

# **School of Management**

## **Coursework Submission Sheet**

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**Department:** Management

**Programme and Year of Study:** Business Analytics 2023-2024

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**Unit title and code:** MN50754 Analytics in Practice

**Coursework title:** Competing with Airbnb

**Number of pages in assignment:** 12 pages      **Word count:** 1992

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## Executive Summary

This chapter briefly explains the report's main discoveries and suggests strategies. Before proposing the outcomes, we will describe our target customers to scope our section to analyse. Our primary approach revolves around making guests happier by boosting the performance of accommodation hosts and staff. We highlight how crucial it is to provide thorough training and support to our staff to guarantee guests have a great time. Additionally, we emphasize the importance of collecting plenty of data to ensure we get everything and develop our analysis's accuracy. By putting in place solid methods for gathering data, accommodations can get valuable insights that help us make better decisions and improve the quality of our service. To wrap it up, the report stresses the importance of investing in staff training and using effective data collection methods to enhance the guest experience and make our business thrive.

## Introduction

This study analyses Airbnb data in Barcelona, a popular tourist destination with iconic landmarks like Casa Batllo and Sagrada Familia. Barcelona attracts over 27 million visitors annually, with 50% staying overnight ([Council C. B., 2014](#)). In 2019, it hosted 8.5 million hotel guests and saw 21.3 million overnight stays, a 5.7% increase from the previous year ([Council C. B., 2020](#)). Statista reported that in 2023, 25 to 34 years old comprised 36.9% of adult travellers ([OTB, 2024](#)). We decided to select the target as high-income single business travellers because Barcelona is a hub for business and leisure travel, and the above findings presented.

The main objective of this research is to find the information that can help our partner firms enhance their housing and room services. We will separate into two main sections: explore our target customers using the empathy map, a tool used to analyse audiences to understand them effectively ([Janse, 2023](#)). Following that, we will explore the Airbnb data to find some insights; we will focus on three spheres: tourist appeal and host standard and estimate the opportunities for market domination of this city by defining an assumption from the available information.

## User Persona Profiles

[Fig 1](#) shows our target customers need the accommodations that have been facilitated that can make them feel comfortable after their journey; the rooms should make them feel relaxed by the satisfied services, and the price is not the main thing for their decision; if you can serve them worthy by supplying more facilities to make them, feel pleasant to pay. Transportation is one critical point they consider because they need to commute to meet with their clients and partners. They want to commute comfortably as much as possible; if our accommodations can give them opportunities, they can get these services quickly with complete availability of transportation services, making them feel confident to select your accommodation instead of your competitors.

