

## **PROBLEM STATEMENT AND HYPOTHESIS PROVIDED BY THE CLIENT**

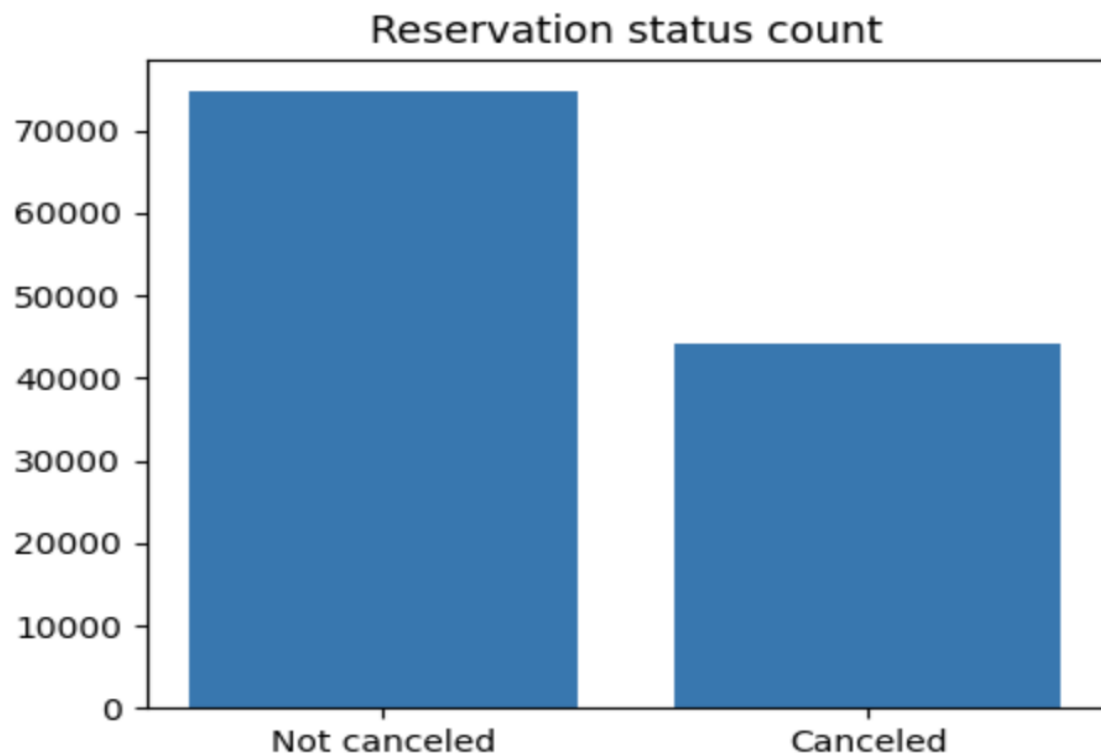
### **Research Question:**

1. What are the variables that affect hotel reservation cancellations?
2. How can we make the hotel reservations cancellations better?
3. How will hotels be assisted in making pricing and promotional decisions?

