

Agoda: Optimizing Urgency Messaging to Boost Bookings.

Analyze price trends and implement urgency messaging to increase booking conversion rates.

- 📌 Key Goal: Identify price movement patterns and booking behavior to create data-driven urgency messaging strategies.



Business Challenge :

- Understanding Price Movement Trends
- Identifying Key Factors Influencing Price Changes
- External Factors Affecting Price Trends
- Delay Bookings leading to missed Revenue Opportunities



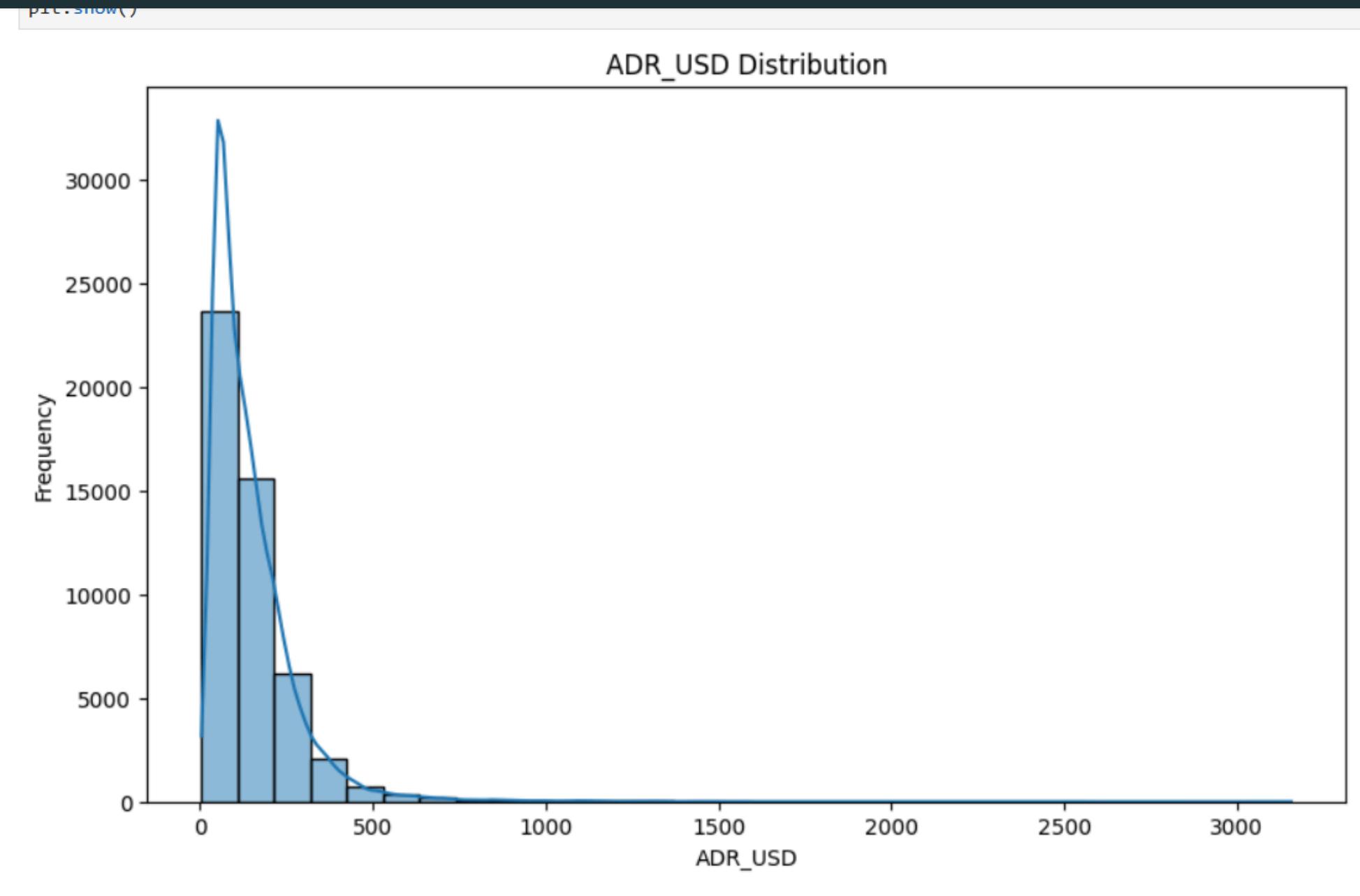
Final Data after Cleaning

#	ADR_USD	hotel_id	city_id	star_rating	chain_hotel	booking_date	checkin_date	checkout_date	accommodation_type_name	lead_time	booking_category	month
1	71.060000	297388	9395	2.5	non-chain	2016-08-02	2016-10-01	2016-10-02	Hotel	60	Early	10
2	76.560000	298322	9395	3.0	non-chain	2016-08-02	2016-10-01	2016-10-02	Hotel	60	Early	10
3	153.880000	2313076	9395	5.0	chain	2016-08-02	2016-10-01	2016-10-02	Hotel	60	Early	10
4	126.600000	2240838	9395	3.5	non-chain	2016-08-04	2016-10-02	2016-10-03	Hotel	59	Early	10
5	115.080000	2240838	9395	3.5	non-chain	2016-08-04	2016-10-02	2016-10-03	Hotel	59	Early	10
...
813	72.580000	130890	8584	4.0	non-chain	2016-12-31	2016-12-31	2017-01-02	hotel	0	Late	12
814	70.020000	130890	8584	4.0	non-chain	2016-12-31	2016-12-31	2017-01-01	hotel	0	Late	12
815	921.260000	21720	8584	5.0	non-chain	2016-12-31	2016-12-31	2017-01-01	resort	0	Late	12
816	345.086667	21720	8584	5.0	non-chain	2016-12-31	2016-12-31	2017-01-03	resort	0	Late	12
817	303.520000	21720	8584	5.0	non-chain	2016-12-31	2016-12-31	2017-01-01	resort	0	Late	12

49064 rows x 13 columns

- Handled Null & Missing Values
- Performed Feature Engineering
- Merged Sheets & Columns

Price Distribution of Bookings



Acc to data: Almost 23k customers booked in the range of 10-100 USD

Assumptions:

The majority of bookings fall within the lower price range, with a few instances of higher-priced bookings.

