for the studies and categorize the twenty districts in Paris. We will use two datasets from here, the revenue distributions across all administrative sub-units in France 2017 (including Paris districts) available here *(reference [2])* and population distributions across ages and genres, and districts in 2016, available here *(reference [3]);* these demographic data that may be useful in order to target a certain audience. We will convert these populations in number into population densities, which might be more relevant as it would seem more profitable to establish a coffee place in a higher-density zone, by using the district surface data, which can be scrapped from this Wikipedia page *(reference [4]).*

Also, a feature that might be of interest is the number of coffee places in the district, in order to avoid targeting a market that could already be saturated. For that, we will use queries via the Foursquare API *(reference [5])* in order to obtain an estimate of the number of coffee places in each district compared to other type of venues.

2.2. Feature selection

For this study, we will use as features:

- Population density (defined as the population on the district *on reference [3]* divided by the district surface scrapped *in reference [4]* which gives an estimate for potential customers, the higher the number, the more profitable a local business would be
- Age bins for population, we will observe for each district the rate of the population which belongs to each bin (chosen arbitrarily but allows to observe a trend in the age of population) [15 y.o.; 35 y.o.[, [35 y.o.; 55 y.o.[, [55 y.o.; 75 y.o.[*(extracted from reference [3]),* which allows for segmentation
- Median revenue *(reference [2])*, which will allow for segmentation
- Rate of coffee venues defined for each query defined as the number of coffee places returned from a query with the Foursquare API *(reference [5])* for the venues in each district divided by the total number of venues, which will be used as a measure of "market saturation"

References

[1] INSEE website (French national institute for statistical studies) https://insee.fr/fr/accueil

[2] Revenue distributions in 2017 in France https://insee.fr/fr/statistiques/4291712

[3] Age and gender repartition of French population from 1968 to 2016 https://www.insee.fr/fr/statistiques/1893204

[4] Wikipedia page for Paris districts https://fr.wikipedia.org/wiki/Arrondissements_de_Paris

[5] Foursquare developer portal https://developer.foursquare.com/