Coursera IBM Data Science Professional Certificate

A Battle of Paris Neighbourhoods

Finding the right place

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Table of Contents:

Executive Summary:

This work is about using Python and foursquare location data to advices a restaurant business owner of potential place to open a restaurant. The study will be performed only for the city of Paris, the French capital.

Eventually, business owners of other type of business could find insights in the following work as well.

1. Segmentation of Paris: Finding the right place of a restaurant

1.1 Business Case

Searching where a business can bring a service or a product to the end users, is an important question each undertaker or business owner has to face sooner or later. Particularly in the case of a restaurant or a bar we may wonder about the best possible place to open. The answer to that apparently simple question require taking into account many parameters regarding what is called the marketing mix (i.e. parameters related to the product \ service, the place, the price and promotion).

In addition, everyone can access nowadays any kind of information only using internet but, the amount of data and time just looking for the right information and performing some comparisons could be not negligible. Only considering Paris (and not the region called $\ll$ $\hat{i}le\ de\ France$ $\gg$ which is on a more important territory), there are twenty (20) boroughs of four (4) neighbourhoods each which have many possible venues for a restaurant.

Taking the case of an undertaker who wants to open a restaurant in Paris, a data science method can then be used in combination to a defined set of location parameters to advice the owner on possible locations.

In this report, after choosing some relevant location parameters for any shop, I will use Foursquare location data combined with a machine learning algorithm to provide insights on potential location in Paris. I will also use some other datasets to have an idea of the general reputation and accessibility of Paris' neighbourhoods.

1.2 Data and Methodology

1.2.1 Data sources

To tackle the problematic of choosing a potential place for a restaurant in Paris, the following data will be used:

1. Data providing, Latitude, Longitude of Paris' neighbourhoods:
   This data will be web-scraped from https://opendata.paris.fr and transformed to be easily used with Foursquare API.

2. Data about general neighbourhood's notations:
   The data come from a web page (https://www.parisenigmes.com/guide-arrondissement-paris) and provide a short description of each neighbourhood as well.

3. Foursquare location data about the already existing venues in each neighbourhoods.

As mentioned, the first data source will provide the Paris' neighbourhoods locations (Name, latitude and longitude). The latter are inputs for the Foursquare API calls to explore the neighbourhoods' venues categories. To have a broader picture, the second data source will help addressing other more general parameters about the Paris neighbourhoods that will complete our understanding of Paris.

The used methodology will be explained in details in the following parts.

1.2.2 Methodology

For week 2

1.3 Results section

1.4 Discussion

1.5 Conclusion

2. Acknowledgements

3. References