

Capstone Project Submission

Summary and its components.

Hotel Booking sector is a customer oriented sector and highly competitive market so to be in a profitable & sustainable in market various factors help us to observe Market trend and analyze the data to discover important factors that govern the Hotel bookings

Data preparation:

➤ **Import & load data**

➤ **Data Inspection :**

Checking above factors

- shape of data i.e. rows & columns
- Features present
- Top, Bottom rows
- Statistical information of Numerical data : Mean, Mode, Median etc
- Data types & Null values of features

➤ **Data cleaning:**

1) **Treating Null Value:**

- find out Percentage of Null values in every column
- plot heatmap of missing data for visualization
- Drop columns containing 96% of missing data
- Replace Null values by 0 in Numerical data
- Replace Null values by 'others' in categorical data

2) **Handling Duplicates:**

Find & drop duplicates.

3) **Treating of Outliers:**

Outliers detection by boxplot data point that is located outside the whiskers treated as outliers and removed for better predictions

Data Analysis on below factors:

- Which one is preferred Hotel type , cancellation rate among them
- Maximum Guest Coming from which category of customers
- Peak season Arrival Monthly basis
- Yearly arrival
- Best time of Year to Book hotel
- Optimal length of stay
- Relation of Booking cancellation with Deposit type , Repeated Guests
- Repeated Guest percentage & their pattern of arrival
- Special Request : Monthly & by different category of guest
- Market Capture : in market segment & distribution channel
- Preferred Meal type , Room type
- Top 10 country visitors

Conclusion:

- City hotel is highly preferred 61% but also has more cancellation rate
- Most of the customers are from Transient type
- Average daily rate increases when demand increases (peak season :Aug ,July) & drops as demand decreases
- one can do advance booking of when prices are down i.e. before July
- To get **resort hotels** at **least price** less than 60 adr one can book in **November , January**
- Highest market captured by: Travel agents & Tour operators
- hotels are likely to receive high special requests in peak months like August , July
- Highest special requests seen by adults in pair.
- **Most of the visitors** from western European countries like Portugal,United Kingdom , France, Spain. More capital can be invested in these areas.
- 4% of repeatedguests,they are less likely to cancel bookings.
- Repeated Guests are aware about increasing & decreasing adr pattern with respect to peak season(demand) as their arrival seen high when adr drops.

Team Member's Name, Email and Contribution:

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Contribution:

- Import & load data
- Data Inspection
- Treating Null Value
- Handling Duplicates
- Handling Outliers

Data visualization:

- Heatmap
- Most preferred Hotel type
- Sector from which maximum customer arrival
- Hotel wise cancelled & confirmed Bookings
- Monthly , Yearly arrival rate of customer
- ADR variation within month of year
- Monthly ADR variation by Hotel type
- Optimal length of stay
- Booking Cancellation with Deposit Type
- Booking cancellation by repeated guest
- Percentage of repeated & Non repeated Guest
- Repeated Guest Non repeated guest pattern of arrival
- Special Request according to month
- Market capture in Market segment & distribution channel
- Most popular meal type preferred in Hotel
- Most preferred Room Type
- Customers from Top 10 country

GitHubRepolink:

<https://github.com/yuktash/Hotel-Booking-Analysis>