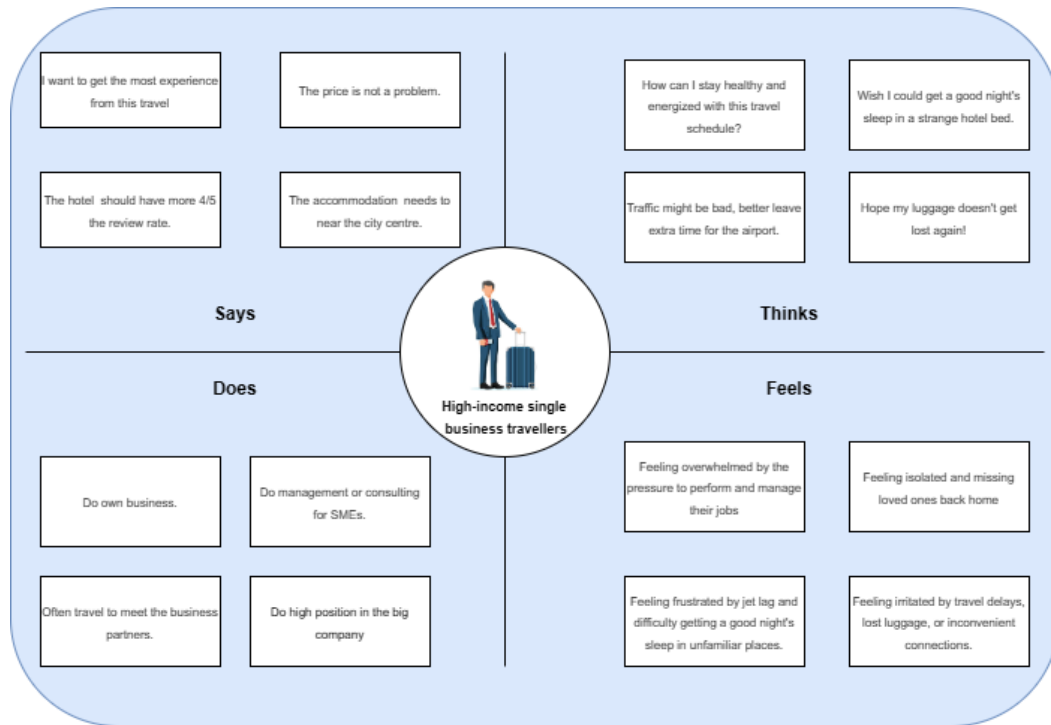


Fig 1: the empathy map of High-income single business traveller's customer.

For this kind of travellers, booking the entire room or house may not match their needs because they are a single-person arrival. They tend to find rooms where they can stay alone or share space with others, but in this case, these customers may prefer to stay alone because they are people who often spend a lot of time traveling for meetings and working with their business partners. After they finish their jobs, they may want to receive a personal area to relax and release stress, which is the best choice for them to spend time relaxing and enjoying their rest time.

Regarding Airbnb room type information, the bar chart below [Fig 2] depicts their number. When we cut two of choice that our target may not be interested in out, it presents that those types are most of the proportion of our competitor rooms, disappearing almost 60%, showing that if we can provide more private and hotel room kinds than them, it may grab some of the customers from our competitor. We should improve our service to prepare to support the tourists who may come to Barcelona, especially in the high season. Regarding the ideas or plans to develop the services, we will provide them in the next section by analysing the key features and dividing them into three aspects; before doing that, we will explore the data to understand what critical features we can pick to consider.

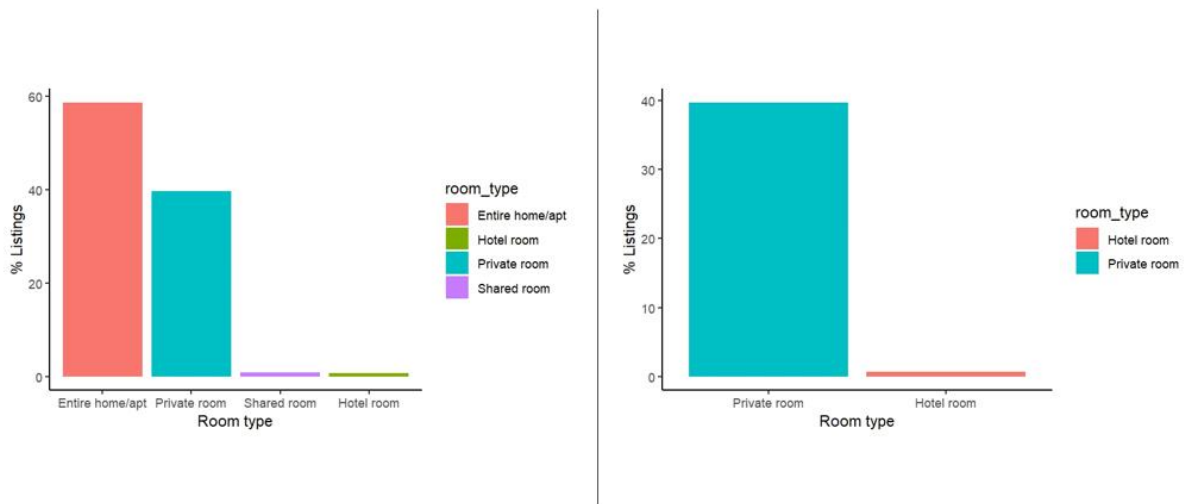


Fig 2: The comparison of the proportion of room types between every type and the specific types.

## Assessment and Insights

We will start by exploring the data both in detail and summary parts to understand the common patterns by doing the exploratory data analysis. After we finished this process, analyzing the inside Airbnb data to find significant insights to enhance our accommodations services.

