



Airbnb Marketing Analysis

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"Belong Anywhere"

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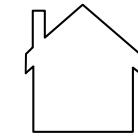
BACKGROUND

Airbnb was founded in 2008 and within just nine years, it became a giant in the short-term rental industry. It continues to disrupt the traditional hotel industry, capturing market share and acting as a mediator between travelers and hosts, thereby revolutionizing the hotel sector. Currently, as a leading brand in the short-term rental market, Airbnb's operations span over 190 countries and more than 34,000 cities.



Marketing Exploration

01



How does Airbnb's pricing strategy vary across different regions and property types?

02



What are the primary product categories (types of rentals) offered by Airbnb?

03



How can we segment Airbnb's user base (both hosts and guests) based on demographic, geographic, and behavioral characteristics?

04



What are the key challenges and opportunities facing Airbnb in the current market landscape?

05



Can we predict future pricing trends for Airbnb listings based on historical data and external factors?

06



What's the improvement that Airbnb can do to help business development?

Data Processing

Dataset Information: 05 September 2024 from Albany, New York, United States.

Calender.csv , Listing.csv, Reviews.csv

Primary key: listing_id(Calendar.csv) = id(Listings.csv) = listing_id(Reviews.csv)

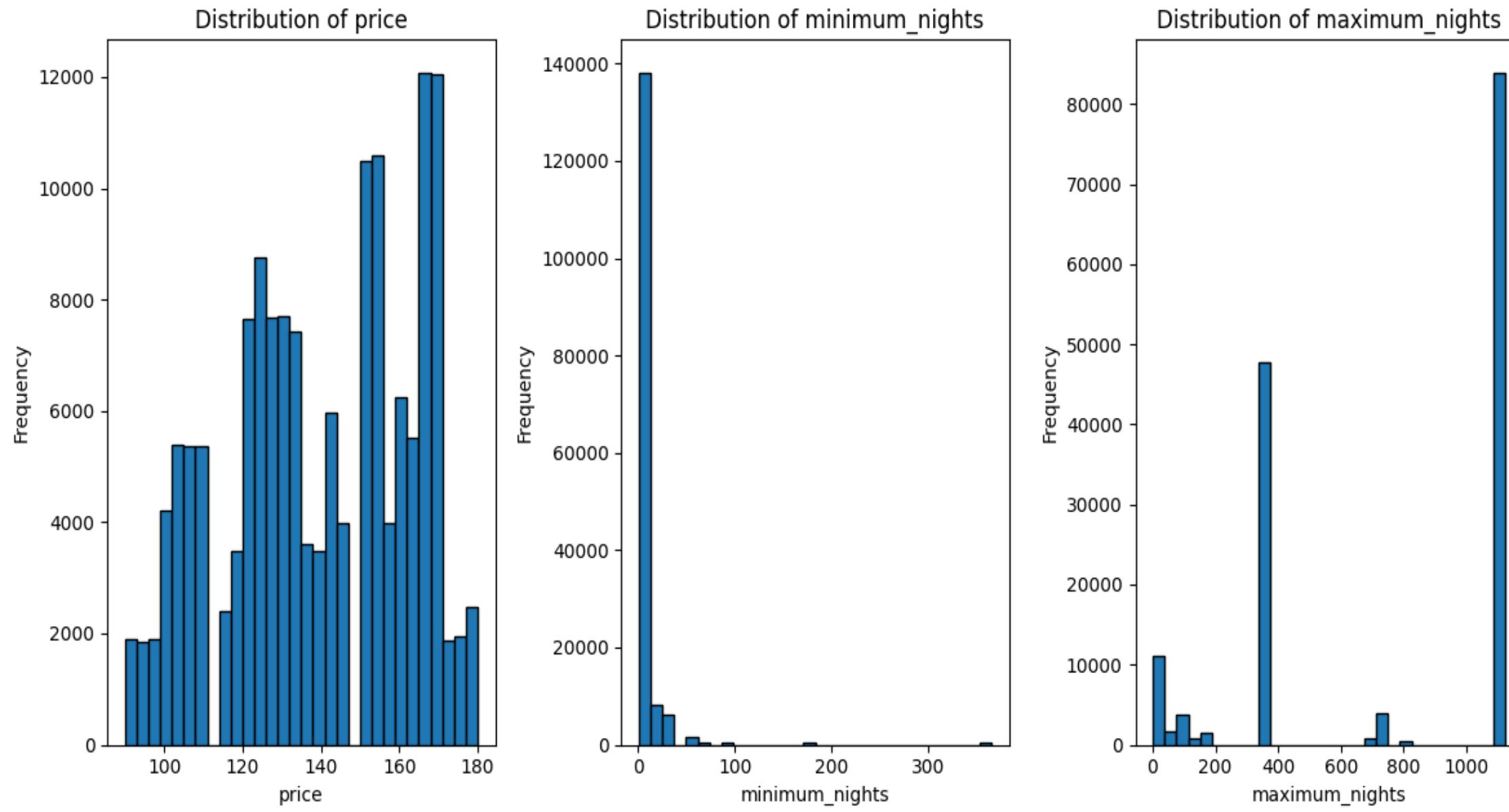


Preprocessing

- To replace the "," by "." in column value.
- Convert specific columns to the correct data types.
- To make all column names into lowercase.
- Check for missing values and duplicate rows.
- Drop some columns which are no values inside
- Split granular columns from specific columns
- Drop null values in some columns