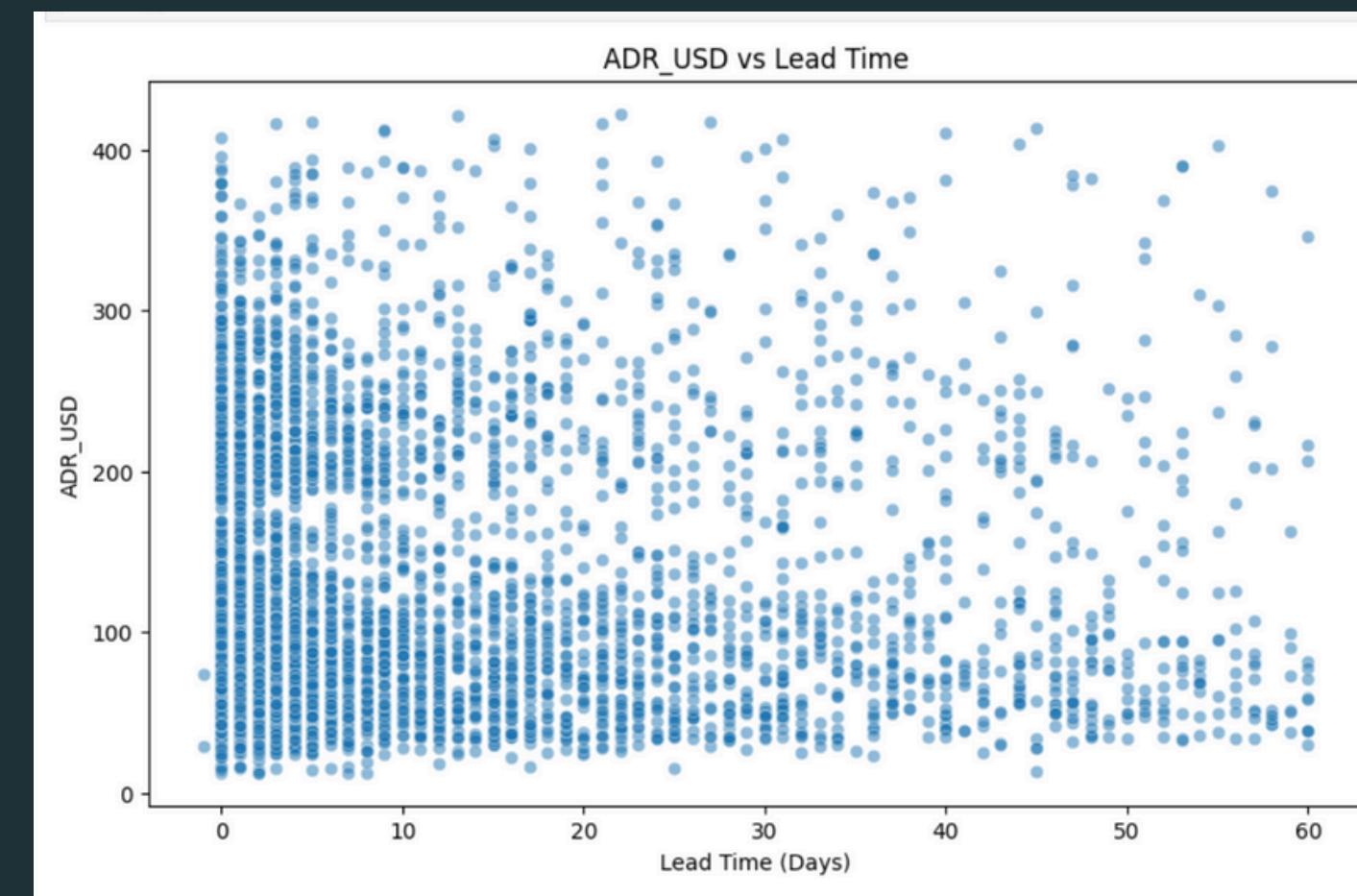
Suggestion:

To target high-price range customers additional value/benefits or dynamic pricing strategy can be introduced!

