SQL Report: Hotel Booking Cancellation Analysis

Analyzing booking cancellation trends using SQL queries

Introduction

This report highlights key insights derived from hotel bookings data. Using SQL, various KPIs were calculated to understand trends such as cancellation rates, lead time patterns, and market segment performance.

KPI (key performance indicators)

Avg Lead Time

```
select avg(lead_time) as avg_lead_time
from bookings
where is_canceled = 1;
```

avg_lead_time
67.4804

Avg Adr

```
select avg(adr) as avg_Adr
from bookings
where is_canceled = 1;
```

	avg_Adr
▶	112.7647

Avg Length Of Stay

```
select
    avg(stays_in_weekend_nights+stays_in_week_nights) as avg_length_Of_stay
from
    bookings
where
    is_canceled = 1;
```

	avg_length_Of_stay
▶	4.8039

Total Cancellations

```
select
    count(*) as total_cancellations
from
    bookings
where
    is_canceled = 1;
```

	total_cancellations
▶	102

Cancellation Rate

```
SELECT
    (COUNT(CASE WHEN is_canceled = 1 THEN 1 END) * 100.0 / COUNT(*)) AS Cancellation_Rate
FROM
    Bookings;
```

Cancellation_Rate
20.44088

Cancellation Rate by lead Time

```
SELECT
    CASE
        WHEN lead_time BETWEEN 0 AND 30 THEN '0-30'
        WHEN lead_time BETWEEN 31 AND 60 THEN '31-60'
        WHEN lead_time BETWEEN 61 AND 90 THEN '61-90'
        WHEN lead_time BETWEEN 91 AND 120 THEN '91-120'
        ELSE '121+'
    END AS lead_time_range,
    COUNT(*) AS Total_Cancellations

FROM Bookings
WHERE is_canceled = 1
GROUP BY lead_time_range
ORDER BY lead_time_range;
```

lead_time_range	Total_Cancellations
0-30	20
121+	4
31-60	34
61-90	24
91-120	20

Cancellation Rate by Customer Type

```
SELECT
    customer_type,
    COUNT(*) AS Total_Cancellations
FROM Bookings
WHERE is_canceled = 1
GROUP BY customer_type
ORDER BY Total_Cancellations DESC;
```

customer_type	Total_Cancellations
Transient	96
Contract	5
Transient-Party	1

Cancellation Rate by Room Type

```sql
SELECT
    assigned_room_type,
    COUNT(*) AS Total_Cancellations
FROM Bookings
WHERE is_canceled = 1
GROUP BY assigned_room_type
ORDER BY Total_Cancellations DESC;
```

assigned_room_type	Total_Cancellations
A	51
D	24
E	13
G	6
F	3
C	3
H	2

Cancellation Rate by Market Segment

```sql
SELECT
    market_segment,
    COUNT(*) AS Total_Cancellations
FROM Bookings
WHERE is_canceled = 1
GROUP BY market_segment
ORDER BY Total_Cancellations DESC;
```

	market_segment	Total_Cancellations
▶	Online TA	69
	Offline TA/TO	17
	Direct	13
	Corporate	2
	Groups	1

Cancellation Rate By Distribution Channel

```sql
SELECT
    distribution_channel,
    COUNT(*) AS Total_Cancellations
FROM Bookings
WHERE is_canceled = 1
GROUP BY distribution_channel
ORDER BY Total_Cancellations DESC;
```

	distribution_channel	Total_Cancellations
▶	TA/TO	87
	Direct	13
	Corporate	2

Cancellation Rate By month

```sql
SELECT
    arrival_date_month,
    COUNT(*) AS Total_Cancellations
FROM Bookings
WHERE is_canceled = 1
GROUP BY arrival_date_month
ORDER BY arrival_date_month;
```

I am using only sample data from real data its contain only 500 rows that , s why it show only July month.

arrival_date_month	Total_Cancellations
July	102

Cancellation Rate By Length of Stay

```sql
SELECT
    stays_in_weekend_nights + stays_in_week_nights AS Total_Stay_Nights,
    COUNT(*) AS Total_Cancellations
FROM Bookings
WHERE is_canceled = 1
GROUP BY Total_Stay_Nights
ORDER BY Total_Stay_Nights DESC;
```

Total_Stay_Nights	Total_Cancellations
21	1
14	1
10	4
9	2
8	4
7	20
6	6
5	12
4	11
3	14
2	16
1	11

Conclusion

This SQL-based analysis identifies key trends in hotel bookings and cancellations, facilitating strategic decision-making for operational improvements.