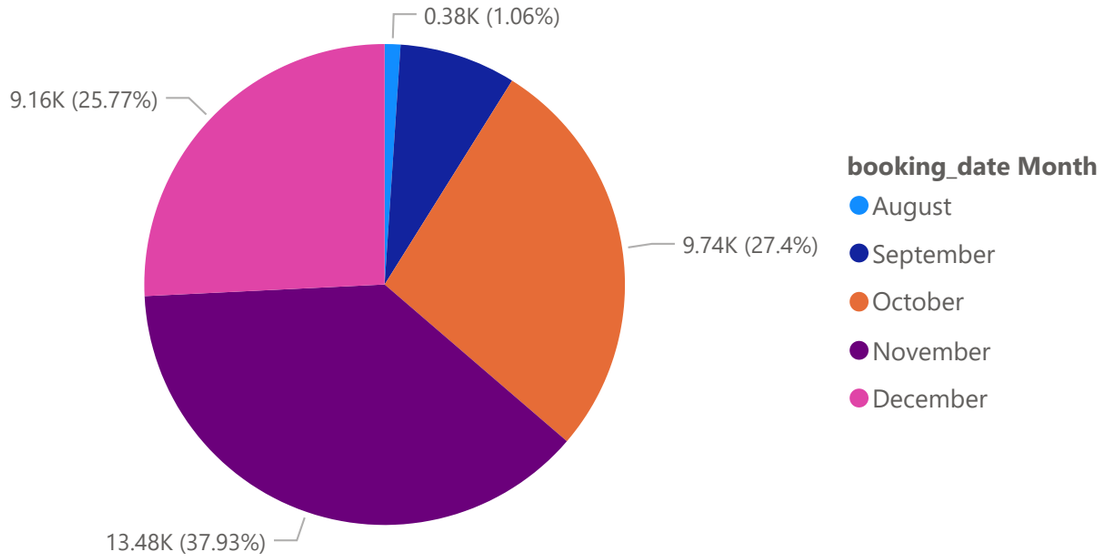
- Overview of Data
- Aggregated Analysis and Results
- City Wise Analysis
- Accommodation Wise Analysis
- Star Ratings Analysis
- Price Correlation and Limitations
- Implementation and Way Forward

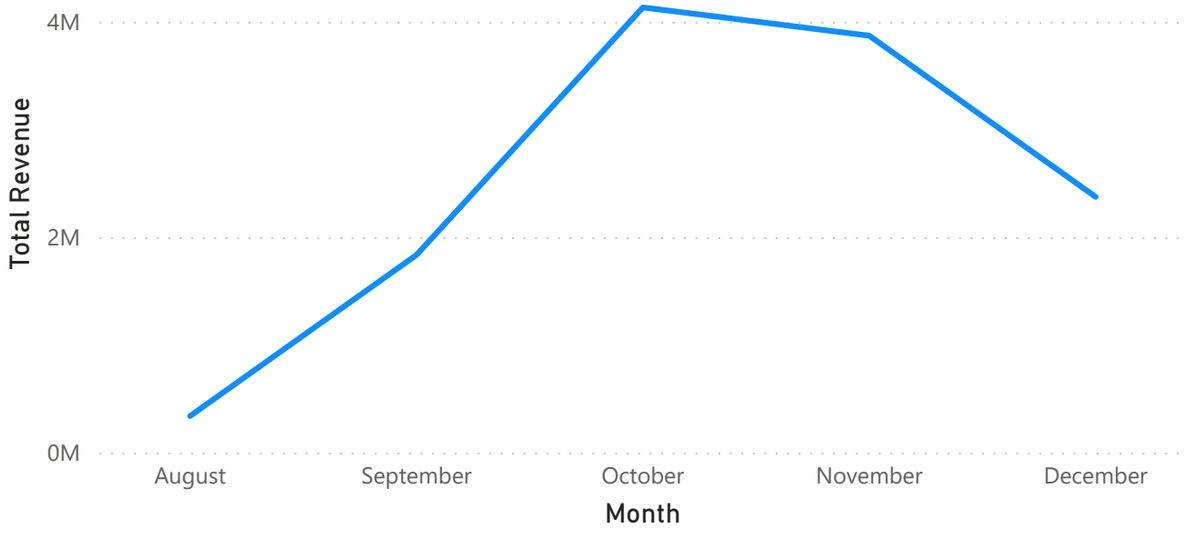
CASE PRESENTED BY:

SANNIA NASIR

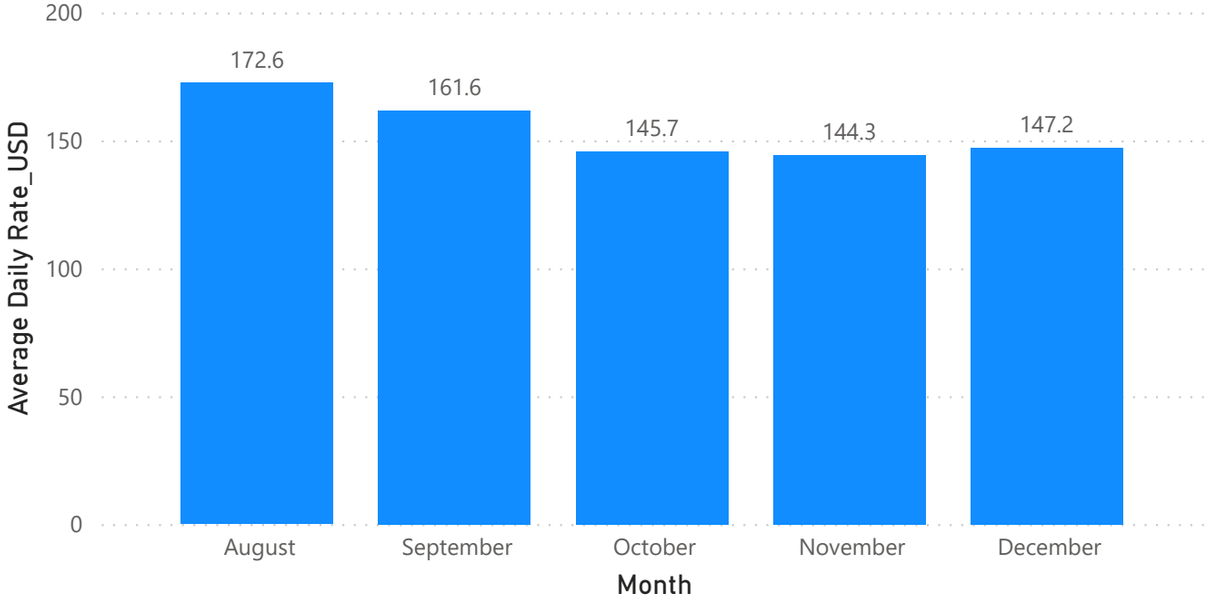
No of bookings in each month



Total Revenue by Month



Average Daily Rate_USD by Month



NOVEMBER
Highest volume of bookings

OCTOBER
Highest total revenue

AUGUST
Highest average revenue per booking

Month, Day

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

Days to check-in	% of bookings
0	22.78%
1	23.01%
2	12.48%
3	10.35%
4	8.79%
5	7.62%
6	6.87%
7	6.17%
8	5.55%
9	5.31%
10	4.70%
11	4.46%
12	4.25%
13	3.90%
14	3.68%
Total	**100.00%**

23% bookings take place on the day of check in.

68.6% bookings take place **within 3 days** prior to check in.

29% of the total revenue of the business is recorded within 3 days to check-in date.

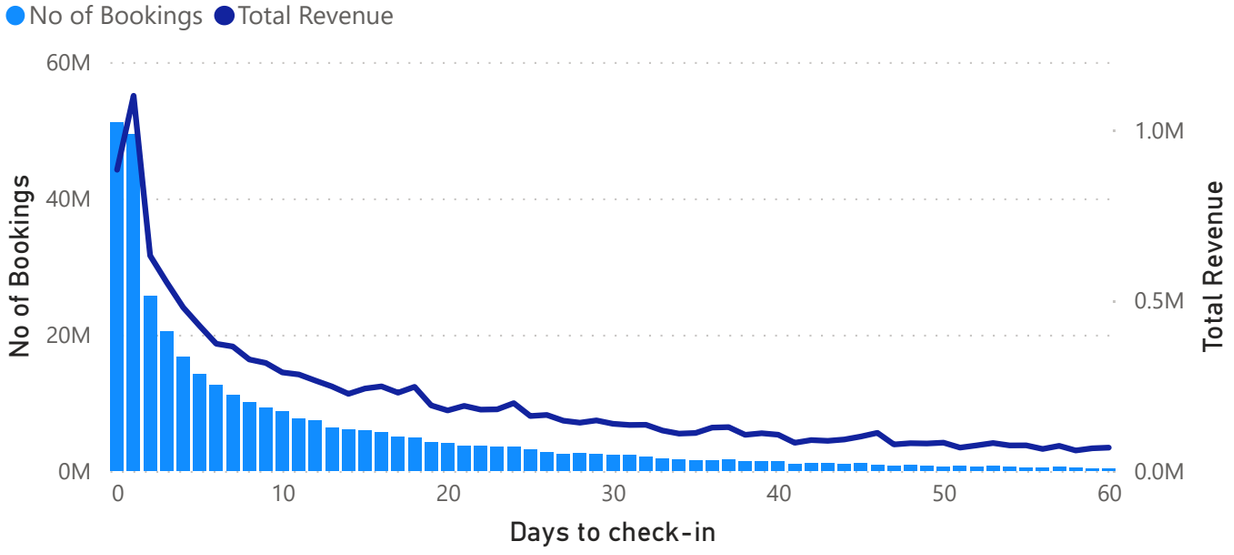
Difference b/w booking date and check in date ↑ Average Daily Revenue ↑

For high grossing months; Oct ,Nov and Dec, **total revenue drops** when the **days to check-in increase**. However, this trend does not hold for August and September.

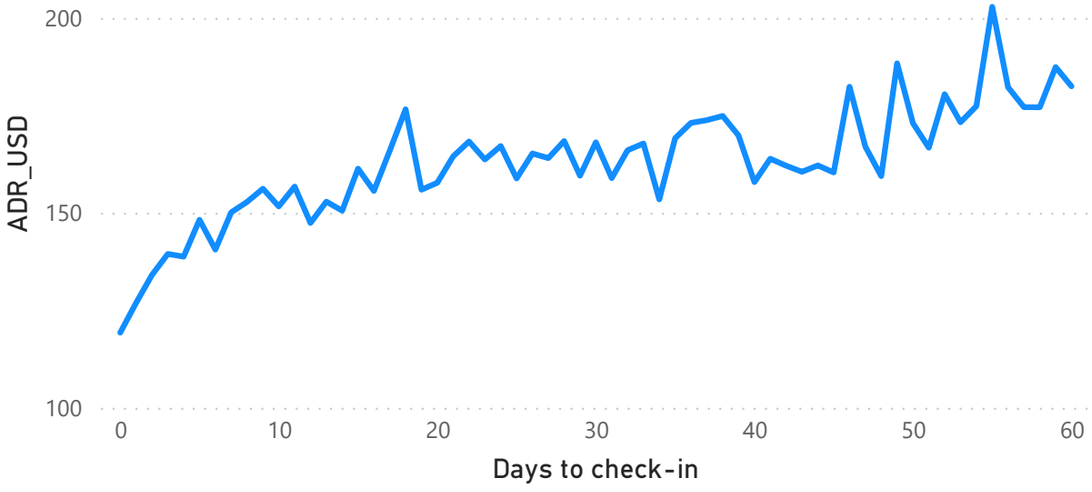
In August**, total revenue increases** if people book 1 or 2 months **prior** to their trip. That is because people pay high on average/booking. This opens up a business opportunity!