## Data Exploration

This subpart will explore the two datasets using the R package “DataExplorer.” This tool aids in understanding the data and extracting meaningful insights further [5].

In [Fig 3](#), the categorical and numeric data ratio is quite similar, and it has more missing values than the summary dataset, around three times. [Fig 5](#) shows that some numeric data in the review and availability scores sectors was lost between 15-36.7%. In contrast, some categorical variables, such as bedrooms and description, are not filled in; if the customers visit their website and cannot see the description and bedroom information about the rooms, it could affect those decisions. However, we can apply this weak point to improve our digital services by providing as many complete details as possible.

The summary data is quite complete, even if it has some missing information on price and the number of reviews per month variables, roughly 12-24%. It is not much compared to the detailed data, but it can be understood because the various dimensions of attributes of the detailed dataset may cause missing some information when the landlords did not fill in their information. In conclusion, observing the data exploratory report of both datasets can help us understand the overall information. In the next section, we will analyze the key features to find the insights and separate them into three main aspects.

## Percentages

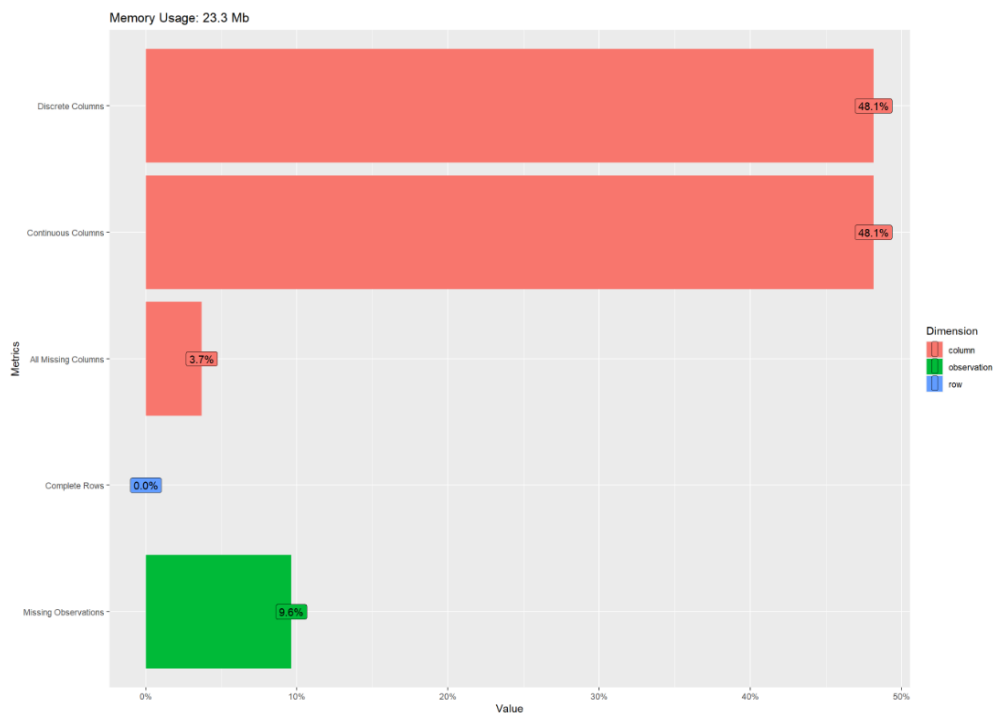


Fig 3: The basic statistics information of the listing's detail dataset.

