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BUSINESS CASE

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GIVEN DATA



bookings.csv

⋮

- booking_id
- hotel_id
- country
- booking_date
- cancellation_date
- checkin_date
- checkout_date
- status
- source
- agency_id



hotel_bookings.csv

⋮

- Booking and Arrival Dates
- Lead Time
- Number of Nights
- Number of Adults and Children
- Meal Type
- Country
- Market Segment
- Distribution Channel
- Other Booking Details



payment_activation_rate.csv

⋮

- month
- payment_activation_rate

Question 1

Identifying suspicious patterns
(possible attempts to avoid paying commission fees)

1

A reservation
is cancelled

2

Shortly after:
New manual
reservation is made

3

The new manual reservation:
same hotel
same check in



```
WITH cancelaciones AS (  
  SELECT  
    agency_id,hotel_id,checkin_date,booking_date  
  AS fecha_cancelacion  
  FROM bookings  
  WHERE status = 'cancelled'),  
  
  nuevas_reservas AS (  
    SELECT  
      agency_id,hotel_id,checkin_date,booking_date  
    AS fecha_nueva,source  
    FROM bookings  
    WHERE source = 'booking.com' OR source = 'manual')
```



```
SELECT
    c.agency_id,c.hotel_id,c.checkin_date,
    c.fecha_cancelacion,n.fecha_nueva
FROM cancelaciones c
JOIN nuevas_reservas n
    ON c.agency_id = n.agency_id
    AND c.hotel_id = n.hotel_id
    AND c.checkin_date = n.checkin_date
    AND DATEDIFF(n.fecha_nueva, c.fecha_cancelacion)
    BETWEEN 0 AND 1
ORDER BY
    c.agency_id, c.hotel_id,
    c.checkin_date, c.fecha_cancelacion;
```


