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| IE 6600: ATLIQ GROUP HOSPITALITY DASHBOARD TABLEAU PROJECT REPORT |  |
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|  | Rida Khan (002804008)Prof: Qurat-ul-Ain Azim |

### INTRODUCTION AND KEY CONSIDERATIONS

#### This project report consists of the initial brainstorming and questions that were chosen to build the dashboard for **hospitality** data on Tableau.

#### Please note that the dataset selected for the sake of this project was obtained through an online [codebasics data analytics](https://codebasics.io/challenge/codebasics-resume-project-challenge/4) portfolio building challenge.

### UNDERSTANDING THE DATA

The data acquired from codebasics consisted of 5 csv files that were easy to process since they were clean:

1. dim\_date

2. dim\_hotels

3. dim\_rooms

4. fact\_aggregated\_bookings

5. fact\_bookings

Each of the above files contained information about hotel properties under the ATLIQ company based in 5 different Indian cities.

After joining the data to use it appropriately in tableau, as highlighted below, there were over 20 columns in the final dataset:

1. **Join dim\_date with fact\_aggregated\_bookings:**
   1. Join on date in dim\_date and check\_in\_date in fact\_aggregated\_bookings.
2. **Join dim\_hotels with fact\_aggregated\_bookings and dim\_rooms:**
   1. Join dim\_hotels with fact\_aggregated\_bookings on property\_id.
   2. Join dim\_rooms with fact\_aggregated\_bookings on room\_category.
3. **Join fact\_bookings with dim\_hotels and dim\_rooms:**
   1. Join fact\_bookings with dim\_hotels on property\_id.
   2. Join fact\_bookings with dim\_rooms on room\_category.

At this point of exploring the data, it was apparent that the questions that could be answered would fall under the following 8 spheres – booking trends over time, customer behavior, booking platform performance, net revenue generation, occupancy insights, room performance, cancellation insights and geographical analysis. These were then elaborated upon through various visuals within the interactive dashboard.

### CREATING CALCULATED FIELDS

As per the requirements of the project, the following three calculated fields were created to provide more comprehensive visual insights in the dashboard:

1. **Net Revenue:** This was calculated based on the revenue\_realized and revenue\_generated fields by subtracting them. Moreover, for the sake of authenticity, there was an extra 40% deduction of revenue\_generated for possible cancellation deductions.  
     
   FORMULA: [revenue\_realized] – ([revenue\_generated] \* 0.4)
2. **Occupancy Rate:** This field was created to understand the efficiency of hotel room usage and utilised the no guests and capacity fields to generate its value.   
     
   FORMULA: SUM([No Guests]) / SUM([Capacity])
3. **Booking Time:** The calculation of this field highlighted the number of days that a potential customer had to wait between booking a room and checking into it and it used the booking\_date and check\_in\_date fields.  
     
   FORMULA: ABS(DATEDIFF('day', [Check In Date (Fact Bookings.Csv)],[Booking Date] ,'SUNDAY'))

### IMPLEMENTING A HIERARCHY

The guidelines for this project stated utilizing a drilldown functionality and this was implemented by creating a category hierarchy that showed room category at level 1 indicating whether the booking was for a business or luxury hotel. This drilled down to level 2 which indicated what was the room class that was chosen within the hotel category, indicating if it was standard, premium, elite, or presidential. Finally, this further drilled down to the property itself on level 3, highlighting all the relevant ATLIQ properties – Bay, Blu, City, Exotica, Grande, Palace, or Seasons.

### ASKING THE RIGHT QUESTIONS

**Booking Trends:**

Q: What are the Booking Trends over the week?

A: The line chart shows us that bookings peak on Sunday and Friday with considerable dips on Monday and Saturday. However, at any given day, the number of bookings is always over 1.2 Million ranging between 1930 and 2023.

**Revenue Analysis:**

Q: How does the Net Revenue vary across the different cities that ATLIQ hotels are situated in?

A: We can infer from the box plot that the net revenue has a wide distribution in Bengaluru and Delhi, a narrower distribution In Hyderabad, and is a lot more concentrated in Mumbai. There seem to be outliers in Bengaluru and Delhi as well. The median values of revenue range from just over 13 thousand rupees in Mumbai to nearly 8 thousand rupees in Hyderabad.

**Occupancy Insights:**

Q: What is the cumulative occupancy rate for different room classes?

A: The Presidential room class has the highest occupancy rate, followed by Premium and Standard. The Elite room class has the least occupancy rate for all properties combined. The highest of the properties being the ATLIQ BLU presidential room at 0.2938% while the lowest is the ATLIQ Palace elite room at 0.0396%.

**Geographical Patterns:**

Q: Which cities have the highest concentration of bookings?

A: As per the choropleth distribution it is evident that the highest frequency of bookings is in Mumbai (3.2M) while the least is in Delhi (1.7M). Bengaluru (2.3M) and Hyderabad (2.5M) seem to be having a similar concentration with Hyderabad showing a slightly higher frequency of bookings in comparison.

**Customer Behavior:**

Q: Do customers who book earlier and have a longer booking time till check in, tend to give higher ratings?

A: As per the continuous line chart, it is evident that there is a relationship between a higher waiting time and a higher rating. A higher wait time has resulted in a higher rating for relatively more people, this could potentially indicate that these are recurrent, loyal customers.

**Cancellation Analysis:**

Q: How many bookings result in cancellations over the 1930-to-2023-time span?

A: The tabular distribution indicates that most bookings are successful (94.4 thousand), while around 33.4 thousand resulted in cancellations. However, this is a decent split over the long, time span and indicates that the ATLIQ group has been quite successful.

**Room Class Performance:**

Q: Which room class contributes the most to revenue?

A: The Presidential room class’s ATLIQ seasons generates the highest net revenue (15.3 thousand rupees).

**Platform Comparison:**

Q: How do the average ratings given by customers differ across booking platforms and properties?

A: The average ratings across booking platforms show some variation for the properties listed. Here's a breakdown of the insights from the chart:

* "Journey" and "Logtrip" platforms have relatively consistent ratings across properties, with some properties receiving slightly higher average ratings.
* "MakeYourTrip" shows more variation in average ratings between properties.
* The "Offline" platform tends to have lower average ratings for most properties compared to online platforms.
* The "Online" platform shows a mix of high and low average ratings, depending on the property.
* "Others" and "Tripster" platforms have a general trend of lower average ratings across the properties shown.

### CONCLUSION

This project was quite insightful and allowed me to apply my in-class learnings to a relevant business case – hospitality management. A Blue grey color scheme was followed throughout the project with implementing joins, creating calculated fields, using a variety of visuals, labels, interactive filters, and hierarchical functionality as well.

Please find the link to the tableau public dashboard [here](https://prod-ca-a.online.tableau.com/t/ridakneu/views/ATLIQGROUPHOSPITALITYDASHBOARD/HospitalityInsightsDashboardUnveilingRevenuePatternsCustomerBehaviorandPlatformDynamics/7837dffd-1849-4c58-91f4-58f61a75544f/2e731c9a-cbb3-425f-966e-f72113d61fb6).

A screenshot of a computer screen

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