If you get more people to make early bookings, the total revenue is likely to increase!

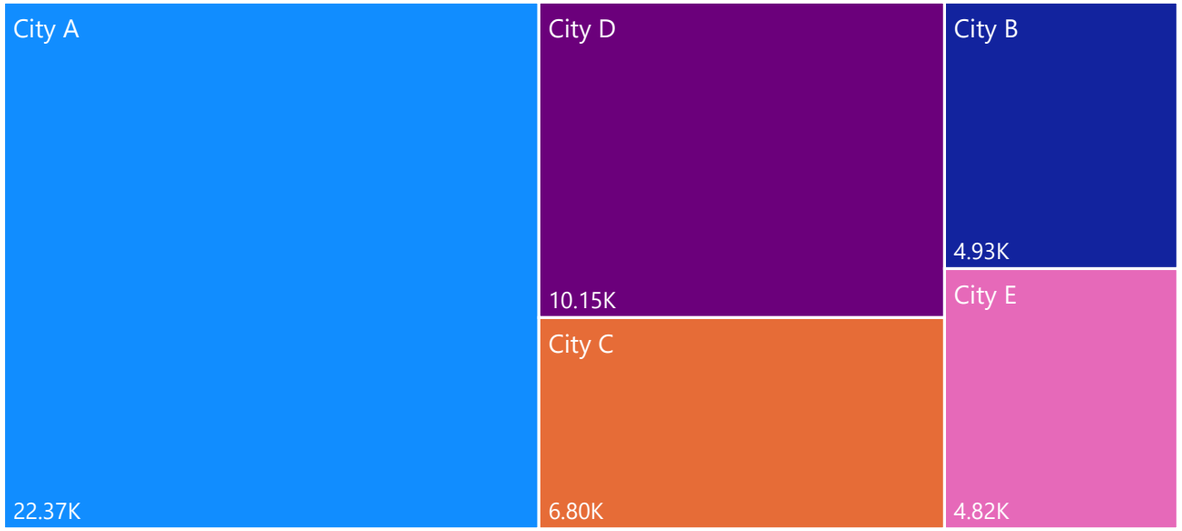
No of Bookings and Total Revenue by Days to check-in



