

With



Power BI



ITC Hotels Revenue Optimization

By – Kartik Pant

Acknowledgement

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Their expertise in data analytics and Power BI proved instrumental in navigating the complexities of this project. The resources and insights provided by WS-Cube Tech significantly contributed to the successful completion of this analysis.

I deeply appreciate their commitment to fostering learning and empowering individuals in the field of data science. This project has been an enriching experience, and WS-Cube Tech's contribution was pivotal to its success.

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ITC Hotels

ITC Hotels is an Indian hospitality company that operates and manages hotels. It has over 100 hotels and is India's third largest hotel chain. It has a franchise agreement to operate most of its hotels as part of The Luxury Collection of Marriott International.

ITC Hotels was a subsidiary of ITC Limited until its demerger in 2025. ITC Limited entered the hotel business on 18 October 1975 with the opening of a hotel in Chennai, which was renamed as **Welcomhotel By ITC Hotels, Cathedral Road, Chennai**.

ITC Hotels has hosted many visiting royalty and world leaders, including George W. Bush, Vladimir Putin, Barack Obama and Donald Trump.

The hotel chain works on a philosophy of "Responsible Luxury" and each hotel in the chain has a LEED (Leadership in Energy and Environmental Design) Platinum rating.

Originally incorporated as Rama Hotels Pvt Ltd in 1972 and renamed **Vishwarama Hotels** in 1973, the Vazir Sultan Tobacco Co Ltd. (VST Industries) bought Vishwarama Hotels in 1980–1981 and soon after, in 1982, the first luxury hotel for the new chain opened in Bangalore.

ITC Hotels – Problem Statement

- ITC Hotels is a luxury hotel chain that operates multiple properties with diverse room categories and varying occupancy rates.
- The company wants to gain deeper insights into its overall financial performance, customer booking behavior, occupancy trends, and room category performance to optimize revenue generation, minimize cancellations, and enhance customer satisfaction.
- The goal of this project is to create an interactive, multi-page Power BI dashboard to provide stakeholders with real-time insights for decision-making.

Financial Overview and Revenue Performance



Financial and Revenue Analysis

₹7.35K

Rev_per_avaiabl...

₹2bn

Revenue_generat...

₹1.7bn

Revenue_realized

₹14.91K

Average_daily_rate

50.44%

M.O.M_Growth

13.85

W.O.W_Growth

Day Type: All

☐ weekday

☐ weekend

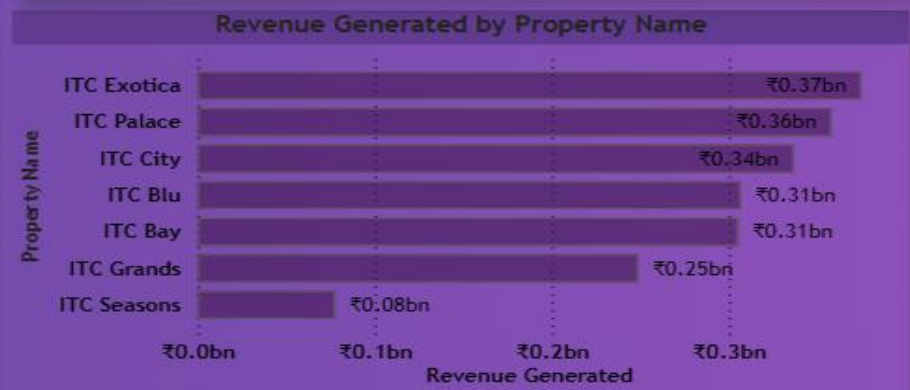
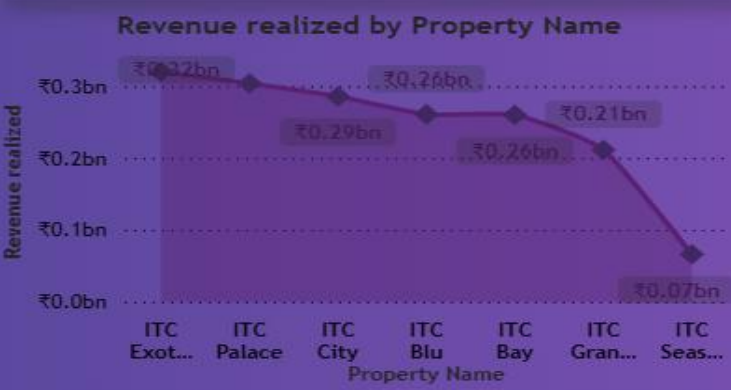
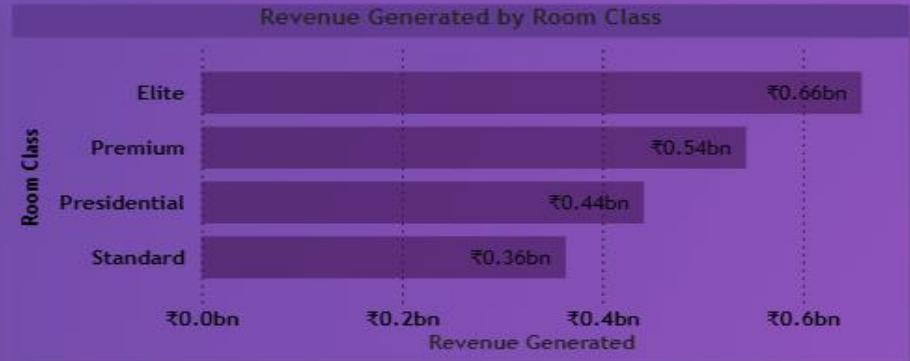
Month Name

