

BIA 652 Project Report

Introduction

Airbnb is a travel app that allows people to find rooms to rent in locations all over the world. The service can be convenient and often more affordable than a hotel while you are traveling. Airbnb has become popular in recent years, and there are now many listings available in most major cities.

Since 2008, Airbnb has helped travelers and hosts find new places to go and offer a more distinctive, personalized way to see the world. Today, Airbnb has developed into a unique service that is used by people all over the world. Data analysts have been a key component for the business that offered millions of listings via Airbnb. Numerous data points are produced by these postings, which can be examined and used for a variety of purposes, including security, business choices, studying user and provider behavior on the platform, adding novel extra services, directing marketing campaigns, and much more.

Business Understanding

The objective of this project is to investigate the determinants of the number of reviews each listing receives per month and to discover useful insights.

Data Understanding

The dataset contains details like the property type, number of bedrooms, price etc. of 24886 Airbnb listings in Rio de Janeiro. The data can be downloaded using the link below –

https://drive.google.com/drive/folders/1z_3I_3k6E6CBWXwCYQpKE0KZabZOkWa9?usp=share_link

Data Cleaning

The dataset is not very suitable for data analysis, so the format of some of the data was changed. Some of the steps involved in the Data Cleaning process are –

- Removing unwanted columns from the dataset such as “host_name”, “host_since”, “host_has_profile_pic” etc.
- Changing NaN values to integer 0 or “Unknown”.
- Removing special characters like “\$” sign etc. from “price” column.
- Changing the data type of some of the required columns.

Exploratory Data Analysis

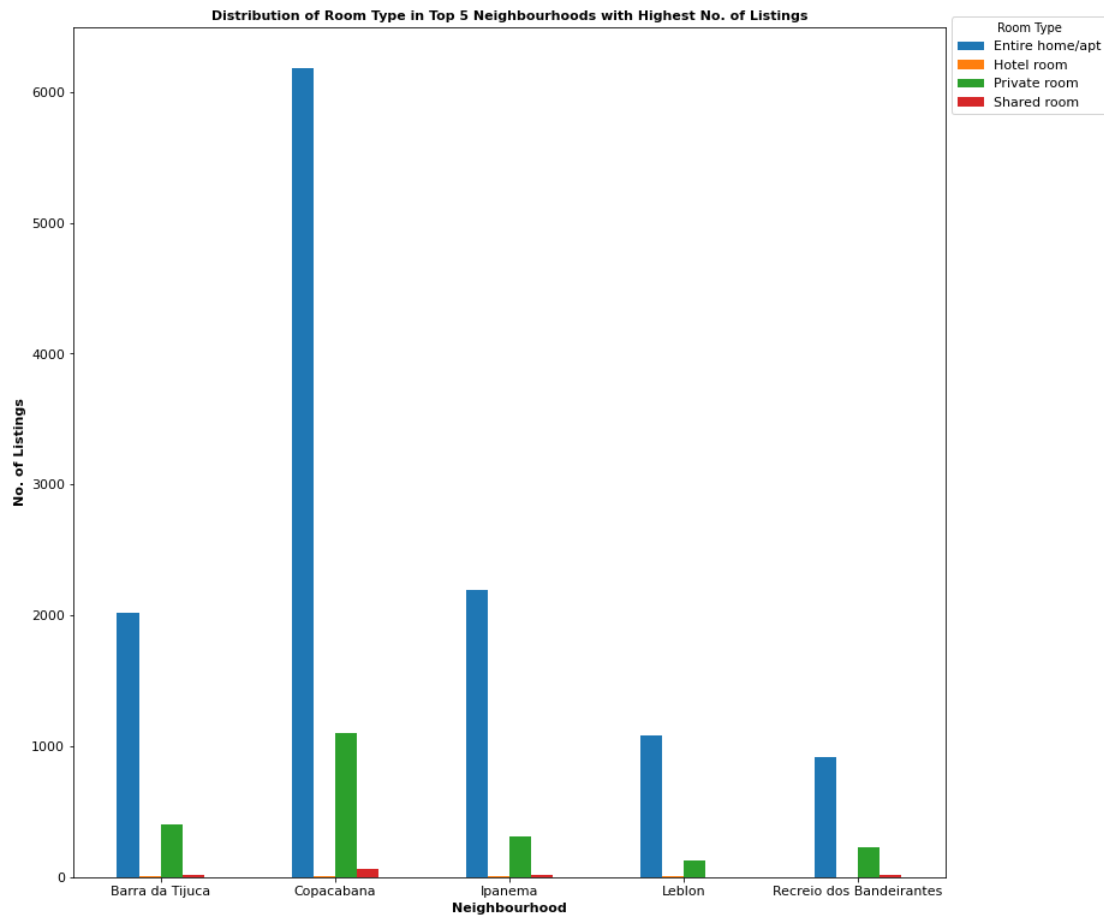
Some of the findings of this analysis are –

- What are the top 5 neighborhoods with highest number of listings?
- Analyzing listings based on room type in the top 5 neighborhoods.
- Size of the property vs number of reviews per month.