## Percentages

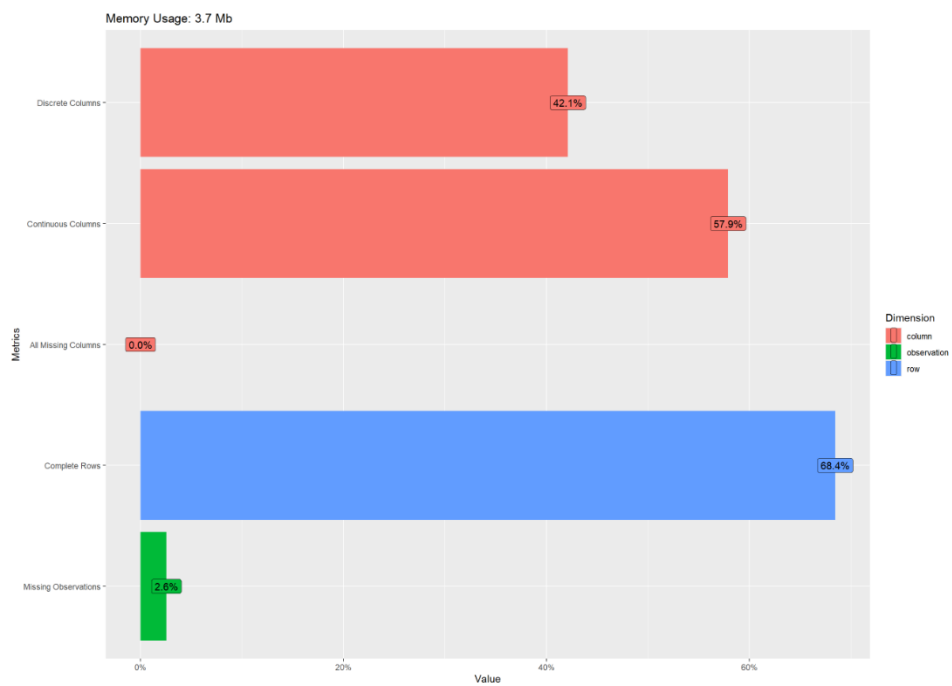


Fig 4: The basic statistics information of the listings summary dataset.

## Missing Data Profile

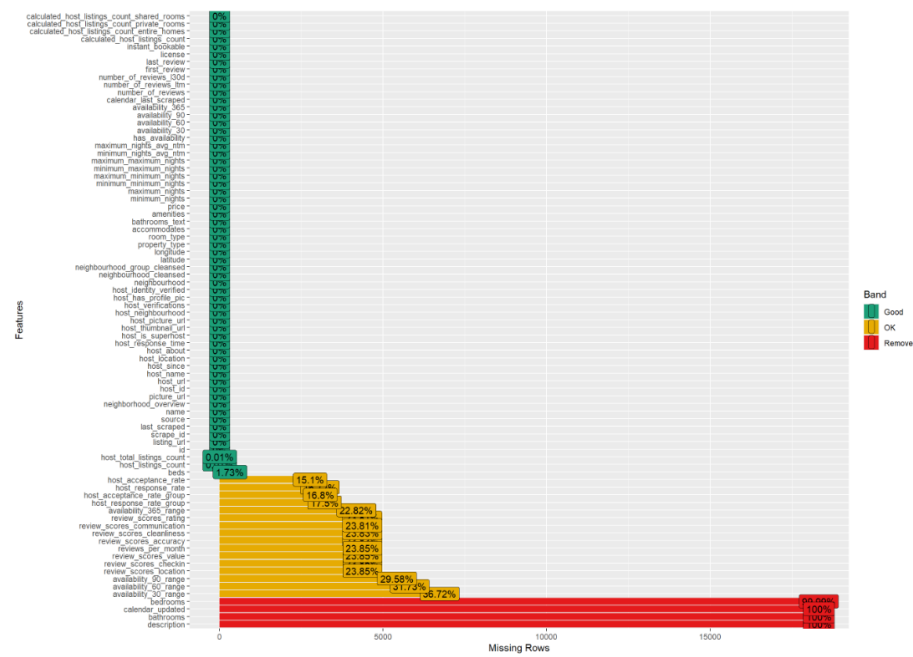


Fig 5: The missing data profile of the listings detail dataset.

