Perfect Beer Bar Location in Paris

1 Introduction

Paris is one of the most beautiful cities in the world and it is one of the top destinations for tourists[1]. With the population of over 2 million people, Paris is a capital of a country whose nation definitely enjoys to spend some time over a glass wine or beer as France is among the most drinking countries[2]. Therefore, Paris is a perfect place to open a beer bar where tourists can rest after long time of sightseeing and locals enjoy a chat with friends. Although the number of bars in the city accedes 4000, according to some sources[3], present bars mostly propose wine or Belgium types of beer. There is a huge potential in setting up a bar with locally crafted beers such as ales, porters or stouts. The newly open bar will possess a microbrewery which is a relatively low-cost investment[4], but this step will enhance bar's uniqueness and make more competitive.

However, a preliminary study of the city area is required to benefit from a chosen location which appears to be crucial for this business. It is important to take into account different factors such as proximity of tourist attractions, number of rivals in neighbourhood and their rating, rent costs, etc. With this regards, it is important to extract relevant data which might help to choose a perfect location for a bar. The tools of data science and machine learning will make a great contribution in finding the position.

This business case is aimed on those who plan to open a new beer place in Paris and do not know where to do it and how to organise the search. The key factors to identify the problem will be defined and data, harvested from various websites (including Foursqure location data), will help to make the final decision.

2 Data description

In order to provide the best location for opening a bar the number of key features should be accounted. First of all, we limit the search inside the city of Paris and do not consider the suburbs. Paris consists of 20 *arrondissements* (districts)[5]. The problem of finding the location will use different parameters but the final results will provide several options.

The choice of a district depends mainly on data accessibility. In this case the following features are chosen for starting the analysis.

These features are chosen for the following reasons. The district number and its postal code serve as identifies and the postal code serves as a unique key which is helpful in data preparation. The number of inhabitants (Population) and employed people (Employees) in a district correlate with the possibility of going out in the neighbourhood. In other words, the more people in the district the more potential clients there are, which nonetheless depends on the playability of these people, i.e. those who have jobs and can spend money in bars. The number of cultural sites correlates with the amount of tourists who

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[1] https://bigseventravel.com/2019/08/50-most-visited-cities-in-the-world/

[2] https://www.worldatlas.com/articles/who-drinks-the-most-alcohol-consumption-by-country.html

[3] http://www.worldcitiescultureforum.com/data/number-of-bars

[4] https://www.telegraph.co.uk/men/the-filter/11329984/How-easy-is-it-to-start-your-own-microbrewery.html

[5] https://en.wikipedia.org/wiki/Arrondissements_of_Paris

Feature name	Description	Source (hyperlink)
Number	District number	link
Post Code	Postal code of a district	link
Population	District population	link
Cultural sites	Different cultural sites and their locations	link
Employees	Number of employees registered in the district	link
Cost	Average property cost for m^2	link

Table 1

visit the district which will also increase chances to get customers. The average property cost is a quantity which also plays role in starting this business. Therefore, it is desirable to find an optimum between these features to select the right district or at lease several of them.

3 Data analysis and decision making

After collecting the data from the presented sources we can extract the following distributions of features among the districts shown in Fig. 1. According to these plots we conclude that there is a diverse distribution
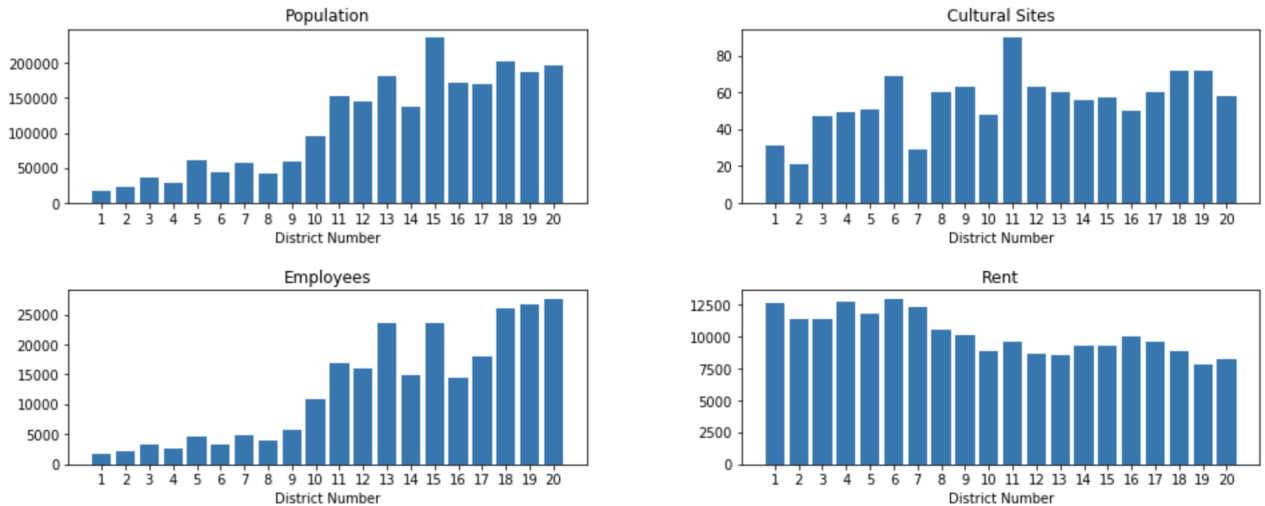

Figure 1

of different parameters. Therefore, we should combine them in some way to make a decision. In the present case we make a new parameter which defines a score for the district:

$$\text{Score} = \text{Population} + \text{Cultural sites} + \text{Employees} - \text{Cost}$$

This parameter allows to maximize the the first three terms and at the same time it accounts the cost which we wish to minimize. According to this parameter we obtain the that *districts 15,18 and 20 are the best locations for a bar* as given in Fig. 2.

4 Conclusions and future directions

In this project I presented results on choosing the perfect location for a bar in Paris. The available data allowed to find the perfect district. However, the search can be pushed forward to find more precise

	Number	Post Code	Population	Cultural Sites	Employees	Cost	Score
14	15	75015	236715	57	23545	9350	250967
17	18	75018	202685	72	25977	8890	219844
19	20	75020	196880	58	27667	8240	216365

We conclude that districts 15,18 and 20 are potentially better for setting up a bar.

Figure 2

location. To accomplish this, further analysis is required which can not be with the use of Foursquare API because the the available data for Paris is not useful in this context. Some other searching tools like Tripadvisor could help but this can be done in future.