

# Hotel Booking & Cancellation Trends

Galuh Alifani





# Agenda

- 1 **Background & Objective**
- 2 Dataset Context
- 3 Key Terminologies
- 4 Data Insights Exploration
- 5 Conclusion & Recommendation



## Background & Objective

### The problem:

The Portugal branch of our ABC hotel chain that operates city & resort hotel, has experienced **stagnant revenue growth** and **increasing cancellation rates** over the past years

### The objective:

Identify data-driven **strategies** to **increase hotel revenue** and **reduce cancellation rates** based on historical booking trends.

### Target user:

Hotel's management, marketing, and operations team.





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# Dataset Context

Dataset Title      Hotel booking demand datasets

Description & Content      This dataset contains **191,000 records** of **historical booking data** from 2 hotels: City hotel and Resort hotel, spanning from period **2015–2017**.

Each record represents a hotel booking comprising details of guests, rates, and booking status

Source      



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## Key Terminologies

### ADR:

Average Daily Rate: Value of each booking per day (*ignores total number of rooms in one booking*).

$\square$  Total booking value (EUR) / Total stay duration

### Booking Value:

\$ value of booking (in EUR)  $\square$  ADR \* stay duration

### Lead Time:

How long a booking was made before its date of stay

$\square$  Date of Stay – Date of Booking



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# EDA Methodology: Focus Questions

Focus on 5 main questions that addresses the key problem

**1**

**Who are the hotels' guests and which one should we focus more on?**

**4**

**What are the factors that drives cancelation rate?**

**2**

**Is there peak booking period of the hotel? What drives it?**

**5**

**What are guests' behavior towards add-on services?**

**3**

**Booking performance variations between City & Resort Hotel?**

Who are the hotels' guest and which one should we focus more on? + + + + + +

Majority of the hotel guests are non-family, domestic travelers.. + + + + +

>90% of hotels' guests are non-family..

..with majority are domestic tourists

Booking Distribution by Guest & Hotel Type

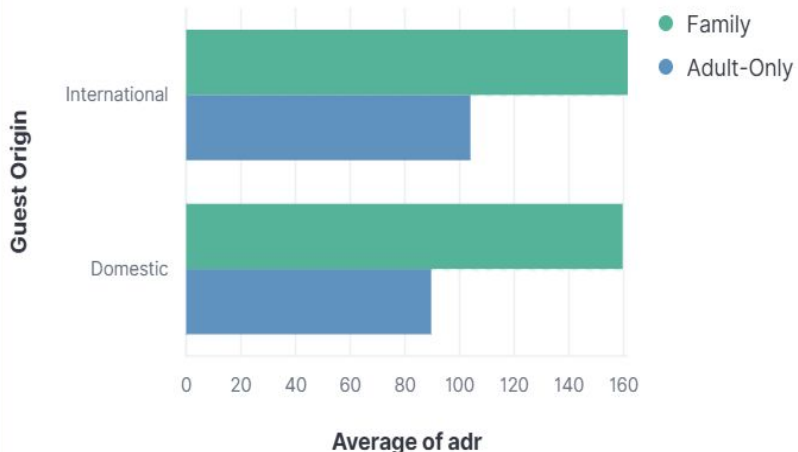


Who are the hotels' guest and which one should we focus more on? + + + + +

**However, both family-guests and international tourists have higher ADRs and longer stay duration** + + + + +

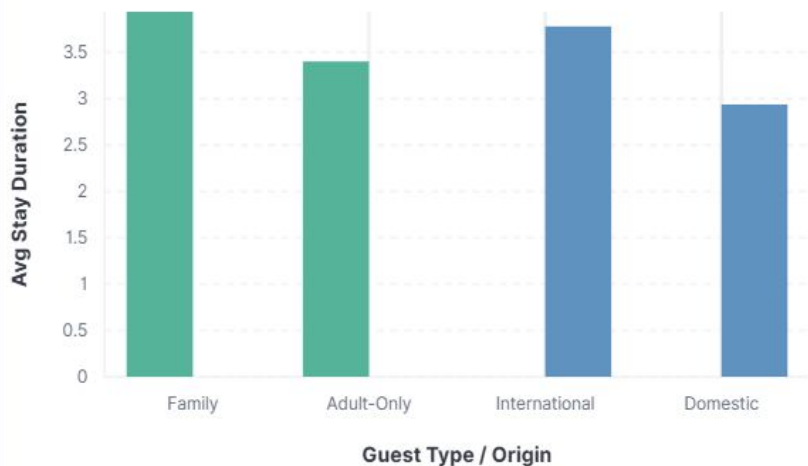
**Family & Intl guests have higher ADR...**

Avg ADR by Hotel & Guest Type



**...with longer stay durations**

Avg Stay Duration by Guest Type & Origin





Is there peak booking period of the hotel? What drives it?