The top 5 Neighborhoods with highest number of listings are –

1. Copacabana – 7360 listings
2. Ipanema – 2531 listings
3. Barra da Tijuca – 2443 listings
4. Leblon – 1213 listings
5. Recreio dos Bandeirantes – 1167 listings

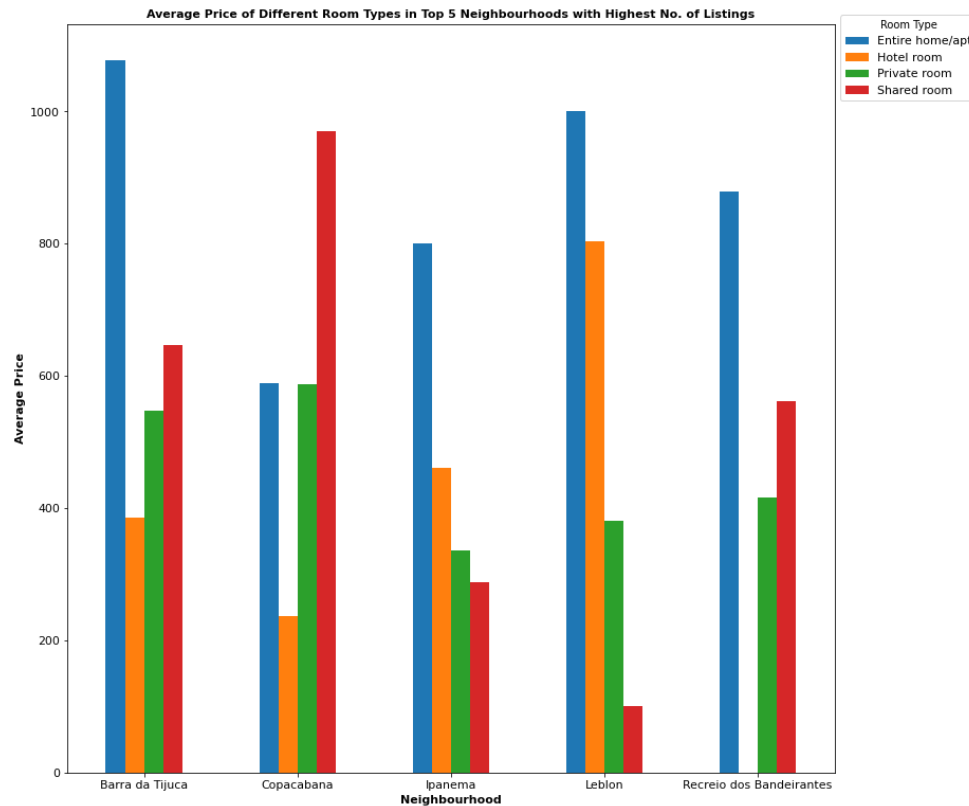
Analyzing listings based on room type in the top 5 neighborhoods –



By observing the above graph, Copacabana seems to be a very popular neighborhood for Airbnb listings followed by Ipanema.

Out of the 7360 listings in Copacabana, there are approximately 6000 listings with “Entire Home/Apt” as the room type, and this room type seems to be very popular among other neighborhoods as well.

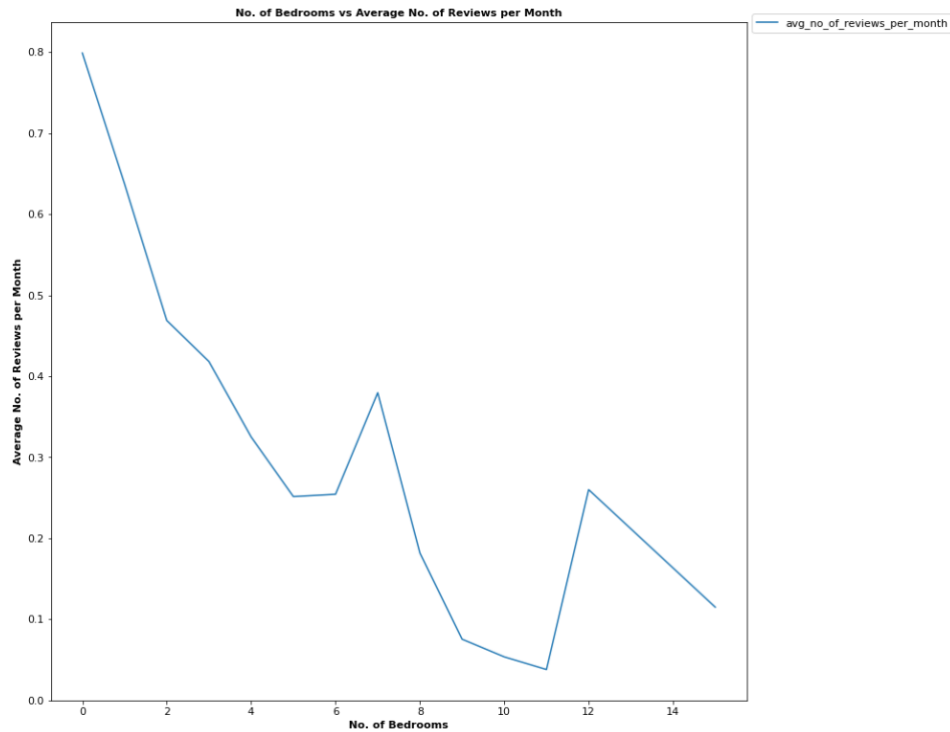
Room Type vs Average Price in top 5 neighborhoods –



By observing the above graph, Barra da Tijuca seems to be the most expensive neighborhood for the listings with the Room type as “Entire Home/Apt” with the average price as approximately \$1100.

Also, for the “Entire Home/Apt” listings in Copacabana, the average price seems to be the cheapest among the top 5 neighborhoods with an average price of approximately \$600. Since, the price is less in Copacabana, it has the highest number of listings, which was confirmed with the help of the earlier graph.

No. of Bedrooms vs the Average No. of Reviews per Month –



With the help of the above graph, we can say that the average number of reviews per month are decreasing as the size of the listing increases, but for some listings with 7, 12 etc. bedrooms the average number of reviews per month are increasing.

Conclusion

From the analysis and the predictive models, we can conclude the following –

- Copacabana has the highest number of listings in Rio de Janeiro.
- Listings with Entire Home/Apartment as room type seems to be the most popular.
- Larger properties tend to receive less reviews.