

## Airbnb rentals in Euskadi, an exploratory analysis.

Tourism in the Euskadi ([Basque Autonomous Community](#)) has increased considerably in recent years, approximately 12% in the last 3 years. Touristic accommodation has consequently increased and is currently considered as an emerging industry in Euskadi.

A short and simple analysis based on the data published on the Airbnb website "[Get the data](#)" for Euskadi on February 2020 aimed to answer the following questions:

- What are the top ten Airbnb rental cities in Euskadi?
- Where are they mainly located?
- What features affect the rental price?

A quantile analysis initially showed that 90% of the rental prices ranged between 25 and 400 USD, hence, we used the data included in this price range for the analysis (A total of 4984 entries).

The map below shows that the Airbnb rentals concentrate mainly around main cities and coastal areas. This map, together with the price density and distribution diagram, illustrates that rental prices are mostly below 200 USD per night.

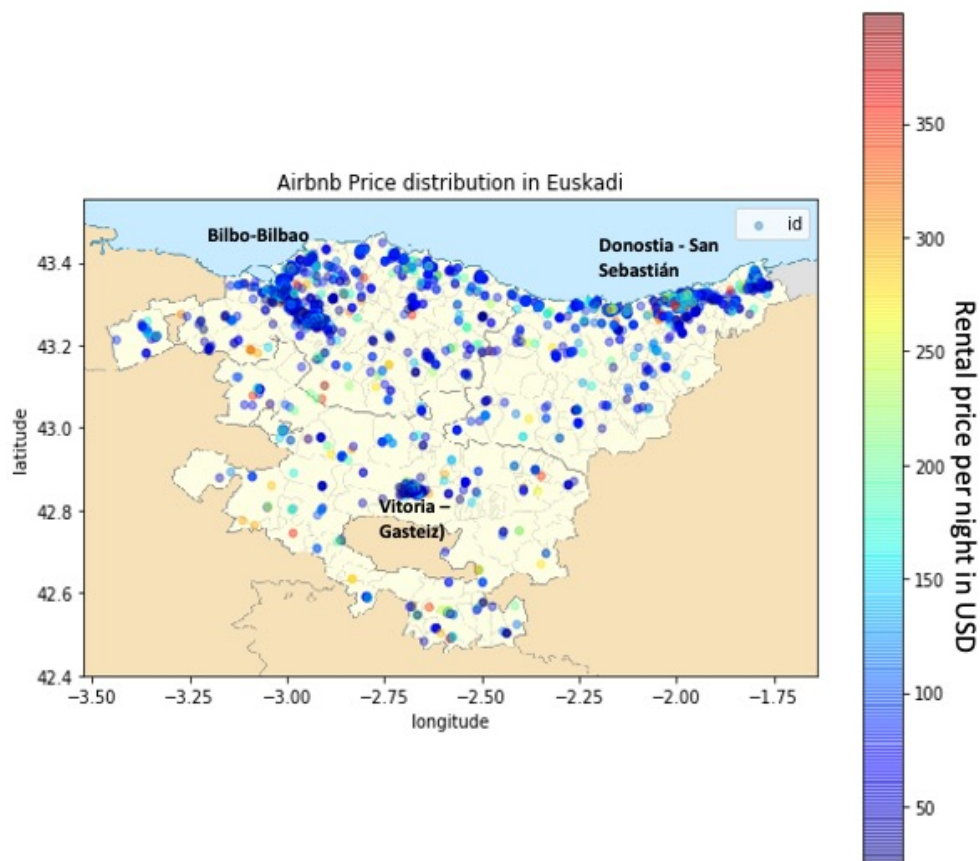
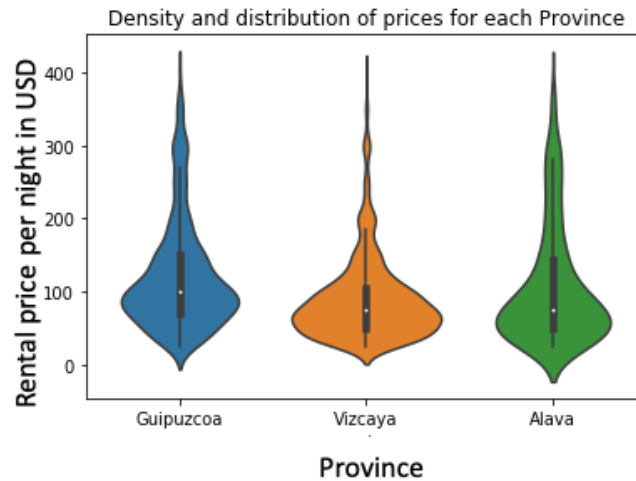
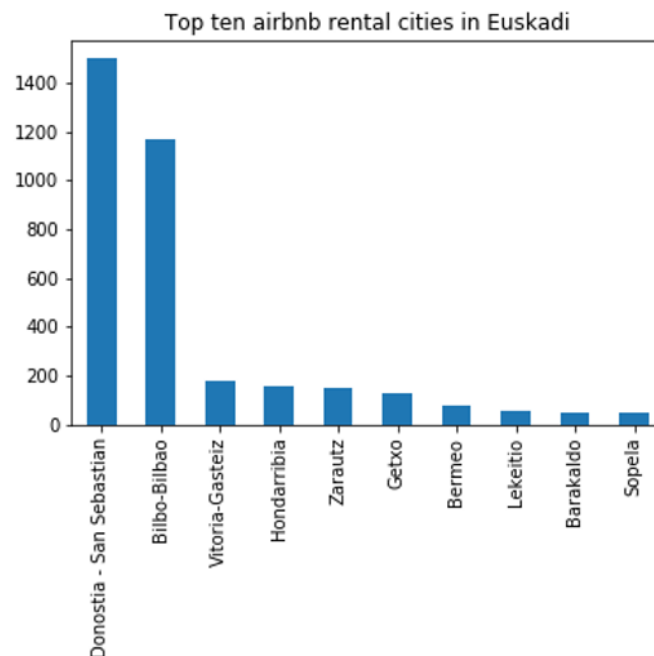