**Resort Hotel: Spikes of booking value observed between Jul-Aug**  
**City Hotel: Drops in # bookings observed between Nov-Jan**

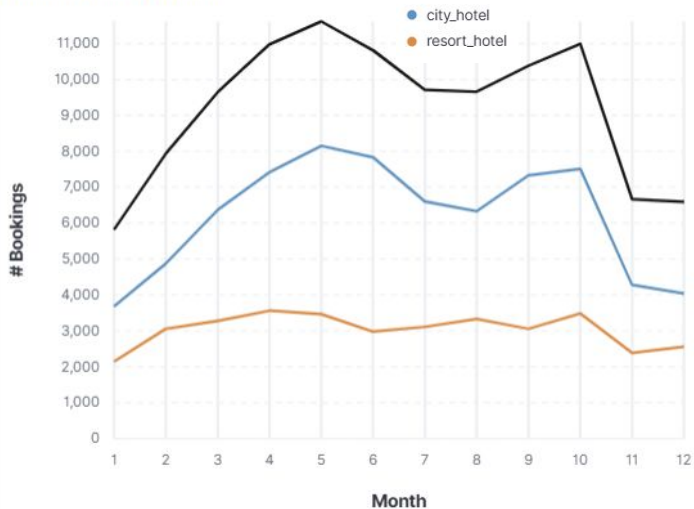
### Total booking value spikes during summer holiday

Booking Value by Time



### ...but # bookings are stable

Total Bookings by month



What are the peak booking period of the hotel?

**Resort Hotel fluctuates heavily during summer holiday, both on daily rates and stay duration, while City Hotel remains stable**

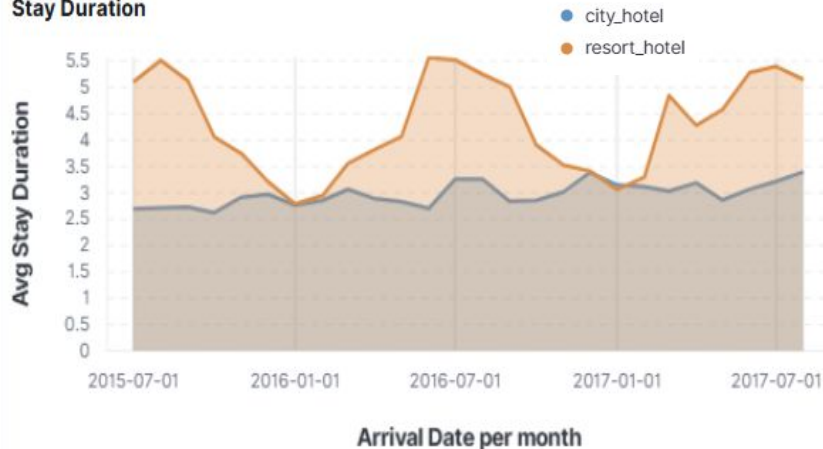
### Fluctuations in ADR for Resort Hotel

Average ADR



### With consistently longer stay duration

Stay Duration

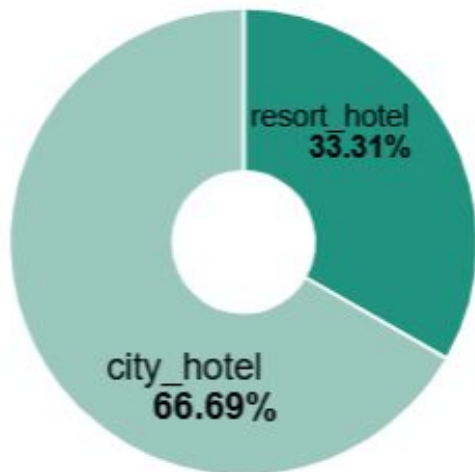


## Booking performance of city vs resort hotel

**Majority bookings comes from City Hotel, however Resort Hotel contributes to higher revenue per booking**

City hotel attracts more # of bookings

# Total Bookings



Resort hotel generate more revenue per booking

Revenue per booking



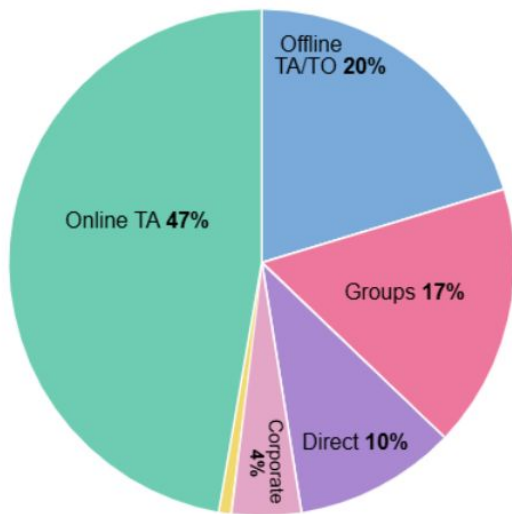


Which sales channel should we prioritize?