Booking Pattern by Lead time

Lead time = checking date - booking date

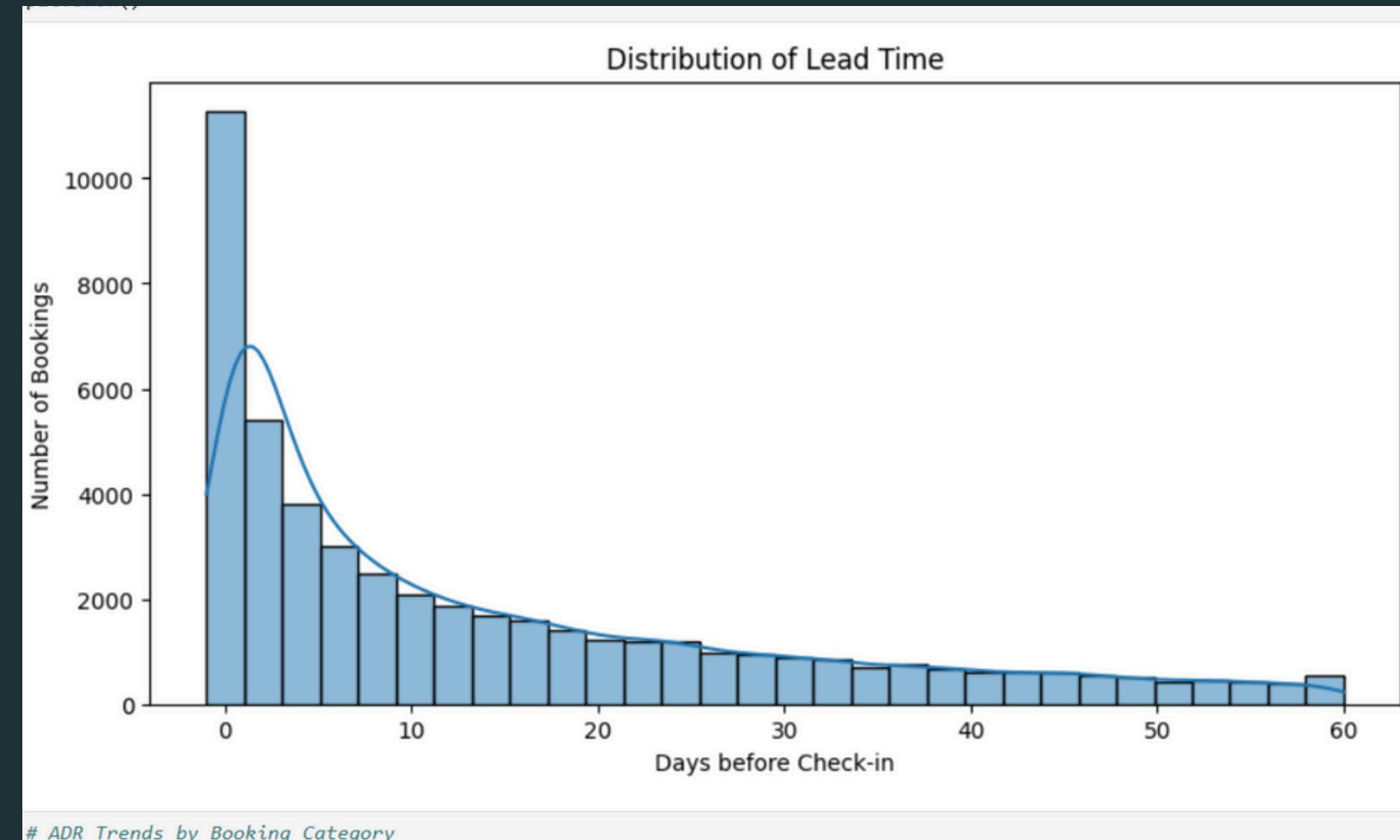
Urgency message for shorter lead times can be more effective.



booking_category	
Late	62.69745
Mid	19.07829
Early	18.22425

Almost 62%, 19% and 18% customers are late, mid and early bookers respectively.

