

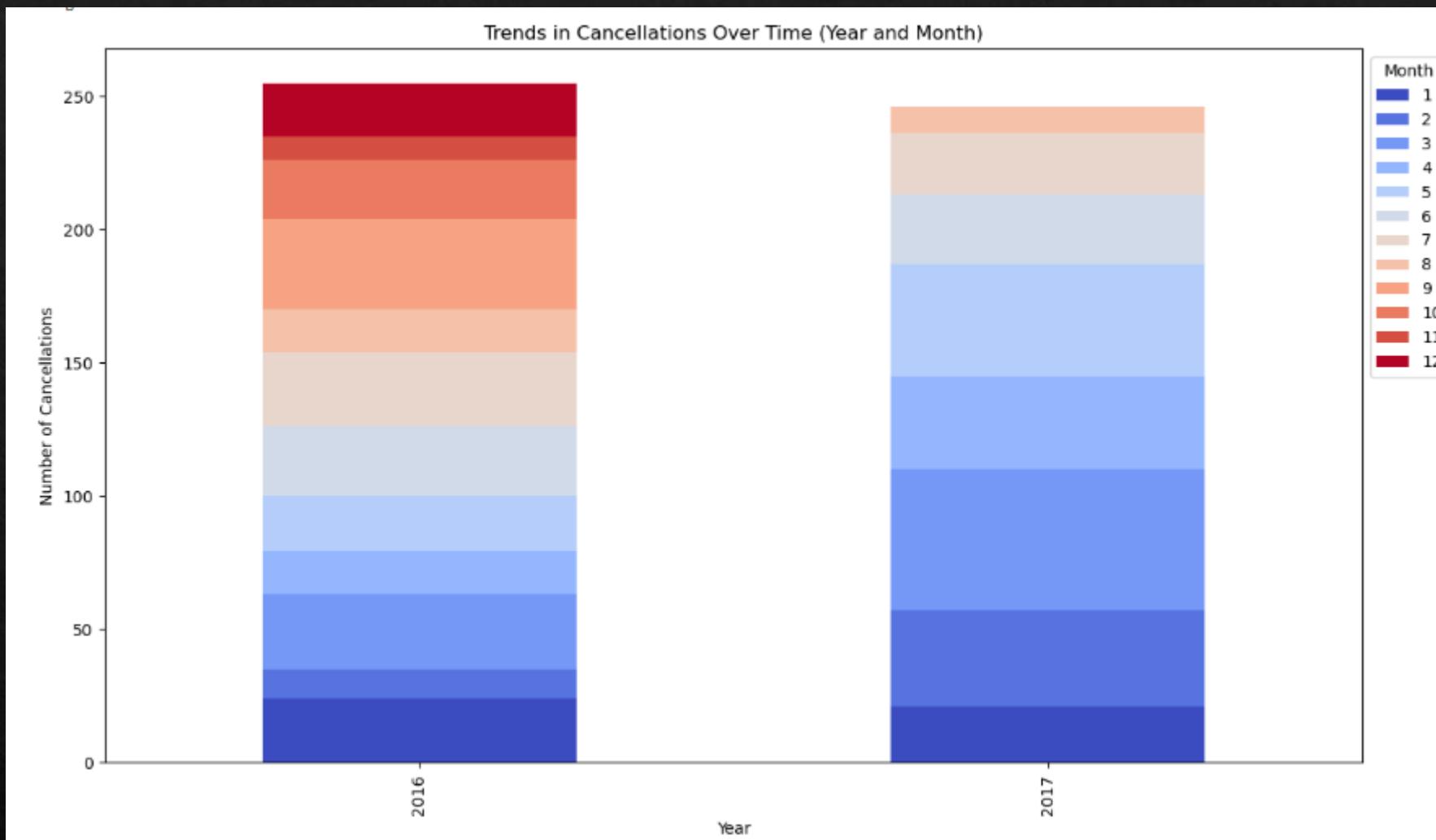
Hotel Dataset Analysis

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Peak Booking Periods for the Hotel

