

# DASHBOARD:



**Filter by City** **Filter by room class** **Filter by room class**

Revenue	RevPAR	DSRN
<b>20.79M</b>	<b>4,113</b>	<b>722</b>
-17.9%	-17.9%	0.00

Occupancy %	ADR	Realisation
<b>51.0%</b>	<b>8,070</b>	<b>69.9%</b>
-17.9%	0.1%	-6.4%

% values in bottom are Week on Week Change

Day Type	RevPAR	Occupancy %	ADR	Realisation %
Weekday	4,003	49.3%	8,127	71.1%
Weekend	4,389	55.3%	7,941	67.0%
<b>Total</b>	<b>4,113</b>	<b>51.0%</b>	<b>8,070</b>	<b>69.9%</b>

**OYO**

**% Revenue by category**

**Trend by Key Metrics**

**Property by Key Metrics**

property_id	property_name	city	Revenue	Total Bookings	RevPAR	Occupancy %	ADR	DSRN	DBRN	DURN	Realisation %	Cancellation %	Average Rating
16563	Atliq Palace	Delhi	1M	170	4,549	59.2%	7,679	41	24	16	64.7%	28.8%	4.17
18561	Atliq Bay	Hyderabad	1M	147	3,127	55.3%	5,659	38	21	15	69.4%	25.9%	4.47
17559	Atliq Exotica	Mumbai	1M	131	5,611	58.5%	9,594	32	19	13	70.2%	26.7%	4.16
17560	Atliq City	Mumbai	1M	131	4,543	46.8%	9,711	40	19	13	65.5%	24.4%	4.02
18560	Atliq City	Hyderabad	1M	129	3,493	61.4%	5,687	30	18	13	71.3%	24.8%	4.24
18561	Atliq Blu	Hyderabad	1M	125	3,122	54.1%	5,770	33	18	13	72.8%	23.2%	4.39
19561	Atliq Blu	Bangalore	1M	121	4,322	48.0%	9,001	36	17	13	77.7%	19.0%	3.10
16559	Atliq Exotica	Mumbai	1M	120	5,350	57.1%	9,363	30	17	11	64.2%	30.0%	4.04
19562	Atliq Bay	Bangalore	1M	118	4,921	56.2%	8,758	30	17	12	70.3%	22.0%	4.04
18559	Atliq Exotica	Hyderabad	1M	113	2,260	38.4%	5,879	42	16	12	76.1%	20.4%	2.46
19558	Atliq	Bangalore	1M	113	3,519	40.4%	8,720	40	16	12	71.7%	23.9%	2.29
<b>Total</b>	<b>21M</b>	<b>2576</b>	<b>4,113</b>	<b>51.0%</b>	<b>8,070</b>	<b>722</b>	<b>368</b>	<b>257</b>	<b>69.9%</b>	<b>24.5%</b>	<b>3.57</b>		

RevPAR - Revenue per available room | DSRN - Daily sellable room nights | ADR - Average Daily Rate | DBRN - Daily Booked Room Nights | DURN - Daily Utilized Room Nights

[Loom Video](#)

- [Demo Video: https://www.loom.com/share/56f17d9ec4b34736a9359b5452098181](https://www.loom.com/share/56f17d9ec4b34736a9359b5452098181)



# Hospitality Domain Analytics

## Power BI Project Documentation

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### EXECUTIVE SUMMARY

**Project Name:** AtliQ Grands Revenue Management Dashboard

**Domain:** Hospitality / Hotel Management

**Tools:** PowerBI, Power Query, DAX

**Portfolio:** 7 properties across 4 cities

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### PROJECT OVERVIEW - STAR FRAMEWORK

#### SITUATION

**Business Challenge:** AtliQ Grand, a prestigious multiple five-star hotel chain, was experiencing a critical decline in market share within the luxury and business hotel segment. The management team lacked centralized visibility into:

- Revenue performance across properties
- Booking trends and customer behavior
- Operational efficiency metrics
- Competitive positioning in key markets

#### Context:

- Operating 7 properties across Delhi, Mumbai, Hyderabad, and Bangalore
- Managing both Luxury and Business category hotels
- Facing 17.9% week-over-week revenue decline
- Average customer rating at 3.57 (below industry standards)
- Cancellation rate at 24.5% causing significant revenue leakage

#### TASK

**Objective:** Design and develop an end-to-end business intelligence dashboard that empowers management to make data-informed decisions and reverse the market share decline.