## Missing Data Profile

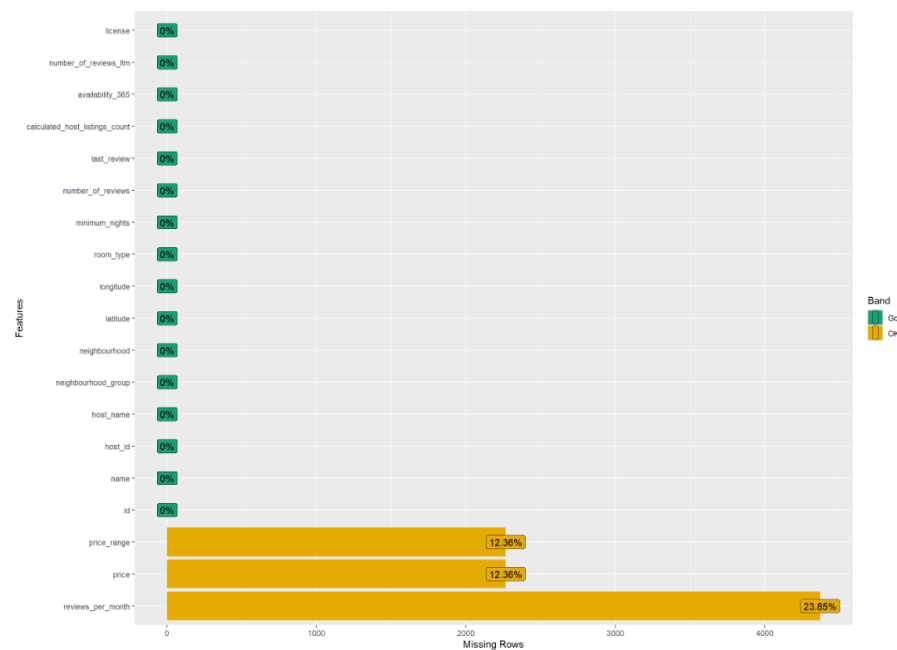


Fig 6: The missing data profile of the listings summary dataset.

## Touristic Appealing

This part focuses on the availability response sphere. As seen in [Fig 7](#) and [8](#), we show the distribution of Airbnb's accommodation. They have many houses around the city centre and received good reviews overall. The availability response depicts two comparisons for the

future short and medium periods. We can find the missing values of these distributions are similar in the percentage portions, but in the trend term, identifying the instant bookable of the percentage of the next two months' availability listings drop from the range of 0-20 to 21-40 when compared to the next month availability listings range from 0-10 to 11-20, increasing as instant bookable term. It shows that the middle number of available listings range has a good tendency for customers to book their rooms suddenly.

Regarding the comparison of the middle term's availability listings, it presents the uptrend of the next quarter's available rooms, which can be booked right away. In contrast, the percentage of available rooms until the next year moves down in the low number of availability listings range but in the high availability listings range. Although every period has a high percentage of availability listings range in each their high range, these data have more portions of slowly bookable, showing tourists cannot book their required rooms immediately.

From this issue, we can apply this problem to develop our service by defining policies or rules to control the quality of our accommodation's response service so we can serve our customers instantly. This can help our business acquire some of our competitors' customers, especially the target customers, who tend not to like to wait for the responses for a long time. If we can handle this lacking point and serve them fast and appropriately, it will attract those people more and can expand our customer base.