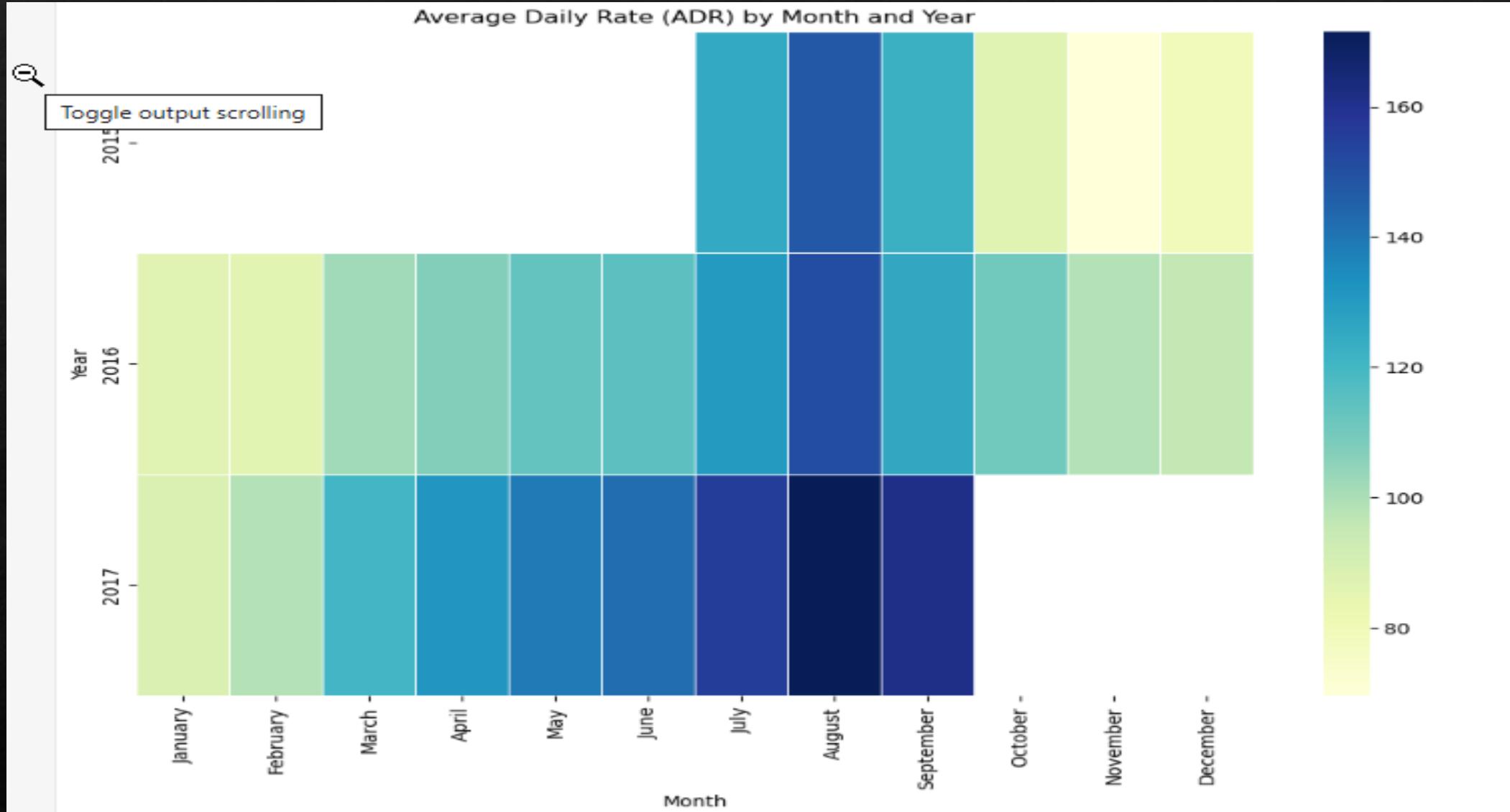
- ❖ The peak Booking periods for the hotel is July and August
- ❖ And majority of Booking in the between in the Month of March to October



