

Business problem

The hospitality industry is facing challenges in managing hotel bookings efficiently, with a specific focus on understanding the reasons behind booking cancellations. Utilizing observations from a City Hotel and a Resort Hotel, this analysis aims to uncover trends and patterns in customer booking behavior, especially factors leading to cancellations. The goal is to leverage these insights to develop strategies that reduce cancellation rates, enhance customer satisfaction, and ultimately drive revenue growth for the hotels. This involves a deep dive into aspects such as lead time, seasonal trends, customer demographics, and pricing strategies.



Assumption:

1. Longer lead times might correlate with higher cancellation rates, as customers making early reservations have more time to change their plans.
2. There could be seasonal trends in booking and cancellation rates, with certain times of the year experiencing higher demand and possibly higher cancellations.
3. The country of origin of the guests may influence booking patterns and cancellation rates, reflecting varying travel behaviours and preferences.
4. The Average Daily Rate (ADR) might affect cancellation decisions, with higher rates potentially leading to more cancellations.
5. The type of hotel (City Hotel or Resort Hotel) may have a distinct impact on booking and cancellation trends due to their different target audiences and services.

Research Questions:

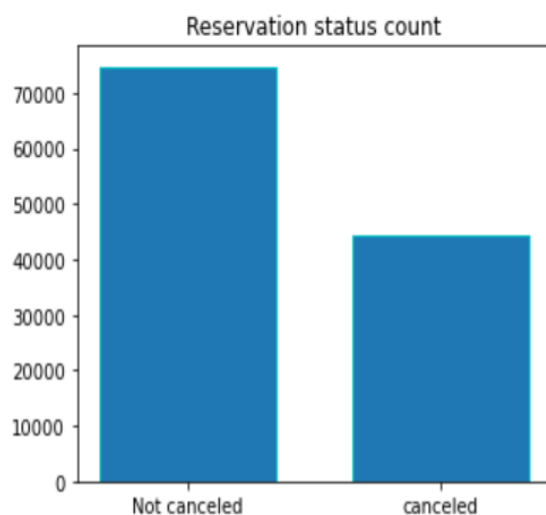
1. What factors most significantly predict whether a booking will be cancelled?
2. How do booking patterns vary across different seasons for both City Hotels and Resort Hotels?

3. How does the lead time between booking and arrival date affect the revenue generated per booking?
4. What are the characteristics of guests who book City Hotels versus Resort Hotels?
5. Is there a relationship between the average daily rate (ADR) and the duration of stay?

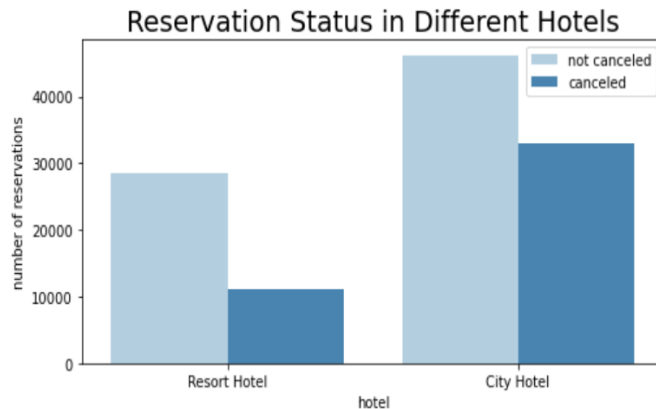
Hypothesis:

1. More Cancellation occur when prices are high.
2. Bookings with a longer lead time and bookings during peak season are more likely to be cancelled.