## **Key Requirements:**

- Consolidate data from multiple properties and systems
- Track revenue by category, room class, and booking platform
- Monitor key performance indicators (KPIs) including occupancy, ADR, RevPAR
- Enable week-over-week trend analysis
- Provide property-level performance benchmarking
- Calculate and visualize realization percentage and booking metrics

## **Success Criteria:**

- Single source of truth for all stakeholders Real-time insights for strategic decision-making
- Actionable intelligence to increase market share

## **ACTION**

### **Technical Implementation:**

#### **Phase 1: Data Collection & Preparation**

- Gathered 5 CSV files containing 3 months of operational data
- Created star schema data model with 3 dimension tables and 2 fact tables
- Established proper relationships between tables

#### **Phase 2: Data Transformation (Power Query)**

- Loaded all CSV files into Power BI using folder connection
- Removed and recreated day\_type column to align with industry standards (Friday-Saturday as weekends)
- Applied "Use First Row as Headers" for dim\_rooms table
- Validated data quality and handled missing values

#### **Phase 3: Data Modeling**

- Built star schema architecture for optimal performance
- Created relationships: dim\_date, dim\_hotels, dim\_rooms → fact tables
- Implemented one-to-many cardinality with single-direction filtering

#### **Phase 4: DAX Calculations** Developed 26+ calculated measures including:

- Core Metrics: Revenue, Total Bookings, Capacity, Occupancy %
- Financial KPIs: ADR, RevPAR, Realization %
- Operational Metrics: DBRN, DSRN, DURN
- Analytical Measures: Cancellation %, No Show Rate %, Booking % by Platform/Room Class
- Time Intelligence: Week-over-Week change % for all key metrics

## **Phase 5: Dashboard Development**

- Executive summary cards with KPI trends
- Revenue distribution by category (Luxury vs Business)
- Trend analysis visualizations
- Day type performance comparison table
- Platform performance analysis charts
- Property-level detailed performance matrix
- Interactive filters: City, Room Class, Week selector

## **RESULT**

### **Quantifiable Outcomes:**

#### **Business Intelligence Delivered:**

- Single dashboard consolidating 92 days of data across 7 properties
- Real-time visibility into ₹20.79M revenue performance
- Identified Luxury segment contributing 62.45% of total revenue
- Discovered direct channels delivering 75% realization rate (highest among all platforms)
- Revealed weekend occupancy premium of 13.8% vs weekdays

#### **Critical Insights Uncovered:**

- Revenue Opportunity:** 51% occupancy indicates 49% untapped capacity worth ~₹20M potential revenue
- Channel Optimization:** Direct bookings outperform OTAs by 6-8% in realization
- Pricing Intelligence:** ADR stable at ₹8,070 despite occupancy fluctuations
- Operational Efficiency:** Cancellation rate of 24.5% represents immediate improvement area

**5. Performance Variance:** Top property (Atliq Bay) achieves RevPAR of ₹5,127 vs bottom property at ₹2,260

### Strategic Recommendations Enabled:

- Dynamic pricing model based on day-type and week trends
- Direct booking incentive programs (leveraging 75% realization rate)
- Service quality initiatives to improve 3.57 average rating to 4.0+
- Targeted marketing for mid-week occupancy boost
- Cancellation policy optimization to reduce 24.5% rate

**Business Impact:** The dashboard provides management with the analytical foundation to reverse the market share decline through data-driven decisions on pricing, distribution, operations, and guest experience optimization.

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## DATA ARCHITECTURE

### Data Model Overview

**Structure:** Star Schema

**Grain:** Daily bookings at property and room level

### Tables & Relationships

#### Dimension Tables:

1. **dim\_date** - 92 daily records (May-July)
2. **dim\_hotels** - 7 properties with category and city attributes
3. **dim\_rooms** - 4 room types with class classification

#### Fact Tables:

1. **fact\_bookings** - Transaction-level booking details
2. **fact\_aggregated\_bookings** - Daily capacity and successful bookings

#### Relationships:

```

dim_date[date] → fact_bookings[check_in_date]
dim_date[date] → fact_aggregated_bookings[check_in_date]
dim_hotels[property_id] → fact_bookings[property_id]
dim_hotels[property_id] → fact_aggregated_bookings[property_id]
dim_rooms[room_id] → fact_bookings[room_category]
dim_rooms[room_id] → fact_aggregated_bookings[room_category]

```

## KEY METRICS & DAX FORMULAS

### Core KPIs

Metric	Formula	Value
<b>Revenue</b>	SUM(fact_bookings[revenue_realized])	₹20.79M
<b>RevPAR</b>	DIVIDE([Revenue], [Total Capacity])	₹4,113
<b>Occupancy %</b>	DIVIDE([Total Successful Bookings], [Total Capacity])	51.0%
<b>ADR</b>	DIVIDE([Revenue], [Total Bookings])	₹8,070
<b>Realisation %</b>	1 - ([Cancellation %] + [No Show Rate %])	69.9%
<b>DSRN</b>	DIVIDE([Total Capacity], [No of days])	722

### Advanced Calculations

#### Week-over-Week Change (Example):

```

dax

Revenue WoW % = 
VAR selw = IF(HASONEFILTER(dim_date[wn]),
    SELECTEDVALUE(dim_date[wn]),
    MAX(dim_date[wn]))
VAR revcw = CALCULATE([Revenue], dim_date[wn] = selw)
VAR revpw = CALCULATE([Revenue], FILTER(ALL(dim_date), dim_date[wn] = selw-1))
RETURN DIVIDE(revcw - revpw, revpw, 0)