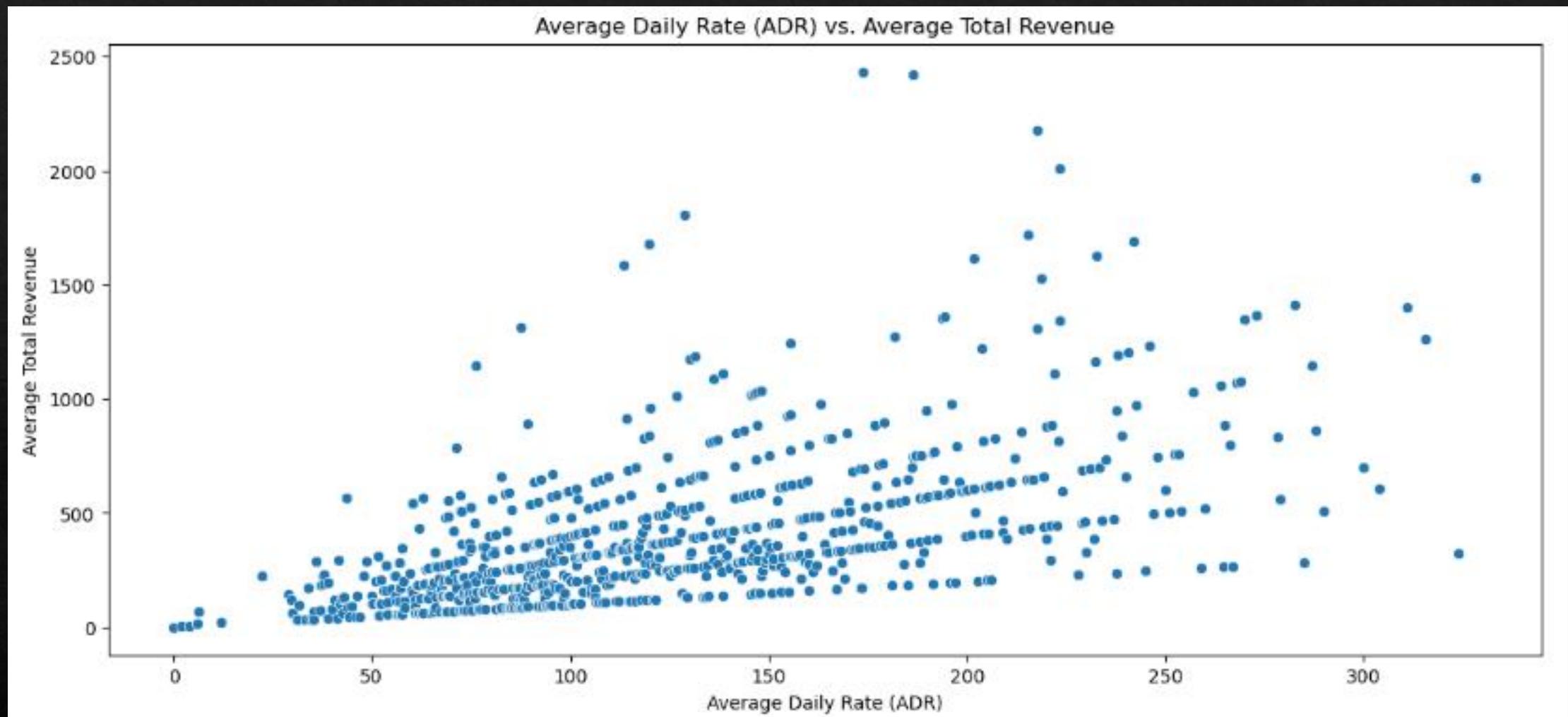
- ❖ The analysis and visualizations reveal specific trends in cancellations, showing that cancellations may peak in Dec and tuesday indicating potential seasonal effects, holiday impacts, or weekly patterns in customer behavior.

	customer_type	previous_cancellations		lead_time		total_of_special_requests	
		mean	median	mean	median	mean	median
0	Contract	0.0	0.0	38.157895	15.0	1.421053	1.0
1	Group	0.0	0.0	61.333333	2.0	0.400000	0.0
2	Transient	0.0	0.0	67.893078	44.0	0.773776	1.0
3	Transient-Party	0.0	0.0	138.384615	127.0	0.685315	1.0

- ❖ The analysis reveals that customer segments with higher previous cancellations may benefit from reassurance-focused marketing, segments with longer lead times could be targeted with early booking incentives, and those with more special requests might respond well to personalized service offerings.

