An African restaurant in Rome

A.1. Description & Discussion of the Background

Rome is one of the most attractive metropolis in the world. Founded according to the tradition in the 753 BC, during its three millennia of history, it has been the beating heart of one of the most ancient civilizations, which influenced society, culture, language, literature, art, architecture, philosophy, religion, law and customs of the following centuries. It is a city full of history that attracts millions of tourists every year.

I was able to discover various aspects of this city having lived here for 4 years, for this reason I have decided to use Rome for my project. The city has a population of about 3 million people divided in 15 Boroughs called "*Municipi*". With a surface of 1 287,36 km^2, it is the fifth largest city in Europe. The city, therefore, has a varied urban structure with the presence of different ethnic groups.

Rome can be the ideal place to open a shop like a restaurant but it can hide many pitfalls at the same time. Indeed, the splendor and monumentality of the old town is opposed to the suburbs characterized by a very different social condition. In such a complex scenario, in the present work I have tried to answer to the following question: *"where could a typical African restaurant be located?"*

Many factors can guide this analysis. The location of the restaurant in a specific neighborhood with respect to another may depend on the cost of rentals, the presence of a large social density, the influx of tourists, the proximity to other activities of the same type or historic sites, the general situation of the neighborhood (comfort, reliability).

In the following a simple analysis using data science techniques have been carried out in order to find the best place to locate an African restaurant (with a medium budget).

A.2. Data description & methodology

A.2.1 Data description

In the project the following data will be considered:

- **Wikipedia.** From here it is possible to obtain general information on Rome in a reliable way **[1]** and at the same time, the administrative subdivision of the city **[2].**
- **Forsquare API** will allow to get the most common venues of a given Borough or Neighborhood of Rome **[3]**.
- **DatiOpen.it.** It is a site that provides data about the city of Rome through multiple formats (csv, jason ...). These data relate to social information, green areas, historical sites and points of interest such as libraries **[4]**.
- **dati.comune.roma.it [5].** It a site that hosts many datasets about Rome for the following fields: environment, tourism, sport, transportation, culture, social environment, urban security and business.
- **Google Maps [6].** Unfortunately, not all geographic data can be retrieved directly from the web. Sometimes I will need to use google maps and manually search for coordinates of specific points.
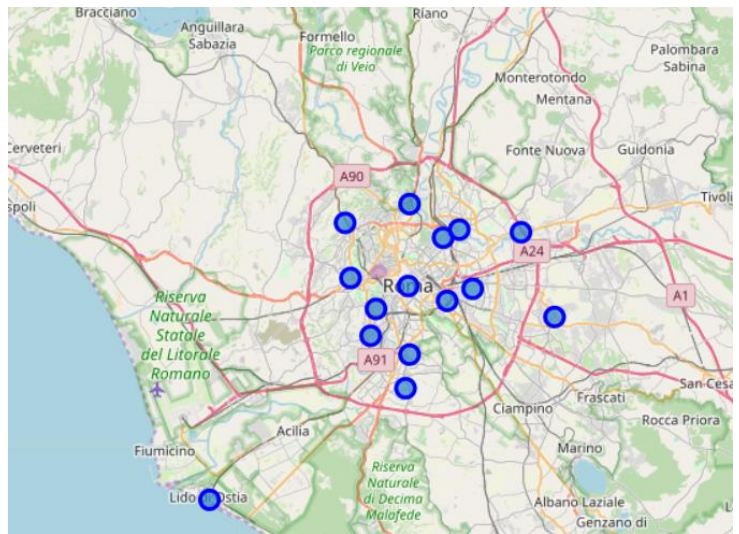
A.2.2 Methodology

- The first step will be to identify the Boroughs of Rome (as shown in image 1) and to find those of greatest interest. Foursquare API will allow to get the most common venues of a given Borough. For instance, those for which data are insufficient or those that are less attractive (lack of points of interest that can attract tourists) could be discarded.
  In this phase, I will also use the other datasets presented in previous section.
- Once the most interesting ones have been identified, each single Borough will be analyzed individually. A list of Neighborhoods with their coordinates will be produced for each Borough.

FIG 1. An image showing Rome's Boroughs. (source: own elaboration)

  Foursquare API will allow again to get the most common venues of a given Neighborhood.
- Thanks to unsupervised machine learning techniques such as the **K-means algorithm**, it will be possible to identify similarities between areas and further reduce uncertainty about the future location of the restaurant. Two aspects will be considered in particular: the average cost of rents in that area and the proximity to points of interest. It will also be important to take into consideration the proximity to activities of the same type which could be a factor of strong competition.
- In the end, ideally, the analysis conducted will allow us to identify great areas for launching our business!!!

References

[1] https://en.wikipedia.org/wiki/Rome

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

[3] https://developer.foursquare.com/

[4] http://www.datiopen.it/it/catalogo-opendata/daticomuneromait

[5] https://dati.comune.roma.it/

[6] https://www.google.fr/maps