Figure 1. Airbnb rentals price distribution map in Euskadi

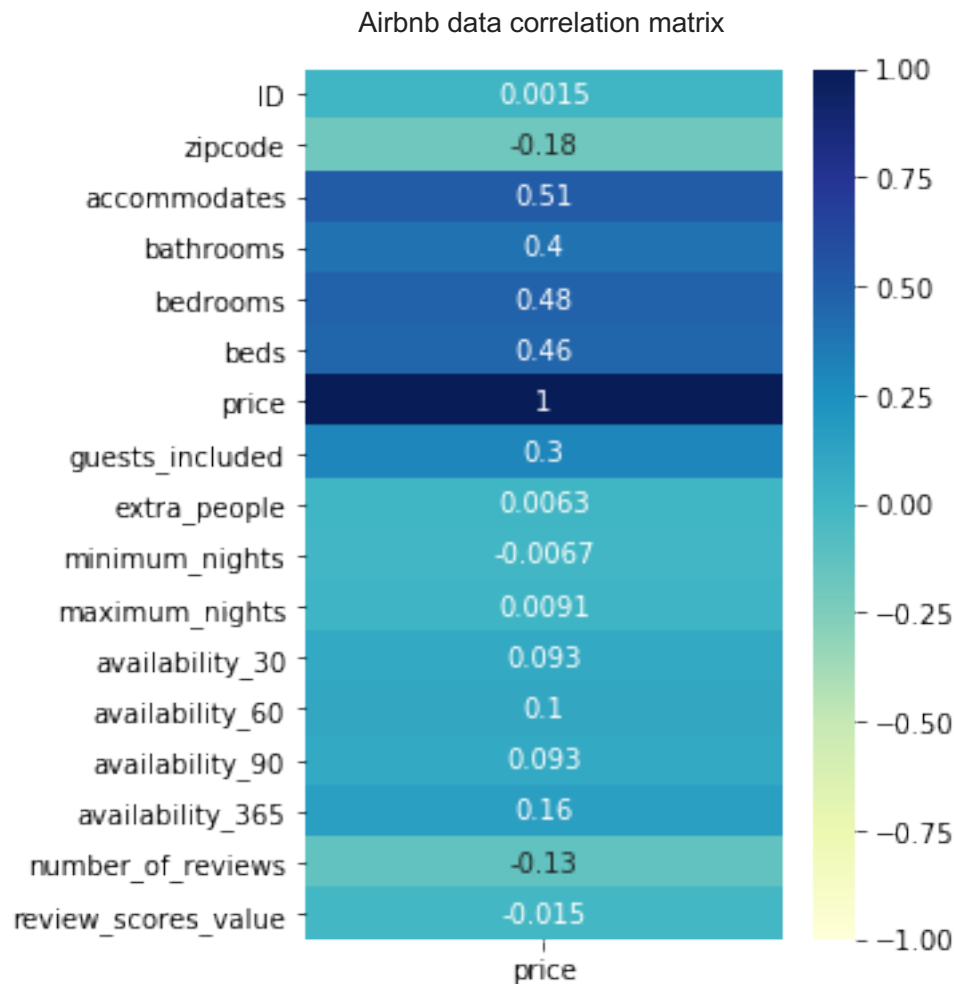


Donostia-San Sebastián is the city with highest number of Airbnb rentals, followed by Bilbao and Vitoria-Gasteiz.



To answer the last question, I used a matrix to show the correlation (Pearson method) between different variables and the rental price. As it is shown below, the variables that show the highest correlation are the number of guests (accommodates), bedrooms, beds and bathrooms.

To finish, a linear regression model was completed to help understand what are the variables that could be used to predict price changes in this area. However, the resulting  $r^2$  was below 0.3, meaning the model was not very robust, and that the variables used (see figure below) only explained 30% of the price. Hence, a deeper analysis needs to be achieved regarding price prediction.



In summary, this short analysis showed that:

- Accommodation prices per night mainly ranged between 25 and 400 USD.
- Airbnb rentals concentrate in the main cities and coastal locations.
- Donostia - San Sebastián has the highest number of Airbnb rentals.
- The rental price appears to be affected by the number of guests (accommodates), bedrooms, beds and bathrooms.

This analysis was completed as part of an assignment for the Udacity Data Science course, it is still quite superficial and simple tools were used. I expect to improve the analysis overtime, incorporating new tools to develop a more thorough and complex analysis.

The code and data can be found in my github page: <https://github.com/Sng79?tab=repositories>