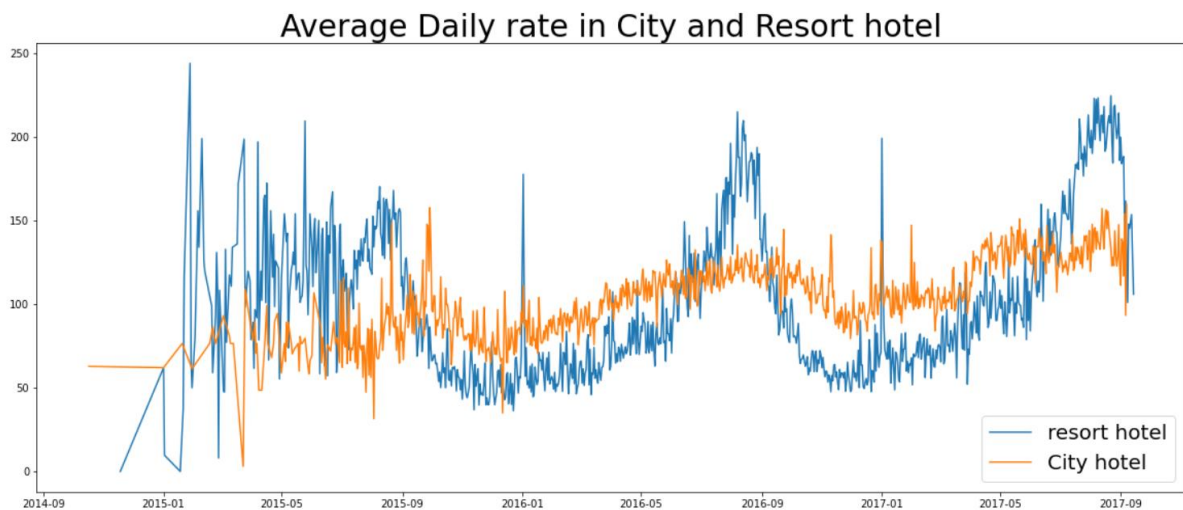
Analysis and findings:



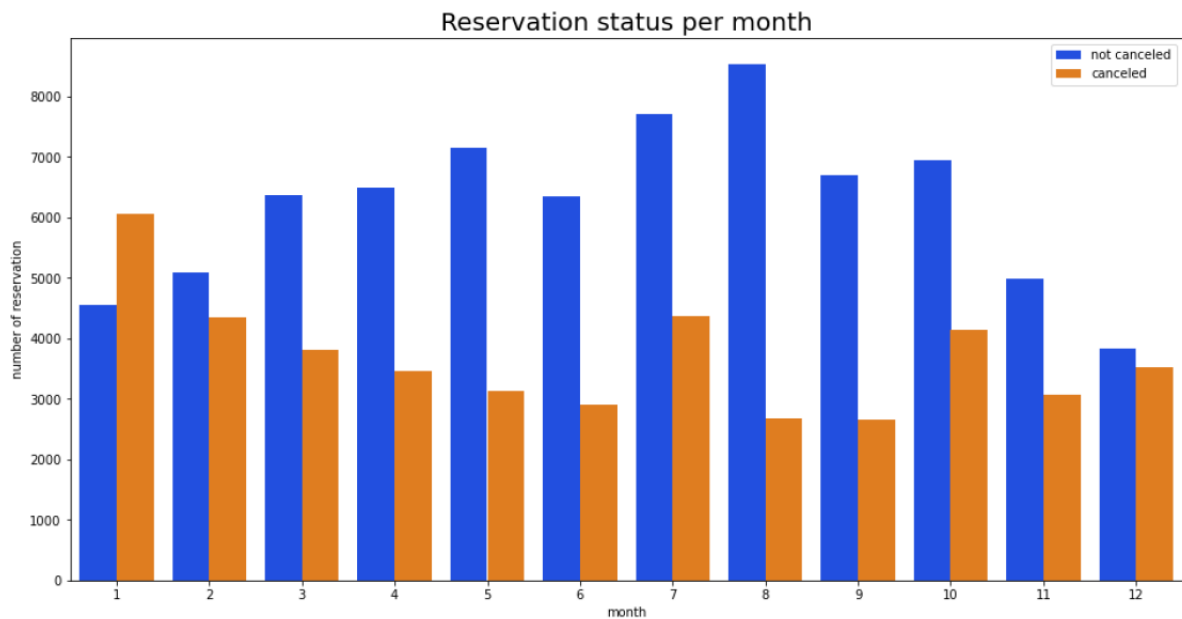
A total of 119,390 bookings were assessed, with 75,166 (approximately 62.96%) leading to stays (not cancelled) and 44,224 (approximately 37.04%) resulting in cancellations. These figures show the operational realities faced by the hospitality sector, indicating a substantial cancellation rate that demands strategic attention. The data-driven insights from this analysis provide a foundational understanding of booking dynamics. The evident disparity between non-canceled and canceled bookings serves as a bellwether for industry practices, signalling the need for enhanced booking management and cancellation mitigation strategies. Targeted initiatives aimed at understanding customer behaviour, personalizing guest experiences, and offering flexible booking policies could potentially lower cancellation rates, optimize revenue streams, and enhance the overall health of hotel operations.