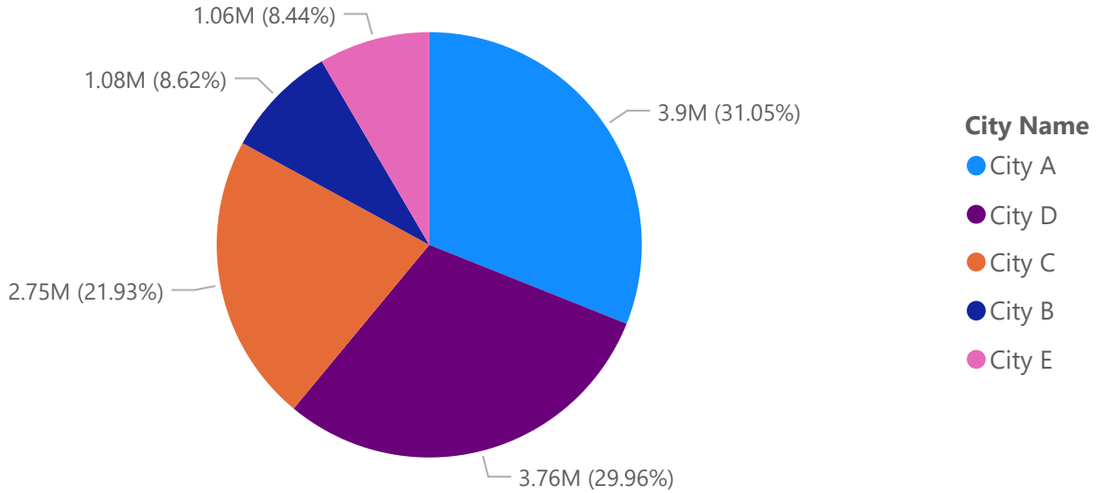
ADR_USD by Days to check-in



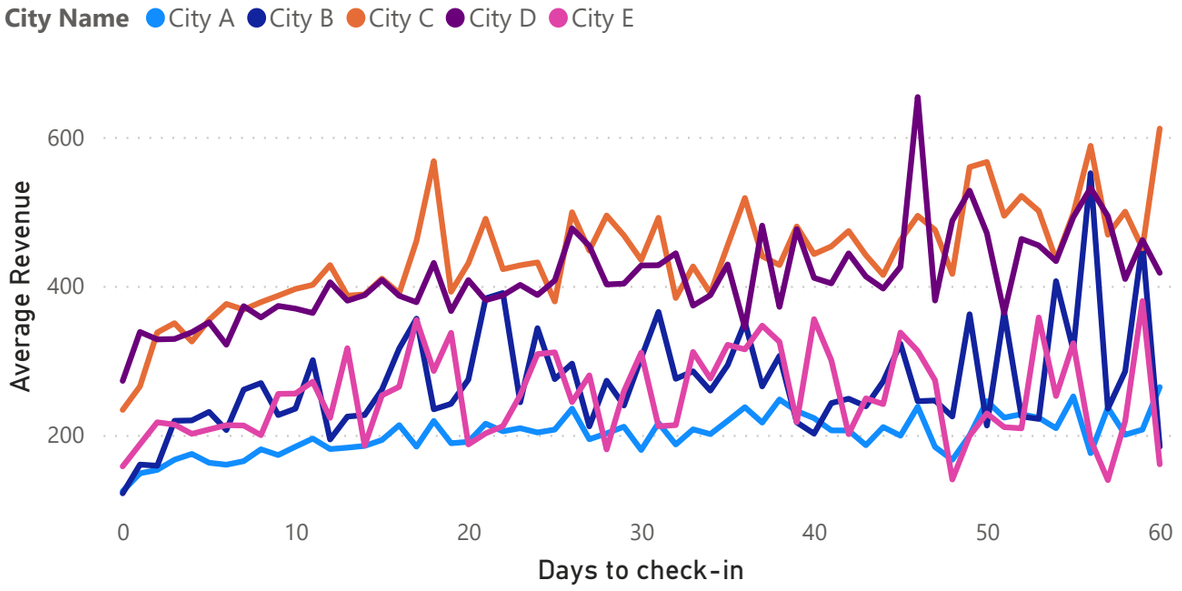
No of bookings by City Name



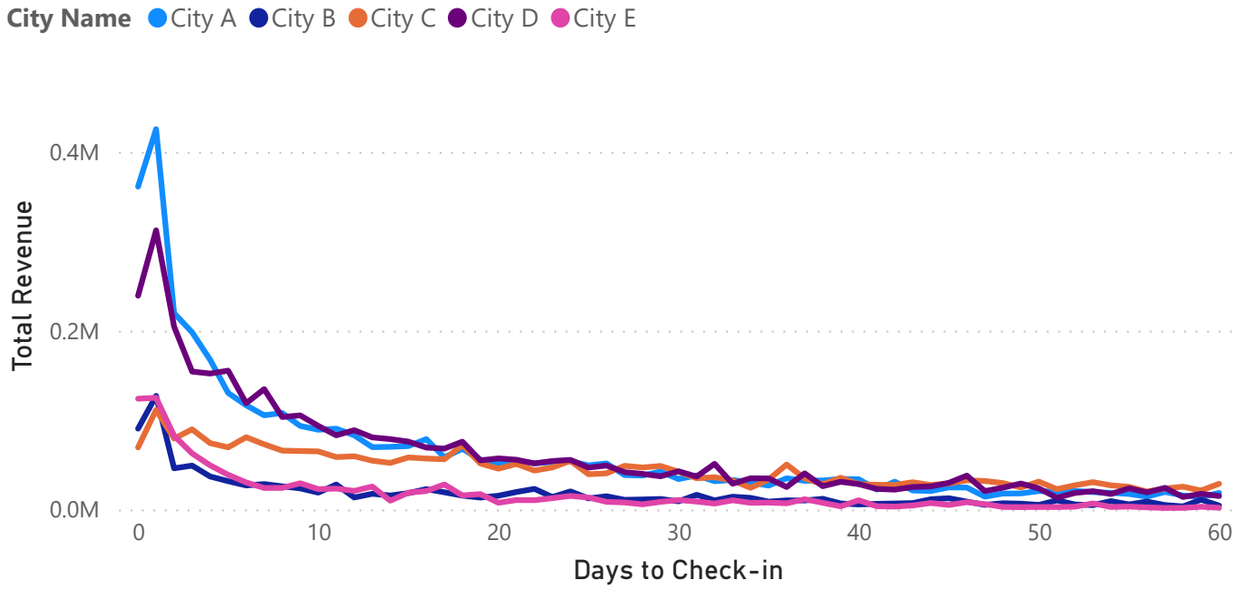
Total Revenue by City Name



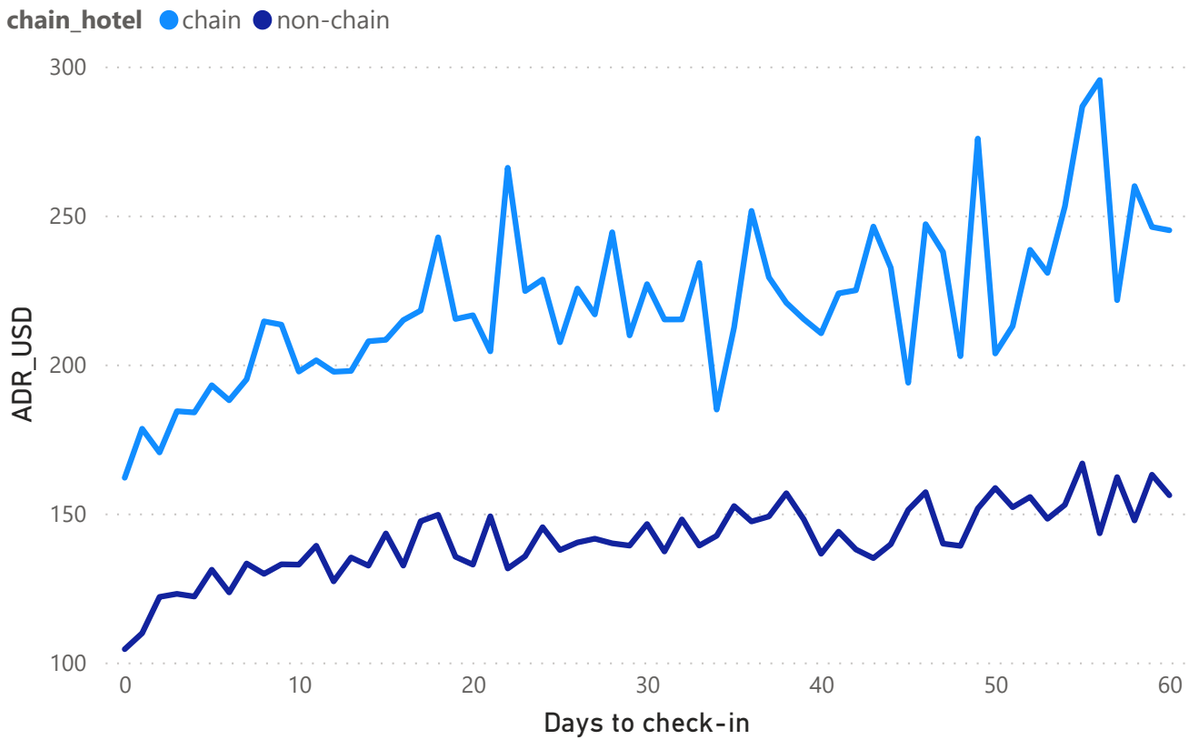
Average Revenue by Days to check-in and City Name



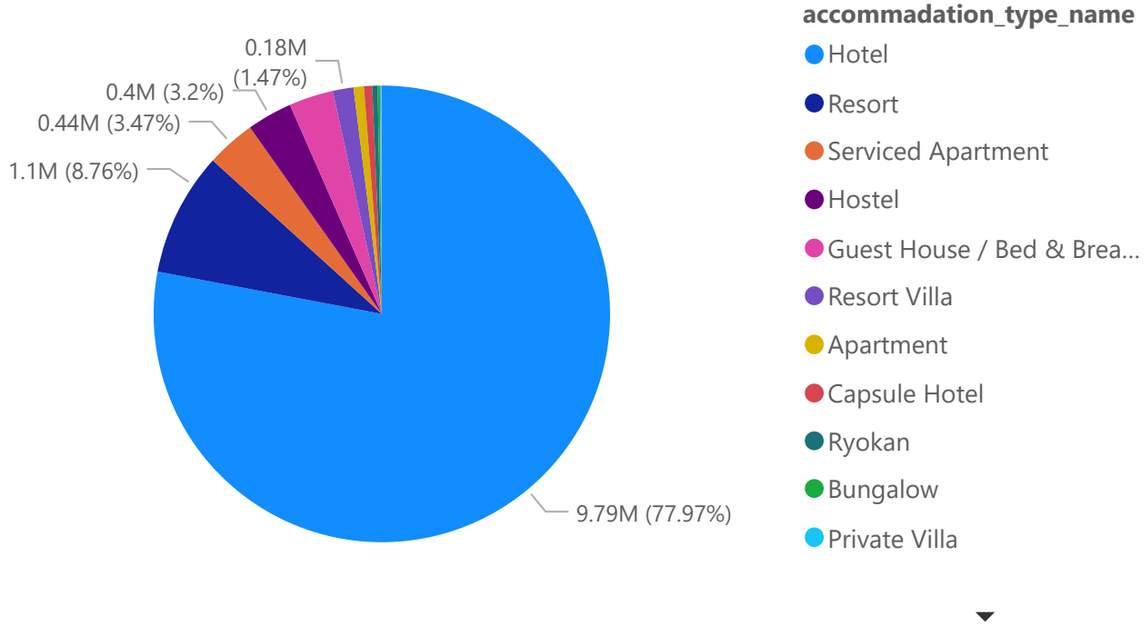
Total Revenue by Days to Check-in and City Name



ADR_USD by Days to check-in and chain_hotel



Total Revenue by accommadation_type_name



accommadation_type_name	Average Revenue
Private Villa	586.85
Resort Villa	463.62
Ryokan	456.37
Apartment	383.34
Love Hotel	334.15
Resort	311.91
Hotel	276.16
Home	263.25
Holiday Park / Caravan Park	188.95
Serviced Apartment	155.87
Total	**255.85**