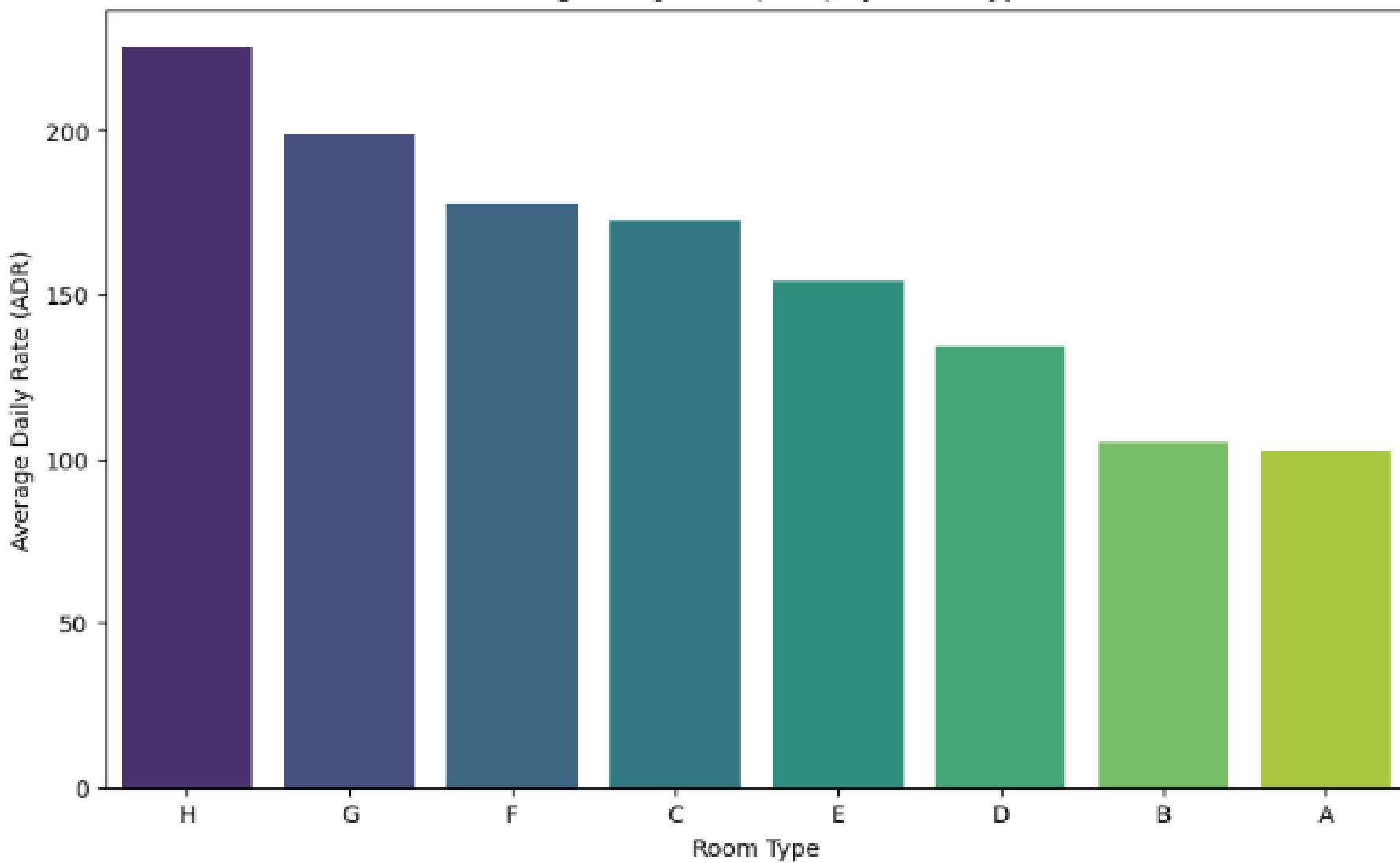


- ❖ The heatmap vividly illustrates how the Average Daily Rate (ADR) varies across different months and years, making it easy to spot trends, seasonal peaks, and changes in pricing strategies over time.



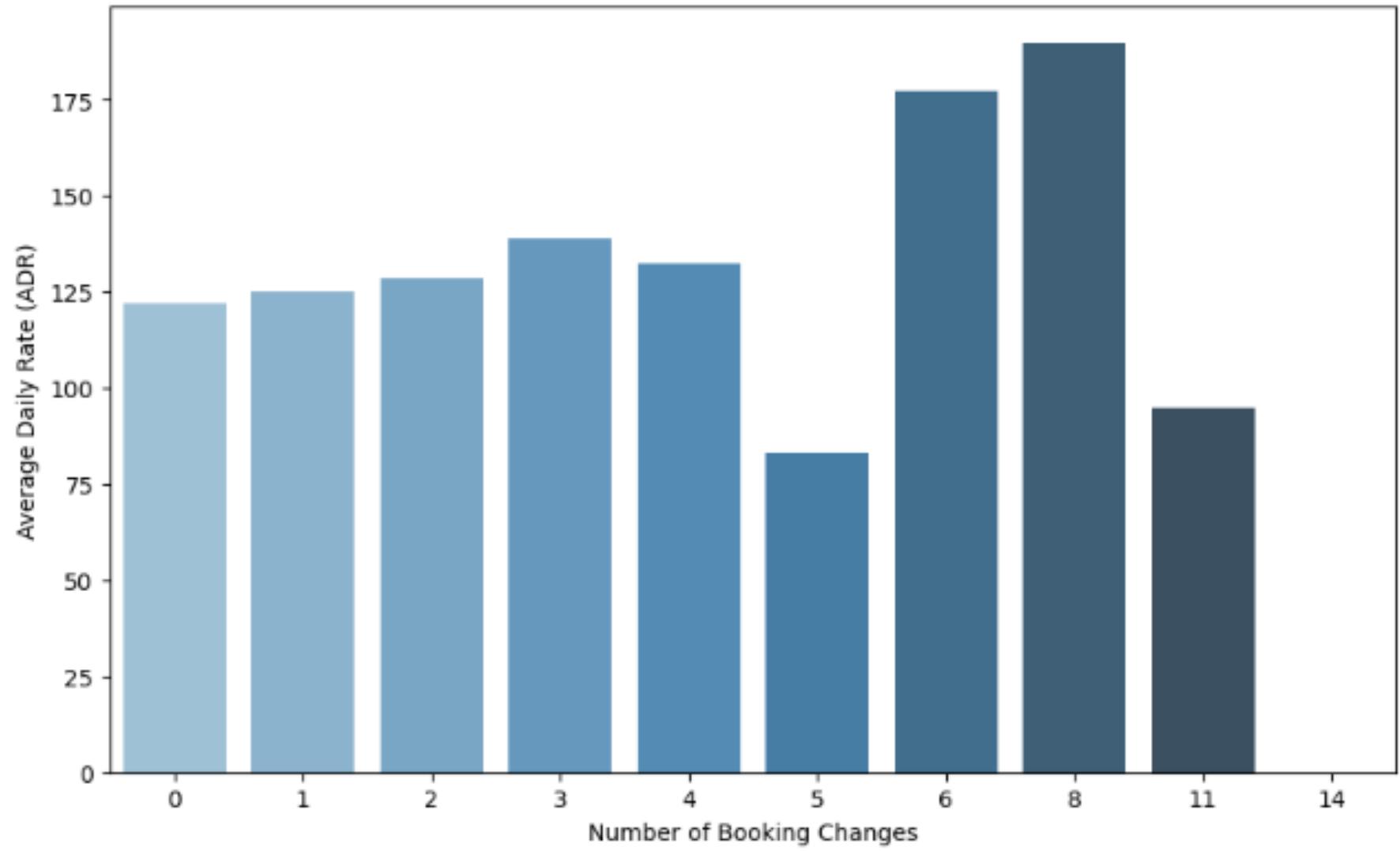
- ❖ By analyzing the relationship between ADR, total revenue, and occupancy rates, we can identify pricing strategies that maximize revenue, typically finding an optimal ADR range that balances higher rates with strong occupancy, leading to increased overall revenue