Question 2

Evolution of the payment activation rate

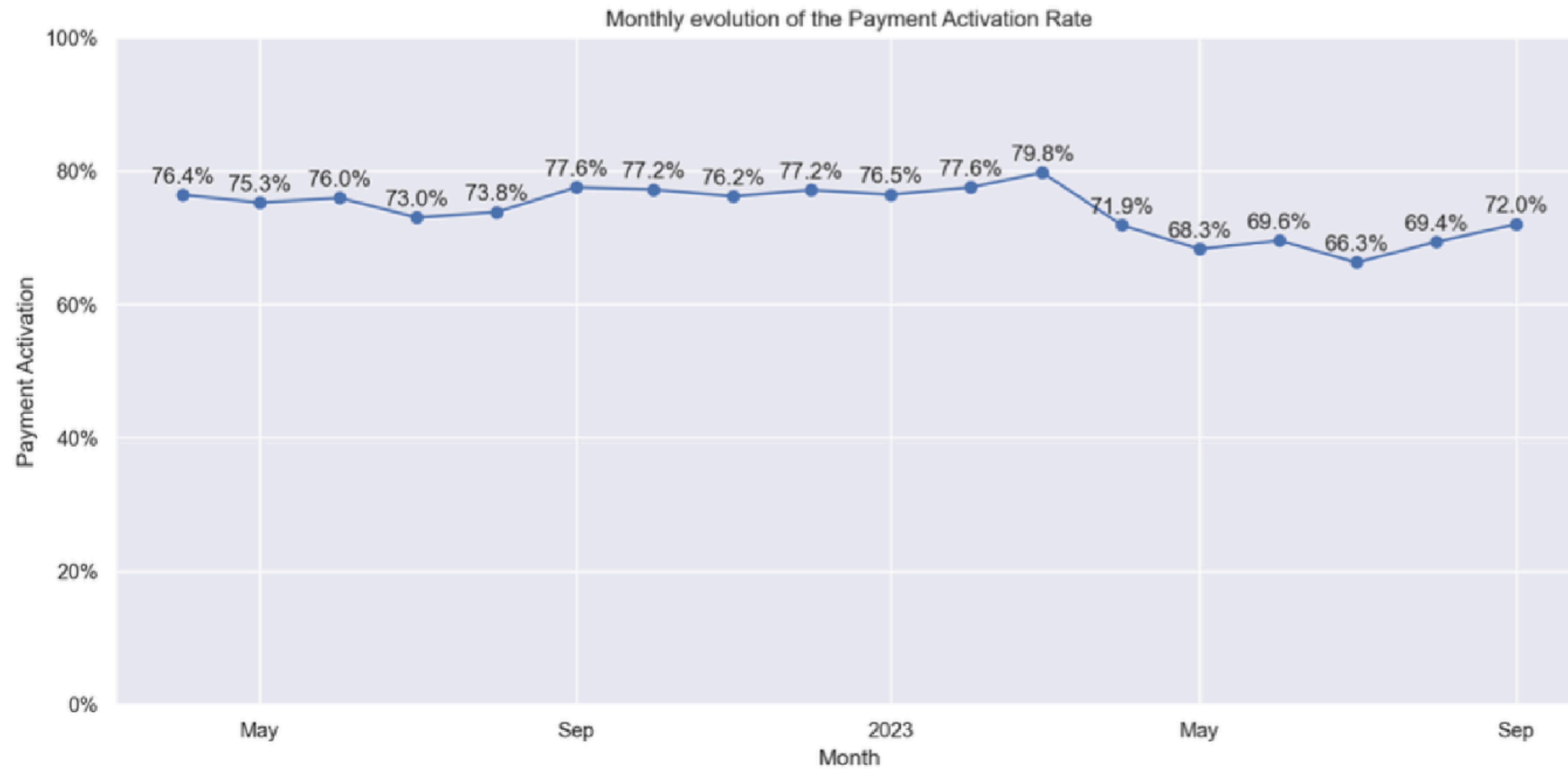