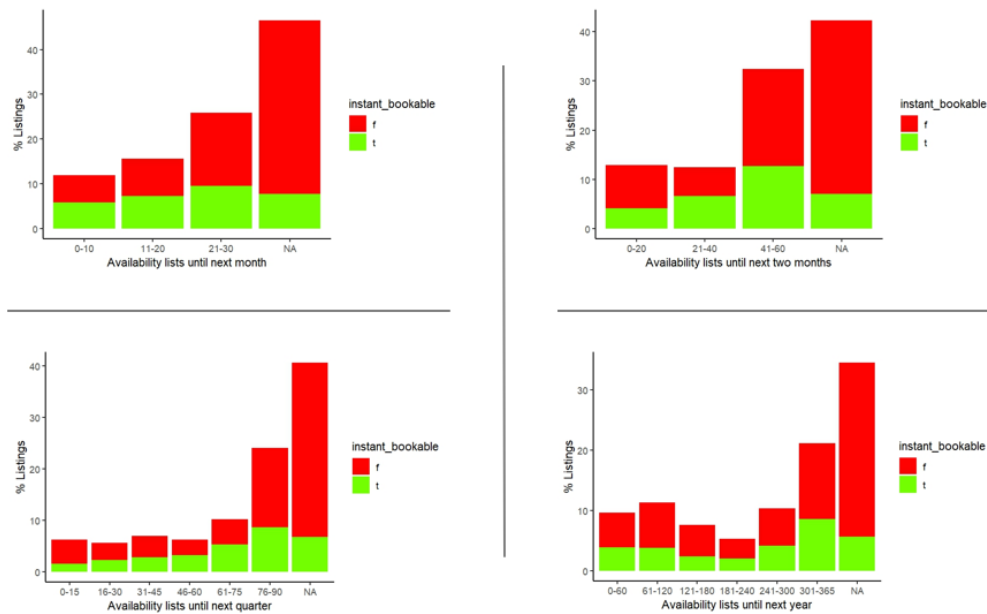


Fig 7: The proportion of availability listings since next 1-12 months, coloring by instant bookable rate.



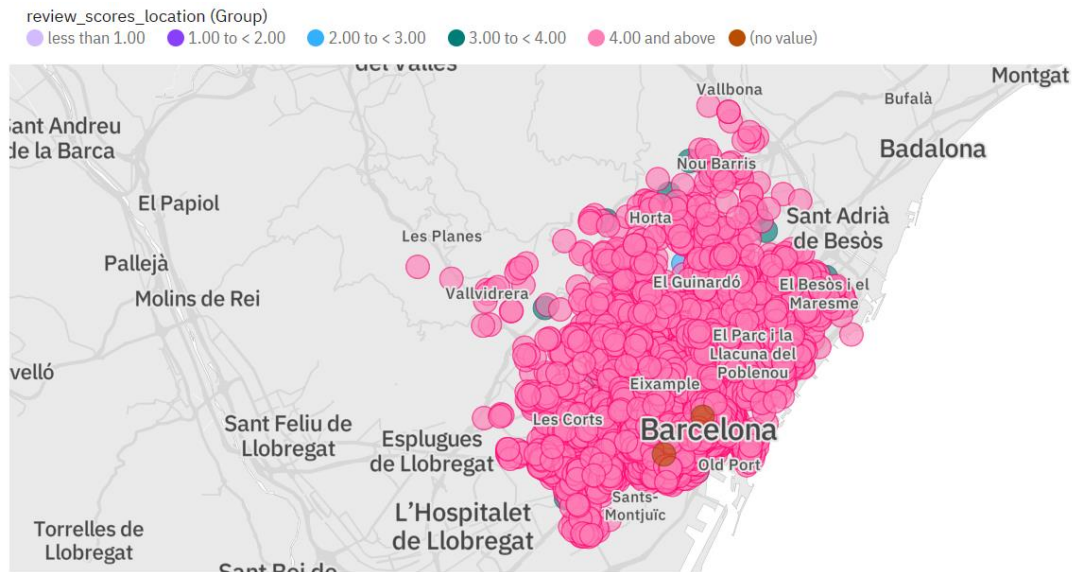


Fig 8: The distribution of Airbnb's accommodations, rating by colors.

## Host Performance

This section will consider two main points: interaction and reliability. Regarding the host's interaction field, this criterion assesses whether they can provide a suitable service. [Fig 9](#) shows that most of Airbnb's host response and acceptance rates received outstanding scores, especially response scores showing that hosts always wait to keep in touch with their customers. However, the percentage of a high-level host as a super host who has met a set of specific criteria set by Airbnb to demonstrate excellent hosting performance and hospitality ([Rawson C., 2023](#)).

This proportion is in the minority group, around 10%, showing that if we can develop our staff to be outstanding compared to those hosts, we will attract more tourists to book our rooms instead. Obviously, these scores indicate That Airbnb hosts have excellent communication and reliability levels, as seen in [Fig 10](#). Nevertheless, they have the missing values in large percentages, from roughly 25% to 30%.

As we mentioned in the prior work, the strategy for enhancing more engagement with customers is to take more feedback information; it is crucial to reduce the loss of essential data that can let us know about the direction that we can follow or avoid for developing our services and reduce this weakness point. Furthermore, one of the most significant things is the quality of our staff; it can help us to participate with our clients and provide the most appropriate services for them. It can make them more loyal to our brand in the long term if we can appropriately reserve these customer needs.

