Problems and background

The primary objective of this project is to understand the factors influencing airline customer satisfaction, enabling the identification of key drivers of passenger contentment and dissatisfaction. Customer satisfaction is critical in the airline industry as it directly impacts customer loyalty, brand reputation, and overall profitability. Satisfied passengers are more likely to choose the same airline for future travel, recommend it to others, and contribute to a competitive edge in a highly dynamic market.

This project utilizes tools like **Tableau** and **Excel** to analyse passenger feedback, demographic data, and service ratings. The goal is to provide actionable insights that will guide the airline in enhancing customer experiences, improving service quality, and tailoring offerings to meet the diverse needs of passengers across various demographics and flight types. This, in turn, will strengthen customer retention and drive business growth.

Project scope

Analyze passenger satisfaction data to identify key factors impacting loyalty and dissatisfaction.

## Deliverables

1. **Segment Analysis**: Study satisfaction across flight lengths, demographics (age, gender), travel types, and classes.
2. **Loyalty & Satisfaction**: Distinguish between loyal and disloyal, as well as satisfied and dissatisfied passengers.
3. **Service Quality**: Evaluate average ratings for services like cleanliness, baggage handling, in-flight amenities, etc.
4. **Insights & Recommendations**: Provide actionable insights and strategies to enhance passenger satisfaction.

Stakeholders

* **Internal Teams**: Marketing department, customer service team, and operations.
* **Leadership**: Senior management and strategic planning team.
* **External Partners**: Data analysis consultants and IT support for data handling and integration.

Methodology

# Data Sources

* I utilized data sourced from **Kaggle** for my analysis.

**Data Preparation**

* **Data Understanding:** I reviewed the dataset’s structure, types, and relationships to understand its characteristics.
* **Data Cleaning:** I addressed missing values and resolved inconsistencies to ensure data quality.
* **Data Integration:** I merged and joined data from multiple sources to create a comprehensive dataset.
* **Data Transformation:** I manipulated and structured the data to make it analysis-ready.

**Data Analysis**

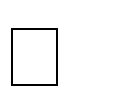
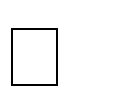
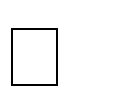
* I analyzed **trends and patterns**, such as age-specific satisfaction levels and the impact of flight types.
* I investigated the root causes of **customer loyalty** and **dissatisfaction** to uncover actionable insights.

**Data Visualization**

* I designed and built **interactive dashboards** in Tableau to effectively communicate key insights to stakeholders.

KPIs

## Total Passengers: 103,904



**Satisfied Passengers: 45,025**

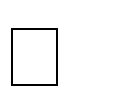
## Dissatisfied Passengers: 58,879 Customer Loyalty Breakdown:

* **Loyal Customers: 81.73%**

## Disloyal Customers: 18.27% Satisfaction by Flight Type:

* **Long Flights: 77.70% satisfied, 22.30% neutral or dissatisfied.**

## Medium Flights: 64.10% satisfied, 35.90% neutral or dissatisfied.

* **Short Flights: 33.51% satisfied, 66.49% neutral or dissatisfied. Age Group Distribution:**

## Distribution of satisfied and dissatisfied passengers across age groups, such as:

* + **Age 16-23: 5,173 satisfied, 3,655 neutral or dissatisfied.**

## Age 24-31: 7,834 satisfied, 6,153 neutral or dissatisfied.

* + **Other age ranges shown with respective satisfaction levels.**

Recommended Analysis:

**Overall Customer Satisfaction Distribution**

* Out of 103,904 total passengers, **45,025 (43.33%) are satisfied**, while **58,879 (56.67%) are dissatisfied**.
* Notably, **82% of passengers are from short flight distances**, where dissatisfaction is predominant.
* This highlights significant dissatisfaction among passengers, indicating areas for potential improvement.

**Customer Loyalty Analysis**

* A significant **81.73% of passengers are loyal**, while **18.27% are disloyal**.
* Among loyal customers, **53% are dissatisfied**, revealing that loyalty does not necessarily correlate with satisfaction.

**Flight Type Analysis**

* Satisfaction levels vary significantly across flight types:
  + **Long Flights:** 77.70% satisfied, 22.30% neutral or dissatisfied.
  + **Medium Flights:** 64.10% satisfied, 35.90% neutral or dissatisfied.
  + **Short Flights:** 33.51% satisfied, 66.49% neutral or dissatisfied.
* Short flights exhibit the **lowest satisfaction rates**, with issues linked to online booking, inflight services, and legroom consistently receiving the lowest ratings.

**Economic Class Analysis**

* Among passengers traveling in **economy class on short flights**, **80% are dissatisfied**.

**Personal Travel Analysis**

* Passengers traveling for personal reasons on short flights report **90% dissatisfaction**, despite all being loyal customers.
* Dissatisfaction is notably high among **female passengers**, who primarily report issues with legroom and inflight WiFi services.

**Age Group Satisfaction Analysis**

* Satisfaction and dissatisfaction vary across age groups:
  + Passengers aged **24-31** have high dissatisfaction rates (**7,834 satisfied vs. 6,153 dissatisfied or neutral**).
  + Age groups **40-47** and **48-55** show more balanced satisfaction levels.
* Insights from these demographics can guide targeted strategies to customize services for various age groups.

**Service Ratings and Improvement Areas**

* Average ratings highlight areas requiring attention:
  + **Cleanliness:** 3.7 (satisfied) vs. 2.9 (neutral/dissatisfied).
  + **Baggage Handling:** 4.0 (satisfied) vs. 3.4 (neutral/dissatisfied).
  + **Check-in Service:** 3.6 (satisfied) vs. 3.0 (neutral/dissatisfied).
* Notable low scores are seen in **legroom** and **inflight Wi-Fi service**, which are critical for improving overall satisfaction.

# Actions to be taken:

**1. Enhance Short-Flight Experience**

* Improve **legroom** and upgrade **inflight Wi-Fi**.
* Simplify **online booking** processes.
* Offer personalized perks for **personal travelers**, who report 90% dissatisfaction.

**2. Address Economy Class Issues**

* Enhance **seating comfort** and provide affordable add-ons (snacks, beverages).
* Focus on creating better **value perception** for economy passengers.

**3. Strengthen Loyalty Programs**

* Offer exclusive benefits like **lounge access** or **reward points** to loyal customers.
* Collect feedback from dissatisfied loyal customers and address their pain points.

**4. Improve Overall Service Quality**

* Enhance **cleanliness**, **baggage handling**, and **check-in services**.
* Invest in **digital kiosks** and faster check-in processes, especially for business passengers.

**5. Customize Services for Age Groups**

* Younger passengers: Provide **free Wi-Fi** and entertainment.
* Older passengers: Focus on **comfort** and **ease of boarding**.

**6. Address Female Passenger Concerns**

* Improve **legroom** and **Wi-Fi** specifically for personal travel.
* Conduct surveys to identify their unique pain points.

**7. Improve Feedback and Monitoring**

* Use **inflight surveys** and post-flight emails for real-time feedback.
* Track satisfaction KPIs and iteratively refine strategies.

# Project owner

Name: Devika Chatterjee Date: 5th November, 2024