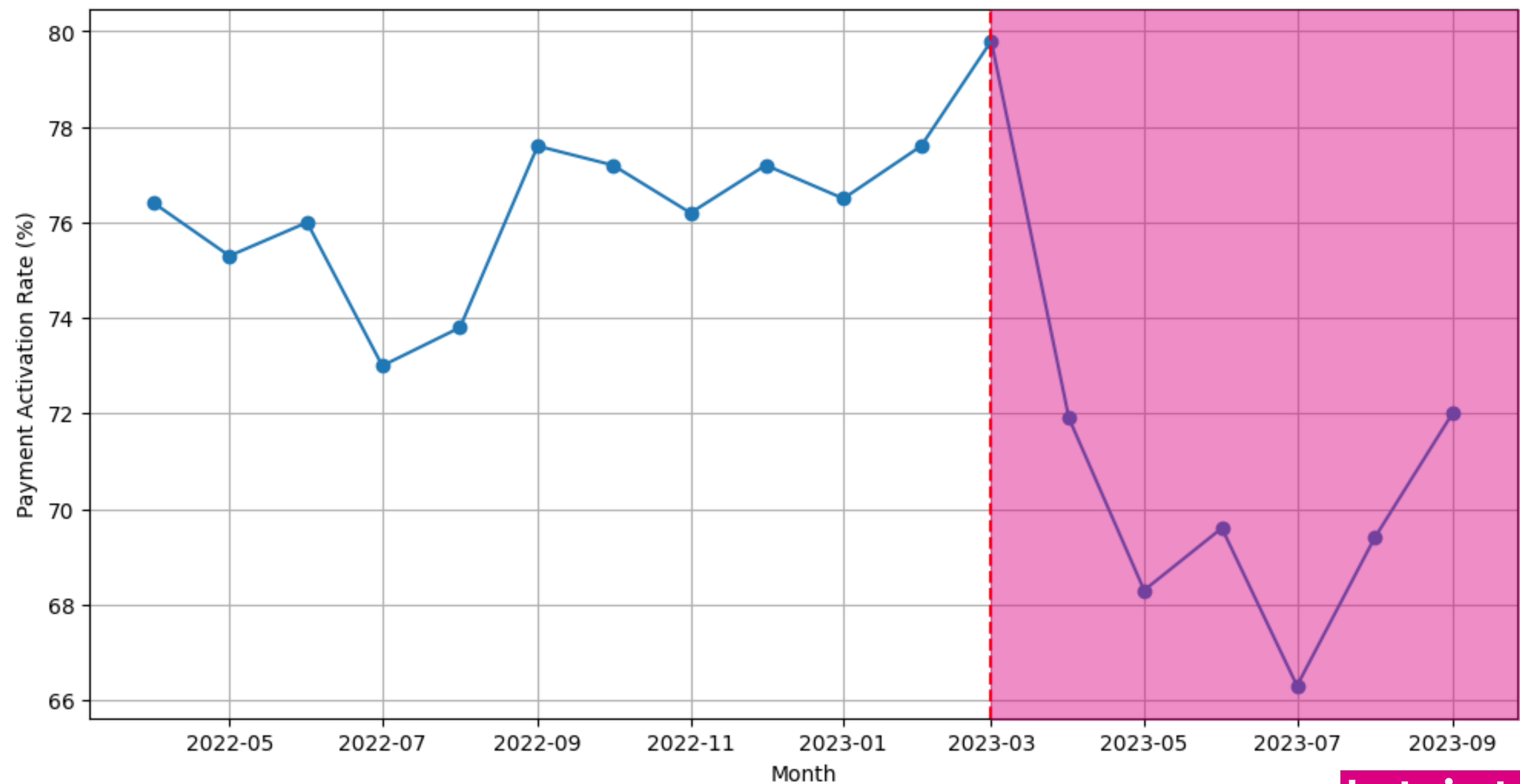
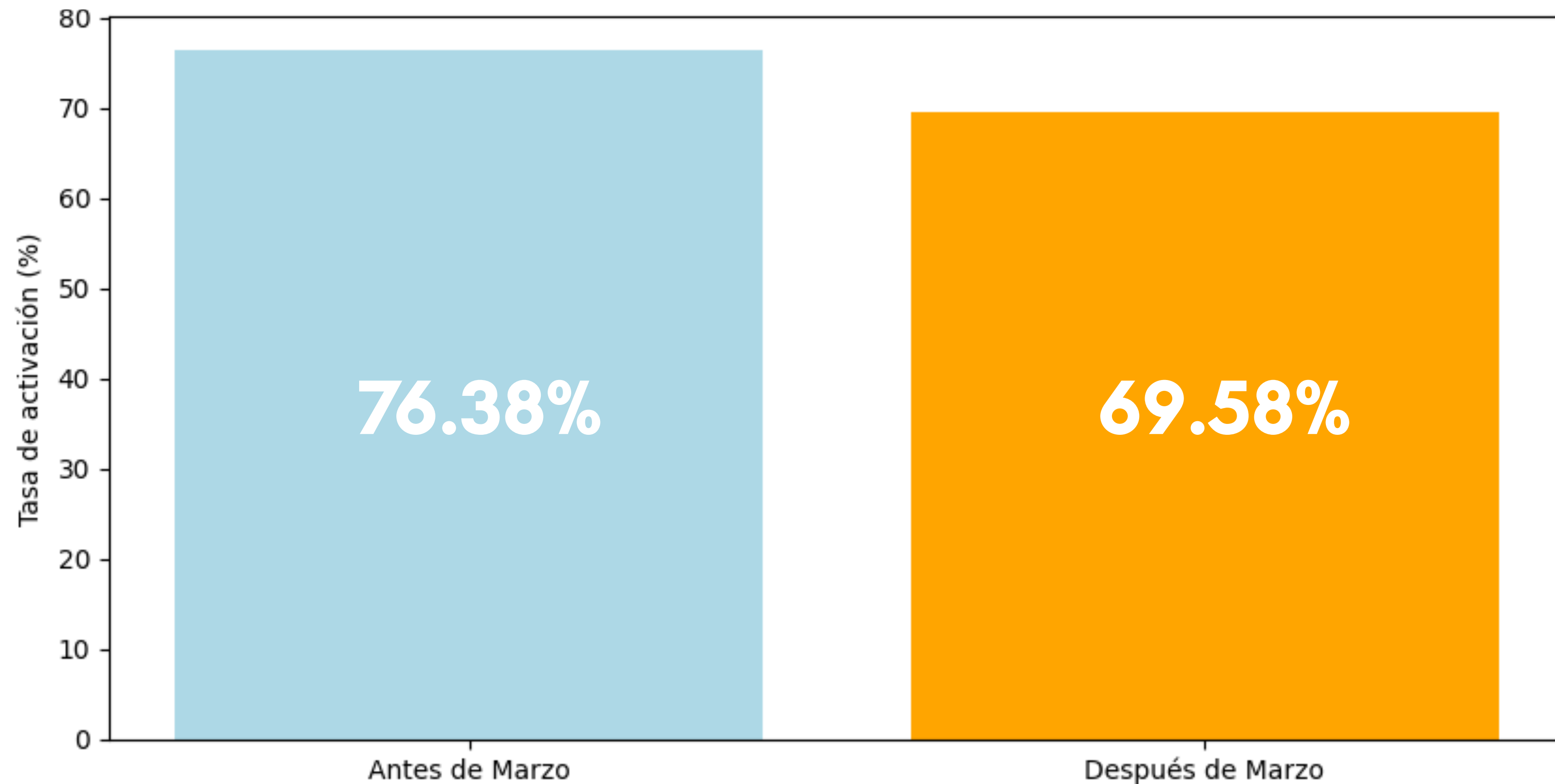