Average Daily Rate (ADR) by Room Type



- ❖ The Bar chart vividly illustrates how the Average Daily Rate (ADR) varies across different Room types, making it easy to spot which room types having high ADR

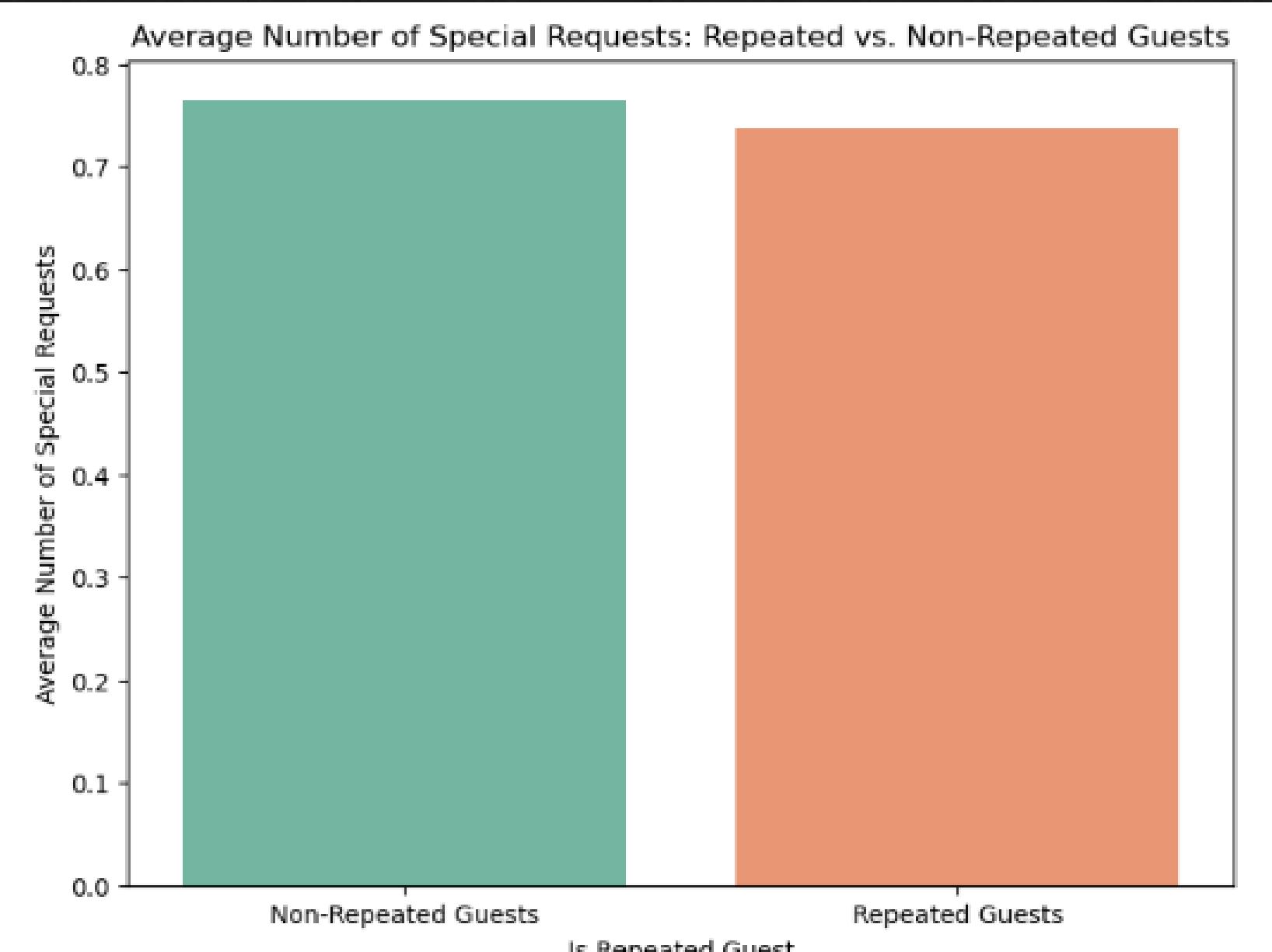
Average Daily Rate (ADR) by Number of Booking Changes



- ❖ The bar plot shows how the Average Daily Rate (ADR) varies with the number of booking changes, indicating whether booking modifications are associated with higher or lower room rates, which can impact revenue management strategies.