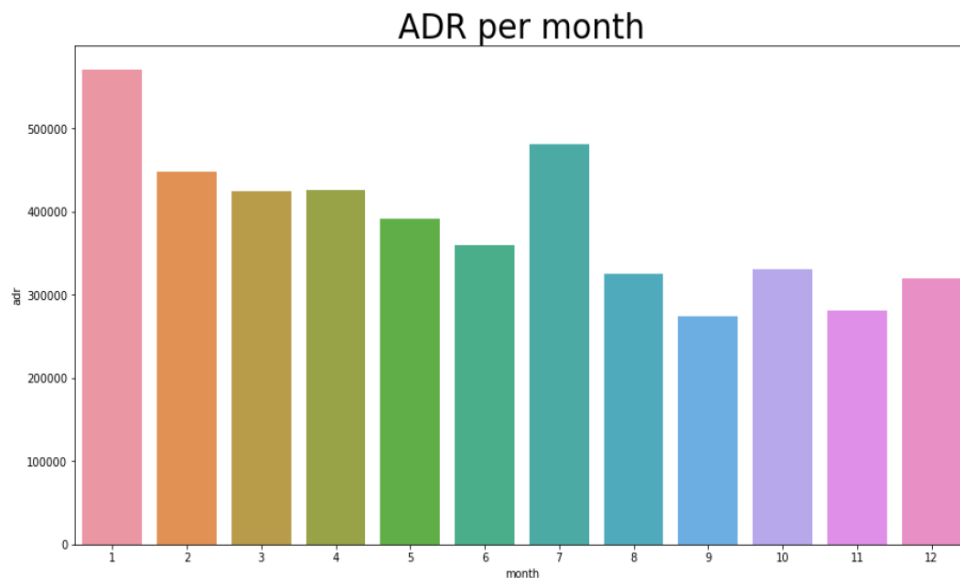
The data delineates a total of 79,330 bookings for the City Hotel, with 46,228 successful stays and 33,102 cancellations, equating to cancellation rates of 58.27% and 41.73% respectively. Conversely, the Resort Hotel, out of a total of 40,060 bookings, witnessed 28,938 non-cancellations and 11,122 cancellations, yielding a significantly lower cancellation rate of 27.76% against a 72.24% success rate. The contrasting reservation statuses between City and Resort Hotels offer valuable insights for tailored management strategies. The higher cancellation rate at City Hotels may prompt a review of flexible booking policies and targeted marketing strategies aimed at business travellers who may need to make last-minute changes. For Resort Hotels, the focus could be on maximizing the higher retention rate, possibly by enhancing the guest experience and loyalty programs to ensure repeat visits. The variance in booking outcomes between the two hotel types emphasizes the importance of context-driven strategies in the hospitality sector, with an underlying goal to bolster customer satisfaction and optimize occupancy rates.



The City Hotel has an average daily rate (ADR) of approximately \$105.30, while the Resort Hotel has a lower ADR of around \$94.95. The higher ADR for the City Hotel may reflect its urban location and potentially higher operating costs or a clientele that is willing to pay more for convenience. The Resort Hotel's lower ADR could be due to a variety of factors, including longer stays or all-inclusive packages that typically have a lower daily rate.