Figure 1. Monthly evolution of Payment Activation rate

Evolution of Payment Activation Rate Over Time



Comparison of Payment Activation Rates Before and After the Change



Shapiro-Wilk Normality Test

Test Statistic = -7.07
p-value = 0.0000

The observed decrease in the payment activation rate **is not random and is likely influenced** by the changes introduced in March 2023.

This indicates that these changes **negatively impacted** user behavior.

Question 3

Potential impacts on revenue

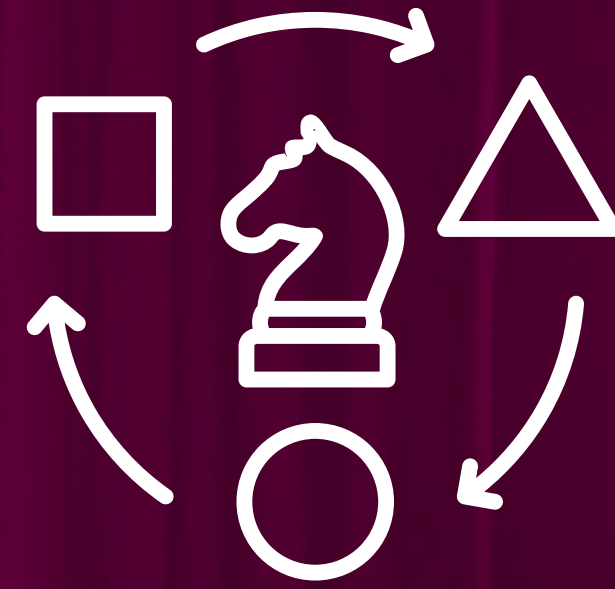
Positives

- ① Annual plans ensure stable income
- ② Higher average income per customer
- ③ Attract new customers with annual discounts

Negatives 👎

- ❶ Loss of price-sensitive customers
- ❷ Liquidity problems
- ❸ High upfront costs