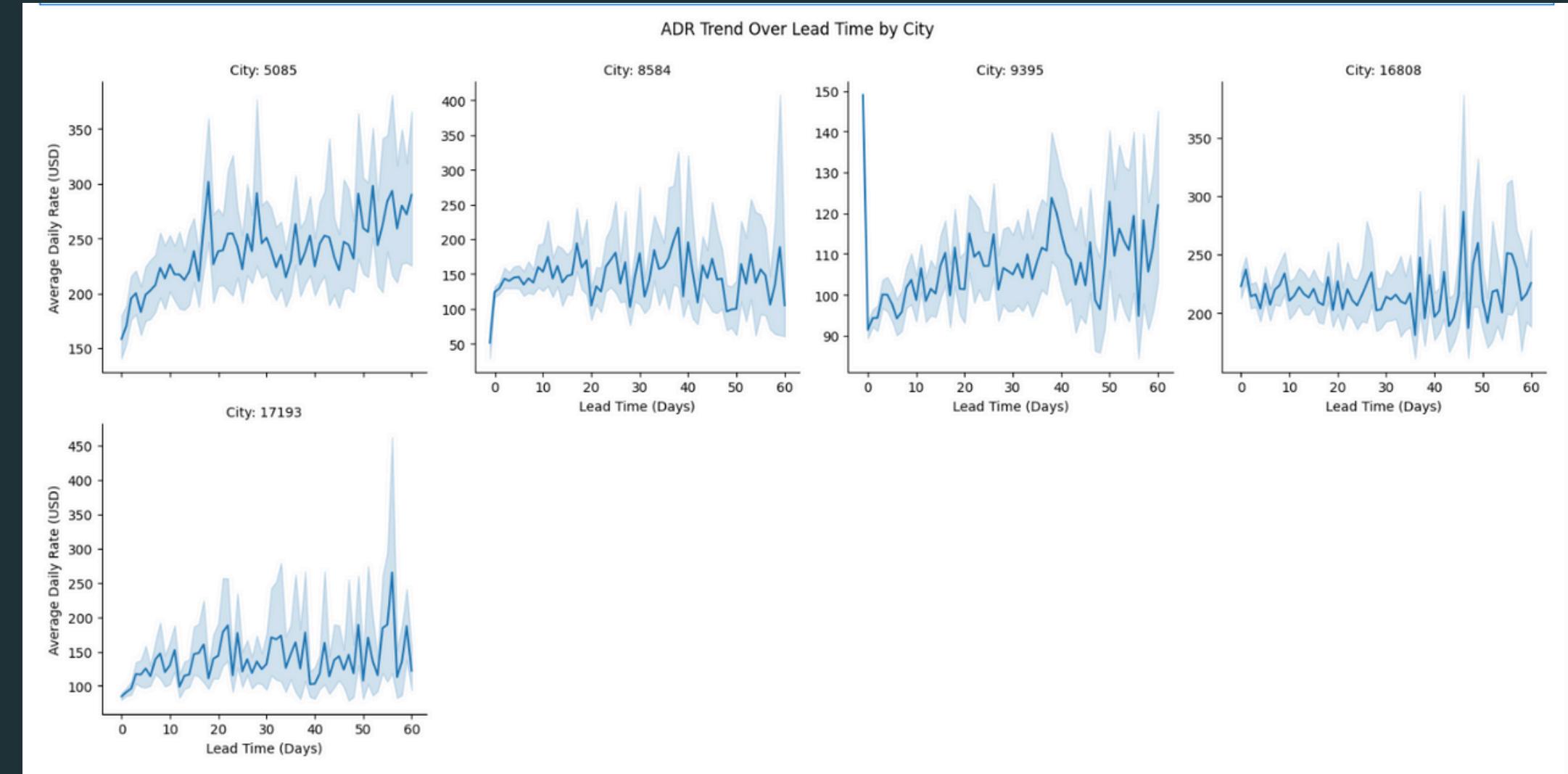
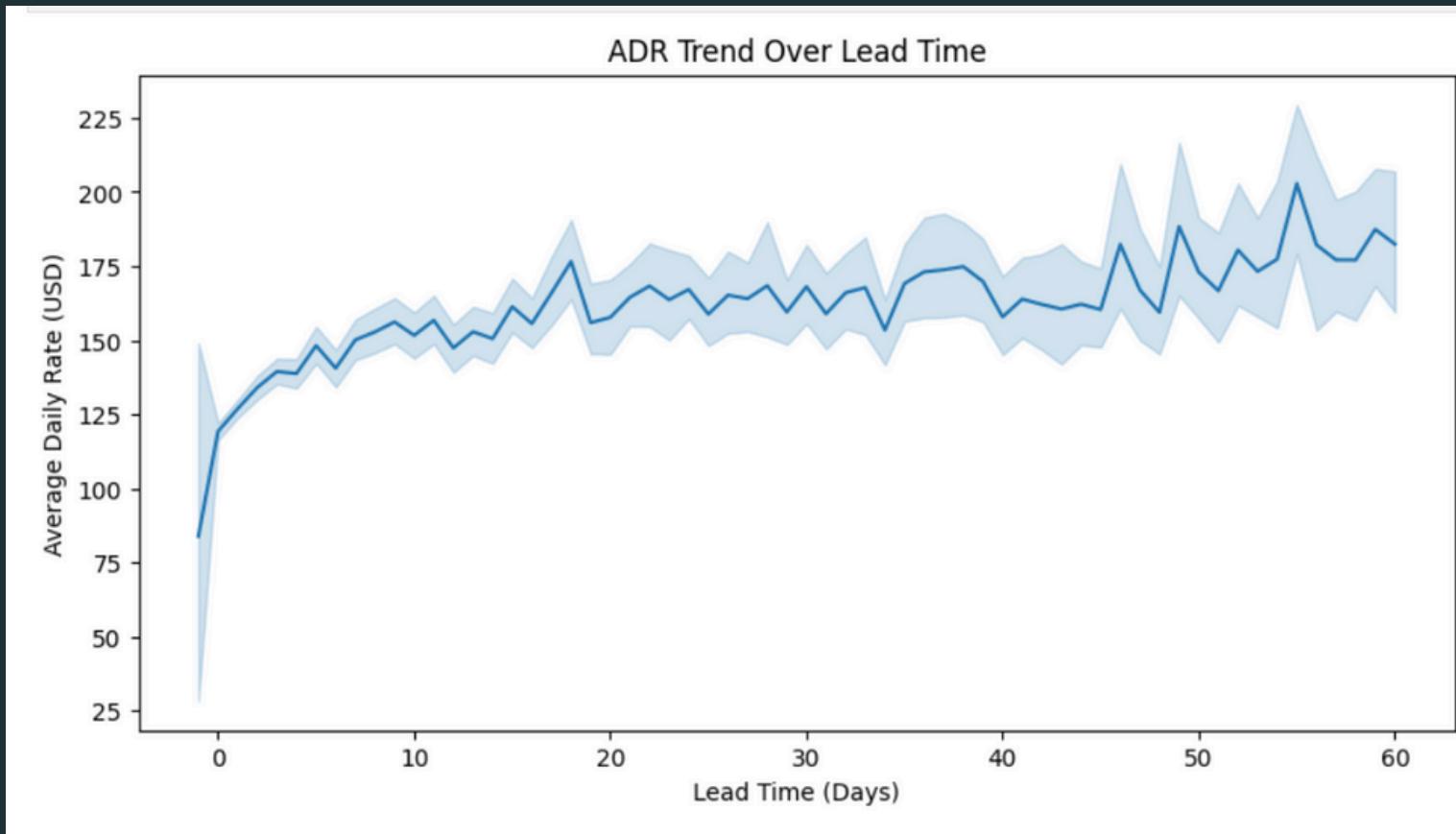
There are clusters of bookings at shorter lead times (e.g., less than 30 days), indicating many last minute bookings.



Acc to plot more than 10,000 users book in the last 10-15 days range.

