

# Exploring venues in Madrid and Barcelona

## using Foursquare location data

### 1. INTRODUCTION

Whenever a company or a person decides to start a new journey in a new city or a new country, there are a lot of research to do ahead before taking this big step on moving to a new city. It would be wise to start collecting and analysing a wide variety of information available about the new future home city. Depending on the type and area of business of the company, or personal lifestyle of the person, age, and many other personal factors, different information will be useful to know beforehand, and which will most probably help in deciding which city would be best to move in. From municipal services and cable providers, to the best local coffee shops and healthcare practices, as well as cultural offer, these are only some of the thing everyone wants to know about the host city. Proximity to stores, schools, coffee shops, parks and many other venues are some of the key elements to analyse when searching for the right neighbourhood in the new city, as well as information about local internet providers, best restaurants and businesses in the area.

The purpose of this project is to explore the venues in 2 cities from Spain: Madrid and Barcelona. Madrid is the capital city of Spain. After Madrid, the second major city in Spain, in terms of population as well as notoriety, is without doubt Barcelona. In both cities there are a lot of venues to explore and which can provide valuable information to anyone who is interested in moving to Madrid or Barcelona. To explore the information, during this project the Foursquare API, together with external datasets (csv file, json files, etc.), are the main tools used to provide the expected analyses of different neighbourhoods from Madrid and Barcelona. Different maps will be plotted in order to better visualize the neighbourhoods and different venues from both cities, highlighting the different venue categories in each city, and maybe what would be very interesting is to find the similarity or dissimilarity around venues categories in each city. The comparison between venues categories that you can find in each city could be a valuable element which could make the difference when choosing a new city where to move in.

The target audience is any person interested in living in Madrid or Barcelona, and wants to access information from both cities, as a comparison tool. On the other hand,

based on the information provided, firstly on neighbourhood level, secondly on venues level, business decisions can be taken with respect to the right area and city where to expand or start a new business.

## **2. DATA**

External csv and json file will be used in order to get information about neighbourhoods in Madrid and Barcelona, as well as their location, etc. Main information used from external files in this project:

- Neighbourhoods name
- Latitude
- Longitude
- Population
- Area of each neighbourhood, among others

On the other hand, in order to start analysing the venues in each neighbourhood, additional information regarding venues will be used throughout this project, by using the Foursquare API as main tool. It entails to extract complete information of various venues (name, location, etc.) in each city, plot them on maps, and highlight them based on their category, frequency, or other information available. This enables any person to take a quick glance and decide which neighbourhood better adapt to his/her lifestyle, based on the venue location and other parameters, and would love to visit.

All previous data will be used to cluster neighbourhoods and venues based on different characteristics, in order to identify similar neighbourhoods and venues, as well as the relationship amongst them. Neighbourhoods and venues will be grouped in different groups/clusters, plotted and coloured for a better and easy visualization of components from different group which are similar, and easy identify the points of interest for any person (type of venues in neighbourhood, etc.) who wants to explore Madrid and Barcelona.