Strategies



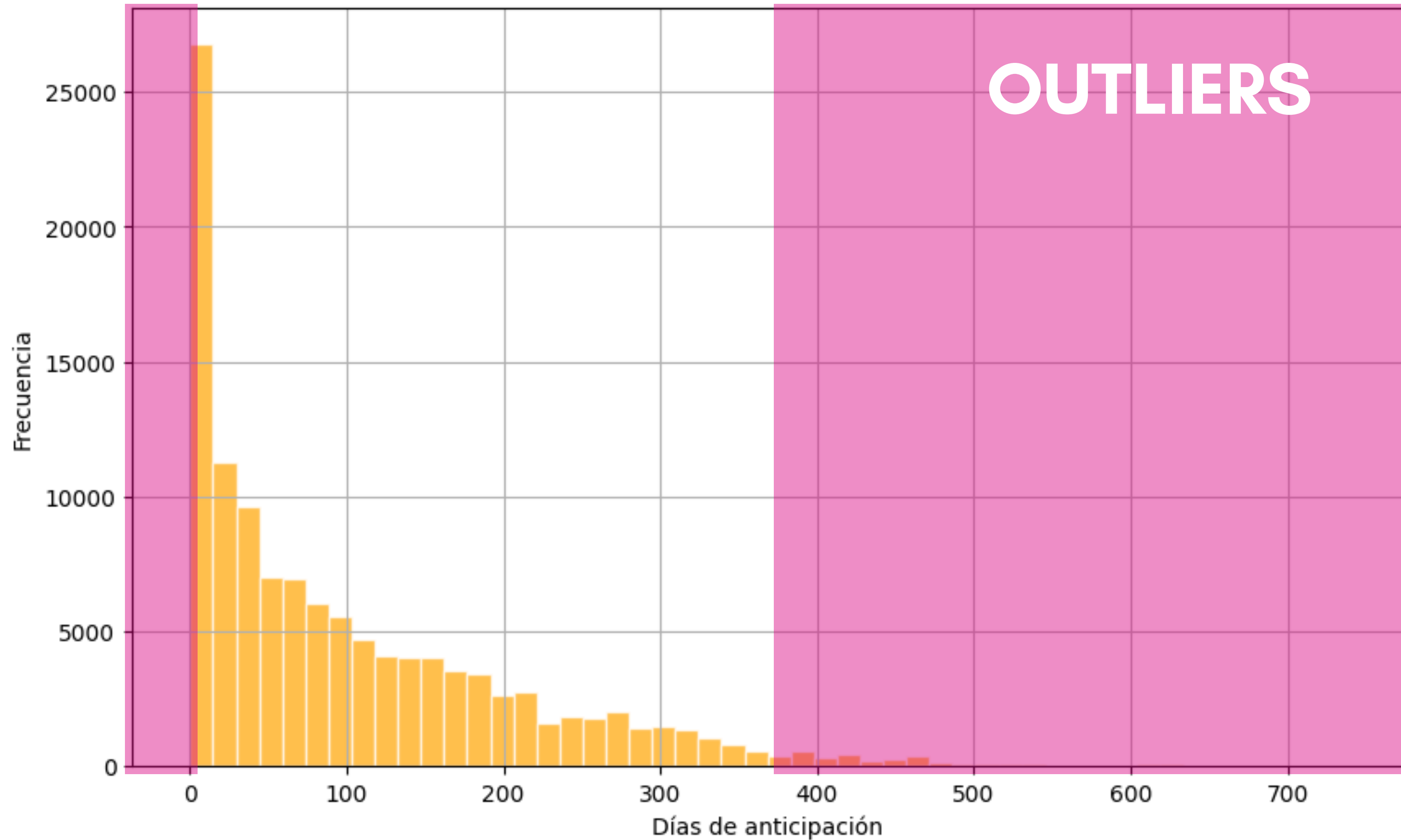
- 1 Offer **gradual discounts** to smooth the transition.
- 2 **Segment prices** to retain sensitive customers and attract premium.
- 3 Analyze **price elasticity to predict** how customers will react.