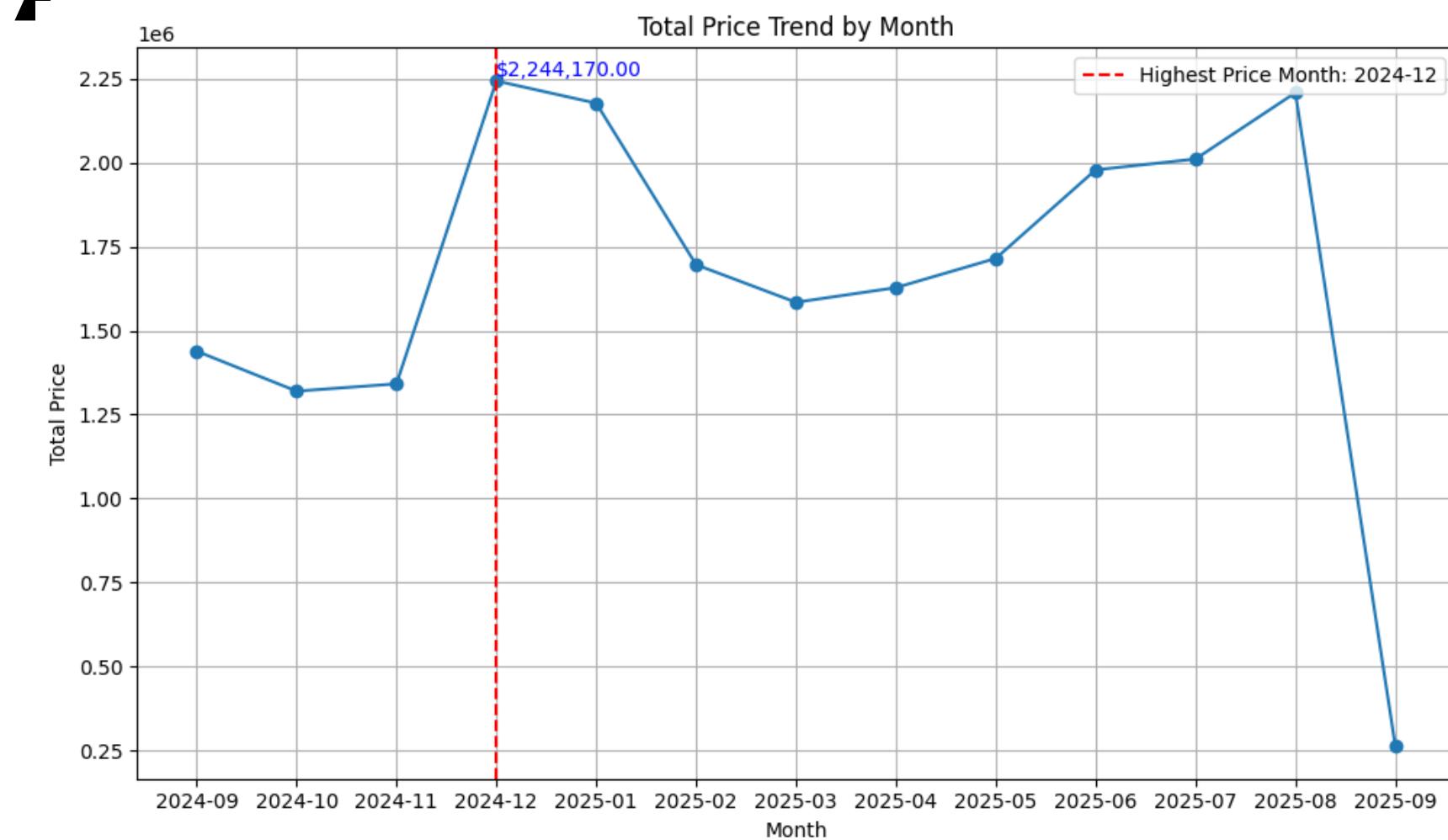
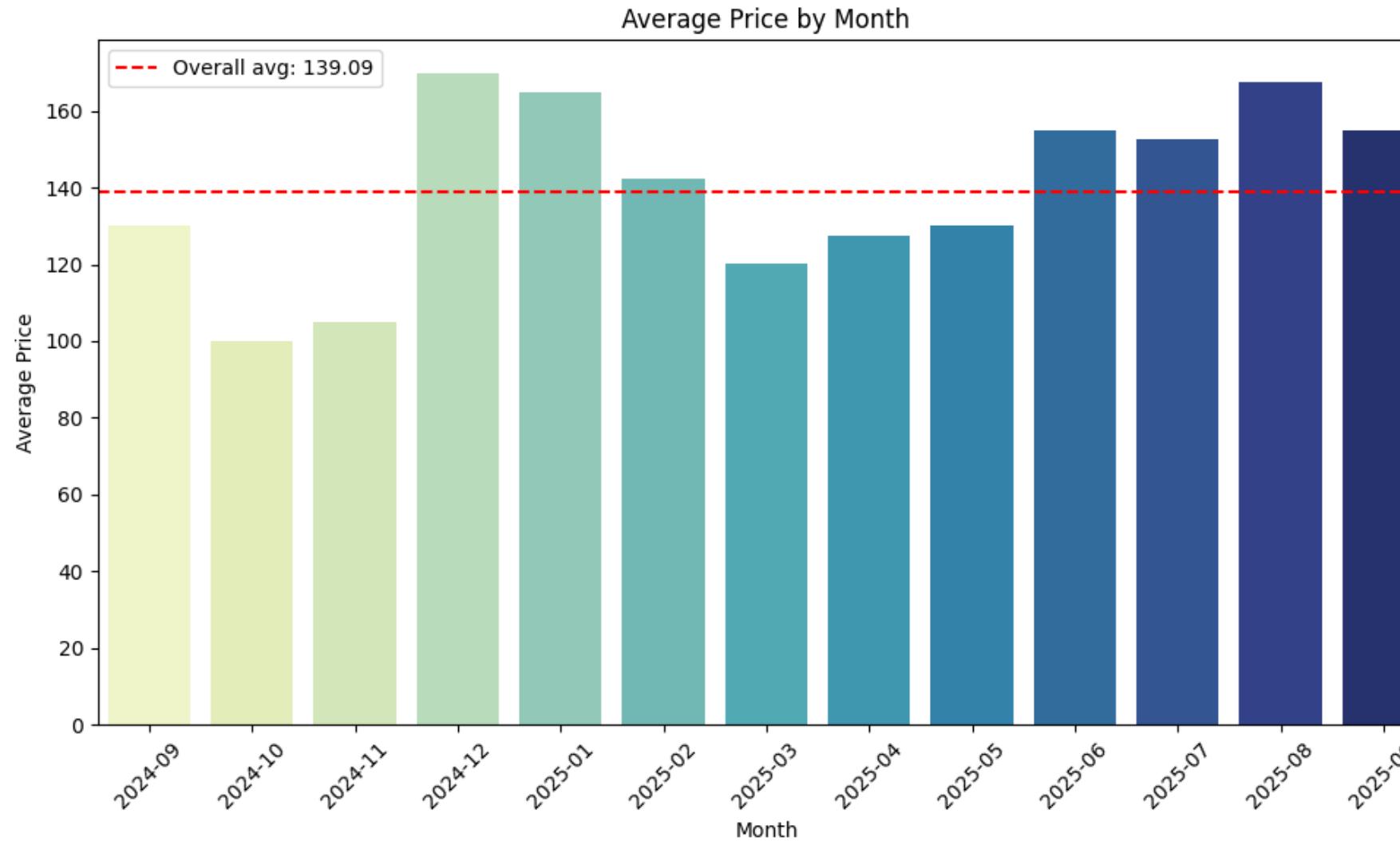
Exploratory Data Analysis