Understanding ADR Behavior as per Lead Time

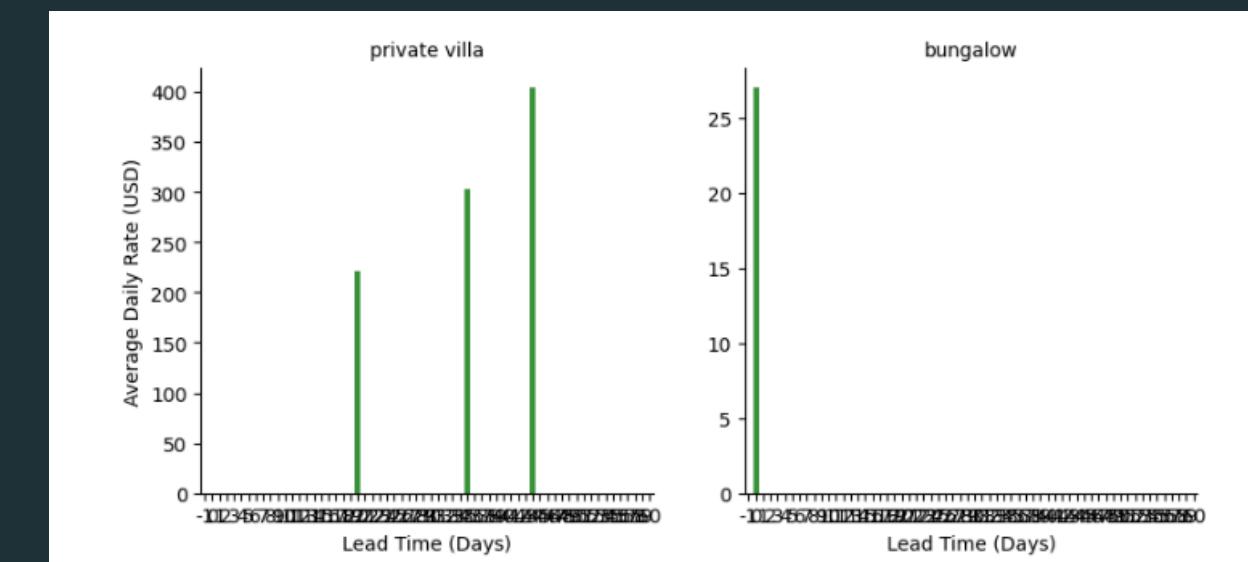
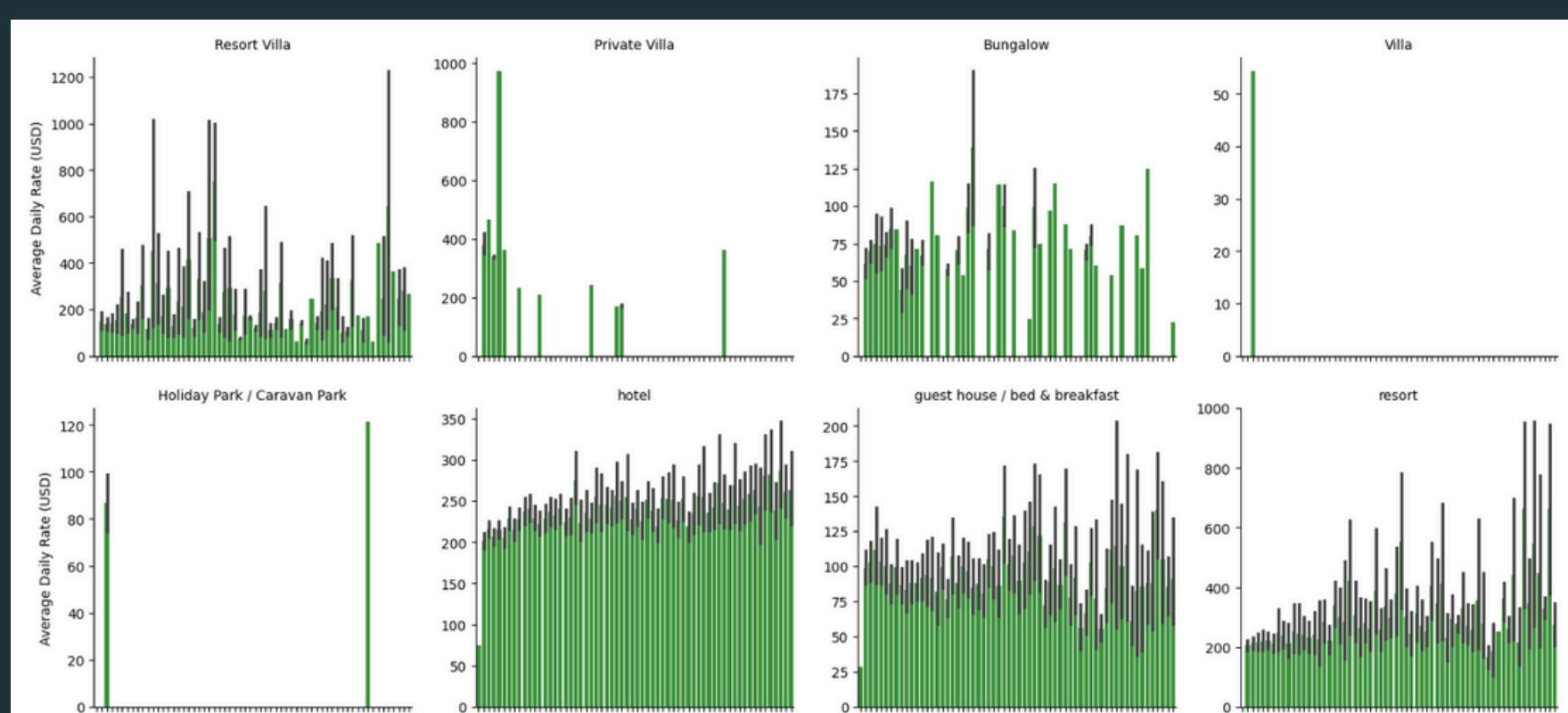