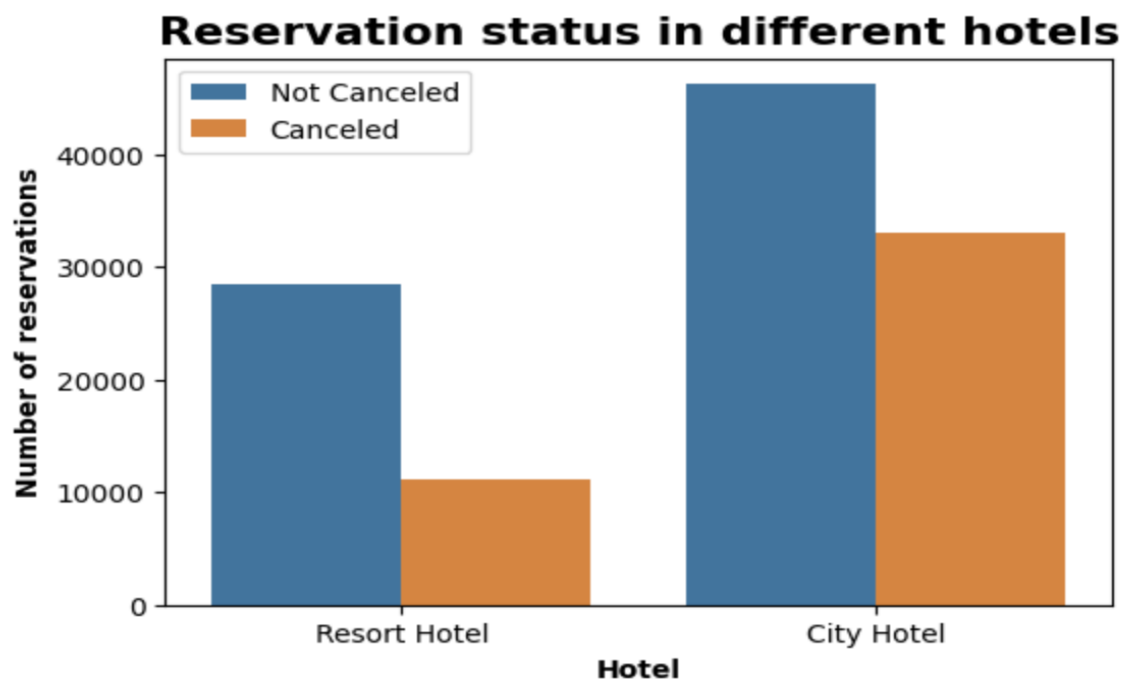
### **Hypothesis:**

1. More cancellations occur when prices are higher.
2. When there is a longer waiting list, customers tend to cancel more frequently.
3. The majority of the clients are coming from the offline travel agents to make their reservations.

