British Airways Passenger Satisfaction Analysis

Introduction

Customer satisfaction is a key performance indicator in the airline industry, as passenger experience directly affects brand perception and repeat business. British Airways receives passenger feedback covering multiple aspects such as cabin staff service, food quality, seat comfort, and overall experience.

This project focuses on analyzing British Airways passenger satisfaction data by performing data cleaning in Excel followed by interactive data visualization using Tableau. The goal of the project is to transform raw review data into meaningful insights that can support decision-making.

Project Objective

The main objectives of this project are:

- To clean and prepare raw passenger review data for analysis
- To analyze customer satisfaction across different service parameters
- To identify trends in passenger ratings over time
- To compare satisfaction across aircraft types, seat classes, and regions
- To build an interactive dashboard for exploratory analysis

Dataset Description

The dataset contains passenger reviews collected from multiple years.

Key fields included in the dataset:

Time-related

- Review Date

Rating-related

- Overall Rating

- Cabin Staff Service
- Entertainment
- Food & Beverages
- Ground Service
- Seat Comfort
- Value for Money

Customer & Flight Details

- Aircraft
- Seat Type
- Traveller Type
- Country

The dataset spans from **2016 to 2023** and contains both numerical and categorical data.

4. Data Cleaning & Preparation (Excel)

Before visualization, the dataset was cleaned and prepared in **Microsoft Excel** to ensure accuracy and consistency.

Steps performed in Excel:

1. **Header Standardization**
    - Verified column names and corrected inconsistencies
    - Ensured each column had a clear and meaningful header
2. **Removal of Blank & Irrelevant Rows**
    - Removed rows with missing or invalid rating values
    - Eliminated incomplete review records
3. **Date Formatting**
    - Converted the Review Date column into a consistent date format

- Ensured all dates were readable by Tableau

4. **Text Cleaning**
    - Trimmed extra spaces from text fields such as Aircraft, Country, and Seat Type
    - Standardized naming conventions (e.g., aircraft names)
5. **Data Validation**
    - Checked rating columns for out-of-range values
    - Ensured ratings followed the same numerical scale
6. **File Preparation**
    - Saved the cleaned dataset in CSV format for Tableau compatibility

This step ensured that the data used for analysis was **accurate, consistent, and analysis ready**.

5. Tools Used

- **Microsoft Excel** – Data cleaning and preparation
- **Tableau Public** – Data visualization and dashboard creation

Data Modelling in Tableau

After importing the cleaned dataset into Tableau:

- Verified data types (Date, Measure, Dimension)
- Converted rating columns into measures
- Created calculated fields for dynamic analysis
- Grouped aircraft types into meaningful categories

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The dashboard includes the following KPIs calculated using average values:

- Average Overall Rating
- Average Cabin Staff Service
- Average Entertainment
- Average Food & Beverages
- Average Ground Service
- Average Seat Comfort
- Average Value for Money

These KPIs provide a quick summary of customer satisfaction.

Parameter-Based Metric Selection

A parameter named “Pick a Metric” was created to allow users to dynamically switch between different service metrics such as:

- Overall Rating
- Cabin Staff Service
- Entertainment
- Food
- Ground Service
- Seat Comfort

This parameter controls multiple visuals simultaneously, improving flexibility and usability.

Rating Trend Over Time

A line chart was created to analyze satisfaction trends over time.

- X-axis: Review Date (Month / Year)
- Y-axis: Average Selected Metric

This visualization helps in identifying:

- Long-term trends
- Periods of improvement or decline
- Seasonal patterns in ratings

Geographic Analysis (Country-Level)

A filled map visualization displays the **average overall rating by country**.

This helps to:

- Compare passenger satisfaction across regions
- Identify high and low-performing countries
- Understand geographic patterns in customer experience

Aircraft Performance Analysis

A bar chart was used to analyze aircraft performance:

- Average Overall Rating by Aircraft
- Number of Reviews per Aircraft

Combining rating and review count ensures insights are reliable and not misleading.

Interactive Filters

The dashboard includes the following filters:

- Review Date (Range Slider)
- Seat Type
- Traveller Type
- Aircraft Group
- Continent

These filters allow users to explore the data from multiple perspectives.

Dashboard Design Approach

- Clean and minimal layout
- KPI section placed at the top for quick insights
- Filters grouped on the left panel
- Logical flow from summary to detailed analysis

Key Insights

- Passenger satisfaction varies across service categories
- Certain aircraft types consistently perform better
- Seat type has a noticeable impact on ratings
- Customer experience differs by region

Conclusion

This project demonstrates an end-to-end data analytics workflow, starting from data cleaning in Excel to interactive dashboard creation in Tableau. The final dashboard converts raw passenger reviews into actionable insights and supports effective analysis of customer satisfaction trends.