

Hotel Booking Data Analysis

Project Overview

Motivation	To derive insights into booking behaviours and trends in the hotel industry
Objectives	Identify hotel booking patterns, identify different customer profiles & high-value customer, geographical analysis to understand regional preferences or trends and identify hotel ratings and their impact on bookings
Scope	66,541 International hotel booking records from 2010 -2019, collected from Customers/Travellers of 7 South-East Asian countries (Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand & Vietnam)

Data Overview

Data source	Kaggle is the source of this data set. The author has originally obtained this data set from DatAfrik which is an educational institute in Lagos. Link to data set: Hotel Bookings Data
Data collection	According to the Kaggle author, DatAfrik Institute has collected these data set from a company who help international travellers around the world to secure hotels in destination countries
Content of Dataset	Hotel booking dataset contains data on hotel bookings January 1st, 2010 , to December 31st, 2019 , including details such as booking ID, date of booking, customer demographics (gender, age), origin and destination countries, check-in/out dates, room details, hotel name and rating, payment methods, booking price, discounts, and profit margins
Limitations of Dataset	Due to privacy limitations the original source of data is not available. Also certain criteria within the data are difficult to recognize. As an example, it's unclear whether the hotel rating in the dataset is based on a scale of 5 or 10.
Relevance	This dataset meets all requested requirements of Achievement 6

Data Profiles

<i>Data Variable</i>	<i>Time-variant / -invariant</i>	<i>Structured / Unstructured</i>	<i>Qualitative / Quantitative</i>	<i>Qualitative: (Nominal / Ordinal)</i> <i>Quantitative: (Discrete / Continuous)</i>
<i>Booking ID</i>	Time invariant	Structured	Qualitative	Ordinal
<i>Date of Booking</i>	Time variant	Structured	Quantitative	Continuous
<i>Time</i>	Time variant	Structured	Quantitative	Continuous
<i>Customer id</i>	Time invariant	Structured	Qualitative	Ordinal
<i>Gender</i>	Time invariant	Structured	Qualitative	Nominal
<i>Age</i>	Time variant	Structured	Quantitative	Continuous
<i>Origin country</i>	Time invariant	Structured	Qualitative	Nominal
<i>State</i>	Time invariant	Structured	Qualitative	Nominal
<i>Destination country</i>	Time invariant	Structured	Qualitative	Nominal
<i>Destination city</i>	Time invariant	Structured	Qualitative	Nominal
<i>No of people</i>	Time invariant	Structured	Quantitative	Discrete
<i>No of days</i>	Time variant	Structured	Quantitative	Discrete
<i>No of rooms</i>	Time invariant	Structured	Quantitative	Discrete
<i>Hotel name</i>	Time invariant	Structured	Qualitative	Nominal
<i>Hotel rating</i>	Time invariant	Structured	Quantitative	Discrete
<i>Payment mode</i>	Time invariant	Structured	Qualitative	Nominal
<i>Bank name</i>	Time invariant	Structured	Qualitative	Nominal
<i>Booking price (SGD/S\$)</i>	Time invariant	Structured	Quantitative	Discrete
<i>Discount</i>	Time invariant	Structured	Quantitative	Discrete
<i>Profit margin</i>	Time invariant	Structured	Quantitative	Discrete

Data Analysis Questions

<i>Booking Patterns and Trends</i>	<ul style="list-style-type: none"> ➤ What is the distribution of bookings over time (e.g., by month, day of the week)? ➤ Identify peak booking periods. ➤ Identify any seasonal trends in bookings.
<i>Customer Segmentation</i>	<ul style="list-style-type: none"> ➤ How to segment customers based on demographic variables such as age, gender, and origin country? ➤ What are the booking preferences of different customer segments. ➤ Identify high-value customers
<i>Geographical Analysis</i>	<ul style="list-style-type: none"> ➤ What is the distribution of bookings by origin and destination country/city. ➤ Identify popular destinations and origins. ➤ Are there any regional preferences or trends that can identify?
<i>Hotel Rating</i>	<ul style="list-style-type: none"> ➤ Is hotel ratings impact on bookings? ➤ Is there a relationship between hotel ratings and booking prices?