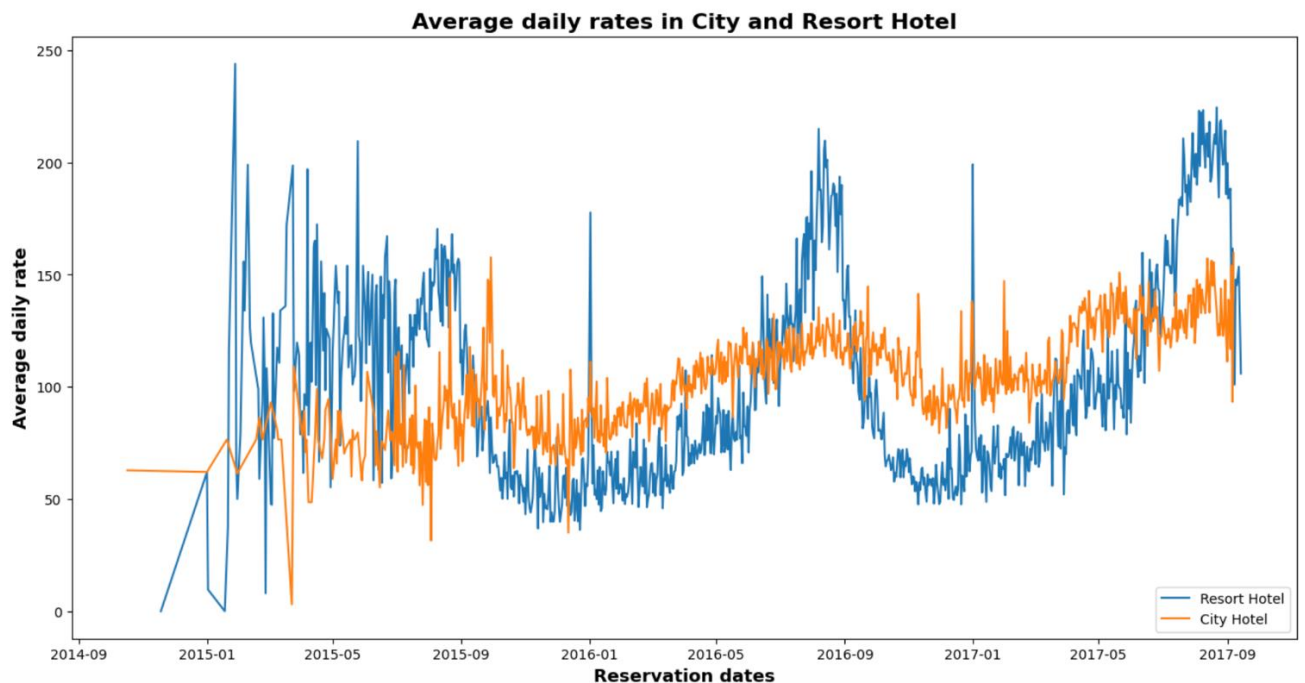
## MY FINDINGS AND ANALYSIS AFTER PERFORMING DATA ANALYSIS & EDA



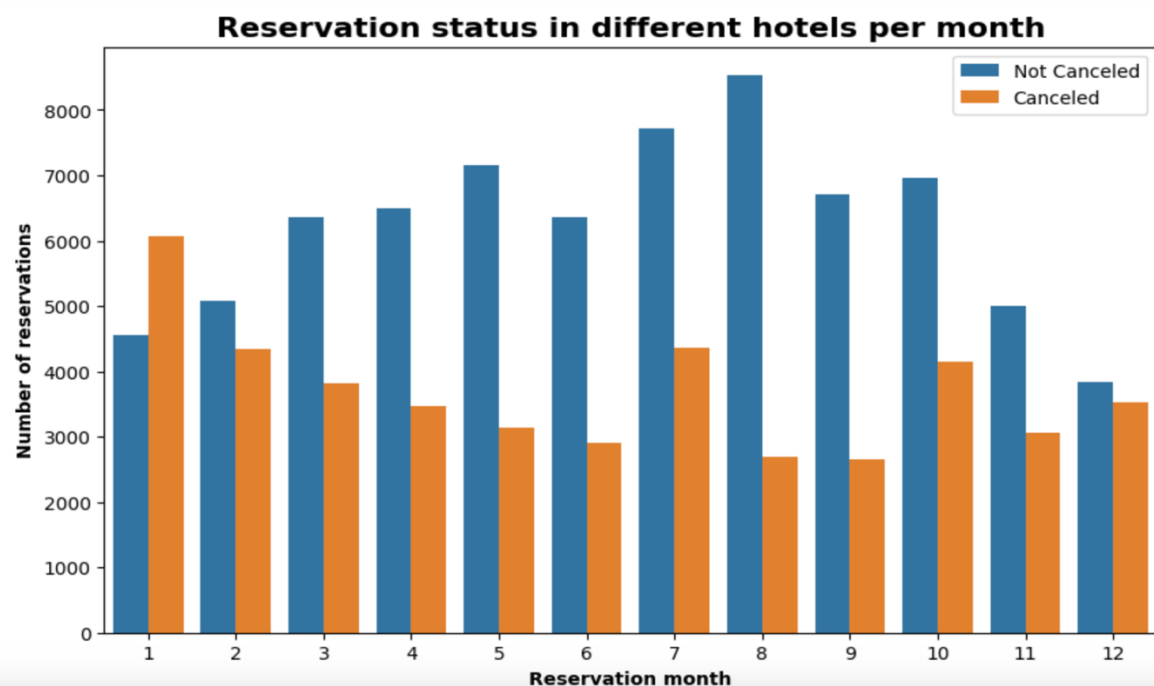
The above bar graph above depicts the count of both canceled and active reservations. Clearly, there remains a noteworthy volume of reservations that haven't been canceled. Nonetheless, it's important to note that 37% of clients did cancel their reservations, significantly affecting the hotel's revenue.