**Online Travel Agencies (Online Booking Platforms) contributes to the highest # of booking with the highest ADR**

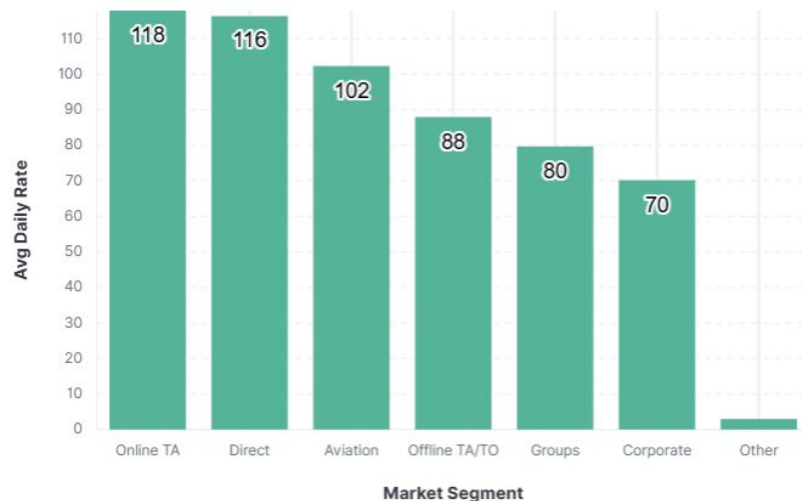
### Online platforms dominate bookings

% of Bookings by Market Channels



### Whilst also maintaining high ADR

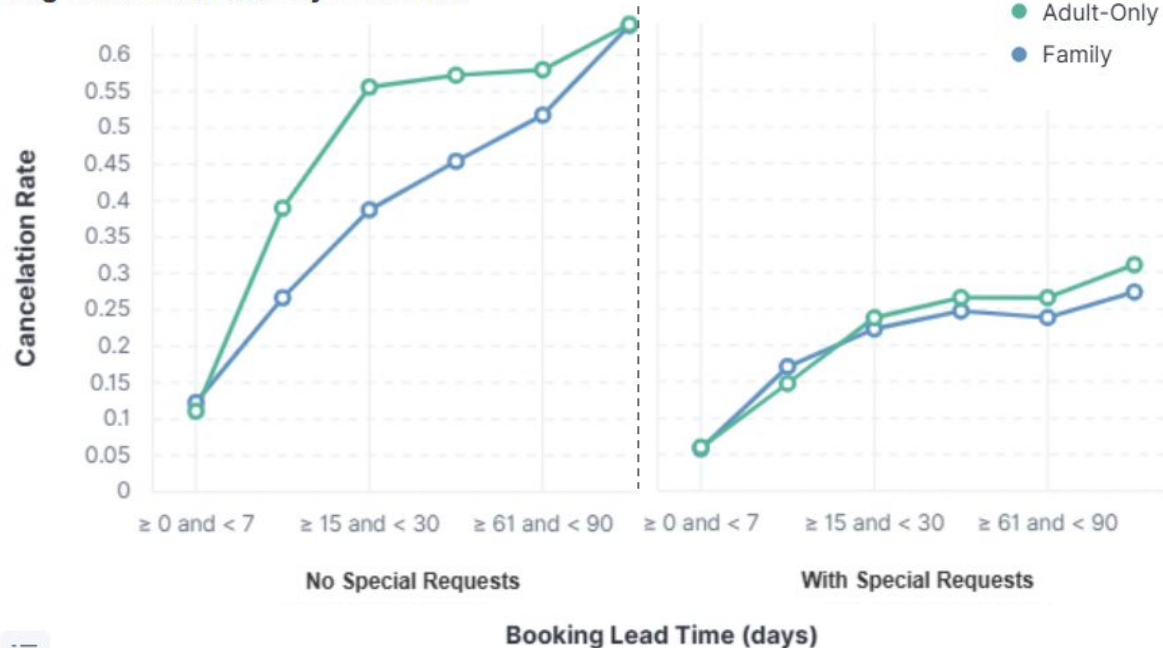
ADR per Market Segment



## What are the factors that drives cancelation rate?

**Bookings made closer to stay date, or with any special requests, have significantly lower cancellation rates**

Avg Cancellation Rate by Lead Time



## What are the factors that drives cancellation rate?

**Repeat guest have significantly lower cancellation rate, while those who made 12+ cancellations in the past will most likely cancel again**