☐ May

☐ June

☐ July

Date	cumulative_revenue_growth	Revenue_realized
01 May 2022	\$2,53,57,111	₹2,53,57,111
02 May 2022	\$4,27,65,917	₹1,74,08,806
03 May 2022	\$6,03,00,105	₹1,75,34,917
04 May 2022	\$7,76,32,159	₹1,73,32,159
05 May 2022	\$9,55,33,195	₹1,79,01,195
06 May 2022	\$11,29,60,081	₹1,74,26,081
07 May 2022	\$13,81,82,064	₹2,52,21,064
Total	\$1,70,87,71,229	₹1,70,87,71,229



Financial Overview and Revenue Performance

Key Highlights:

- Strong Revenue Generation:** The total **revenue generated** stands at **₹2 billion**, while the **revenue realized** amounts to **₹1.7 billion** up to May 7, 2022.
- Healthy Revenue Per Available Room:** The **revenue per available room** is a robust **₹7.35K**, indicating efficient utilization of available inventory.
- Solid Average Daily Rate:** The **average daily rate** is **₹14.91K**, reflecting the premium positioning and pricing strategy.
- Significant Month-over-Month Growth:** The **month-over-month (M.O.M.) growth** in a key metric is a substantial **50.44%**, suggesting strong positive momentum.
- Positive Week-over-Week Growth:** The **week-over-week (W.O.W.) growth** is also positive at **13.85%**, indicating consistent short-term performance improvement.

Financial Overview and Revenue Performance

Revenue Breakdown:

- **By Room Class:** The **Elite** room class is the highest revenue generator, contributing **₹0.36 billion**. Following this are **Premium** and **Presidential** at **₹0.4 billion** each, and **Standard** at **₹0.3 billion**.
- **By Property Name:** **ITC Grands** leads in revenue generation among the listed properties at **₹0.25 billion**. **ITC Palace** and **ITC City** also show significant contributions at **₹0.3 billion** and **₹0.34 billion**, respectively.
- **By City:** **Mumbai** is the top revenue-generating city at **₹476M**. **Bengaluru** also shows strong performance at **₹266M**, followed by **Delhi** at **₹256M**. **Hyderabad** and **Chennai** contribute **₹219M** and **₹125M**, respectively. **Goa** generates **₹192M** in revenue.

Financial Overview and Revenue Performance

Trends and Observations:

- The cumulative revenue shows a steady upward trend throughout the analyzed period (May 1st to May 7th, 2022).
- The revenue realized by property name appears to show a slight dip towards the end of the analyzed period for some properties, as indicated by the trend line.

Overall, the dashboard indicates a strong financial performance with significant revenue generation and positive growth trends. Mumbai and Bengaluru are key revenue-generating cities, while the Elite, Premium, and Presidential room classes are the major contributors to room revenue. ITC Grands, ITC Palace, and ITC City are the top-performing properties in terms of revenue generation.