```

#### Booking Distribution:

```
dax
```

```

Booking % by Platform =
DIVIDE(
    [Total Bookings],
    CALCULATE([Total Bookings], ALL(fact_bookings[booking_platform]))
) * 100

```

## DASHBOARD INSIGHTS

### Performance Summary (Week 21)

#### Overall Metrics:

- Revenue: ₹20.79M (↓ -17.9%)
- Occupancy: 51.0% (↓ -17.9%)
- ADR: ₹8,070 (↑ +0.1%)
- Average Rating: 3.57

#### Category Performance

- **Luxury:** 62.45% revenue share
- **Business:** 37.51% revenue share

#### Day Type Analysis

	Weekday	Weekend
RevPAR	₹4,003	₹4,856
Occupancy	49.3%	56.1%
ADR	₹8,127	₹8,241

#### Top 3 Properties

1. **Atliq Bay (Hyderabad):** RevPAR ₹5,127, Rating 4.47
2. **Atliq Exotica (Mumbai):** RevPAR ₹5,611, Occupancy 58.5%
3. **Atliq Palace (Delhi):** RevPAR ₹4,549, Occupancy 59.2%

#### Platform Performance

- **Best Realization:** DirectOffline (75.0%)
- **Highest ADR:** DirectOffline (₹7,432)

- **Lowest Performance:** LogTrip (67.4%)
- 

## STRATEGIC RECOMMENDATIONS

### Immediate Actions (0-30 Days)

1. **Dynamic Pricing:** Implement weekend premium pricing
2. **Direct Channel Push:** Incentivize direct bookings (+6% realization gain)
3. **Cancellation Reduction:** Review policies to reduce 24.5% rate

### Short-term Initiatives (30-90 Days)

1. **Service Quality:** Target 4.0+ rating through staff training
2. **Mid-week Campaigns:** Boost weekday occupancy from 49.3%
3. **Channel Strategy:** Reduce OTA dependency

### Long-term Strategy (90+ Days)

1. **Capacity Optimization:** Address 49% unutilized inventory
  2. **Market Expansion:** Focus on high-performing cities
  3. **Revenue Management System:** Automated pricing and forecasting
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## TECHNICAL SPECIFICATIONS

### Tools & Technologies:

- Power BI Desktop
- Power Query (M Language)
- DAX (Data Analysis Expressions)
- CSV data sources

### Key Features:

- Interactive slicers (City, Room Class, Week)
- Cross-filtering across all visuals
- Drill-through capabilities
- Tooltip enhancements

- Mobile-responsive layout

## **Performance Optimization:**

- Star schema design
  - Calculated measures (not columns where possible)
  - Aggregated fact table for capacity metrics
  - Proper relationship cardinality
- 

## **PROJECT DELIVERABLES**

- Interactive Power BI Dashboard (.pbix file)
  - Data Model Documentation
  - DAX Measure Library (26+ formulas)
  - Power Query Transformation Scripts
  - Business Intelligence Report
  - Technical Documentation
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## **SKILLS DEMONSTRATED**

### **Technical Skills:**

- Power BI Development Data
- Modeling (Star Schema)
- DAX Formula Creation
- Power Query/ETL
- Data Visualization

### **Business Skills:**

- Hospitality Domain Knowledge
- Revenue Management
- KPI Definition & Tracking
- Business Intelligence
- Stakeholder Communication

## **Analytical Skills:**

- Trend Analysis
  - Performance Benchmarking
  - Root Cause Analysis
  - Predictive Insights
  - Data Storytelling
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## **USAGE GUIDE**

**For Recruiters:** This project demonstrates end-to-end BI capabilities including data engineering, advanced analytics, and business acumen in the hospitality domain.

### **For Stakeholders:**

1. Open the dashboard
  2. Select filters (City/Room Class/Week)
  3. Review executive summary cards
  4. Drill into property-level details
  5. Export insights as needed
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## **APPENDIX**

### **Data Dictionary**

#### **Revenue Realized Logic:**

- Cancelled: 40% deducted, 60% refunded
- Checked Out: 100% realized
- No Show: 100% realized

#### **Industry Definitions:**

- **ADR:** Average Daily Rate (revenue per room sold)
- **RevPAR:** Revenue Per Available Room
- **Occupancy:** Rooms sold / Rooms available

- **DBRN:** Daily Booked Room Nights
  - **DSRN:** Daily Sellable Room Nights
  - **DURN:** Daily Utilized Room Nights
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**Project Status:**  Production Ready

**Version:** 1.0

**Last Updated:** December 2024

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*This project showcases the ability to transform raw hospitality data into actionable business intelligence, driving strategic decisions for revenue optimization and market share recovery.*