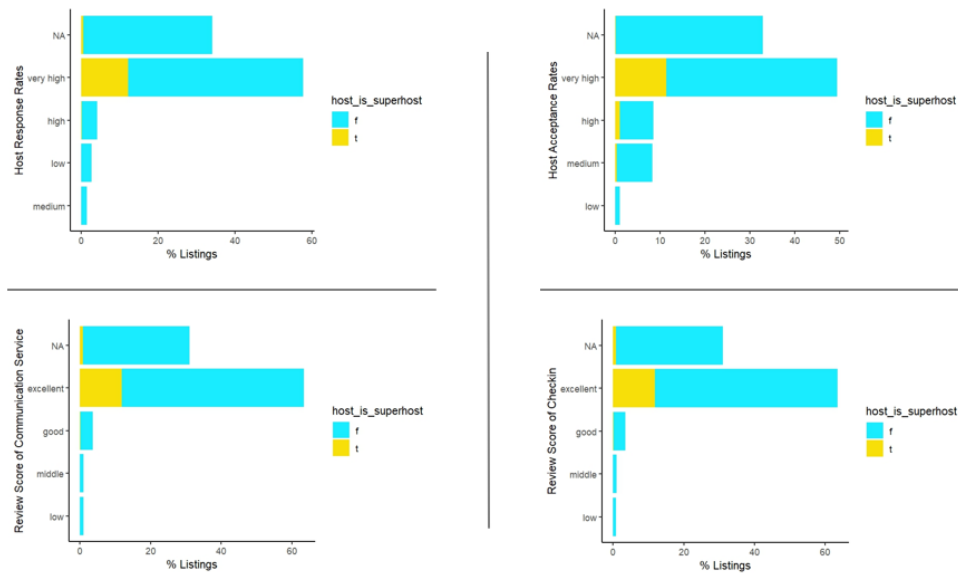


Fig 9: The comparison of the factors of interaction and hospitality criteria.

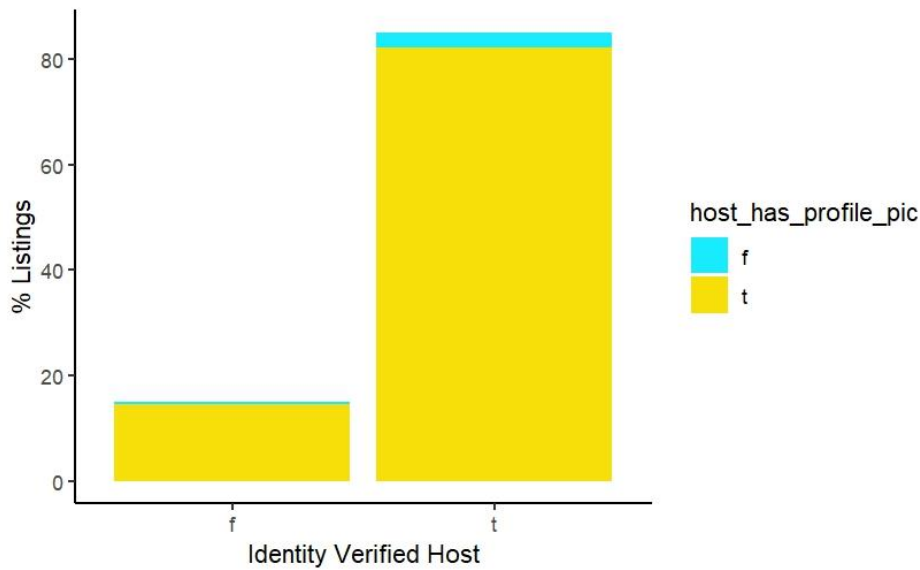


Fig 10: The comparison is the proportion between hosts with profile pictures and hosts who have already done identity verification.

## Estimate The Market Gap

This part will present an assumption to anticipate the market value of Airbnb in Barcelona city and the potential income if we can dominate them. [Fig 11](#) depicts the distribution of key features for estimating outcomes. We can see that the price has the right-skewed distribution, which means the cost is in the lower range; it is obviously the strength of Airbnb, which provides approachable rental rooms effortlessly. In terms of our assumption, we will define the nights booked and market value using these key attributes. Firstly, we calculate the average nights booking from the average minimum nights booked and average review numbers and then find the average income from this value multiplied by the average price.