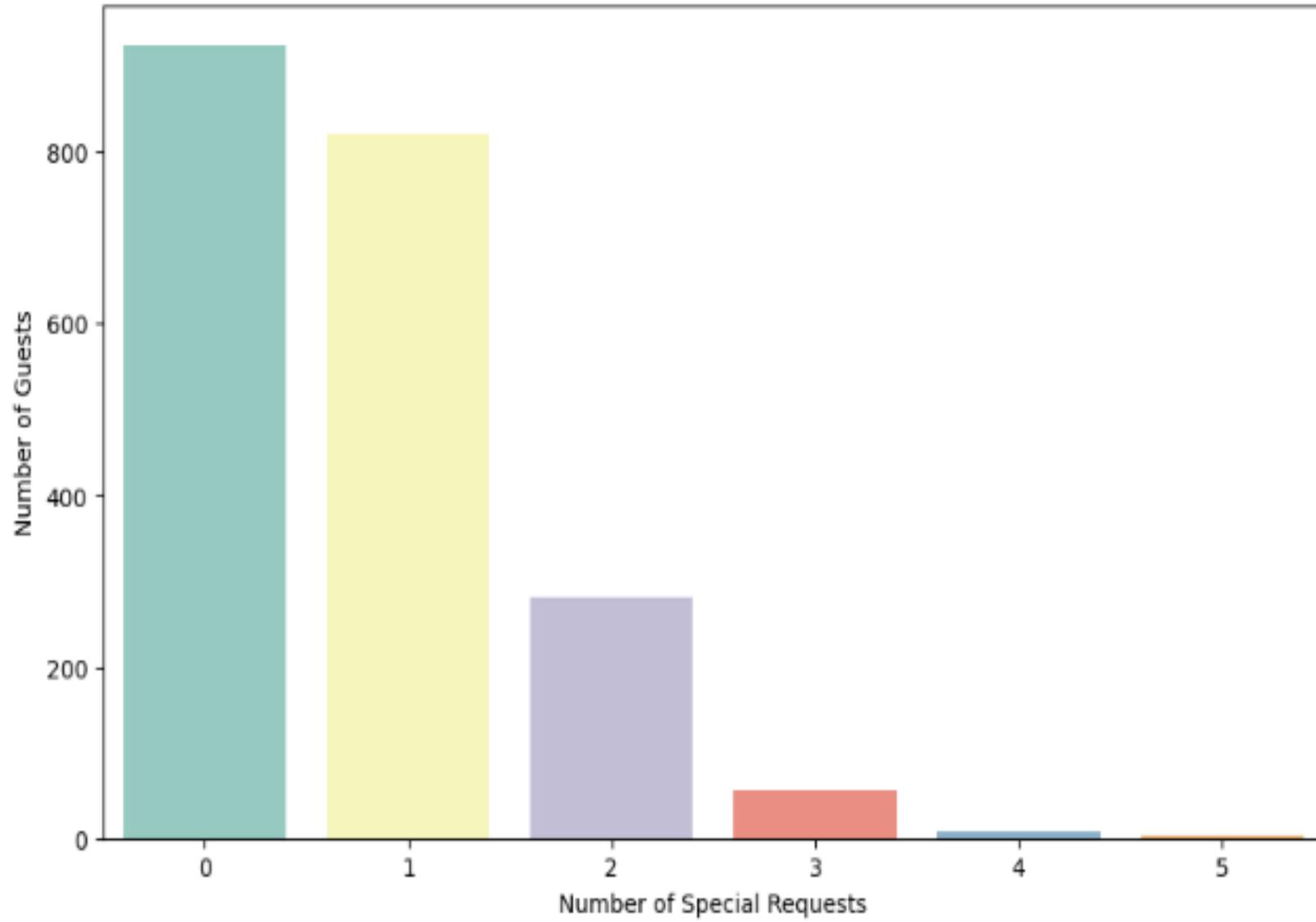
	Is Repeated Guest	Avg Weekend Stays	Median Weekend Stays	Avg Weekday Stays	Median Weekday Stays	Avg Special Requests	Median Special Requests	Avg ADR	Median ADR	Most Common Room Type
0	0	0.857555	1.0	1.92589	2.0	0.765159	1.0	123.221809	115.0	A
1	1	0.578947	0.0	1.00000	1.0	0.736842	0.0	97.885789	108.0	A

- ❖ The analysis reveals that repeated guests may have distinct preferences and behaviors, such as staying longer during specific periods, making more special requests, or consistently booking certain room types, which can inform loyalty program strategies to enhance guest satisfaction and encourage repeat business.



