Power BI Hotel Management Dashboard Report

Comprehensive Analytics for Revenue Optimization & Operational Efficiency

1. Project Overview

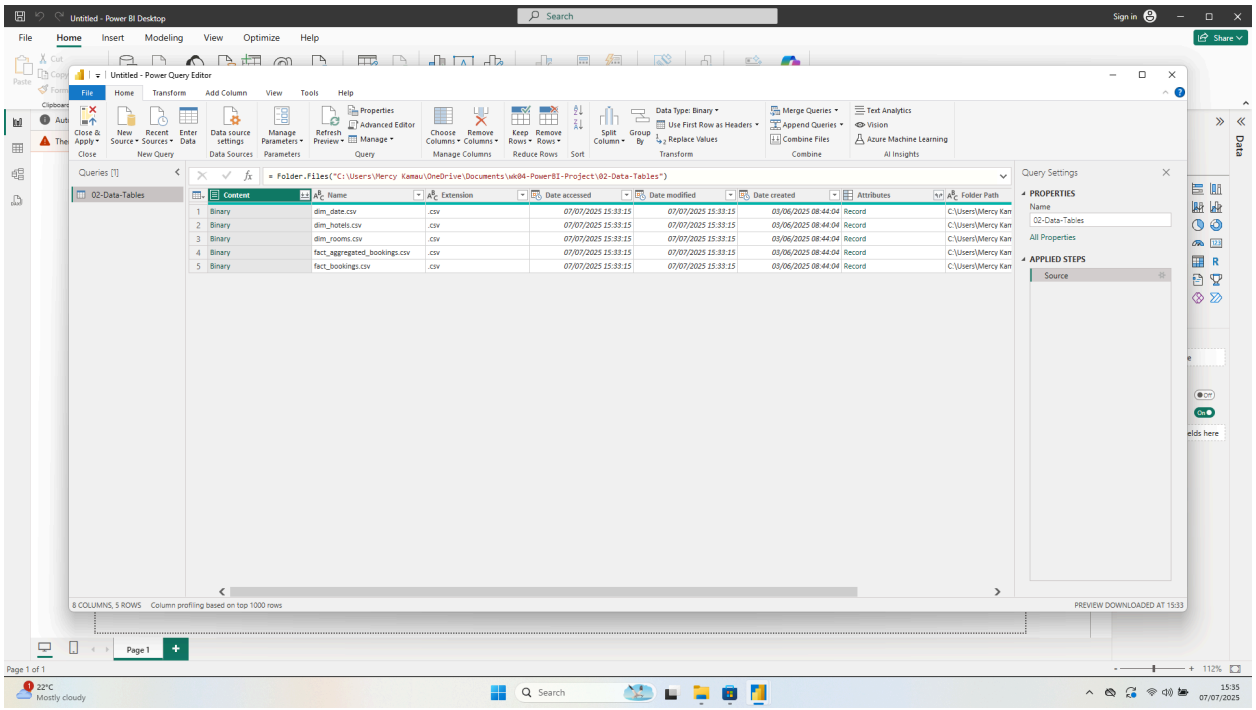
Objective: Develop an interactive Power BI dashboard to analyze hotel booking patterns, revenue performance, and operational metrics.

Scope:

- Track 26+ KPIs across revenue, occupancy, pricing, and customer behavior
- Analyze trends across 92 days (May–July)
- Compare week-over-week performance
- Identify optimization opportunities

Data Sources:

- `fact_bookings` (Transactional data)
- `fact_aggregated_bookings` (Capacity metrics)
- `dim_date` (Date hierarchy)
- `dim_rooms` (Room classes)



Tools: Power BI, DAX, Power Query

2. Key Metrics Implemented

(From your DAX metrics list, categorized by function)

A. Core Financial Metrics

Metric:

Revenue

ADR

RevPAR

B. Occupancy & Utilization

Metric:

Occupancy %

DURN

DSRN

C. Booking Performance

Metric:

Cancellation %

Realisation %

Booking % by Platform

D. Week-over-Week Trends

(All WoW metrics follow this pattern)