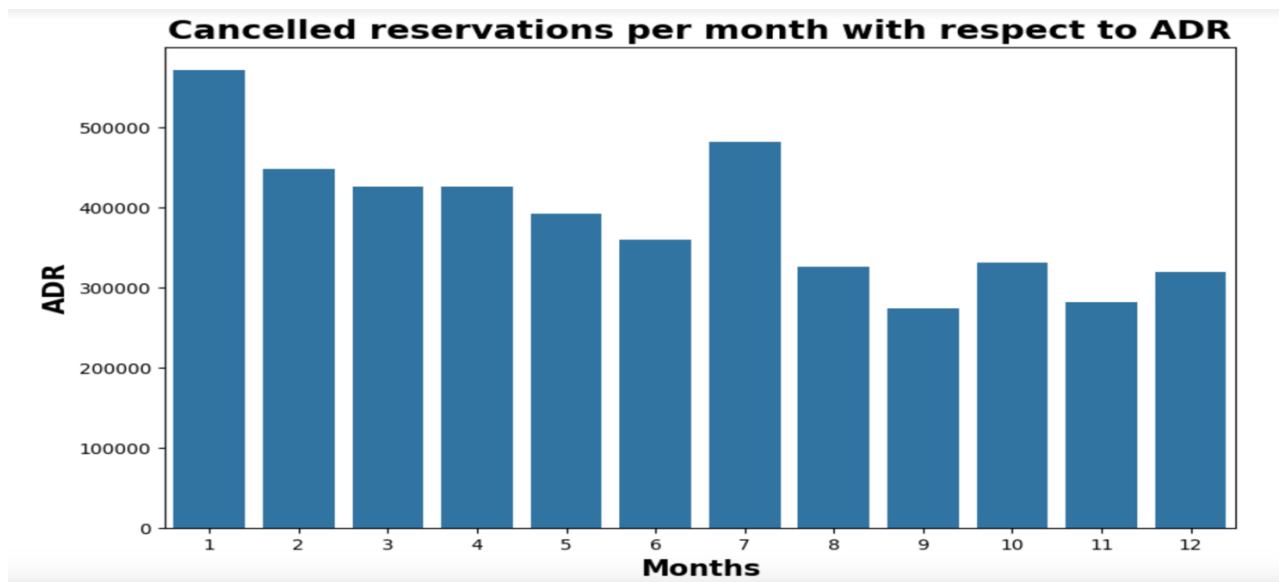
City hotels receive a higher number of reservations compared to resort hotels. This discrepancy may suggest that resort hotels could potentially have higher pricing than city hotels.



According to the line graph above, it is apparent that, on specific days, the average daily rates for a city hotel are lower than those for a resort hotel, and on other days, the difference is even more pronounced. It is reasonable to assume that rates at the resort hotel may increase during weekends and holidays.



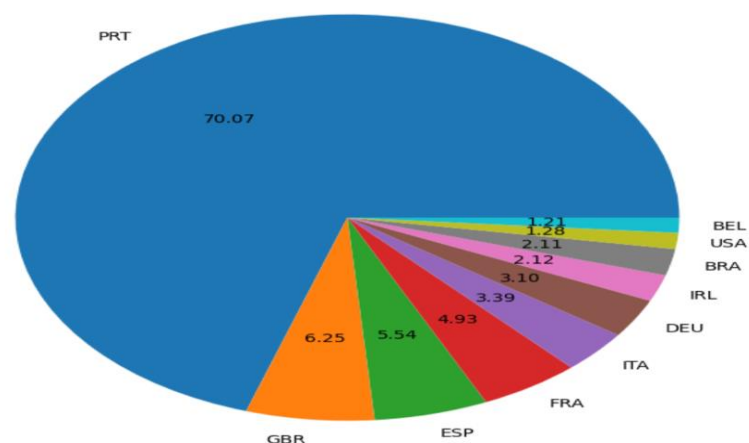
We created a grouped bar graph to analyze the months with the highest and lowest reservations based on their status (cancelled and not cancelled). It is evident from the graph that August has the highest number of confirmed reservations with the fewest cancellations. In contrast, January records the highest cancellations with a relatively lower number of confirmed reservations.