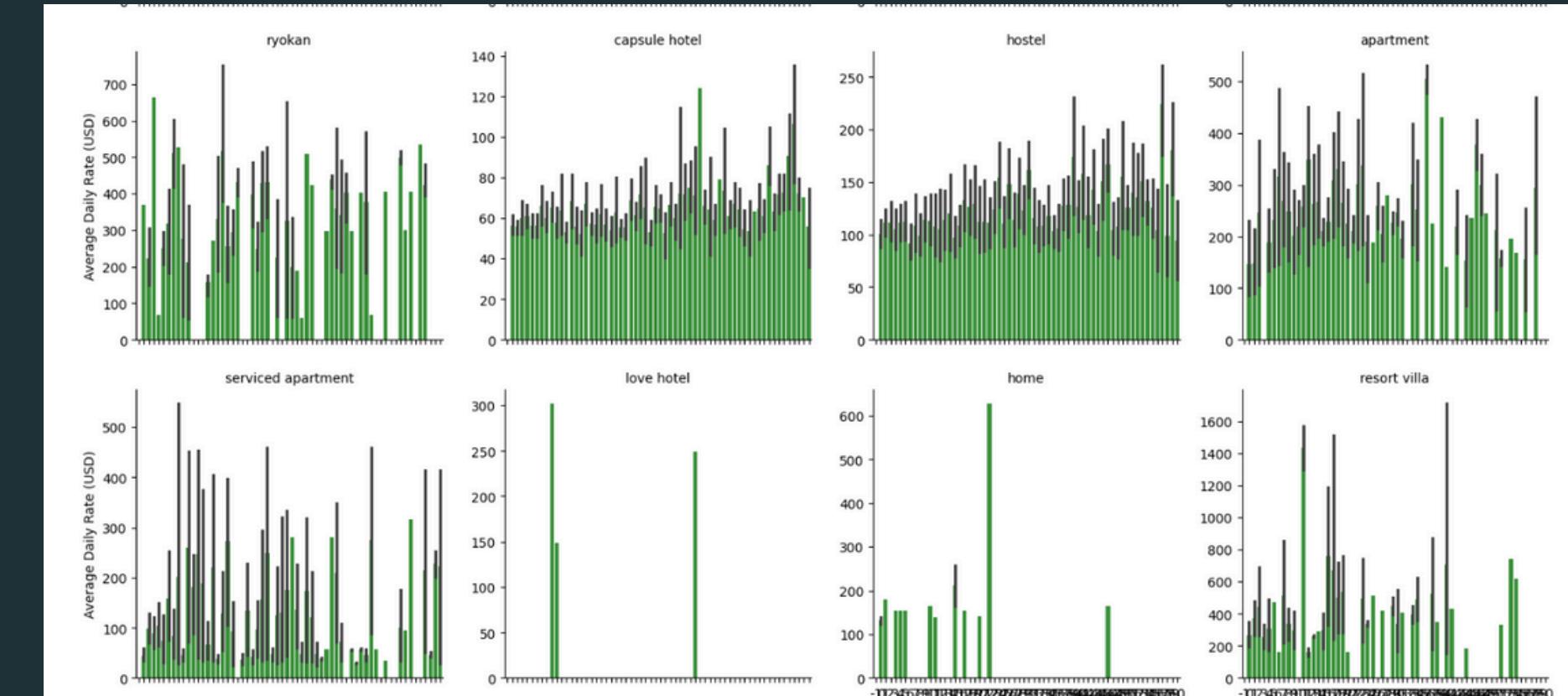
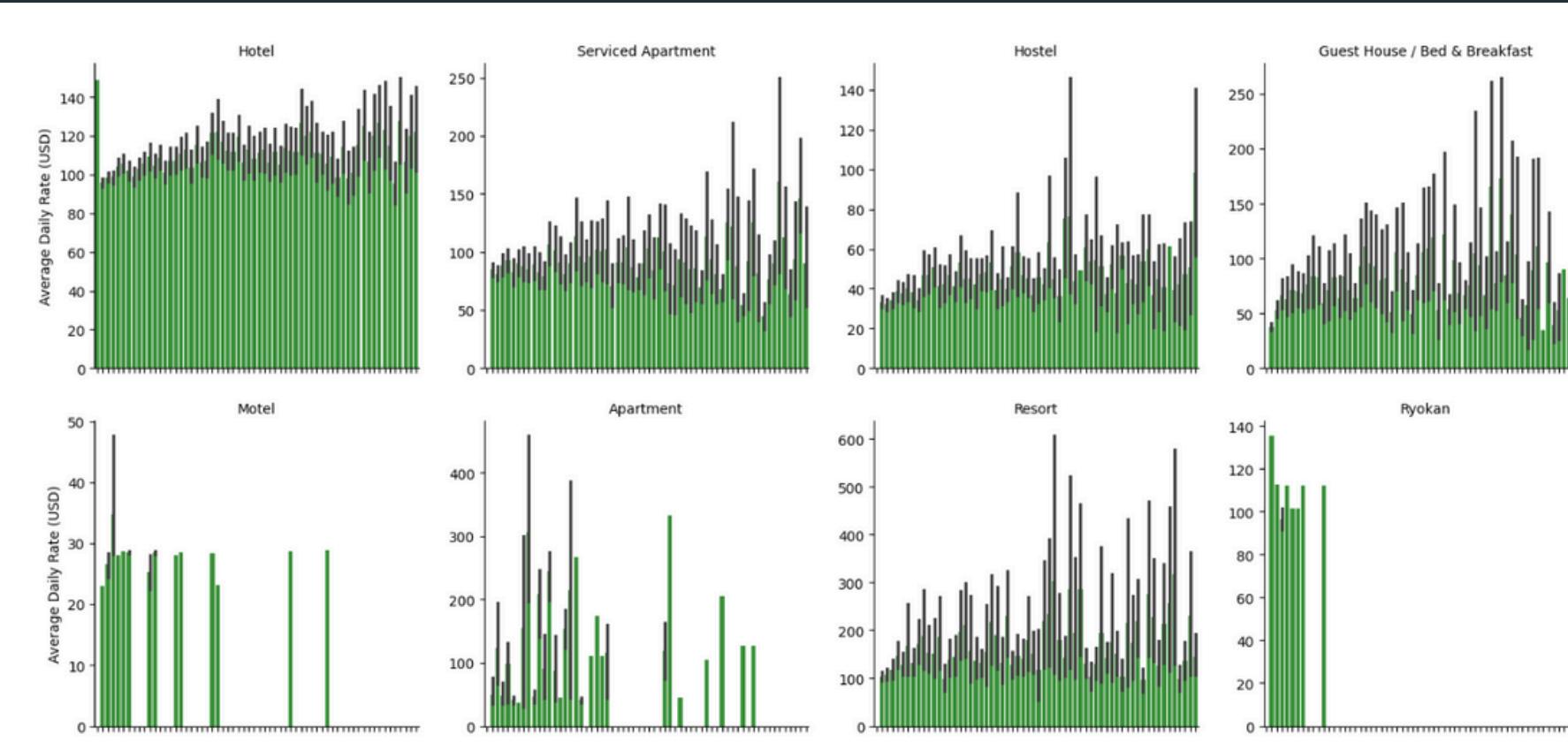
This plot is to understand what factors actually affect price movements.