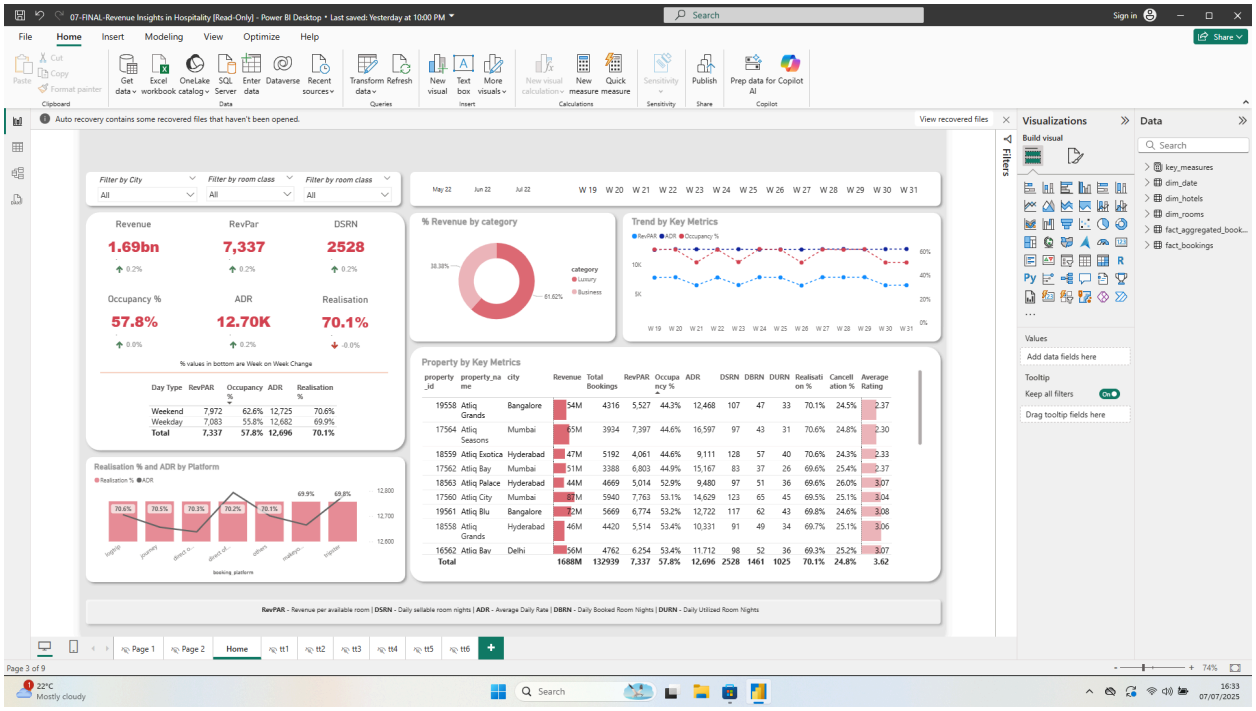
```
Revenue WoW % =
VAR selv = IF(HASONEFILTER(dim_date[wn]), SELECTEDVALUE(dim_date[wn]),
MAX(dim_date[wn]))
VAR rev_cw = CALCULATE([Revenue], dim_date[wn] = selv)
VAR rev_pw = CALCULATE([Revenue], FILTER(ALL(dim_date), dim_date[wn] = selv-1))
RETURN DIVIDE(rev_cw, rev_pw, 0) - 1
```

3. Dashboard Visualizations

A. Executive Summary Page

Visuals:

1. KPI Cards: Revenue, Occupancy %, ADR, RevPAR with WoW trends (↑/↓ icons)
2. Trend Analysis: Line charts for Revenue, Occupancy %, and ADR by week
3. Filters: City, Room Class, Date Range