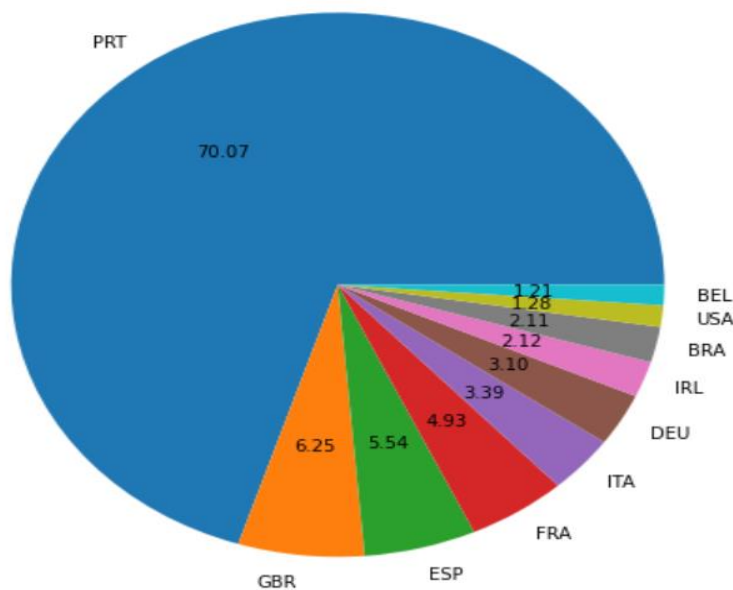


The months of July and August show the highest number of cancellations, while the winter months of January and November have the lowest. This seasonal pattern suggests that the summer months, being peak travel times, may see more cancellations due to travellers' changing plans. The lower winter cancellation rates could be due to fewer overall bookings or more committed travel plans during the holiday season.



The ADR peaks during the month of August at approximately \$140.11 and is lowest in January at around \$70.36. The fluctuation in ADR throughout the year aligns with traditional travel patterns, where peak seasons see higher rates due to increased demand. The lower rates in off-peak months may be used as an incentive to attract guests during times of lower occupancy.

top 10 countries with reservation canceled



Portugal (PRT) leads with the highest number of cancellations at 27,519, followed by Great Britain (GBR) and Spain (ESP) with 2,453 and 2,177 cancellations respectively. The high number of cancellations from Portugal could be due to domestic travellers who may find it easier to change plans. The significant cancellations from other top countries may reflect their strong travel ties with the destination of the hotels, or possibly indicate areas where targeted marketing strategies could improve retention rates.

Suggestion:

1. Implement dynamic pricing models that adjust rates based on demand, seasonality, and booking patterns observed. During peak months with higher ADR and cancellations, consider introducing non-refundable rates or early bird specials to secure bookings and reduce the likelihood of cancellations.
2. Develop targeted marketing campaigns focusing on countries with high cancellation rates to improve booking retention. This could include personalized offers, flexible booking conditions, or loyalty programs to encourage commitment.
3. Offer more flexible rebooking options for guests who might otherwise cancel. This could help retain revenue and maintain customer satisfaction, especially for guests who cancel due to unforeseen circumstances.
4. Invest in customer experience enhancements, particularly during off-peak months when ADR is lower. Special events, amenities, and unique experiences could be marketed to attract and retain guests.
5. Conduct further analysis on customer booking behaviour, focusing on the lead time and reasons for cancellations. This could provide deeper insights into when and why bookings are most at risk and how to intervene.

6. With Portugal showing the highest cancellation rates, special attention should be given to the domestic market. Strategies like special resident rates, localized promotions, and partnerships with local businesses could help in reducing cancellations.

7. Enhance the online booking system to make it more user-friendly, providing clear information about the best rates, booking conditions, and cancellation policies. An optimized online presence can also tap into insights from data analytics to offer tailored suggestions and improve conversion rates.

8. Adjust staffing and inventory levels according to the seasonal demand and booking patterns to ensure operational efficiency and cost management while maintaining high service standards.