



Data Visualization Project

Kpi Dashboard for a hospitality client

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Business objective

- AtliQ is a company that owns multiple hotel chains across various cities of India
- The Managing director / CEO of AtliQ wants to incorporate 'Business and Data Intelligence' to identify and track the source of revenue for AtliQ hotels
- Hence, it is decided to develop a KPI Dashboard for AtliQ, using May-22 to July-22 data, which can help track its revenue sources and other relevant KPIs across various dimensions
- It'll help the management take strategic business decisions based on the insights generated from the dashboard

Problem statement / Project scope

- Identify the data sources pertaining to revenue management
- Clean and model the data as per requirement for analysis
- Create a revenue dashboard that measures important KPIs
- Relevant filters need to be provided to slice and dice the data
- The dashboard should depict both high level and granular insights

Solution approach

- There are 5 tables provided for tracking revenue, 3 dimension tables (date, hotel, room) and 2 fact tables (bookings, aggregated bookings)
- Power BI was the tool used for creating the visualization/dashboard
- The data was imported, analysed and transformed as per necessity within Power Query
- The relationships between the tables were created within Power Pivot

Data cleaning/transformation in Power Query

Dashboard

File

Home

Transform

Add Column

View

Tools

Help

Close & Apply

New Source

Recent Sources

Enter Data

Data source settings

Manage Parameters

Refresh Preview

Advanced Editor

Properties

Manage

Choose Columns

Remove Columns

Keep Rows

Remove Rows

Sort

Split Column

Group By

Replace Values

Data Type: Whole Number

Use First Row as Headers

Merge Queries

Append Queries

Combine Files

Text Analytics

Vision

Azure Machine Learning

Queries [6]

dim_date

dim_hotels

dim_rooms

fact_aggregated_bookings

fact_bookings

Key_measures

123

property_id

check_in_date

room_category

123

successful_bookings

123

capacity

1	16559	01-05-2022	RT1	25
2	19562	01-05-2022	RT1	28
3	19563	01-05-2022	RT1	23
4	17558	01-05-2022	RT1	13
5	16558	01-05-2022	RT1	18
6	17560	01-05-2022	RT1	28
7	19558	01-05-2022	RT1	25
8	19560	01-05-2022	RT1	23
9	17561	01-05-2022	RT1	22
10	16560	01-05-2022	RT1	24
11	16561	01-05-2022	RT1	16
12	16562	01-05-2022	RT1	20
13	16563	01-05-2022	RT1	36
14	17559	01-05-2022	RT1	26
15	17562	01-05-2022	RT1	12
16	17563	01-05-2022	RT1	21
17	18558	01-05-2022	RT1	11
18	18559	01-05-2022	RT1	29
19	18561	01-05-2022	RT1	31
20	18562	01-05-2022	RT1	34
21	18563	01-05-2022	RT1	18
22	19559	01-05-2022	RT1	18
23	19561	01-05-2022	RT1	25
24	17564	01-05-2022	RT1	9

fx

= Table.TransformColumnTypes("#Promoted Headers",{{"property_id", Int64.Type}, {"check_in_date",

Query Settings

PROPERTIES

Name

fact_aggregated_bookings

All Properties

APPLIED STEPS

Source

Navigation

Imported CSV

Promoted Headers

Changed Type

5 COLUMNS, 999+ ROWS

Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 02:37 PM

Data modelling in Power Pivot

Dashboard • Last saved: 2/8/2024 at 4:17 PM Search vikas.paliwal319@novypro.com

File Home Help

New measure New column New table

Share

dim_date

- date
- Day type
- mmm yy

fact_bookings

- booking_date
- booking_id
- booking_platform
- booking_status
- check_in_date
- checkout_date
- no_guests
- property_id
- ratings_given
- revenue_generated
- revenue_realized
- room_category

fact_aggregated_bookings

- capacity
- check_in_date
- property_id
- room_category
- successful_bookings

dim_rooms

- room_class
- room_id

dim_hotels

- category
- city
- property_id
- property_name

Key_measures

- ADR
- ADR WoW change %
- Average Rating
- Booking % by Platform
- Booking % by Room class
- Cancellation %
- change icon
- DBRN
- DSRN
- DSRN WoW change %
- DURN
- No of days
- No Show rate %
- Occupancy %
- Occupancy WoW change %
- Realisation %
- Realisation WoW change %
- Revenue
- Revenue WoW change %
- RevPAR
- Revpar WoW change %
- Total Bookings
- Total cancelled bookings
- Total Capacity
- Total Checked Out
- Total no show bookings
- Total Successful Bookings

All tables +

62%

Solution approach

A few measures were created to calculate the KPIs as shown below:

- **Revenue** = Sum of revenue_realized from Bookings table (in Rs.)
- **Total bookings** = Count of booking_id from Bookings table
- **Avg rating** = Average of ratings from Bookings table
- **Total capacity** = Sum of capacity from Aggregated bookings table
- **Total successful bookings** = Sum of successful bookings from Aggregated bookings table

Solution approach

A few measures were created to measure the KPIs as shown below:

- **Occupancy rate** = Total successful bookings / Total capacity (in %)
- **Total cancelled bookings** = Count of booking_id with status='cancelled' from Bookings table
- **Cancellation rate** = Total cancelled bookings / Total bookings (in %)
- **Total Checked Out** = Count of booking_id with status='checked out' from Bookings table

Revenue Dashboard



Filter by City: All
Filter by Room class: All
Filter by Property: All

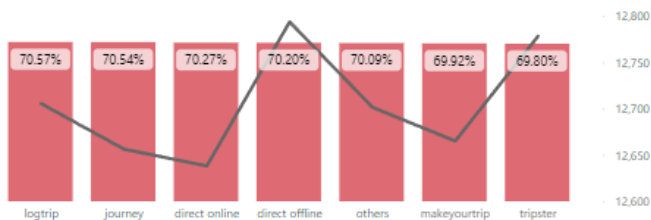
Revenue: **1.69bn** (0.20%)
RevPar: **7.34K** (0.20%)
DSRN: **2.53K** (0.00%)
Occupancy %: **57.8%** (0.01%)
ADR: **12.70K** (0.19%)
Realisation %: **70.1%** (-0.03%)

% values in bottom are Week on Week Change

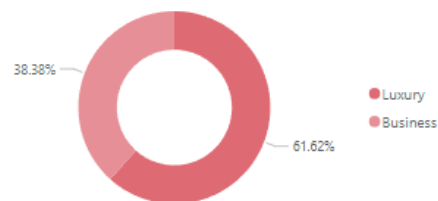
Day type	RevPAR	Occupancy %	ADR	Realisation %
Weekday	7,083	55.85%	12,682	69.94%
Weekend	7,972	62.64%	12,725	70.59%
Total	7,337	57.79%	12,696	70.14%

Realisation % and ADR by Platform

Realisation % ADR

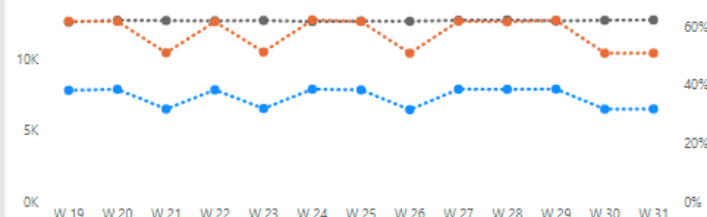


% Revenue by category



Trend by Key Metrics

RevPAR ADR Occupancy %



Property by Key Metrics

property_id	property_name	city	Revenue	Total Bookings	RevPAR	Occupancy %	ADR	DSRN	DBRN	DURN	Realisation %	Cancellation %	Average Rating
16558	Atliq Grands	Delhi	36M	3114	7,525	65.81%	11,436	52	34	24	70.01%	25.08%	4.25
16559	Atliq Exotica	Mumbai	117M	7251	10,629	65.85%	16,141	121	80	56	70.39%	24.63%	4.32
16560	Atliq City	Delhi	54M	4635	6,281	53.61%	11,714	95	51	36	71.20%	24.03%	3.01
16561	Atliq Blu	Delhi	57M	4362	8,612	65.66%	13,115	73	48	33	69.85%	25.56%	4.28
16562	Atliq Bay	Delhi	56M	4762	6,254	53.40%	11,712	98	52	36	69.34%	25.24%	3.07
16563	Atliq Palace	Delhi	88M	7054	8,269	66.25%	12,480	117	78	54	70.02%	25.19%	4.27
17558	Atliq Grands	Mumbai	74M	4975	7,953	53.60%	14,839	102	55	38	69.91%	25.67%	3.05
17559	Atliq Exotica	Mumbai	93M	6074	10,107	66.09%	15,293	101	67	47	70.81%	24.04%	4.32
17560	Atliq City	Mumbai	87M	5940	7,763	53.07%	14,629	123	65	45	69.51%	25.12%	3.04
17561	Atliq Blu	Mumbai	73M	5120	9,447	66.19%	14,271	85	56	39	70.14%	24.41%	4.30
17562	Atliq Bay	Mumbai	51M	3388	6,803	44.86%	15,167	83	37	26	69.60%	25.44%	2.37
17563	Atliq	Mumbai	100M	6259	10,592	66.13%	16,016	104	69	49	70.67%	24.38%	4.29
Total			1688M	132939	7,337	57.79%	12,696	2,528	1,461	1,025	70.14%	24.84%	3.62