Occupancy and Capacity Analysis



Occupancy and capital Analysis

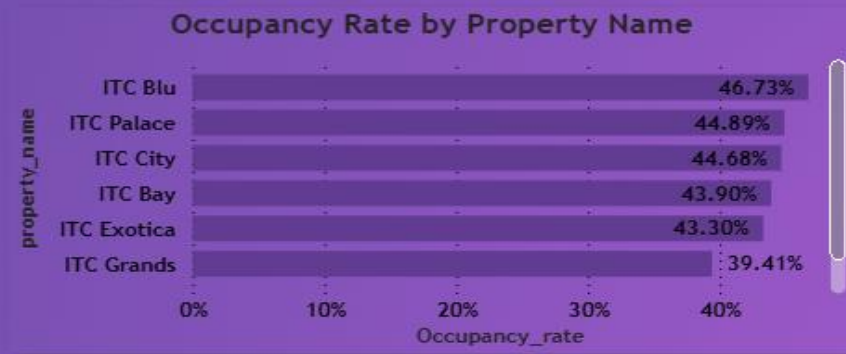
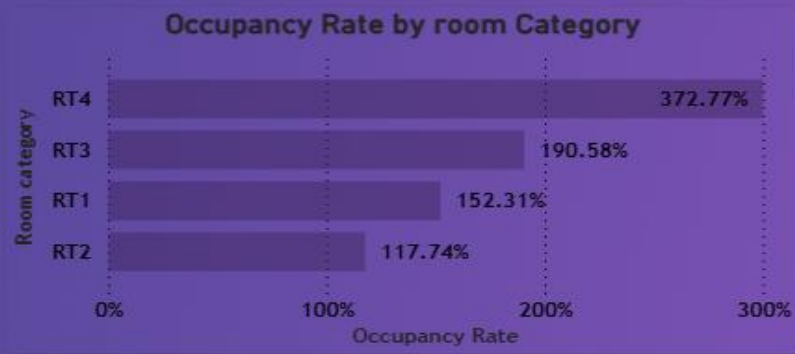
43.50%
Occupancy_rate

-0.12%
M.O.M_Occupancy

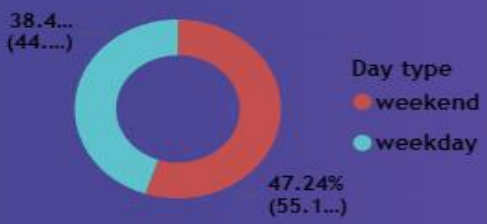
1.00
Revenue_generate...

0.13
W.O.W_Occupancy

- Name: All
- ☐ Select all
 - ☐ Ambedkar Jayanti
 - ☐ Bakrid
 - ☐ Bhai Duj
 - ☐ Birthday of Rabindranath
 - ☐ Buddha Purnima/Vesak



Occupancy Rate by Day type



Occupancy and Capacity Analysis

Key Highlights:

- **Moderate Overall Occupancy:** The overall **occupancy rate** stands at **43.50%**.
- **Slight Month-over-Month Occupancy Decline:** There is a marginal **month-over-month (M.O.M.) decline in occupancy** of **-0.12%**.
- **Efficient Revenue Generation:** The **revenue generated per unit of capital** is **1.00**, indicating efficient asset utilization in generating revenue.
- **Marginal Week-over-Week Occupancy Growth:** The **week-over-week (W.O.W.) growth in occupancy** is slightly positive at **0.13%**.

Occupancy and Capacity Analysis

Occupancy Breakdown:

- **By Room Category:** There is significant variation in occupancy across room categories. **RT4** exhibits the highest occupancy at **372.77%**, which is unusually high and likely indicates a data anomaly or a specific interpretation of this category (e.g., overbooking or a different unit of measurement). **RT3** also shows a high occupancy at **190.58%**. **RT1** has an occupancy of **152.31%**, and **RT2** at **117.74%**. These figures above 100% warrant further investigation to understand the underlying reasons.

- **By Property Name:** **ITC Blu** has the highest occupancy rate among the listed properties at **46.73%**. **ITC Palace** follows at **44.89%**, and **ITC City** at **44.68%**. **ITC Bay** has an occupancy of **43.90%**, **ITC Exotica** at **43.20%**, and **ITC Grands** has the lowest occupancy at **39.41%**.

- **By Day Type:** Weekends show a significantly higher occupancy rate of **47.24%** compared to weekdays at **38.41%**.