Hotels

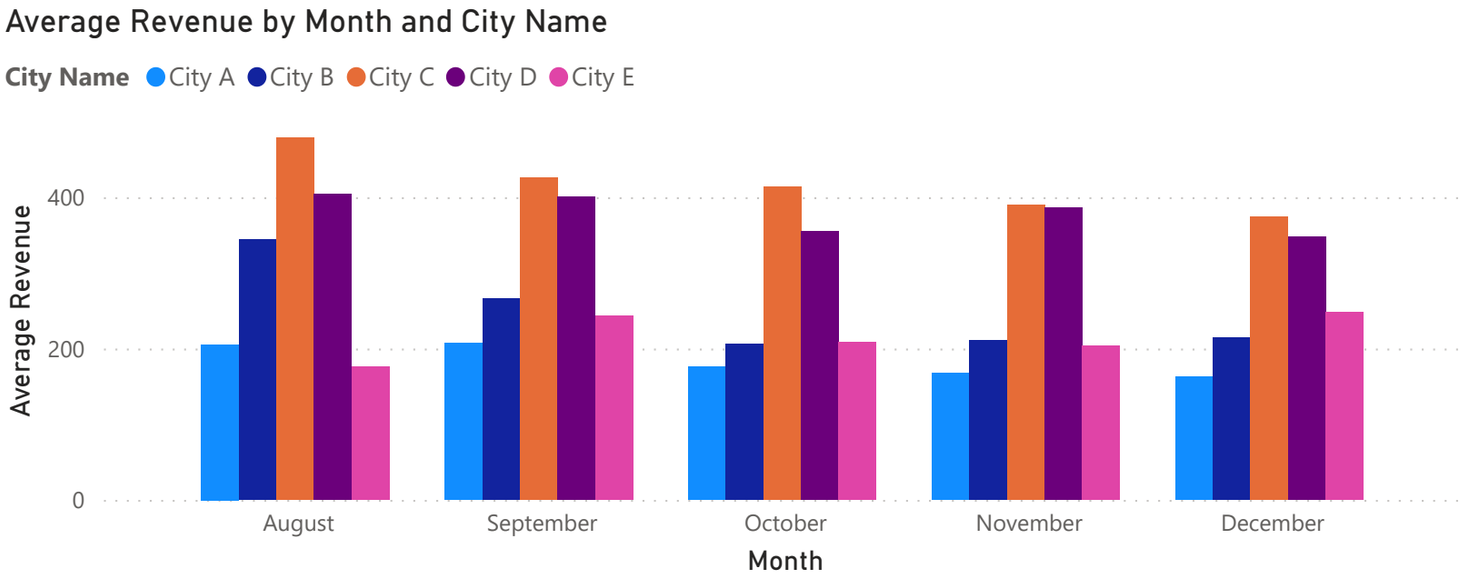
80% of total revenue but low ADR

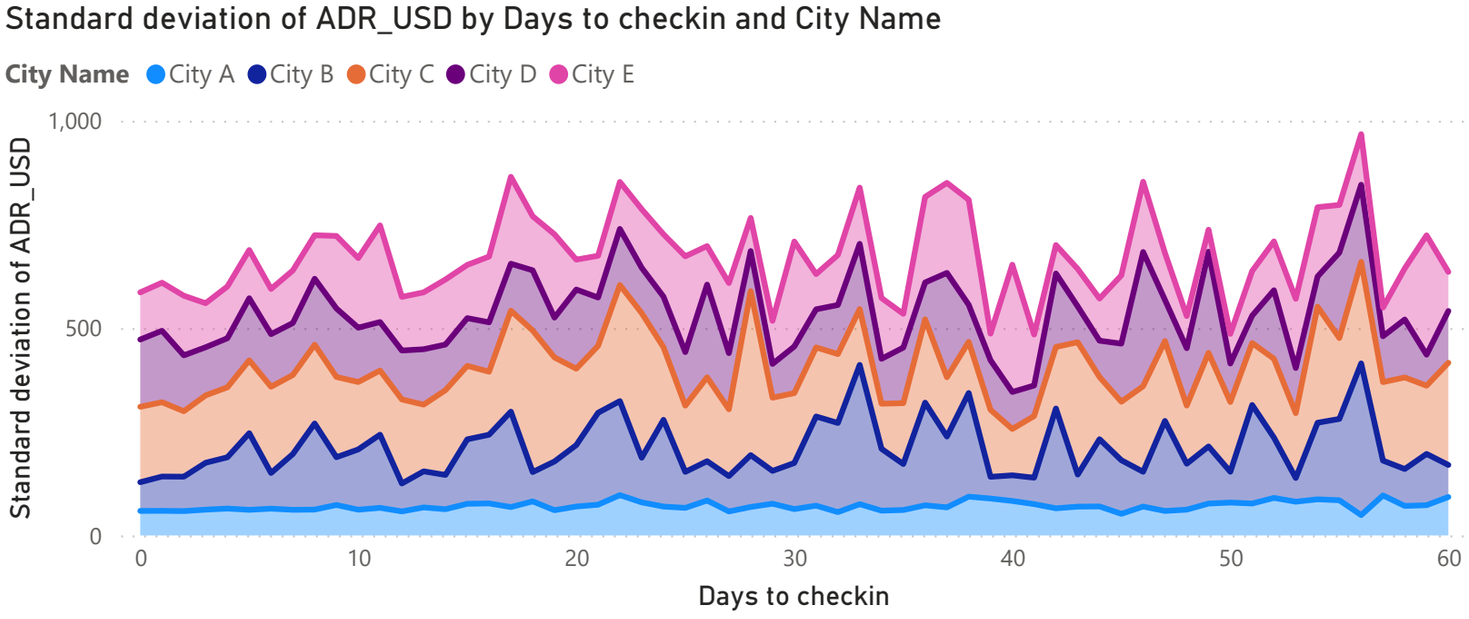
Private Villa

Highest ADR but limited booking volume.