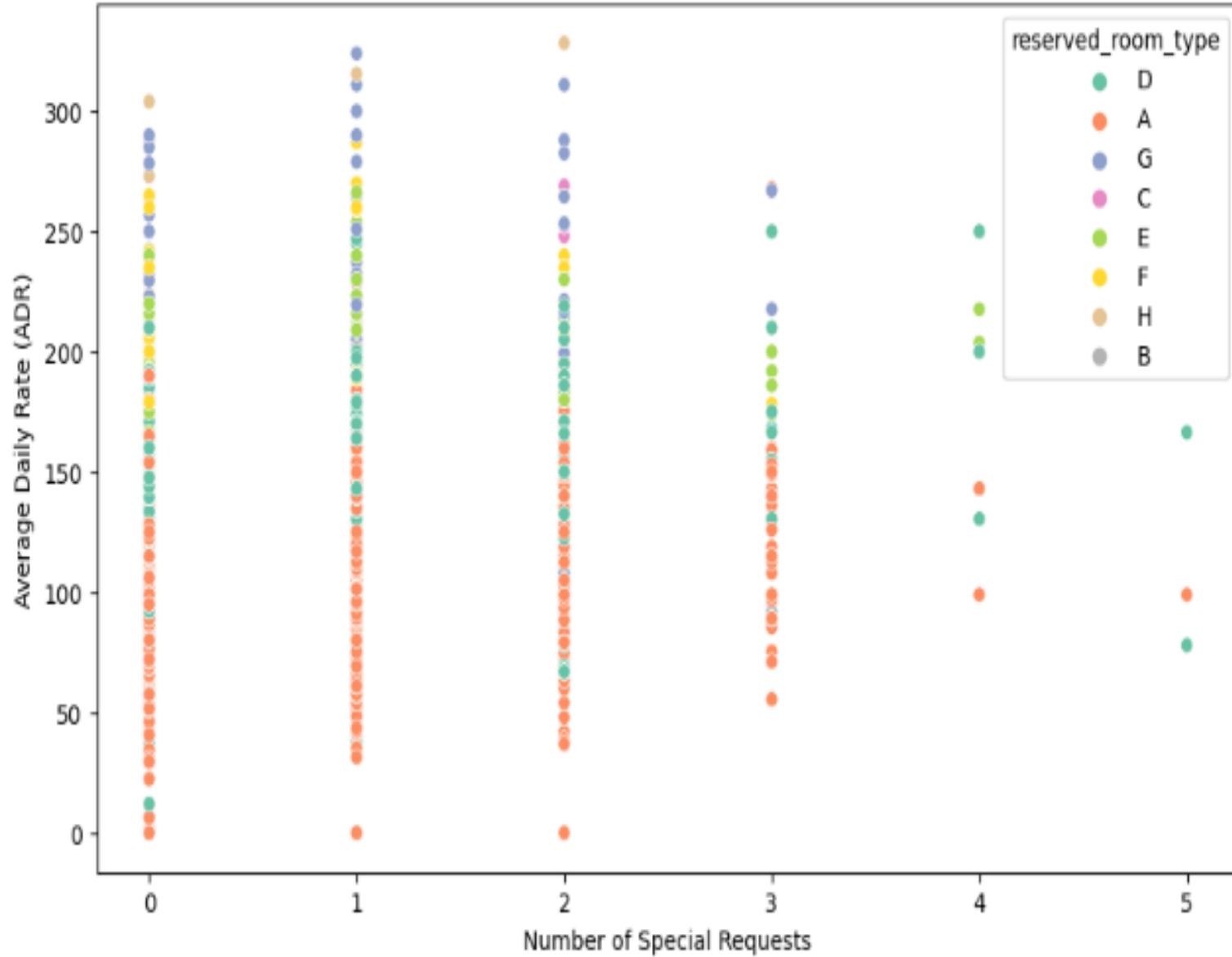
- ◊ The bar plot shows that repeated guests tend to make more special requests on average