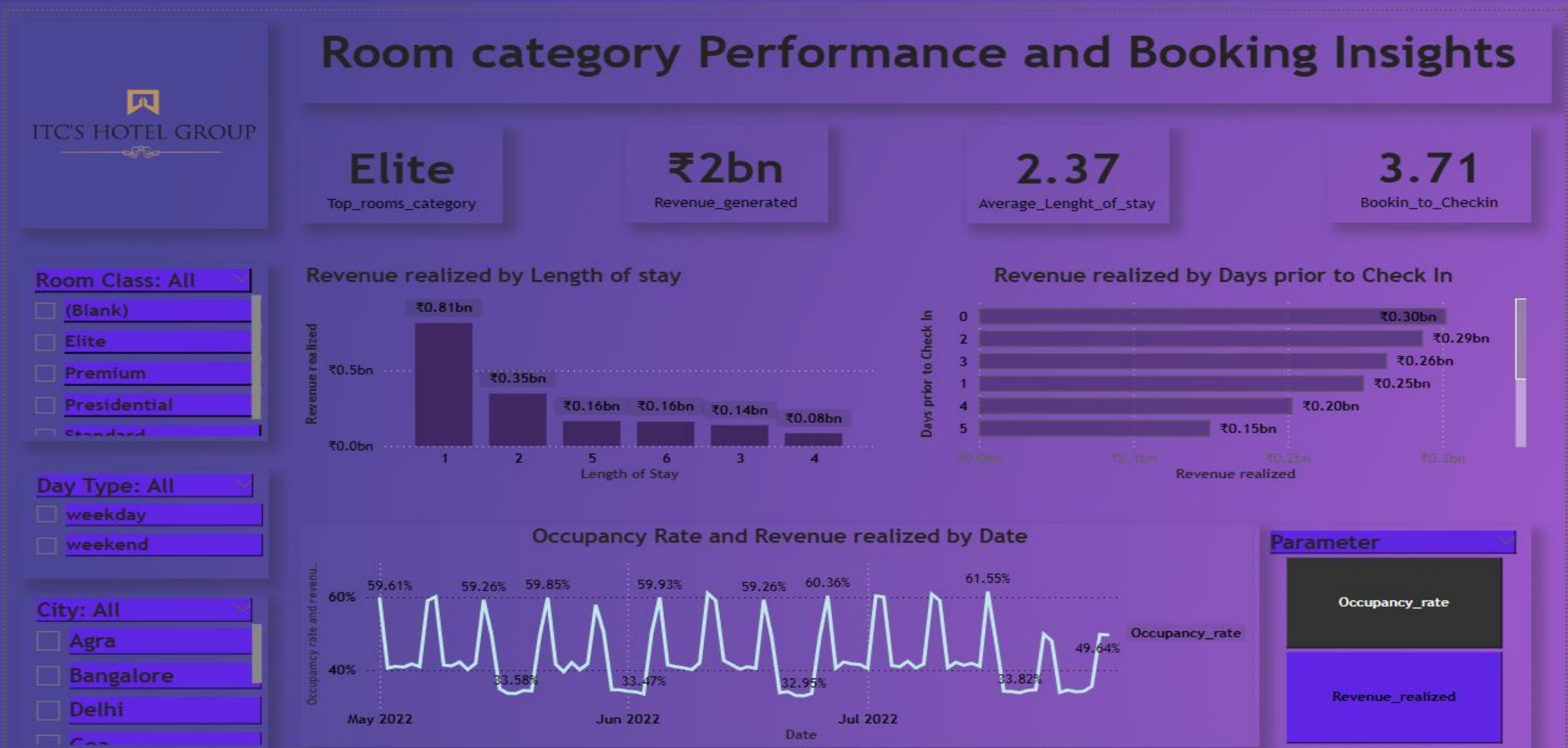
Occupancy and Capacity Analysis

Occupancy Trends Over Time:

- The occupancy rate by date fluctuates between approximately **32%** and **61%** during the May to July 2022 period.
- There are noticeable peaks in occupancy, particularly around weekends, as indicated by the higher occupancy on specific dates.
- Occupancy appears to generally be higher in late May and early June, with some dips in late June and a recovery in July.

