<div align="center">**Enhancing Customer Satisfaction**</div>

Introduction

1.The purpose of this project is to analyze passenger satisfaction with airlines in terms of in-flight services, booking experiences, and timeliness. The project looks for patterns and trends in passenger input to find areas where the travel experience is strong and where it needs to be improved. Airlines may more effectively plan resource allocation to raise customer satisfaction levels by gaining a deeper understanding of customer needs through data-driven insights. The ultimate objectives are to maintain competitiveness in the aviation sector, develop client loyalty, and maximize the overall passenger experience.

2. About the dataset

- Link:data-airline-passenger-satisfaction

- The dataset includes data on airline passenger happiness. Airlines and industry experts can use this dataset to better understand passenger preferences, pinpoint areas for development, and raise ratings of customer satisfaction overall.

- Data Rows are 124987 and Data Columns are as follows: Age, Gender, Class, Flight Distance, Inflight Wi-Fi Service, Departure/Arrival Time Convenient, Ease of Online Booking, Food & Drink, Online Boarding, Seat Comfort, Inflight Entertainment, On-Board Service ,Leg Room Service, Baggage Handling, Check-In Service, Inflight Service, Departure Delay in Minutes, Arrival Delay in Minutes and Satisfaction

Analysis Methodology

- I used PowerBI tool for this project. It's a great tool from Microsoft that helps us analyze and visualize data. PowerBI is good at handling big sets of data. It has an easy-to-use interface that lets us make interactive dashboards. These dashboards make it easy to understand complicated analysis

- I have imported the dataset into PowerBI made preprocessing and cleaned the dataset. Added a satisfaction column. I have segregated the dataset into 3 dashboards to explain. For most of the visualizations I have used the basic visualizations, but I have tried to explore and add more creative features into my visualizations.

- Visualization 1: Count of satisfaction by class

  I have selected a Donut chart as it effectively represents the distribution of categorical data (satisfaction) across different categories (class), allowing for easy comparison of proportions within each category. I dragged the "Count of satisfaction" field to the values section of the chart, indicating that the chart should display the count of satisfaction responses. Additionally, I added the "Class" field as labels, ensuring that the donut segments are labeled according to the different classes. Donut chart's slices were formatted to represent different satisfaction levels, while class labels are added for easy identification.
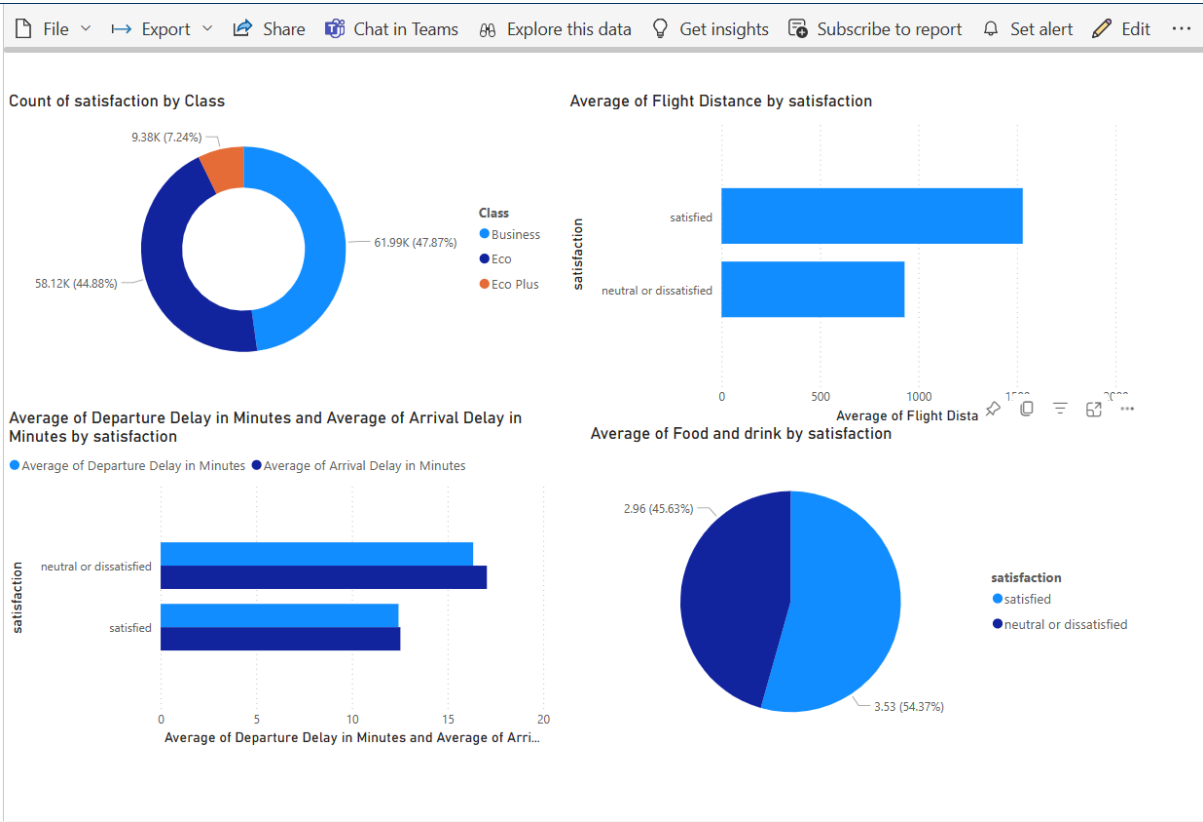