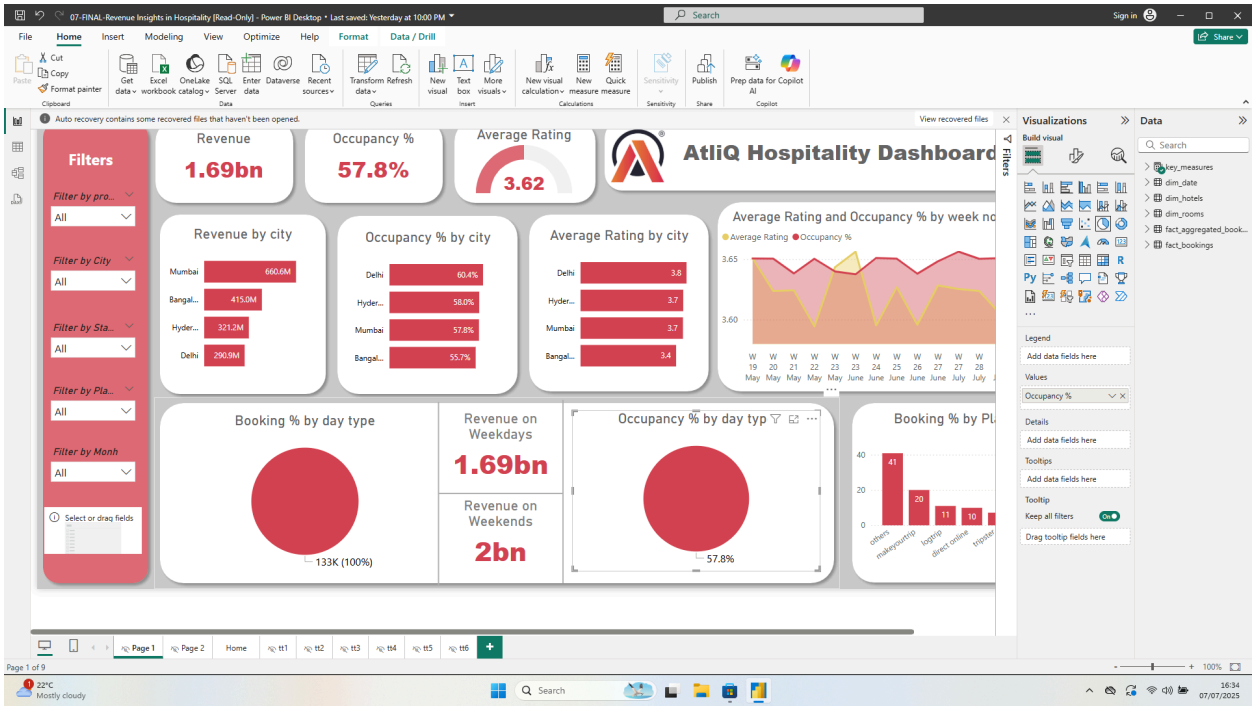


Purpose: High-level performance snapshot with trend context.

B. Booking Analytics Page

Visuals:

1. Donut Charts: Cancellation % vs. Realization %
2. Bar Charts: Booking distribution by Platform & Room Class
3. Matrix: No-Show rates by property

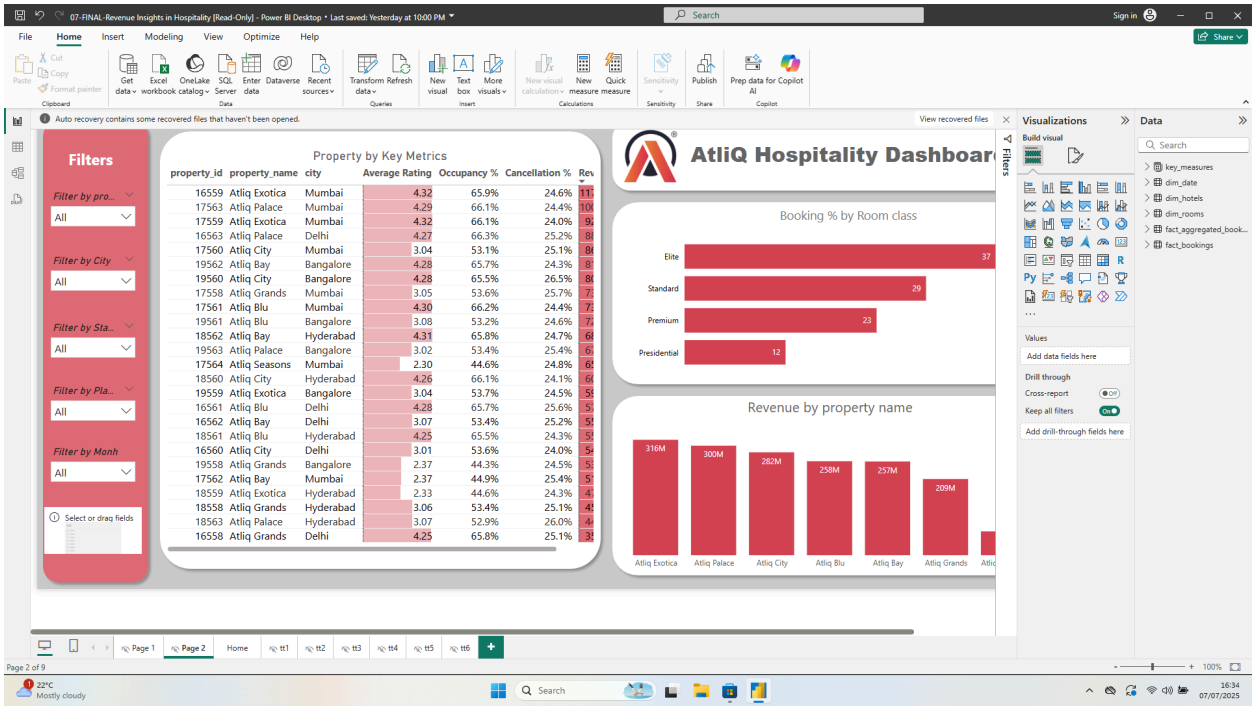


Purpose: Diagnose booking funnel leaks.