This plot examines whether prices naturally increase as the check-in date approaches. However, the data reveals that ADR actually drops for last-minute bookers and remains stable for mid and early bookers. This indicates that there is no significant price fluctuation over time.,

- City A & City D is expensive comparative to CITY B, C & E.
- Last minute bookings are less costly comparative to early bookings.

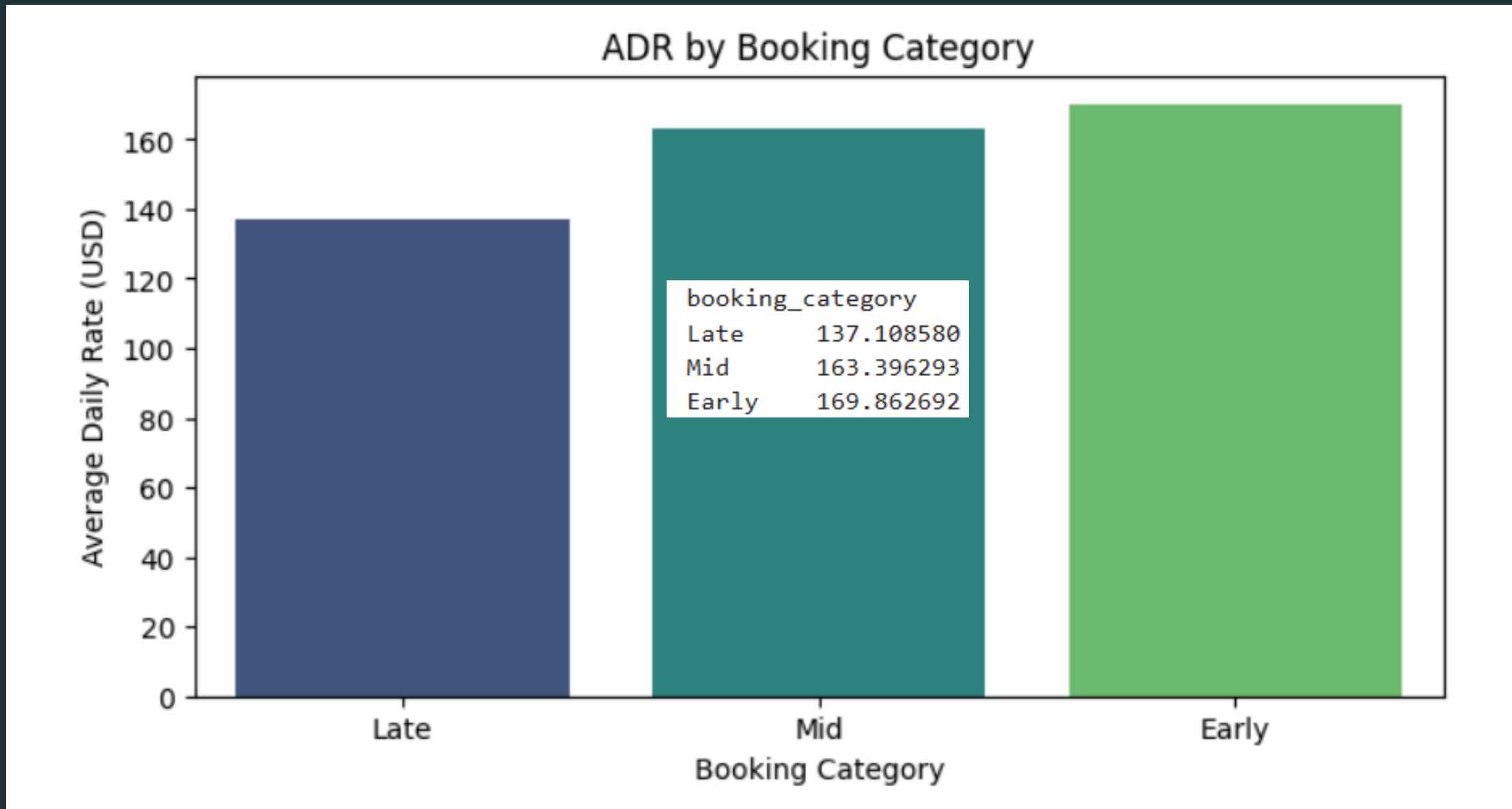
ADR Trend over Accommodation type



Hostel, Hotel, Serviced appartment, Guest hoouse, Resorts have more bookings comparative to other accomodation type.

ADR Trends: Late vs. Mid vs. Early Bookers

"DISCOUNT-BASED URGENCY MESSAGES MAY PERFORM BETTER HERE."