Overall, the dashboard reveals a moderate overall occupancy rate with a slight month-over-month decline. Revenue generation efficiency appears strong. Weekends drive significantly higher occupancy compared to weekdays. There is substantial variation in occupancy across different room categories, with some categories showing unusually high percentages that require further scrutiny. Among the properties, ITC Blu, ITC Palace, and ITC City exhibit the highest occupancy rates.

Room Category Performance and booking insights



Room Category Performance and booking insights

Key Highlights:

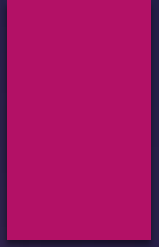
- **Elite is the Top Performing Room Category:** The **Elite** room category is highlighted as the **top rooms category**.
- **Significant Revenue Generation:** The total **revenue generated** is **₹2 billion** across all room categories.
- **Moderate Average Length of Stay:** The **average length of stay** is **2.37** nights.
- **Reasonable Booking Lead Time:** The **average booking to check-in** time is **3.71** days.

Room Category Performance and booking insights

Revenue Breakdown by Length of Stay:

- The highest revenue realized is for stays of **1 night**, amounting to **₹0.55 billion**.
- Stays of **2 nights** also contribute significantly with **₹0.35 billion** in revenue realized.
- Revenue realized decreases for longer stays, with **3-night stays** generating **₹0.16 billion**, **4-night stays** at **₹0.14 billion**, and **5-night stays** at **₹0.08 billion**.

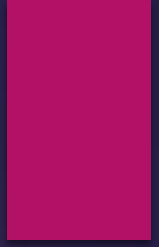
Room Category Performance and booking insights



Revenue Breakdown by Days Prior to Check-in:

- Bookings made **0 days prior to check-in** (same-day bookings) generate the highest revenue at **₹0.30 billion**.
- Bookings made **1 day prior** contribute **₹0.29 billion**, and **2 days prior** also generate **₹0.29 billion**.
- Revenue realized decreases for bookings made further in advance, with **3 days prior** at **₹0.25 billion**, **4 days prior** at **₹0.20 billion**, and **5 days prior** at **₹0.15 billion**.

Room Category Performance and booking insights



Occupancy Rate and Revenue Realized by Date:

- The **occupancy rate** fluctuates between approximately **32%** and **61%** during the May to July 2022 period, showing a similar trend to the previous occupancy dashboard with peaks around weekends.
- The **revenue realized** by date generally follows a similar pattern to occupancy, with higher revenue on dates with higher occupancy.

Overall, the Elite room category is the top revenue generator. The majority of revenue comes from shorter stays (1-2 nights) and bookings made closer to the check-in date (0-2 days prior). Occupancy and revenue realized show similar trends over time, with weekend peaks.

Cancellation and Lost Revenue Analysis



Day Type: All

weekday

weekend

city

☐ Agra

☐ Bangalore

☐ Delhi

☐ Goa

☐ Hyderabad

☐ Mumbai

☐ Pune

Cancellations and Lost revenue Analysis

1423....

W.O.W_Cancellation

24.83%

Cancellation_Rate

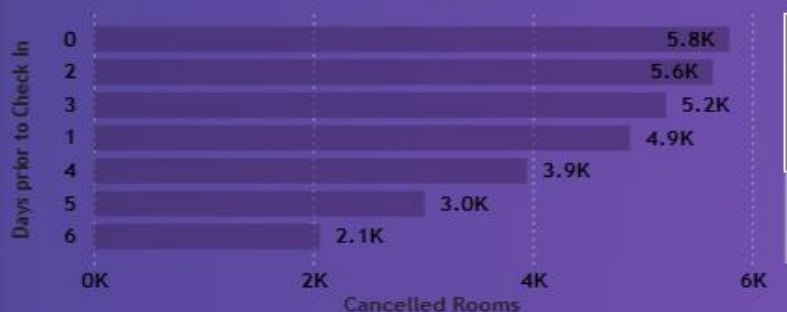
₹199M

cancelled_revenue

49.15%

M.O.M_Cancellation

Cancelled Rooms by Days prior to Check In



Cancellation Rate by Date



W.O.W Cancellation by Month Name and Week Number



Lost Revenue by Property Name



Cancellation and Lost Revenue Analysis

Key Highlights:

- **Significant Week-over-Week Cancellation Increase:** There is a substantial **week-over-week (W.O.W.) increase in cancellations** of **1423%**. This drastic increase warrants immediate investigation to understand the underlying causes.
- **Moderate Overall Cancellation Rate:** The overall **cancellation rate** is **24.83%**.
- **Substantial Cancelled Revenue:** The total **cancelled revenue** amounts to **₹199 million**, representing a significant financial impact.
- **High Month-over-Month Cancellation Increase:** The **month-over-month (M.O.M.) increase in cancellations** is a significant **49.15%**, indicating a worsening trend in cancellations.