Distribution of numerical columns from calendar.csv

- **Price:** The price distribution is right-skewed, with a peak around 150-160. This indicates that most prices are concentrated in this range, but there are some higher-priced listings.
- **Minimum Nights:** The distribution of minimum nights is heavily left-skewed, with a long tail towards higher values. This suggests that a significant number of listings have low minimum stay requirements, but there are also listings with very high minimum nights.
- **Maximum Nights:** The distribution of maximum nights is also right-skewed, but with a more pronounced peak around 300-400. This indicates that a large number of listings have a maximum stay limit in this range

Exploratory Data Analysis



The plot reveals a clear seasonal pattern in the average price. There's a noticeable dip in prices during the months of September and October, followed by a significant increase in November and December. This suggests that the product/service is more in demand during the holiday season.

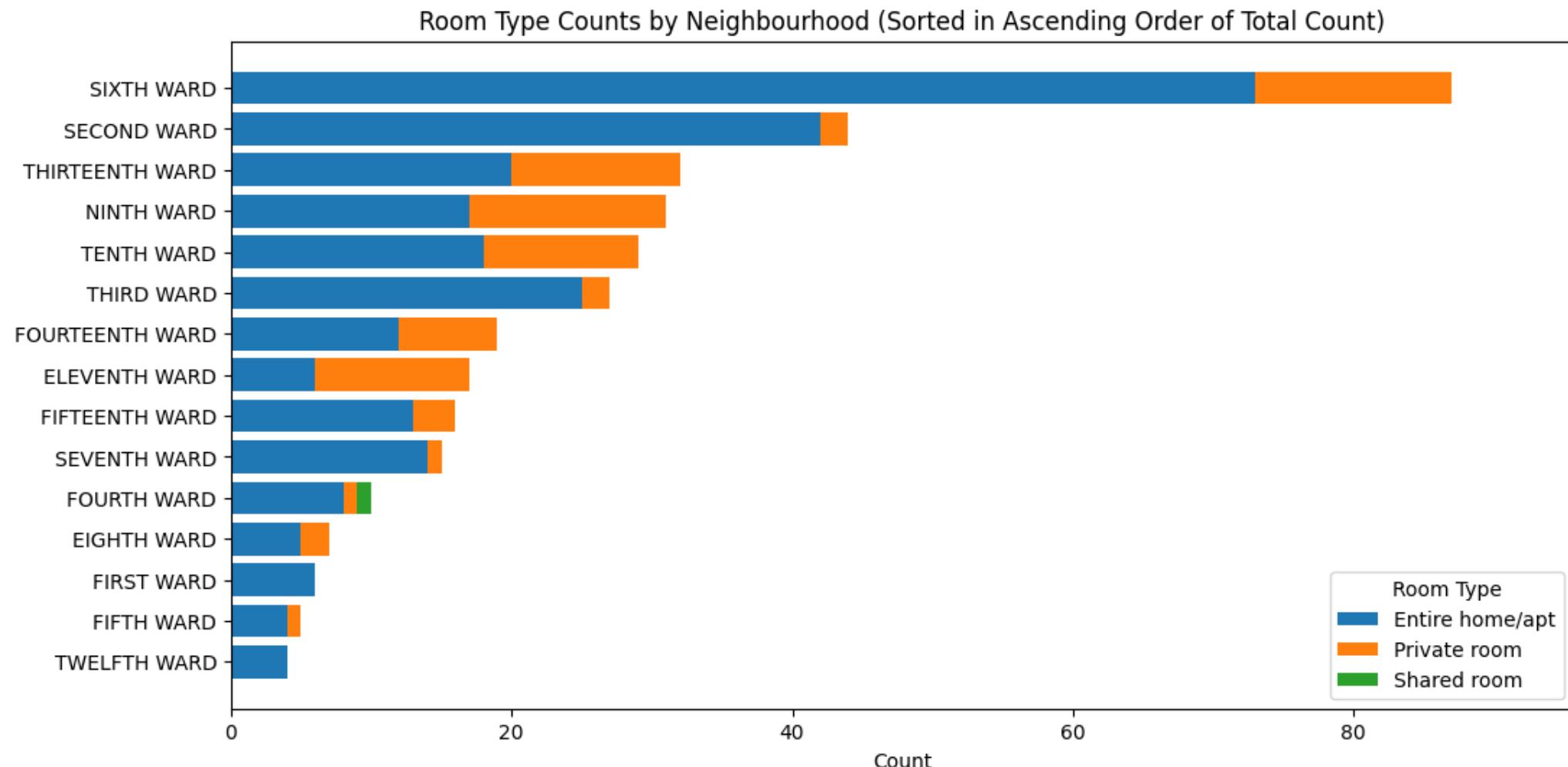
Peak Months: The highest average prices are observed in December and Jan, with a slight dip in Feb. This aligns with the holiday season and potential post-holiday sales or discounts.