Count of satisfaction by Class
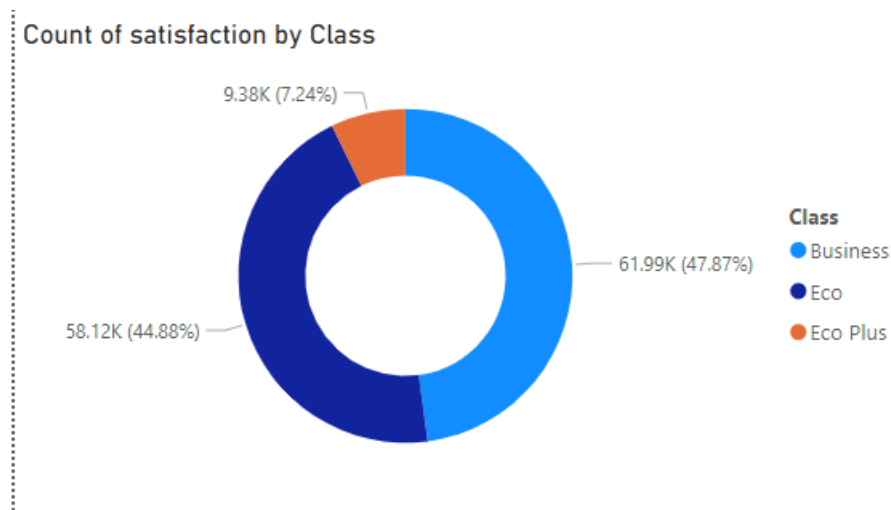
- Visualization 2: Average of flight distance by satisfaction

I selected a Clustered Bar chart, which is suitable for comparing multiple categories (satisfaction levels) across a continuous variable (average flight distance).I placed the "Average of flight distance" field on the X-axis to represent the continuous variable of flight distance. Then, I assigned the "Satisfaction" field to the Y-axis, indicating that the chart should display satisfaction levels as the categories. I ensured that the chart aggregated the flight distance values by averaging them for each satisfaction level, allowing for a clear comparison of average distances across satisfaction categories. I added appropriate axis labels and titles to clarify the chart's content and purpose.

