

# **Airbnb Rental Business Opportunities**

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## Executive Summary

This report analyses Airbnb rental data to seek business opportunities for new entrants into this market and real estate companies that intend to grow their business in Madrid. The business problems to solve are three:

- What are the main determinants of accommodation price on Airbnb?
- Which districts in Madrid have higher potential to invest?
- Which accommodation category is best to invest?

Datasets of listings and bookings in Madrid for the last year are downloaded from [insideairbnb.com](https://insideairbnb.com). First, the factors that drive the accommodation price are identified using Machine Learning prediction. Consequently, visualization analysis is carried out in Tableau using those variables.

The analysis revealed the following solutions:

- Price determinants: number of accommodates, room type, neighborhood, number of beds, number of bathrooms.
- Potential districts: Barajas airport, Chamartin, Chamberi, San Blas-Canillejas
- Accommodation category: entire space, 1-2 beds, 2-4 accommodates

Considering these findings, starting short-term rental business will help to reach the breakeven point faster.

## Introduction

Airbnb is a platform for homeowners to rent accommodation for short stays. Whereas Madrid is one of the most visited cities in the world, but short-stay rent market is not saturated yet, compared to London or Paris, opportunities in Madrid rental market is huge.

This analysis focuses on mid-size accommodations (1-7 persons). Currently, there are a little over 20 500 apartment units in this category. The average occupancy rate according to [airdna.co](https://airdna.co) is 81% and average annual revenue in very generalized terms is 51 000 euros. Different real estate sources claim that short-term rent in Spain is at least 60% more profitable than long-term rent.

Madrid has 21 districts with most of the sightseeing spots located in the city center.

## Analysis

Calendar booking and Listings datasets were downloaded from [insideairbnb.com](https://insideairbnb.com). These datasets contain booking and listings data for 2023.

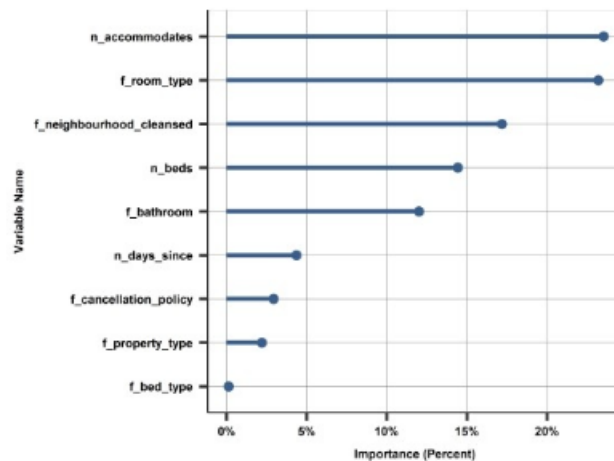
**Feature Engineering.** To select the most relevant determinants of apartment prices, I read through some popular blogposts of experienced Airbnb hosts and scientific articles that researched this topic. The location of the listing counts for experienced owners, while for opportunist owners it has no importance. The listings' reputation has a negative impact on the price, contrary to the conclusions achieved in other studies, an aspect that supports the idea that price determinants differ across regions.

Basically, major predictors common in both texts are number of accommodates, amenities, location, rating and bathrooms. Some other variables that also influence the price are instant bookable, host

involvement, distance to the center, minimum nights requirement and if host has a status of superhost.

**Model selection** was based on comparison of the RMSEs of the models, where the Random Forest model beats the other two with 48.24 against 50 and 51. All of the models perform extremely badly on test set, but performance on truncated test set is better than even on train set. So, for more accurate results, the apartment owners are advised to rely on truncated test results.

The Random Forest model generated the following feature importance diagram:



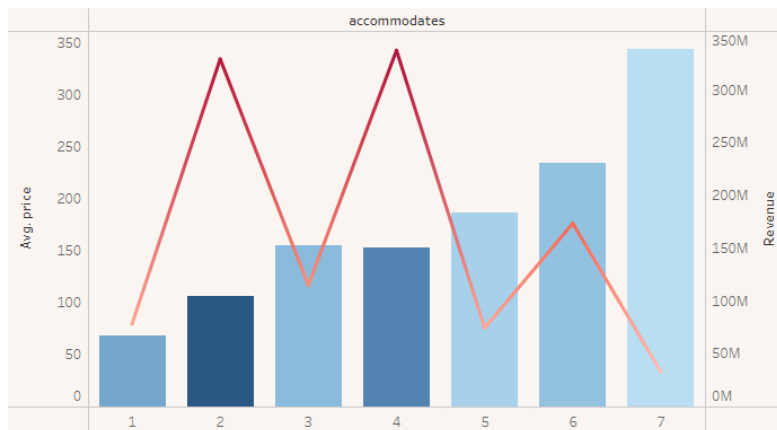
The findings match the opinions in the host blogs and research studies. Thus, I moved on to Tableau for visual analysis.

Visual analysis showed that competition is extremely low everywhere except the city center. The districts with highest potential based on the geographic analysis are Barajas, San Blas-Canillejas, Chamartin and Chamberi. The reason for choosing these specific areas is that there is the main airport in Barajas, so the demand for short stays on arrival and departure must be quite high. Especially, when we consider that hotel prices near airports are normally unreasonably high.

Chamartin and Chamberi districts are historically the home of aristocratic residences. Most popular museums of Madrid, the stadium of “Real Madrid” FC and parks are located in these two districts. Besides, they are very close to the city center and have multiple types of public transportation connections.

Finally, San Blas and Salamanca districts are the richest areas of Madrid. Most of the embassies and diplomatic entities are located there. This location is perfect for travelers who seek for luxurious brands, green parks and night life. Demand from the visitors of diplomats and symposiums will also be high there.

Price by Number of Accommodates



Regarding the accommodation type, the graph above perfectly summarizes the situation. The color of the bars indicate the competition density, where we can see that two and four-person apartments are ample in supply. Consequently, revenue in these two categories is also the highest. Although there is little price difference between 1-2 and 3-4 person accommodations.

Moreover, entire homes generate incomparably high revenues compared to hotel rooms, private and shared rooms, even though entire home category offers lower price per night compared to hotels.

## Conclusion

Considering the dynamics in tourism and popularity of Madrid museums, a suggestion to expand the simple rent business is to offer additional travel services. For example, buying tickets to football matches, museum tickets or airport pick-up and drop-off services will be popular with visitors. These small items of the trips simplify their travel and offer extra travel experience.

In conclusion, this analysis could be improved by getting more historical data on listings, adding reviews data to have extra dimension on perfecting the business, and trying out other machine learning models.

## Recommendations

Overall, there are several recommendations based on the current analysis results:

- Consider the districts with lower competition but high potential for tourism.
- Mind the launch timing. Early spring or late autumn should work best.
- Invest in 2-4 accommodate apartments or bigger houses if up-market segment is chosen.
- Don't spend on more than 2 bathrooms as it will not make a difference.
- Focus on providing "at home", "local lifestyle" feeling via design items.
- Offer add-on travel services such as airport pick-up, museum tickets, festivals or football match tickets.