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

Features of the dashboard

The following 4 visuals were provided:

- **Revenue by category** = The donut chart displays the revenue in the luxury/business hotels category
- **Trend by key metrics** = The line chart illustrates the percentage of rooms occupied, RevPAR, and ADR on weekly basis
- **Realisation % and ADR by platform** = The combined line and clustered column chart present the percentage of realized revenue and ADR.
- **KPI table** = A matrix visual (pivot table) showcases various KPIs across different properties

Features of the dashboard

- A bunch of card visuals were placed to show the values of important KPIs
- The following filters were provided to slice and dice the data:
 - City
 - Room class
 - Properties
 - Month
 - week
- The theme of the dashboard is based on the logo of the company
- The visuals are interactive in nature
- Tooltips pop-up when hovering over a visual for more information about the data point

**Important business insights
derived from the
Revenue Dashboard**

Cities in Focus: Revealing Revenue, Occupancy, and Ratings in Mumbai, Hyderabad, Bangalore and Delhi

	Mumbai	Hyderabad	Bangalore	Delhi
Revenue (M)	660.64	321.17	415.03	290.92
Occupancy(%)	58.0	57.8	55.7	60.4
Rating (1-5)	3.65	3.66	3.41	3.78

- **Mumbai** generate the highest revenue (**660M**) followed by Bangalore, Hyderabad and Delhi.
- **Delhi** topped both in occupancy and rating followed by Hyderabad, Mumbai and Bangalore.

Properties in Focus: Revealing Revenue, Occupancy, and Ratings in different properties

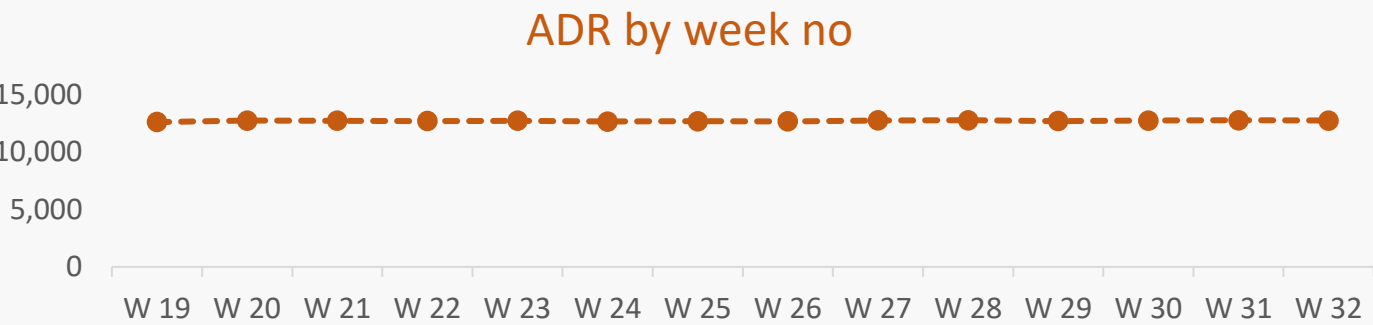
	Revenue (M)	Occupancy (%)	Rating (1-5)
Atliq Bay	256.96	58.3	3.71
Atliq Blu	257.70	61.9	3.96
Atliq City	282.15	59.4	3.69
Atliq Exotica	316.47	57.2	3.62
Atliq Grands	208.91	52.5	3.10
Atliq Palace	300.29	59.9	3.75
Atliq Seasons	65.29	44.6	2.30

- **Atliq Blu** has the highest occupancy of **61.9 %** and rating of **3.96** .
- **Atliq Exotica** perform better compare all 7 types of property with **316.47 M** revenue.

Day Type in Focus: Revealing RevPAR, Occupancy, ADR, and Realisation in Weekday and Weekend

	Weekdays	Weekends
RevPAR	7083	7972
Occupancy %	55.85	62.64
ADR	12682	12725
Realisation %	69.94	70.59

- The **occupancy rate** is higher during weekends across all cities, months and booking platforms. Leverage this insight to increase revenue generated during weekends.
- The **ADR** is almost equal in both weekdays and weekends.



Conclusion

- A revenue dashboard was built for AtliQ hotels depicting its various KPIs visually
- Relevant filters along with tooltips and interactions was provided in the dashboard
- This dashboard can be used for both high-level and in-depth analysis of KPIs across various dimensions

Thank you!