### Repeat guest cancels less

Repeat Guest Cancellation



### Those with 12+ past cancels almost always cancel again

Cancellation Rate by Past Cancellation History

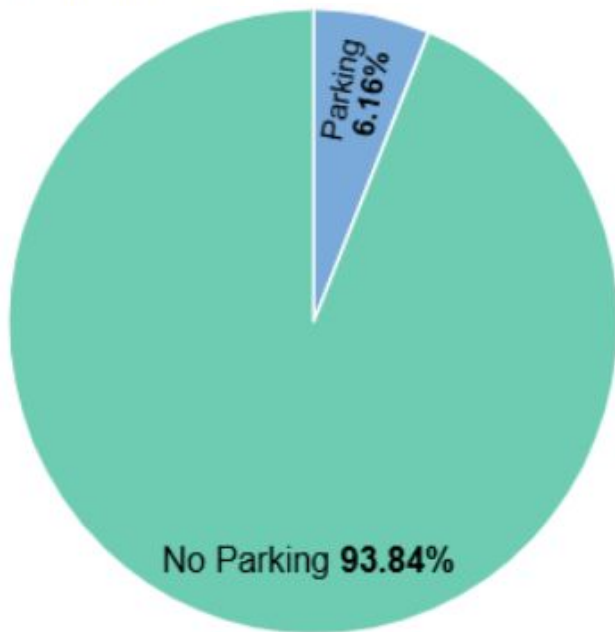




## What are guests' behavior towards add-on services?

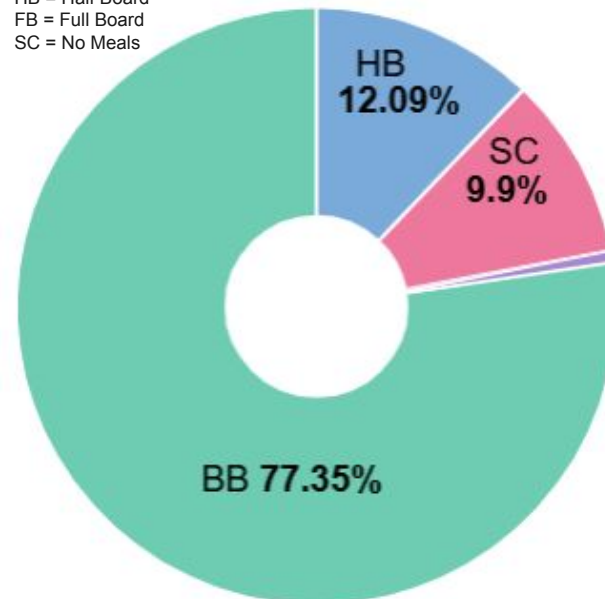
**Minimal engagements on existing add-ons: 93% guests do not require parking spaces, and most of the guests prefers simple meal plans**

**Parking Requirements**



**Meal Package Distributions**

BB = Bed & Breakfast  
HB = Half Board  
FB = Full Board  
SC = No Meals





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## Conclusion & Recommendations

# Boosting loyalty, personalization, and promoting family resort packages can help reduce cancellations and maximize revenue.

### Insights Summary

- **Family & international guests** are under-tapped: makes up the least # bookings, but have higher ADR and longer stay durations
- **Resort hotel** is the main **revenue driver**, while **City hotel** is the main **booking driver**
- **Loyalty & personalization** drives cancellation rate down: **Significantly lower cancellation rate** for bookings with **special requests** or from **repeat guests**
- Cancellations are **significantly higher** for bookings made with **long lead times**
- Guest with **>12 past cancellations** are **almost certain to cancel again**

### Recommendations

#### Reduce Cancellations

1. **Encourage Shorter Lead Times** via last-minute deals and flash sales
2. **Minimize cancellation for long-lead time bookings** via discounted upgrades or free add-ons
3. Encourage & offer **special requests**
4. **Boost loyalty program** to increase repeat guests
5. **Implement KYC Checking** for High-Risk Bookers

#### Increase Revenue

1. **Upsell to Families:** Design family-focused packages & kids-friendly facilities.
2. **Expand Internationally:** Increase marketing exposure in Western Europe
3. **Diversify add-ons packages:** increase revenue share from non-room sources
4. **Boost peak demand in resort hotel:** Offer promotions during summer holidays
5. **Boost off-peak bookings in city hotel:** Offer promo in city hotel during EOY period