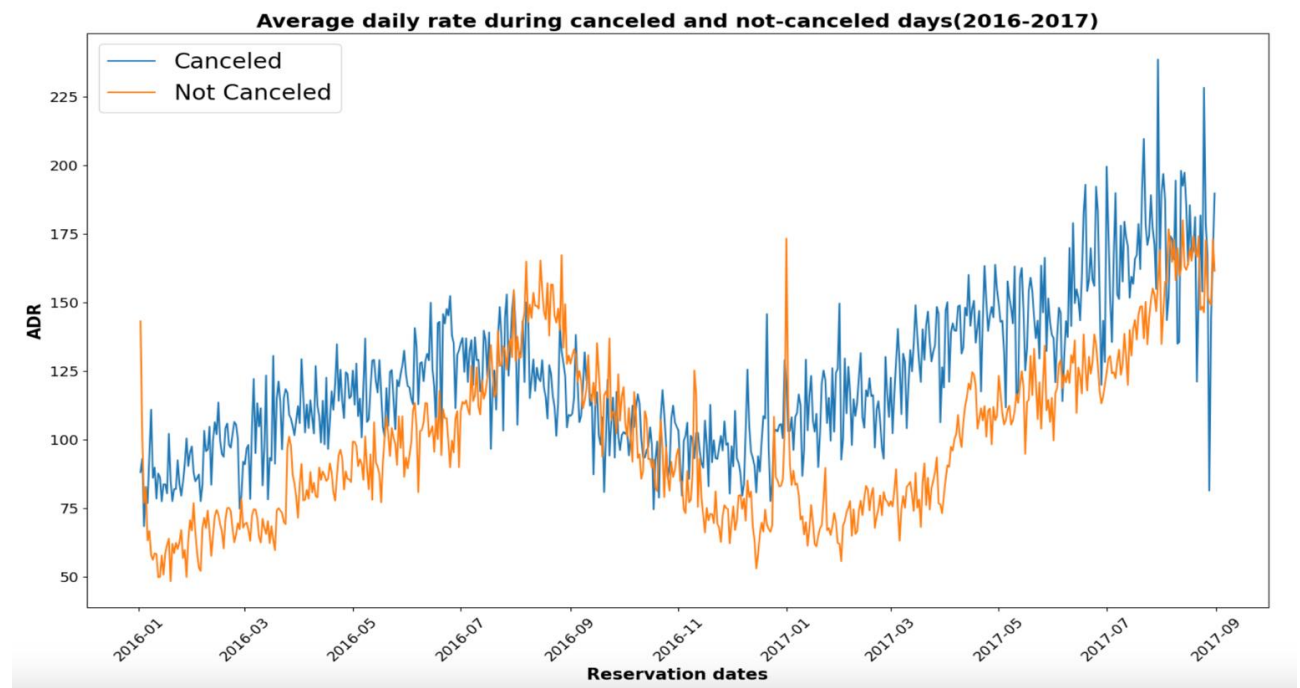
The preceding bar graph illustrates the average daily rates of hotels each month, with January showing the highest average daily rate. Upon analyzing and correlating this information with the previous bar graph, it becomes apparent that cancellations tend to be more frequent when prices are elevated, and conversely, less common when prices are lower. Consequently, we can infer that the cost of accommodation is a primary factor influencing cancellations.

Now, let's identify the country with the highest number of cancelled reservations. The subsequent pie chart reveals that Portugal has the highest incidence of cancellations.

**Top 10 countries with highest cancellations**



In the hypothesis section, it was asserted that the majority of guests originate from offline reservations. However, upon analyzing the data, it is evident that this assertion is inaccurate. Approximately 46% of clients make reservations through online travel agencies, 27% through other reservation methods, and only 4% book hotels directly by visiting them in person.



As depicted in the aforementioned line graph, cancellations tend to occur more frequently when the average daily rates are higher. The analysis strongly indicates that elevated prices correlate with increased cancellation rates.

### **Suggestions based on the above analysis:**

#### **1. Optimize Pricing Strategies:**

Recognizing the proportional relationship between cancellation rates and hotel prices, it is advisable for hotels to refine their pricing strategies. Lowering rates, especially for specific locations, and implementing promotional discounts may serve to mitigate cancellation rates.

#### **2. Targeted Discounts for City Hotels:**

Given that the ratio of cancellations to confirmed reservations is higher for City hotels compared to Resort hotels, offering reasonable discounts on room prices during weekends and public holidays could be an effective strategy to attract guests and reduce cancellations.

**3. Campaigns in January:**

Considering the higher cancellation rate in January due to elevated daily rates, hotels could initiate marketing campaigns or promotions with attractive discounts during this month to enhance revenue and mitigate cancellations.

**4. Enhance Quality in Portugal:**

With a notable number of cancellations in Portugal, it may be indicative of potential issues with service and maintenance. Management should prioritize efforts to improve the quality of hotels in Portugal, focusing on enhancing service standards and overall maintenance.

Implementing these suggestions can contribute to a more strategic approach in managing cancellations and improving overall guest satisfaction.