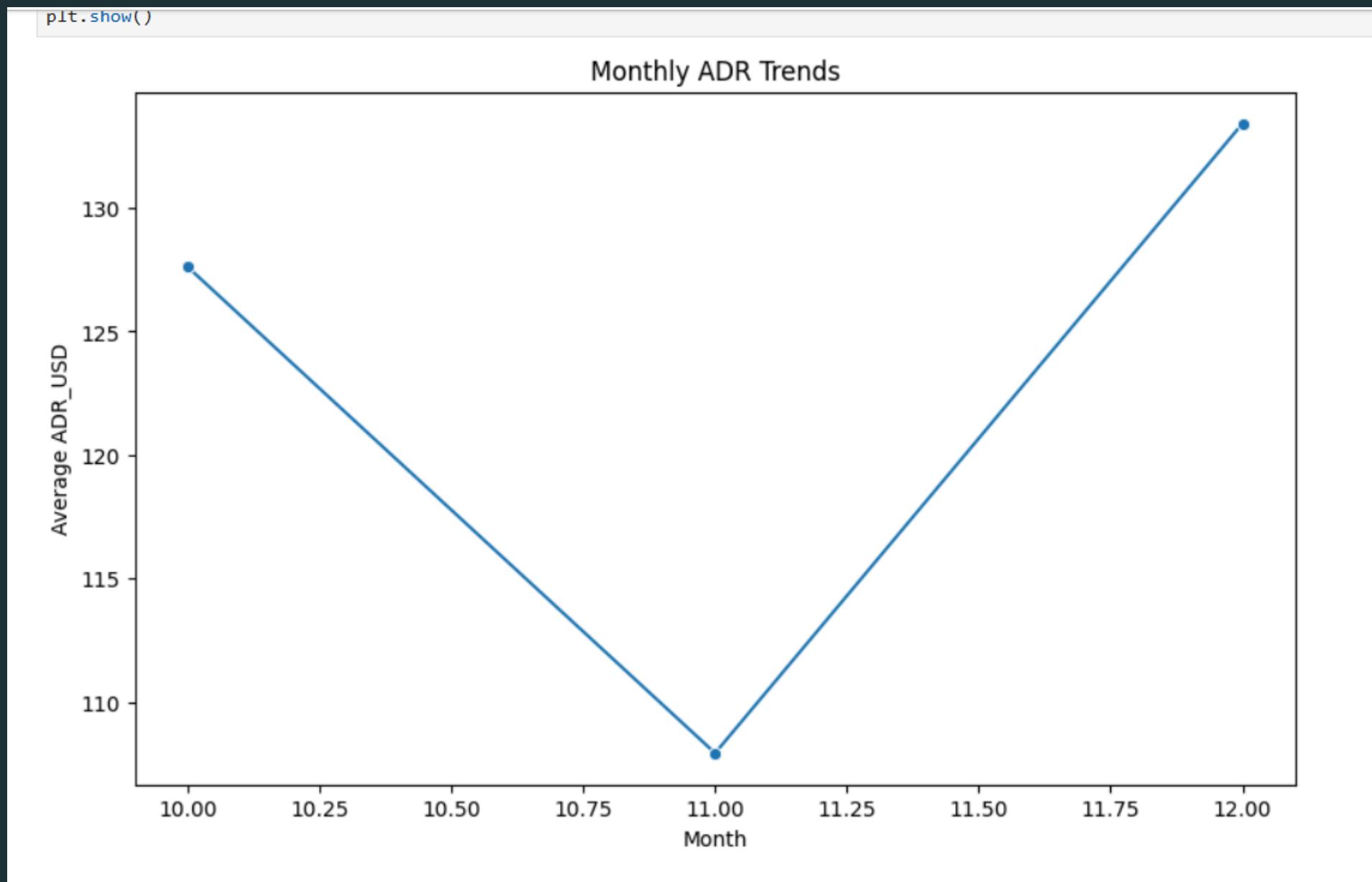


This plot examines how pricing differs for Early (30+ days), Mid (15-29 days), and Late (0-14 days) bookers.

Assumptions:

Acc to data the ADR is lower for late bookers, hotels may be offering discounts to fill empty rooms. Late bookers are paying less comparative to early bookers which suggest that the pricing strategy could involve higher rates for early bookers, as they may prioritize securing their booking in advance. On an average 137% ADR IN USD is paid by late bookers, 163 by mid and 169 by early.

Seasonality Variations in ADR



Acc to data: Nov is low-demand month comparative to Oct and Dec months.

Assumptions:

"ADR fluctuates, showing noticeable drops in certain months, indicating seasonality—higher ADR in peak months and lower ADR in low-demand periods."

Suggestion:

Consider seasonal promotions based on monthly ADR trends, targeting months with lower ADR (e.g., November, December).



Recommendations:

Insights from Data:

1. Seasonal promotions can enhance conversion rates.
2. Urgency messages should be more targeted toward shorter lead times.
3. Discounts should be tested on properties with lower bookings (as seen in the accommodation type analysis).

Additional Strategies to Consider:

1. Personalized messaging based on customer behavior can drive engagement.
2. Recommending similar properties based on past booking data may improve conversions.

Validation Through A/B Testing:

*Variant A (Control Group): No urgency message.

*Variant B (Test Group): Display urgency messages.

*Success Metrics: Conversion rate uplift, reduced time-to-booking, and increased revenue per booking.

Other Options:

1. Customer Feedback
2. Survey Insights

Urgency Message Ideas!



Urgency Messages should be backed by real data to create transparency and gain users trust.

Discount-Driven Urgency Message -

- Exclusive Limited-Time Offer: Save 20% if you book now!
- Hurry! Special discount ends in the next 2 hours!

Scarcity-Based Urgency Messages -

- Only 2 rooms left at this price! Book now!
- High demand! 5 bookings made in the last hour!
- Trending property! 10 people are viewing this right now

Last-Minute Booking Messages-

- Only a few rooms left for your travel dates! Don't miss out.
- Flight booked? Now lock in your stay before last-minute price hikes!

Seasonal-Deal Urgency Messages-

- Exclusive Winter Deal: Save 20% if you book by tomorrow!
- You may also like [similar/-suggestions]!
- Prices are increasing! Book within the next 30 minutes to lock this rate!
- Top-rated property! Book now to experience premium comfort.

Additional-

THANK YOU!!