Lowest Months: The lowest average prices are seen in October and November, indicating a potential off-season for the product/service.

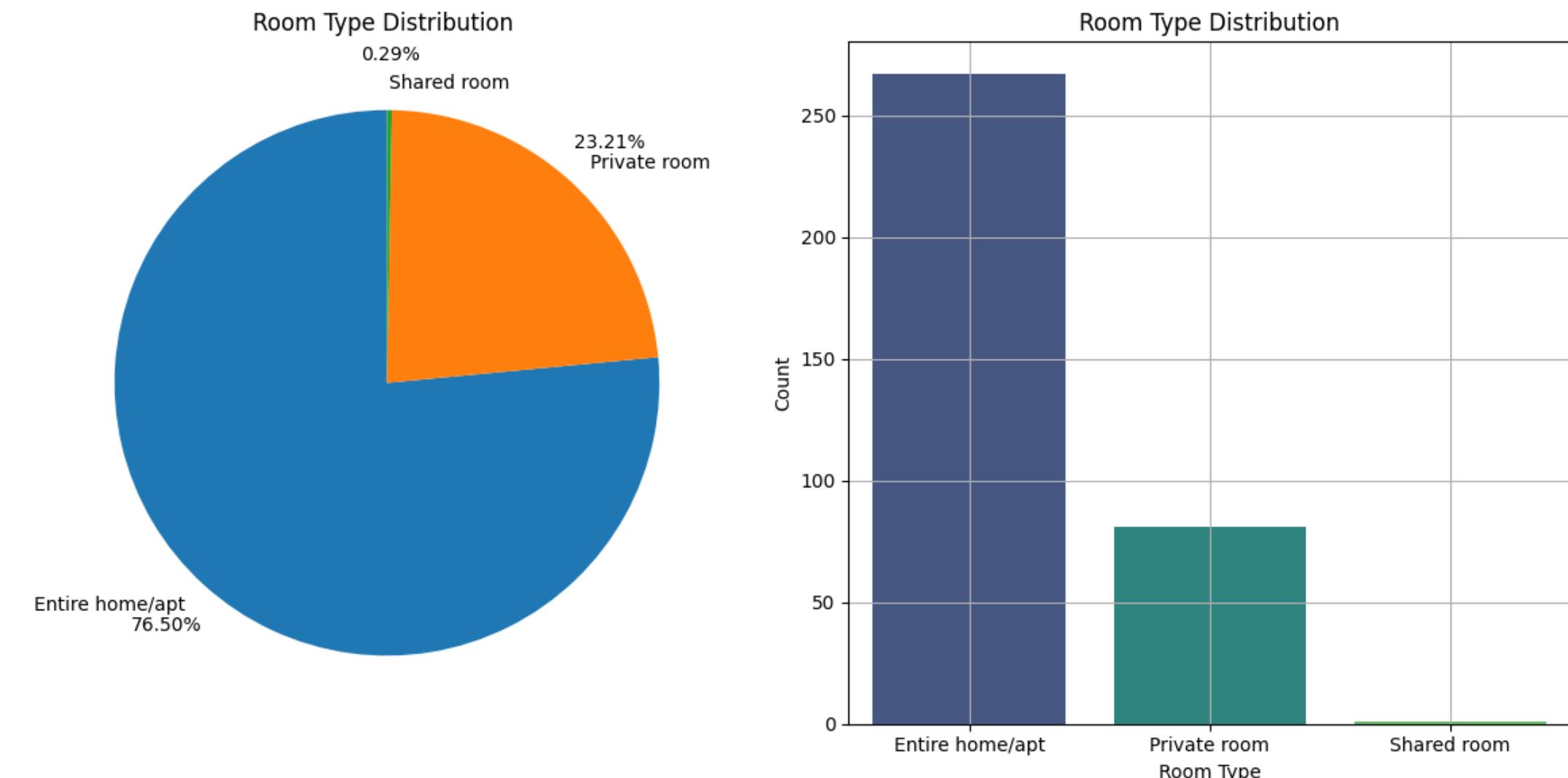
Overall Average: The dashed red line represents the overall average price of 139.09. This provides a baseline for comparing the monthly averages.

