Optimizing Revenue Leakage in the Hospitality Sector

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Executive Summary

This report analyzes potential revenue leakage within the hospitality industry using structured booking data from hotels. Key performance indicators like Occupancy Rate, ADR, RevPAR, and Cancellation Percentage were extracted using SQL and visualized in Power BI. Findings reveal substantial booking cancellations, no-shows, and city/property-based inefficiencies that affect profitability. A range of data-driven recommendations is proposed to improve revenue realization and operational efficiency.

1 Objectives

- Identify causes of revenue leakage using booking and capacity data.

- Analyze key KPIs such as Occupancy, ADR, RevPAR, Cancellation Rate.

- Use SQL to extract patterns and segment data by city, hotel, room class.

- Visualize trends and root causes in Power BI.

- Recommend strategic and operational improvements.

2 Methodology

1. Raw data from `fact_bookings`, `fact_aggregated_bookings`, and `dim_rooms` tables was queried using SQL.

2. 20+ KPIs and diagnostic queries were designed, including occupancy rates, cancellation percentages, RevPAR, and booking platform contributions.

3. A Power BI dashboard was created to visually explore booking trends, weekly revenue, and city/property segmentation.

4. Underperforming hotels and services were identified through filters and breakdowns.

3 Key Metrics and SQL Insights

- **Total Bookings:** 135K

- **Occupancy Rate:** 57.87%

- **Cancellation Rate:** 24.83%

- **Total Cancelled Bookings:** 33,420

- **RevPAR:** Calculated as Revenue / Capacity

- **ADR:** Calculated from Revenue / Rooms Sold

- **No Show Percentage:** Derived using booking status filter

Sample SQL query for Occupancy:

```
SELECT (SUM(successful_bookings) / SUM(capacity)) * 100 AS Occupancy_Rate
FROM fact_aggregated_bookings;
```

4   Power BI Dashboard Highlights

- Time-series trends reveal revenue drop in Week 32.

- Mumbai generates the highest revenue (39% share).

- Elite rooms contribute the most among room classes.

- Bookings and occupancy decline during weekends and in specific cities.
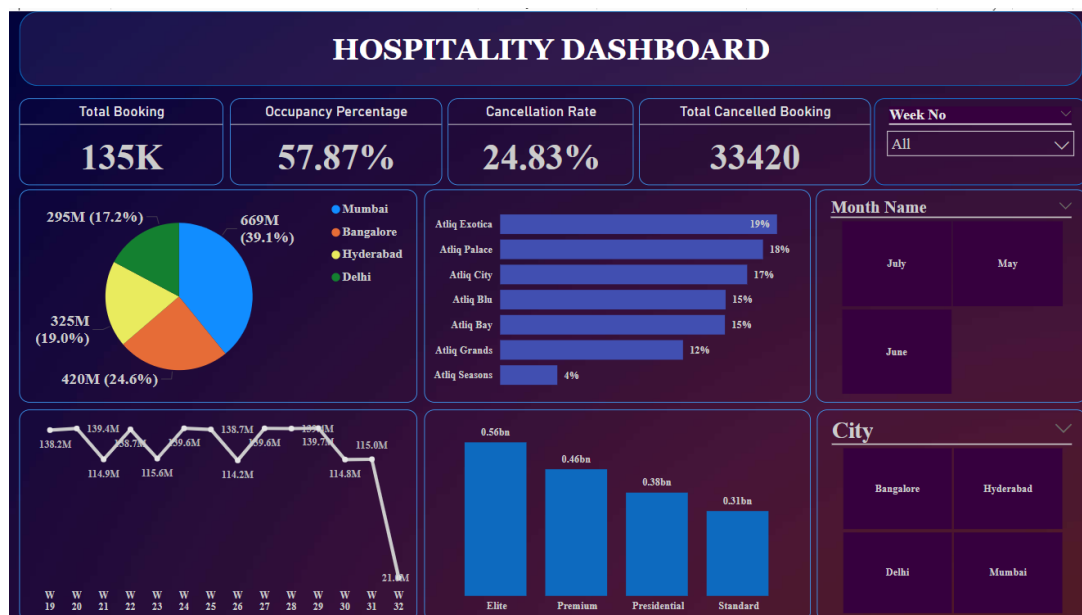
5   Recommendations

- Reduce no-shows with automated pre-check reminders.

- Improve onboarding across high-cancellation platforms.

- Launch weekday discount campaigns to balance demand.

- Optimize room mix based on occupancy by room class.

- Use predictive analytics to forecast low occupancy dates.

6 Conclusion

The analysis has identified key revenue leak points including cancellations, low occupancy periods, and underutilized room classes. By tracking data across hotels, platforms, and time, we built a robust view of performance and leakage. The combination of SQL diagnostics and Power BI visualization provided actionable insights that can help hotel chains improve revenue realization.

Tools Used: MySQL, Power BI, Excel.