Lastly, we will calculate the market value by multiplying the average income by the total accommodation. The computation will not consider those missing values.

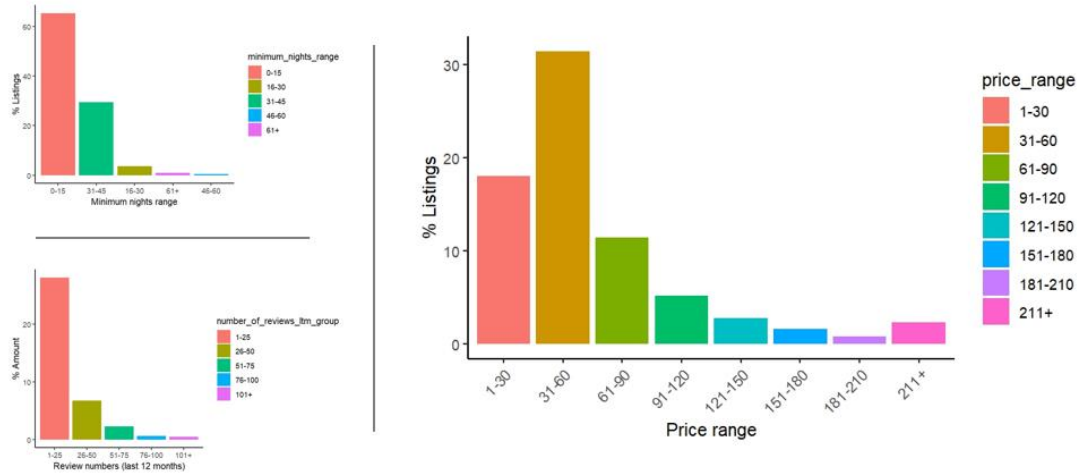


Fig 11: The distribution of key features for estimating the market cap.

Feature	Value	Note
Average price	99	
Average minimum nights	15	
Average reviews	8	Last 12 months
Total accommodation	7409	Private room and Hotel only
Feature	Formulation	Value
Average nights booked	Average minimum nights * Average reviews	120
Average income	Average nights booked * Average price	\$ 11,880
Estimate market value	Average income * Total accommodation	\$ 88,018,920

Table 1: The statistical values from an assumption are used to estimate the market value.

[Table 1](#) shows every detail about this assumption. We will receive three critical findings. It reveals that Airbnb's accommodation in Barcelona has an average income of around twelve

thousand U.S. dollars, an average daily rate (ADR) of almost \$100 per night, and a valuation of around 88 million U.S. dollars.

We aim to dominate some of Airbnb's market. [Table 2](#) shows when we can take some customers out from the competitor. In the medium term, we expect to dominate them by around 15-30%; the amount of assets is quite large portions of only one city by applying and executing our strategies and ideas strictly. To enhance our services and staff.

100%	\$ 88,018,920
<b>Dominate %</b>	<b>Value</b>
1	\$ 880,189
5	\$ 4,400,946
10	\$ 8,801,892
15	\$ 13,202,838
20	\$ 17,603,784
25	\$ 22,004,730
30	\$ 26,405,676
35	\$ 30,806,622
40	\$ 35,207,568
45	\$ 39,608,514
50	\$ 44,009,460

Table 2: The market size domination rates.

## Conclusion

In conclusion, the findings from this study underscore the significance of three aspects: tourist appealing, host quality, and forecasting the market gaps. We can find two main strategies to improve our service: enhancing the quality of the host and our staff by making the training or conference section, and gathering as much information as possible, especially critical features detail. These methods can aid us, highlighting to fix some issues to reduce those things, avoiding lack of missing points, and services that our competitor cannot serve customers just in time. The main limitation of this project is the missing values; we cannot comprehensively analyse the information because it has lost a lot of data for the essential features. Additionally, if we have more fields to visualize, the assumption can be made more reasonable. This study paves the way for the development of our work in the future. The analysis should have more detail and complete information, especially the key variables. It can make our analysis more sense and expand it deeper into many periods, such as quarters and seasonal times.

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