Exploratory Data Analysis

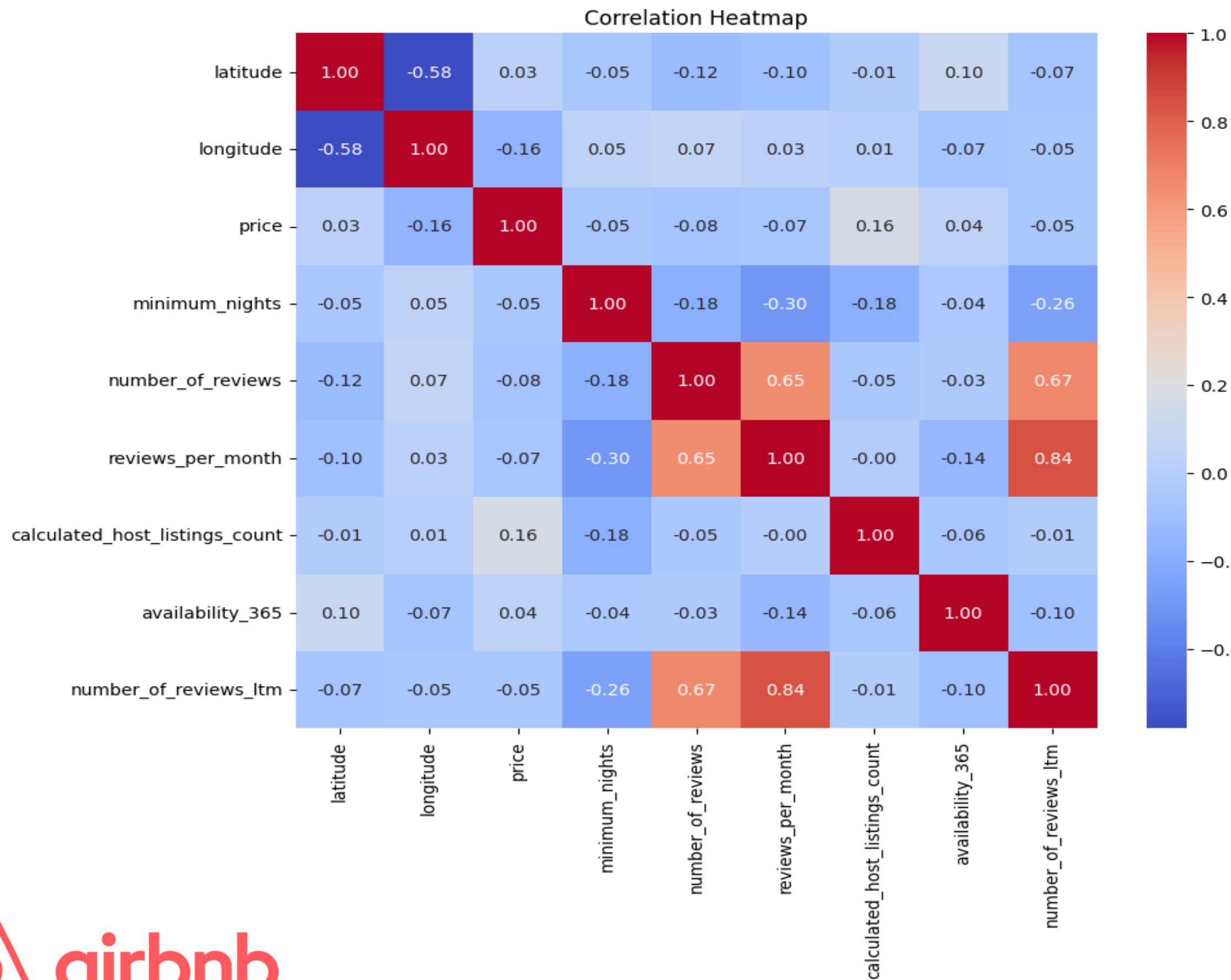
- The stack barplot shows the distribution of room types (Entire home/apt, Private room, Shared room) across different neighborhoods. Wards with higher overall room counts tend to have more entire home/apt listings. Shared rooms are generally less common, except in a few wards like the Fourth Ward.



- Both pie chart and bar chart visualizations reveal that the most common room type is "Entire home/apt," followed by "Private room," and "Shared room" is the least common.