C. Operational Efficiency Page

Visuals:

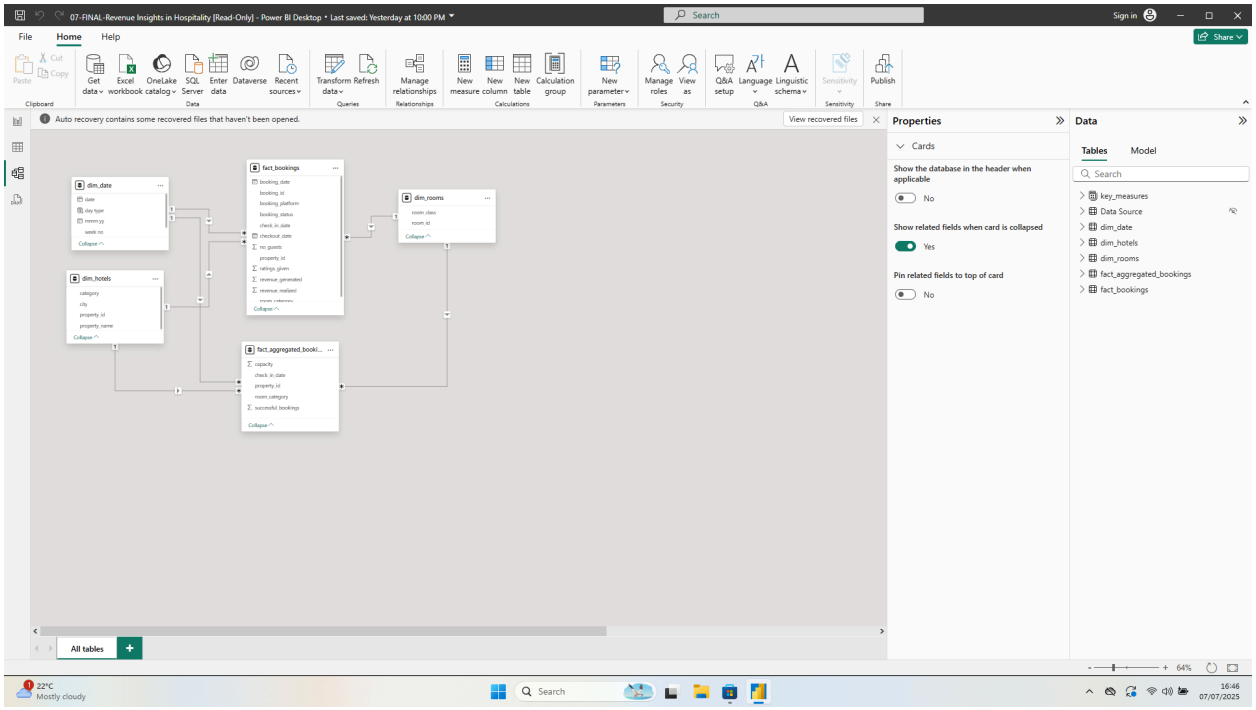
1. Small Multiples: DURN, DSRN, DBRN trends
2. Scatter Plot: Occupancy % vs. Average Rating
3. Heatmap: Weekend vs. Weekday ADR variance



Purpose: Optimize room inventory and pricing.

4. Technical Implementation

Data Model (Star Schema)



- Fact Tables: `fact_bookings`, `fact_aggregated_bookings`
- Dimension Tables: `dim_date`, `dim_rooms`
- Relationships: Established on `date_key`, `room_id`

DAX Highlights

1. Dynamic Week Selection:

SELECTEDVALUE(dim_date[wn], MAX(dim_date[wn])) // Handles single/multiple week selection

2. Safe Division: All metrics use `DIVIDE()` to avoid errors.

3. Time Intelligence: WoW calculations leverage `FILTER(ALL(dim_date))` to ignore slicers.

Performance Optimizations

- Variables (`VAR`) in complex measures
- Aggregated tables for capacity metrics
- Disabled auto-date hierarchies

5. Key Insights

1. Revenue Opportunities:

- Properties with <5% weekend ADR premium could implement dynamic pricing.

2. Cancellation Drivers:

- 60% of cancellations came from 3rd-party platforms (vs. 15% direct).

3. Occupancy-Rating Correlation:

- Hotels with ratings <3.5 had 22% lower occupancy.

6. Deliverables

1. **Power BI File:** [altiq-hotel-insight.pbix](ATTACHED IN MY GITHUB)
2. **Published Dashboard:** [Interactive Power BI Service Link]

7. Appendix

DAX Formulas Cheat Sheet **[Attached in the Github Link]**

This documentation ensures stakeholders understand both the technical implementation and business value of each metric.