Question 4

Exploratory Data Analysis

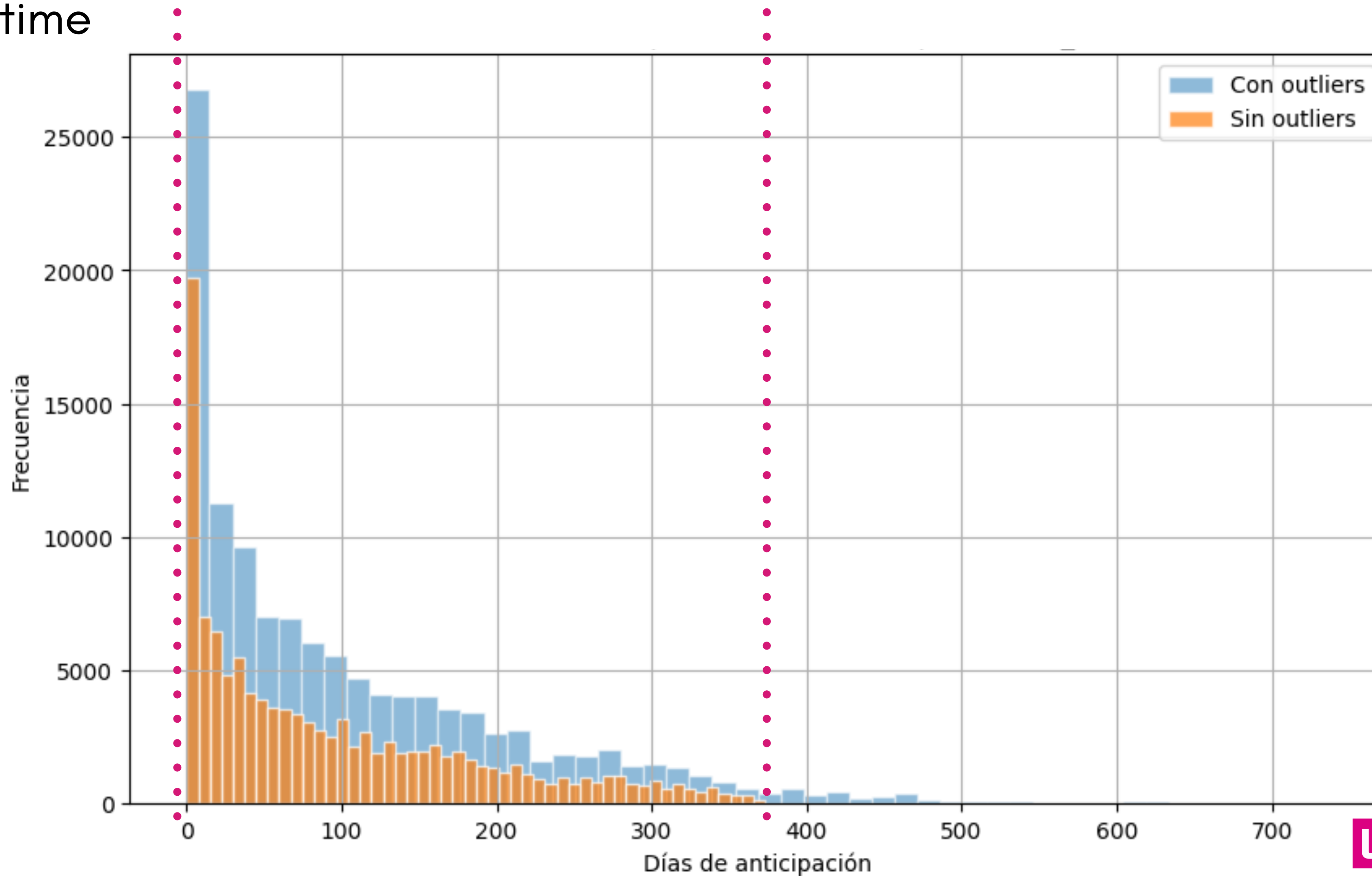
Advance booking time distribution

lean_time



Advance booking time distribution

lean_time



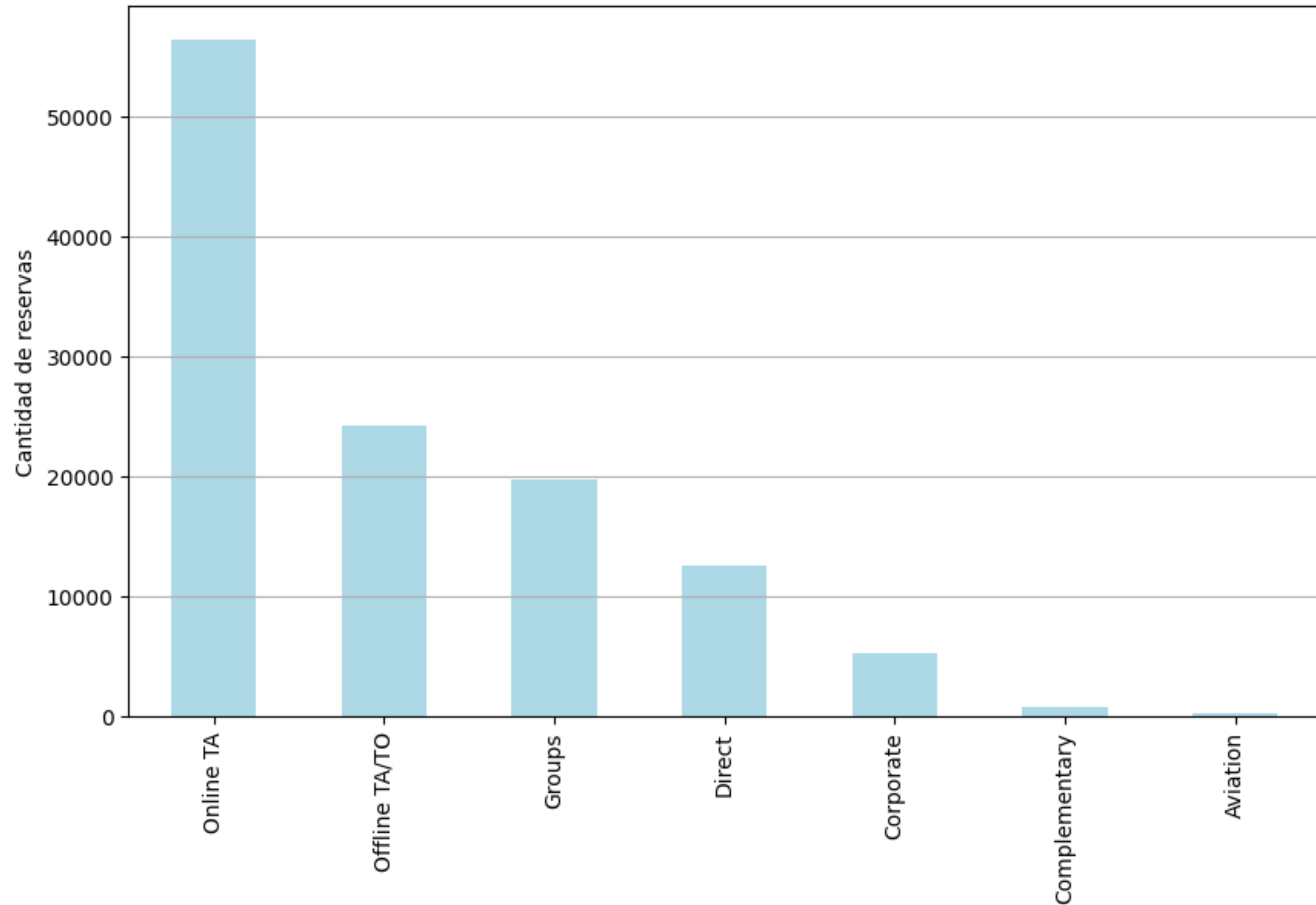
Advance booking time distribution

lean_time

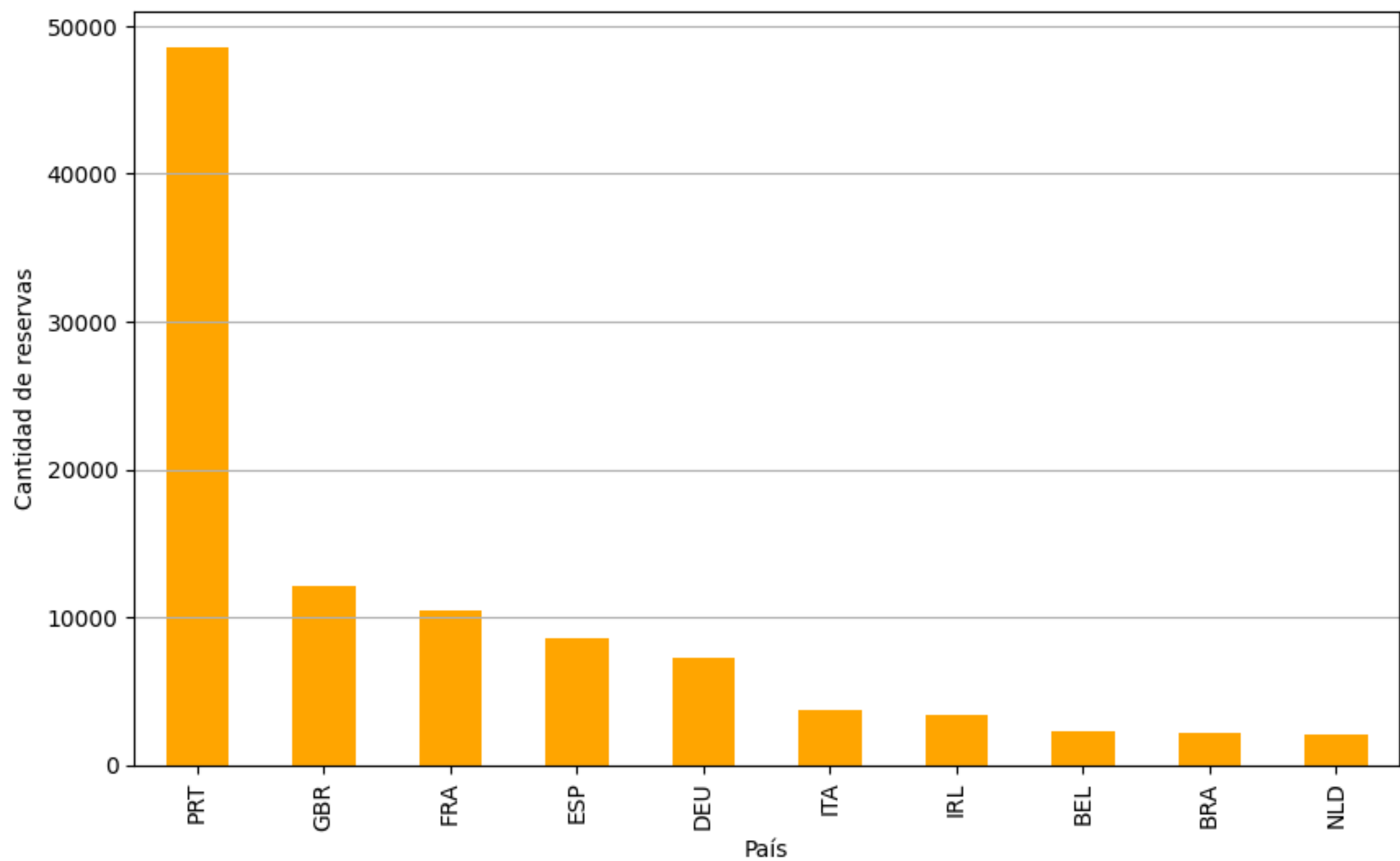
lead_time We observe that most bookings are made with less than 200 days of anticipation.

Outliers The distribution without outliers is more concentrated and better represents the majority of bookings.

Market segments



Main Countries of Origin for Guests



Market segments

Online TA 47.30%

Most customers come from online travel agencies like Booking.com, Expedia, etc. This figure reflects the importance of the digital market. A strong strategy on online platforms has a direct impact on revenue.

Offline TA/TO 20.28%

A significant portion of bookings is made through traditional travel agents or operators. These segments are more traditional but stable, making them ideal for ensuring occupancy during low seasons.

Groups 16.59%

Group bookings ensure a high occupancy volume, which helps maximize resources such as catering, transportation, and services.



THANKS

Do you have any questions?

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