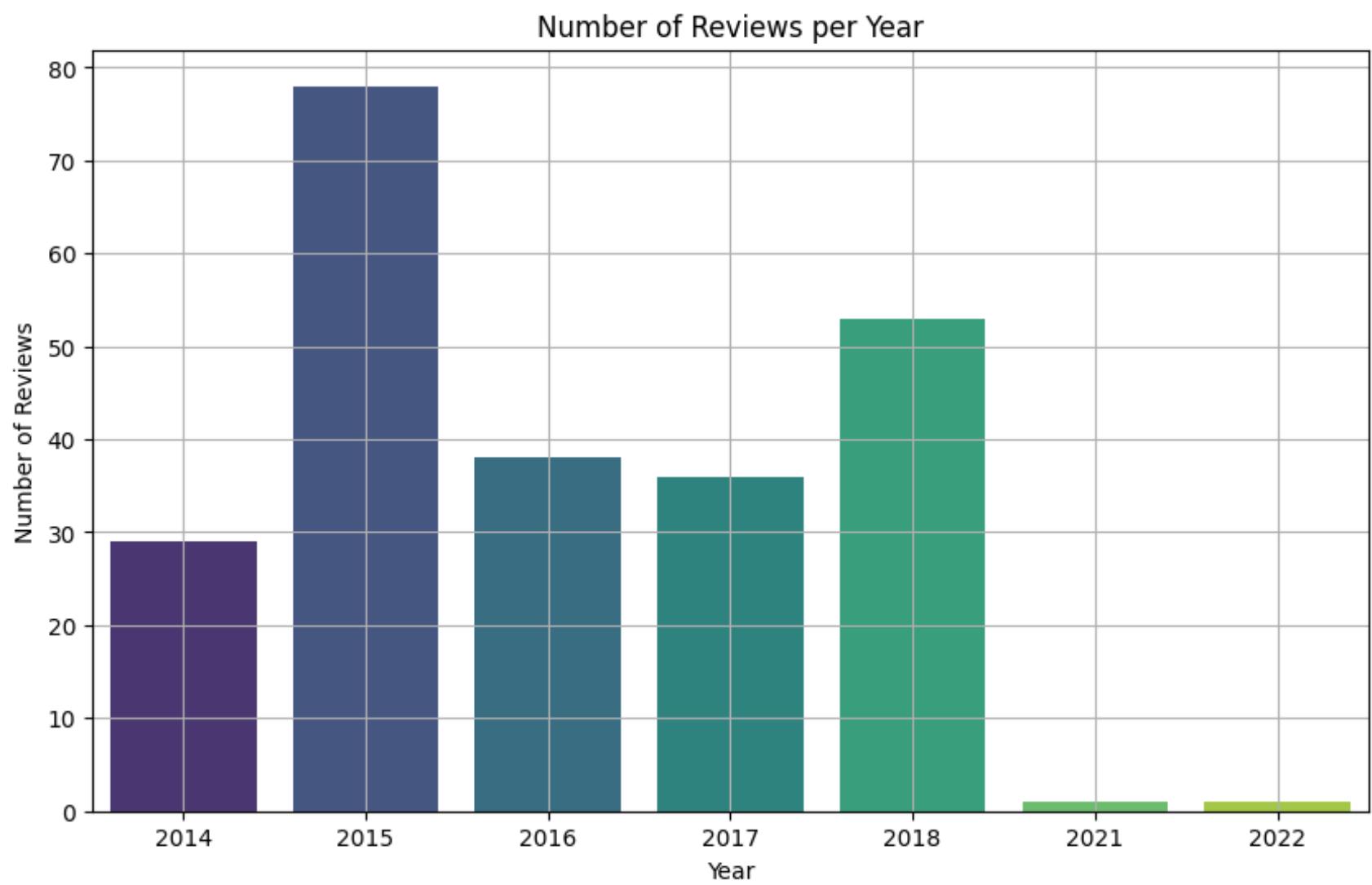


Exploratory Data Analysis

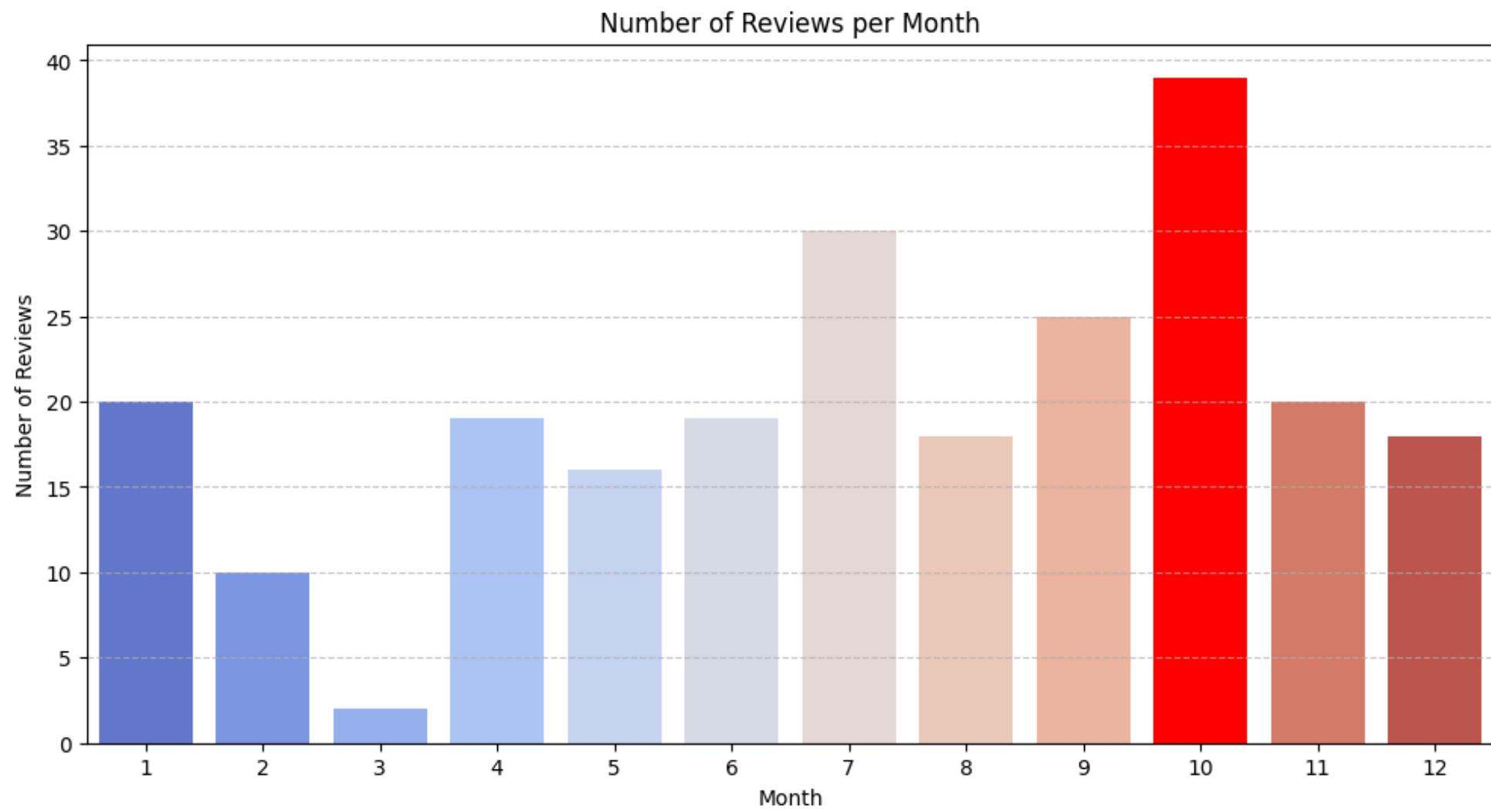


The correlation heat map indicates that there is a moderate positive correlation between number of reviews and reviews per month, and there is a strong positive correlation between number of reviews and number of reviews from the last 12 months.