Chain vs Non-Chain Hotels

As days to check in increase, ADR for chain hotels rises more rapidly than non-chain hotels. Marketing partnerships with chain hotels can result in increased bookings and total revenue





City C

Highest average revenue throughout

City E

Highest variation in average daily rate

City A

Lowest average daily rate and variation

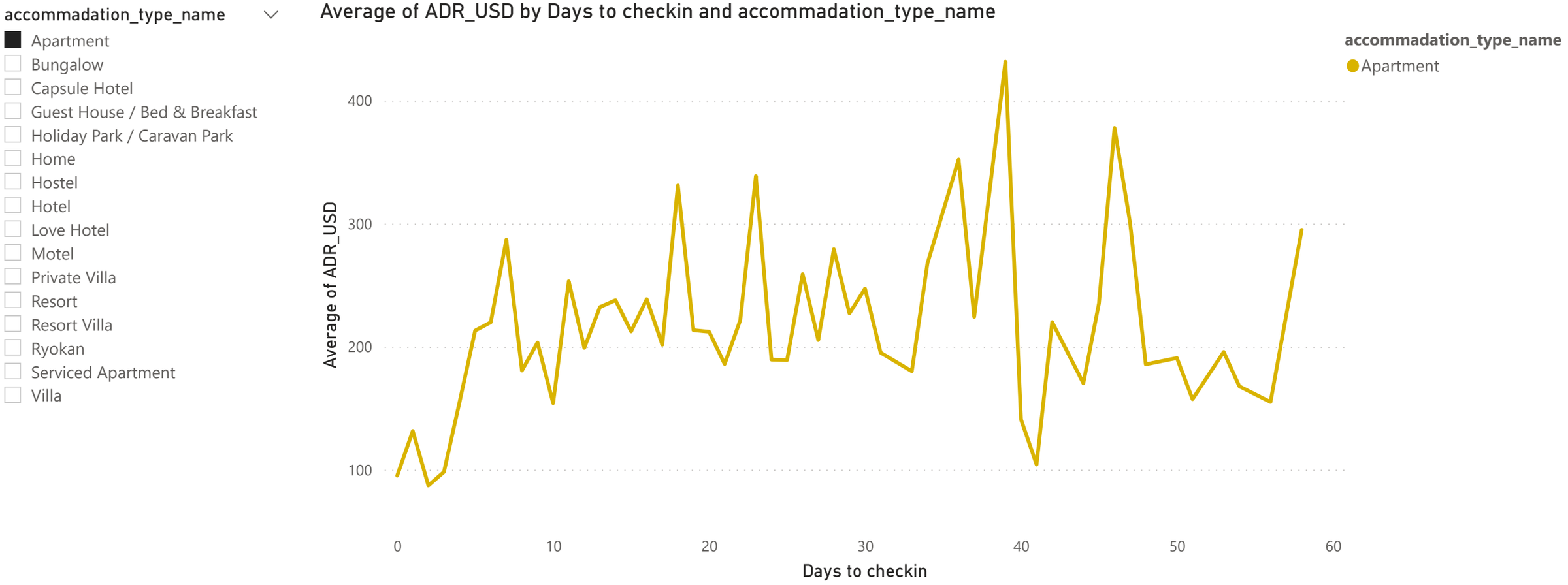
IMPLICATIONS AND OPPORTUNITIES

City C ranks 3rd highest in terms of bookings. If early bookings increase, the total revenue will increase with a higher percentage as the ADR is highest.

Similarly, City D which has second highest booking volume also has second highest ADR which makes it an attractive option for increasing early bookings and sales.

City E has the highest variation in average daily rates. This can be used to encourage customers to make timely bookings to avoid sudden change in prices.

City A has highest bookings and relatively stable rates so delivering urgency messages based on occupancy rates rather than prices might be more relevant..



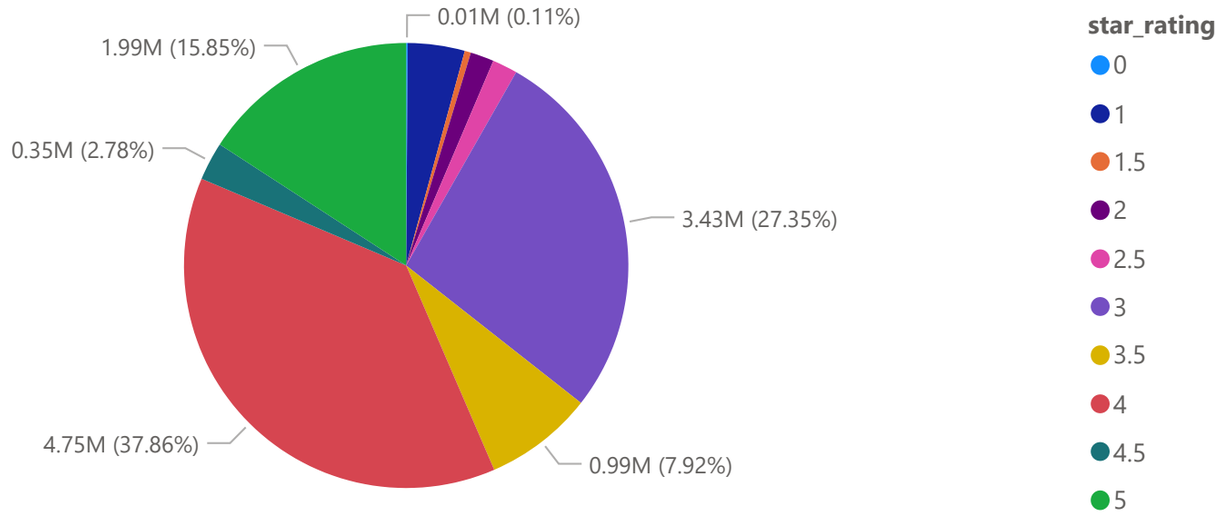
Hotels

ADR increases for hotels if people book earlier. As it is the most popular accommodation type, increasing bookings would improve revenue significantly.