Distribution of the Number of Special Requests

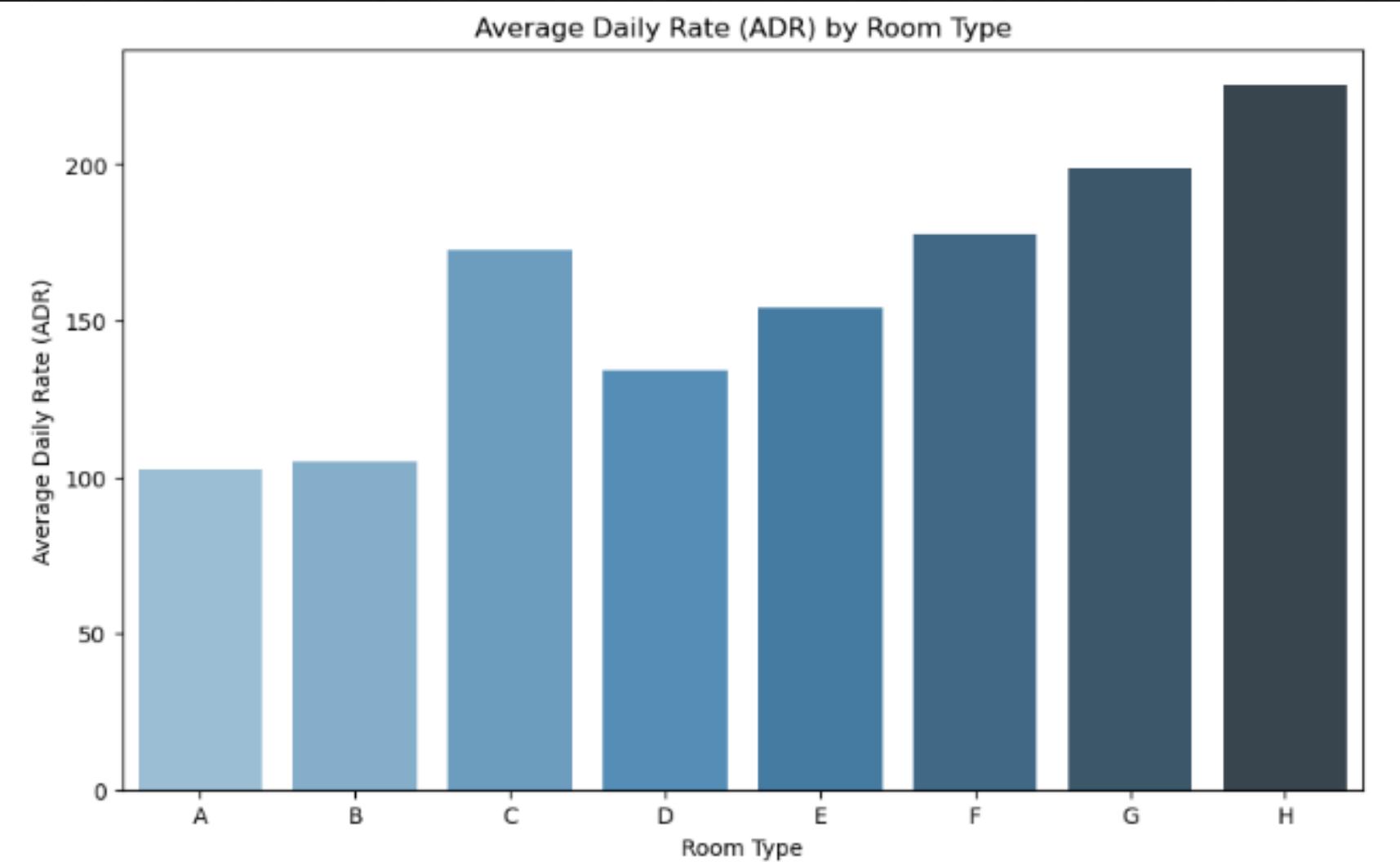


- ❖ Most of the Guest atleast asks one special request and only very low number of guest only as above 3 Special Request

Relationship Between Special Requests and Average Daily Rate (ADR)



- ◆ The correlation between the number of special requests and ADR is 0.11 suggests that as the number of special requests increases, the ADR also tends to increase.



- ◊ The analysis reveals that there may be a positive relationship between the number of special requests and ADR, suggesting that customers willing to pay higher rates may also expect more personalized services. Additionally, different room types show varying levels of ADR and special requests, highlighting specific customer preferences and expectations associated with premium room categories.

Distribution Channel Contribution to Successful Bookings

	distribution_channel	successful_bookings
3	TA/TO	1244
1	Direct	308
0	Corporate	35
2	GDS	9

"Market Segment Contribution to Successful Bookings

	market_segment	successful_bookings
6	Online TA	983
3	Direct	309
5	Offline TA/TO	141
4	Groups	132
2	Corporate	29
0	Aviation	1
1	Complementary	1

- ❖ The Online TA and TA/TO channels contribute the most to successful bookings, indicating that online travel agencies and traditional travel agents/tour operators are the primary drivers of successful hotel reservations.

	adr
adr	1.000000
reserved_room_type_G	0.323936
reserved_room_type_F	0.252443
reserved_room_type_E	0.176486
reserved_room_type_H	0.162858
meal_BB	0.160520
market_segment_Direct	0.156347
meal_HB	0.140643
reserved_room_type_D	0.108617
reserved_room_type_C	0.101404
market_segment_Online TA	0.081881
meal_Undefined	0.079577
market_segment_Aviation	-0.005499
market_segment_Complementary	-0.018620
reserved_room_type_B	-0.042692
market_segment_Corporate	-0.046671
market_segment_Offline TA/TO	-0.161386
market_segment_Groups	-0.203975
meal_SC	-0.224422
reserved_room_type_A	-0.477530

❖ Strong Positive

Correlations: reserved_room_type_G (0.32) and reserved_room_type_F (0.25): These room types are most strongly associated with higher ADRs, indicating that guests staying in these rooms pay more on average.

❖ Negative

Correlations: reserved_room_type_A (-0.48): This room type has a strong negative correlation with ADR, meaning it is associated with lower room rates