

Hotel Booking Cancellation Analysis

End-to-End Business Insight Report

1. Project Overview

This project analyzes hotel booking data to understand the key factors driving booking cancellations. High cancellation rates directly impact hotel revenue, room utilization, and overall operational efficiency.

Using historical booking data, this analysis focuses on identifying clear business patterns behind cancellations and translating them into actionable recommendations that can help hotels reduce revenue loss and improve decision-making.

2. Business Context

Hotels operate on thin profit margins and rely heavily on advance bookings to plan pricing, staffing, and room availability. When bookings are canceled—especially close to arrival dates—rooms often remain vacant, resulting in unrecoverable revenue loss.

City Hotels typically face higher demand volatility due to business travel, while Resort Hotels rely more on leisure and seasonal demand. Understanding cancellation behavior is critical for improving occupancy stability and achieving predictable revenue outcomes.

3. Business Problem

Both City Hotels and Resort Hotels experience high booking cancellation rates, which lead to:

- Revenue loss
- Under-utilized hotel rooms
- Inefficient operational planning

Core Business Question

How can historical booking data be used to identify the main drivers of cancellations and help hotels reduce revenue loss?

4. Business Objectives

The key objectives of this analysis are to:

- Understand overall cancellation trends
 - Identify the major factors influencing booking cancellations
 - Compare cancellation behavior between City Hotels and Resort Hotels
 - Provide practical, data-driven business recommendations
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5. Dataset Overview

The analysis is based on historical hotel booking records containing information on:

- Hotel type (City Hotel or Resort Hotel)
- Room pricing (Average Daily Rate – ADR)
- Booking channel
- Customer country
- Reservation status

The primary outcome analyzed is whether a booking was canceled or not.

6. Key Business Findings

6.1 Hotel Type and Cancellations

City Hotels experience significantly higher cancellation rates compared to Resort Hotels. This indicates that demand for City Hotels is more unstable, likely due to flexible travel plans associated with business travel.

Business implication:

City Hotels require stronger booking and pricing controls to manage cancellation risk.

6.2 Pricing Impact on Cancellations

Bookings with higher room prices are more likely to be canceled. Customers show clear price sensitivity, and higher pricing increases the likelihood of booking reversals.

Business implication:

Pricing decisions play a critical role in cancellation behavior and must be carefully balanced.

6.3 Booking Channel Behavior

A large proportion of bookings—approximately half—are made through Online Travel Agents (OTAs). These bookings also show the highest cancellation rates compared to other channels such as direct or corporate bookings.

Business implication:

Booking channel is one of the strongest contributors to cancellations, making OTA dependency a major business risk.

6.4 Country-Wise Cancellation Patterns

Portugal stands out as the country with the highest concentration of booking cancellations. A disproportionate number of canceled bookings originate from this region.

Business implication:

Geography plays an important role in cancellation risk, and Portugal represents a high-risk market requiring focused attention.

7. Interpretation of Findings (Business Reasoning)

Higher cancellation rates associated with Online Travel Agents may be driven by several factors, including:

- Ease of booking and cancellation on online platforms
- Customers booking multiple properties and canceling later
- Mismatch between online property representation and actual guest experience

In regions such as Portugal, high reliance on OTA bookings combined with seasonal tourism further amplifies cancellation risk.

8. Key Insights Summary

- City Hotels are more prone to cancellations than Resort Hotels

- Higher room prices increase cancellation likelihood
 - Nearly half of all bookings come through Online Travel Agents
 - Online Travel Agents have the highest cancellation rates
 - Portugal represents the highest regional cancellation risk
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9. Business Recommendations

Booking Channel Strategy

- Improve accuracy and transparency of online property listings
- Use verified and up-to-date property images
- Clearly communicate hygiene and service standards

Pricing Strategy

- Avoid aggressive pricing during high-risk periods
- Use pricing strategies aligned with historical cancellation behavior
- Offer non-refundable or semi-flexible pricing options

Geography-Specific Actions (Portugal)

- Apply targeted pricing and promotional strategies
- Improve expectation management for international travelers
- Closely monitor cancellation trends at the country level

Quality and Experience Control

- Strengthen hygiene and service consistency
 - Ensure online representation matches actual guest experience
 - Act proactively on customer feedback
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10. Business Impact

If implemented, these actions can help hotels:

- Reduce cancellations driven by online platforms

- Improve revenue retention
 - Increase room occupancy
 - Enhance operational planning accuracy
 - Strengthen long-term brand trust
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11. Conclusion

Hotel booking cancellations are not random events. They are strongly influenced by pricing decisions, booking platforms, and geographic factors. By reducing dependency on high-risk channels, applying smarter pricing strategies, and focusing on high-risk regions such as Portugal, hotels can significantly reduce cancellations and improve overall business performance.