Average of Flight Distance by satisfaction
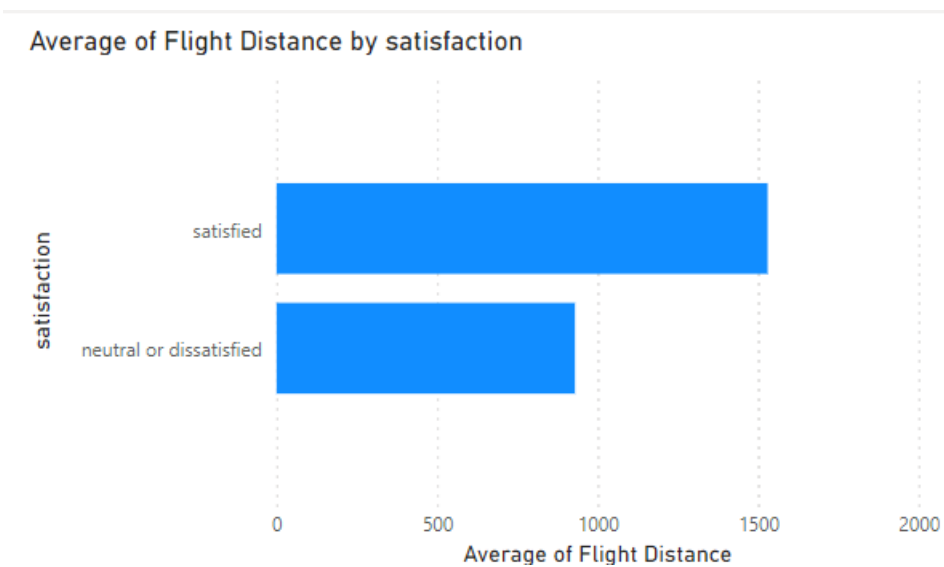
Dashboard 1: Passenger Satisfaction Analysis

Dashboard 2: Flight Experience Analysis

Dashboard 3: Travel Convenience Analysis

Checkin service and Baggage handling

Average of Leg room service by Class

3.06 (31.23%)
3.65 (37.26%)
3.08 (31.51%)

Class
- Business
- Eco
- Eco Plus

satisfaction, Departure Delay in Minutes and Online boarding

satisfaction ● neutral or dissatisfied ● satisfied

Average of Online boarding by satisfaction

Analysis Results:

Dashboard-1	
Positive Insights	**Negative Insights**
Passengers in higher classes (e.g., first class) tend to report higher satisfaction levels compared to those in lower classes, as indicated by the donut chart.	Longer flight distances are associated with lower satisfaction levels, potentially due to discomfort or fatigue from longer journeys.
Passengers with shorter flight distances generally have higher satisfaction levels, suggesting that shorter flights contribute to a more positive travel experience.	
Flights with minimal departure and arrival delays correlate with higher passenger satisfaction, as shown by the clustered bar chart.	
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Dashboard-2	
Positive Insights	**Negative Insights**
In-flight services such as Wi-Fi, entertainment, and on-board services receive generally high ratings, contributing to overall positive flight experiences.	A significant number of passengers report dissatisfaction with flight distance, potentially due to discomfort or inconvenience associated with longer journeys.
There's a clear correlation between departure delay and arrival delay, suggesting that airlines are able to manage delays effectively to minimize disruptions.	
Passengers who report higher satisfaction with seat comfort also tend to rate leg room satisfaction positively, indicating a holistic approach to comfort.	
Flights with higher satisfaction levels tend to cover longer distances, possibly indicating that passengers are more tolerant of longer flights when other aspects of the experience are satisfactory	

Dashboard-3	
Positive Insights	Negative Insights
Passengers who rate check-in services highly also tend to report high satisfaction with baggage handling, suggesting a seamless pre-flight experience.	A lack of correlation between online boarding satisfaction and departure delay may indicate that efficient boarding processes do not necessarily mitigate the impact of delays on passenger satisfaction.
Certain classes, such as first class, tend to offer higher levels of leg room service satisfaction, as indicated by the pie chart.	
Online boarding satisfaction is positively correlated with overall satisfaction, particularly when departure delays are minimal, as shown by the scatter chart.	
Flights with high online boarding satisfaction tend to have overall higher satisfaction levels, as depicted by the stacked area chart.	

Conclusion:

The analysis shows the value of first-rate services and comfort by showing that customers in higher class and those on shorter flights tend to be more satisfied. Although in-flight facilities are well-received, longer trip durations are associated with decreased levels of satisfaction, underscoring the need for increased comforst on longer flights. Overall satisfaction is positively impacted by effective pre-flight experiences, however there may be opportunities for operational improvement given the lack of a strong correlation between delays and online boarding satisfaction. In the end, airlines need to put first class services, passenger comfort, and operational effectiveness in order to raise satisfaction levels and increase customer loyalty in a market that is highly competitive.