Cancellation and Lost Revenue Analysis

Cancelled Rooms by Days Prior to Check-in:

- The highest number of cancelled rooms occurs for bookings made **0 days prior to check-in** (same-day cancellations) at **5.8K**.
- Cancellations are also high for bookings made **1 day prior** (5.4K) and **2 days prior** (5.2K).
- The number of cancelled rooms generally decreases as the booking lead time increases.

Cancellation and Lost Revenue Analysis

Cancellation Rate by Date:

- The cancellation rate fluctuates throughout the period, ranging from a low of around **22%** to a high of nearly **28%**.
- There appear to be peaks in the cancellation rate around late May and mid-June.
- The cancellation rate shows a slight decrease towards the end of July.

Cancellation and Lost Revenue Analysis

Week-over-Week Cancellation by Month Name and Week Number:

- There are significant fluctuations in week-over-week cancellations. Notably, there are substantial increases in cancellations in certain weeks of May (Week 19, 20, 22, 23) and July (Week 27).
- Conversely, some weeks show a decrease in cancellations. The large positive W.O.W. cancellation figure of 1423% likely stems from a specific week-over-week comparison within this timeframe.

Cancellation and Lost Revenue Analysis

Lost Revenue by Property Name:

- **ITC Exotica** experienced the highest lost revenue at approximately **₹48M**.
- **ITC Palace** follows with a significant lost revenue of around **₹54M**.
- **ITC City** also shows substantial lost revenue at approximately **₹45M**.
- **ITC Grands** incurred a lost revenue of around **₹37M**.
- **ITC Bay** had a lost revenue of approximately **₹17M**.
- **ITC Seasons** experienced the lowest lost revenue among the listed properties at around **₹12M**.

Overall, the dashboard highlights a concerning trend of increasing cancellations, particularly the very high week-over-week increase. A substantial amount of revenue has been lost due to cancellations, with ITC Exotica and ITC Palace experiencing the highest impact. Same-day and next-day cancellations contribute significantly to the total number of cancelled rooms.

Conclusion of the ITC Hotel Revenue Optimization Project

Based on the analysis of the provided dashboards spanning from May to July 2022, several key conclusions can be drawn regarding ITC Hotels' revenue optimization:

Strong Revenue Generation but Untapped Potential: While the hotel group demonstrates robust revenue generation (₹2 billion), there are clear opportunities to further optimize revenue through a deeper understanding of booking patterns, room category performance, and cancellation drivers.

Elite Room Category Drives Revenue: The Elite room category stands out as the top revenue generator, suggesting a strong demand and potentially the possibility of premium pricing strategies or upselling efforts.

Short Stays and Last-Minute Bookings Dominate: A significant portion of revenue comes from shorter stays (1-2 nights) and bookings made close to the check-in date (0-2 days prior). This highlights the importance of effectively managing inventory and pricing for these booking windows.

Weekends are Key for Occupancy: Weekends consistently exhibit significantly higher occupancy rates compared to weekdays, underscoring the need for targeted strategies to boost weekday occupancy.

High Cancellation Rates and Significant Lost Revenue are Major Concerns: The most critical area requiring attention is the high overall cancellation rate (24.83%) and the substantial lost revenue (₹199 million). The dramatic week-over-week and month-over-month increases in cancellations are particularly alarming and demand immediate investigation.

Last-Minute Cancellations are Prevalent: A significant number of cancellations occur very close to the check-in date, indicating potential issues with booking flexibility, deposit policies, or unforeseen circumstances impacting travelers.

Property-Specific Cancellation Impact: The impact of lost revenue due to cancellations varies significantly across properties, with ITC Exotica and ITC Palace experiencing the highest losses. This suggests the need for tailored cancellation management strategies at the property level.

Data Anomalies Require Investigation: The unusually high occupancy rates reported for certain room categories (RT4, RT3, RT1, RT2) warrant a thorough data quality check to ensure accurate interpretation and analysis.



Thank you