Exploratory Data Analysis

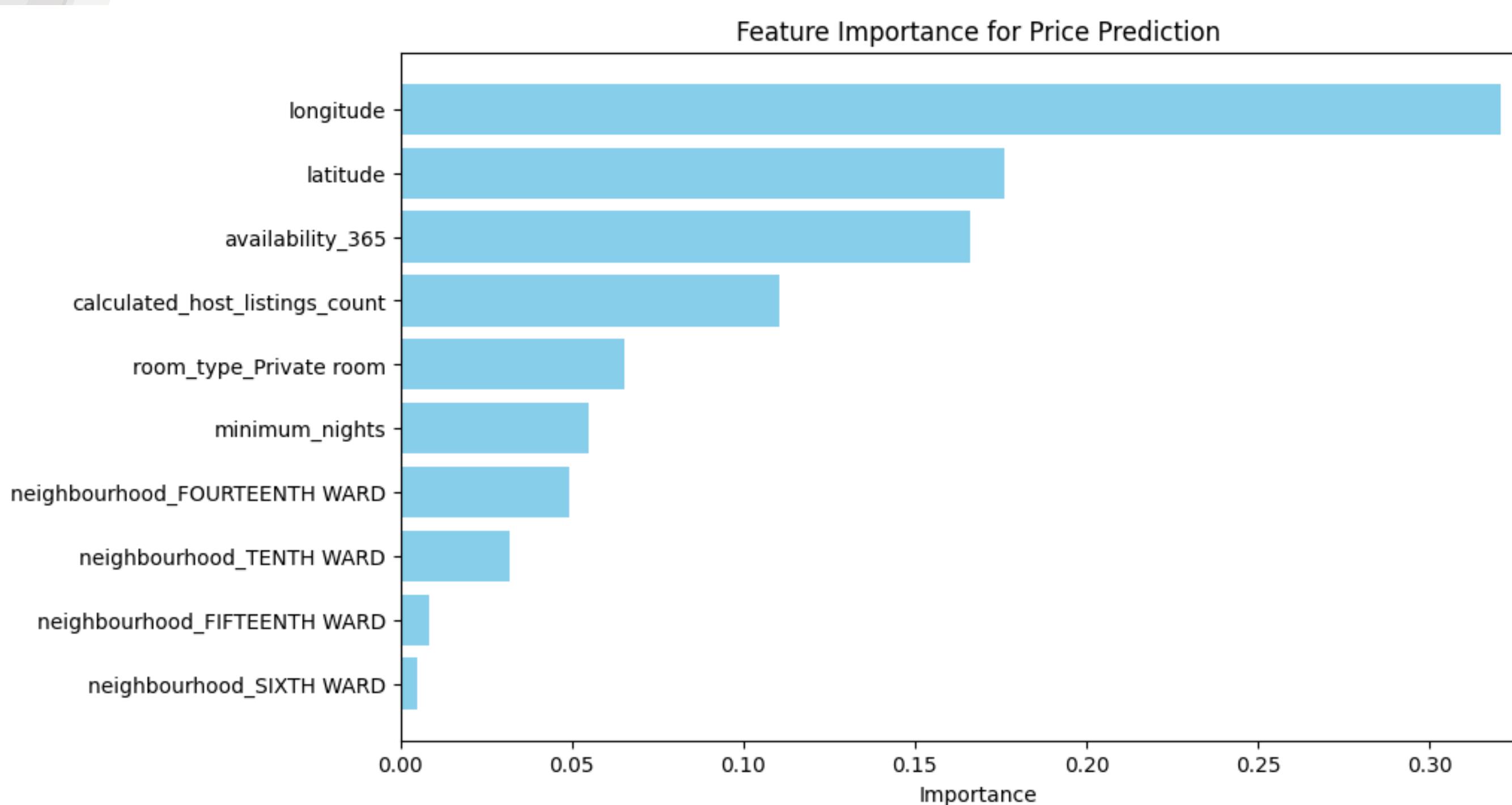


The bar chart shows the number of reviews received each year. There's a clear peak in 2015, followed by a decline and then a rise again in 2018. The number of reviews in 2021 and 2022 is significantly lower which might be due to Covid period.



The bar chart displays the number of reviews received per month. There's a noticeable peak in the 10th month, indicating a significant increase in reviews during that period. The other months show a more consistent pattern of reviews, with some months having slightly higher or lower numbers.

Exploratory Data Analysis



The plot shows the importance of different features in predicting the price of a listing. Location-based features like longitude and latitude are the most important, followed by availability and room type. Neighbourhood features have a relatively smaller impact on price prediction.

Recommendations



- **Pricing Strategy:**

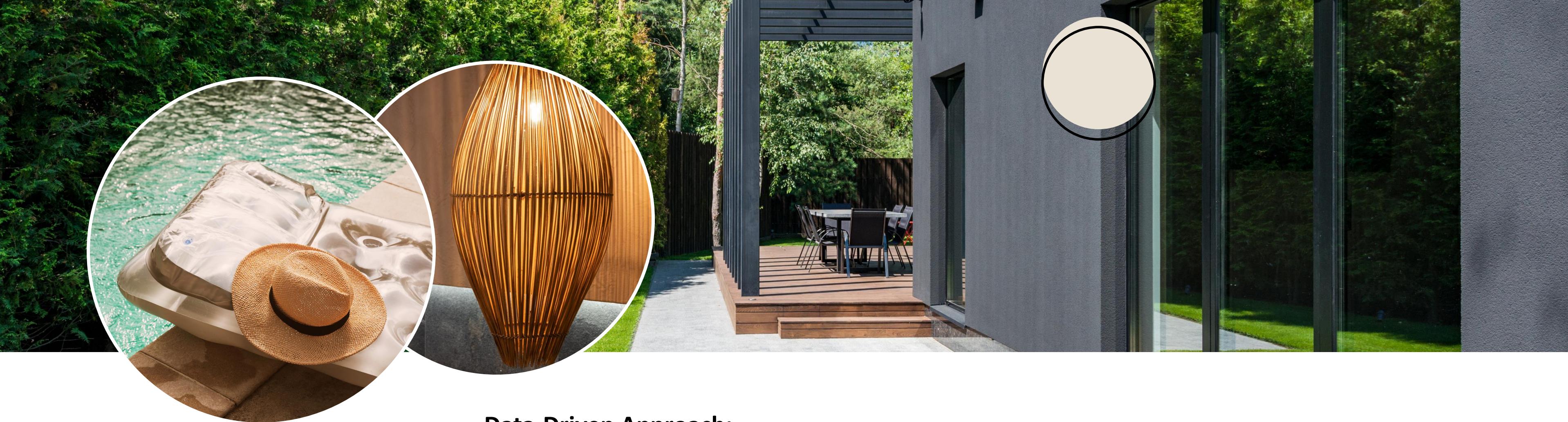
To capitalize on peak travel seasons (June-August and December-January), hosts often adjust prices upwards. Airbnb can leverage this by implementing a dynamic pricing strategy, automatically adjusting rates based on factors like seasonality and demand. Additionally, targeted promotions such as early bird discounts and coupons can be sent to users to stimulate bookings ahead of time.

- **Target Neighbourhood Strategy:**

Given the high demand for accommodations in SIXTH WARD, the platform should prioritize these listings in search results and implement targeted marketing campaigns. To cater to diverse traveler needs, the focus should be on promoting ENTIRE HOME/APT and PRIVATE ROOM options. Entire homes are ideal for families or groups, while private rooms are well-suited for budget-conscious travelers.

- **Review Monitoring Strategy:**

October typically sees a surge in reviews. By employing sentiment analysis, the platform can proactively identify negative feedback and alert hosts to address these issues promptly. This proactive approach can significantly enhance guest satisfaction and maintain the platform's reputation.



Conclusion

Data-Driven Approach:

By systematically analyzing listing information, Airbnb can identify patterns and trends in user behavior. This deep dive into data provides valuable insights into factors influencing customer interactions with the platform.

Strategic Focus:

Implementing strategies to encourage users spending more time and expense by understanding the factors that lead to review, Airbnb can take proactive steps to address customer concerns and improve retention rates.

Outcome:

A data-driven approach empowers Airbnb to make informed decisions that can significantly impact user interactions. By understanding the factors that review frequency, the platform can implement targeted strategies to optimize user experience and minimize customer attrition.