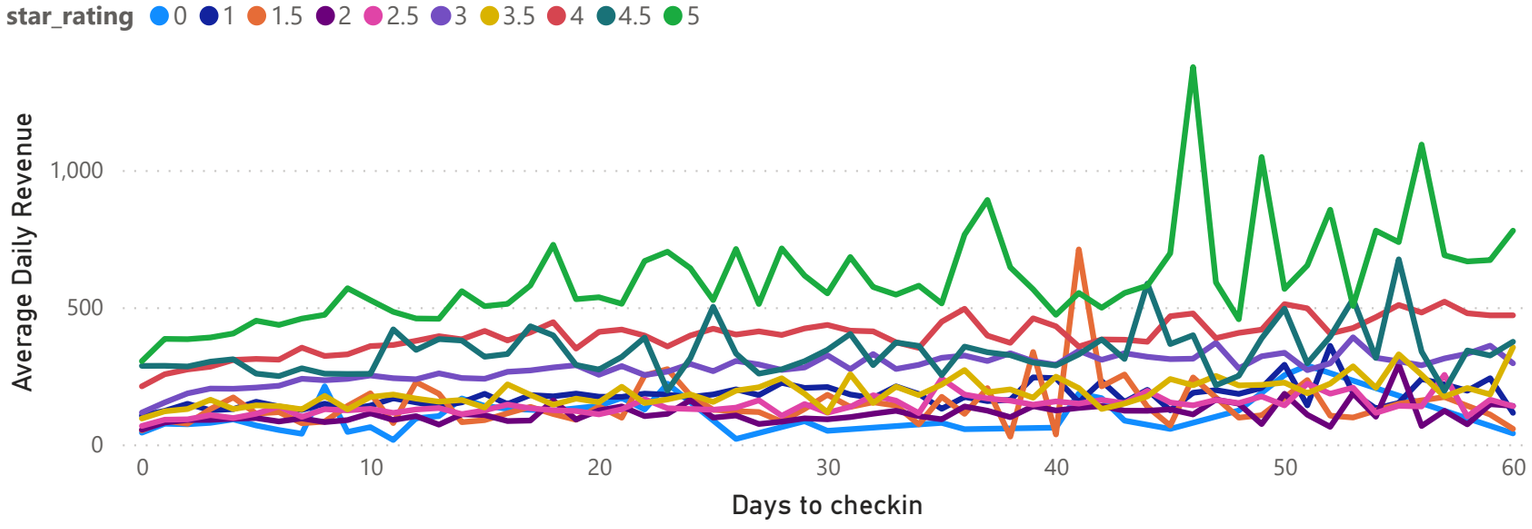
Private Villas

If people book on short notice, average price is very high so customers could be encouraged to pay earlier which can help increase booking volume.

Total Revenue by star_rating



Average Daily Revenue by Days to checkin and star_rating



Ratings 3 and above

80% of the booking volume
91.76% of the total revenue.

Accommodation which is highly rated has higher ADR as the days to check-in increase.

Promotion partnerships with high rating accommodation can help increase the bookings and increase overall revenue.

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PEARSON CORRELATION

Weak correlation between average daily rate and days to check-in. This is also primarily because there are several other factors influencing price.

```
import numpy as np
x =citi["ADR_USD"]
y = citi["Days to checkin"]

# to return the upper three quartiles
pearsons_coefficient = np.corrcoef(x, y)
print("The pearson's coeffient of the x and y inputs are: \n" ,pearsons_coefficient)
```

```
The pearson's coeffient of the x and y inputs are:
 [[1.       0.112928]
 [0.112928 1.      ]]
```

0.35

Days to checkin and Average of ADR_USD correlation for star_rating

0.72

Average of Days to checkin and Average of ADR_USD correlation for City Name

0.57

Average of Days to checkin and Average of ADR_USD correlation for accommadation_type_name

OTHER FACTORS AFFECTING PRICE

Demand and supply: If demand is high and supply is low, prices naturally increase.

Seasonality factors: Prices are highly dependent on weather, unusual circumstances such as covid, natural disasters etc. Analysis does not hold if seasonal variation is not taken into account.

Occupancy rate: Capacity of rooms can massively impact prices.

Economic and political factors: Instability can also impact prices.

LIMITATIONS

Year round data required to validate the analysis. Current data set only includes data for 5 months.

Multiple years need to be analysed to interpret and account for seasonal trends.

This analysis can not be generalized for all locations and accommodation types. The data set only contains records for 5 cities. Price variations within and across different geographical locations can be massive. Different regions will have to be analyzed separately.

In the current data set the duration of stay is only between 1-3 days. It can be assumed that this data is for short duration bookings only. Data regarding long term stays will be needed to see if the given analysis holds for them or not.

IMPLEMENTATION

Check booking abandonment rate -> check where people drop in the funnel and then re-target them. For example, if they drop off at giving card info, allow them to save progress and come back.

If a person sends an x amount of time looking at a place or marks it as a favorite, send constant reminders via push notifications to complete booking process. Reinforcement leads to action.

Pop ups/ Notifications which instill " Fear of Missing out on a limited time offer". Mention how many places have been booked in past hour. Award points for early bookings which can be redeemed.

In the deals section, similar to unlocking discounts for first booking etc, introduce streaks for early bookings and a chance to get cash backs.

When a user shows interest in a particular place, start marketing the location via push notifications e.g. fun facts about the location, how popular the place is, how frequently it is booked etc.

Thank you