

# **Airline Satisfaction**

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# Business Problem

Which factors contribute to customer satisfaction and dissatisfaction?

## Introduction:

- Airlines compete with each other to provide the best service.
- Keeping passengers happy is very important for their success.

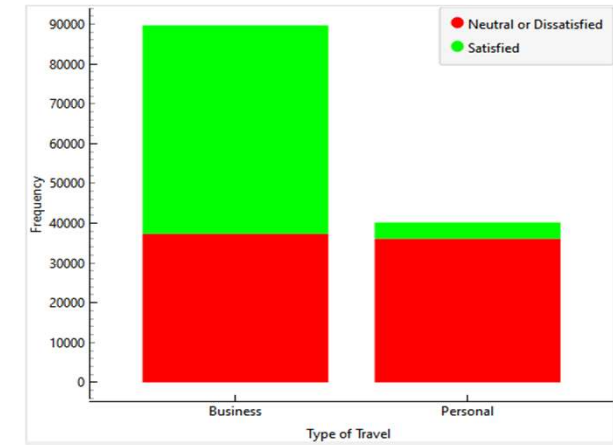
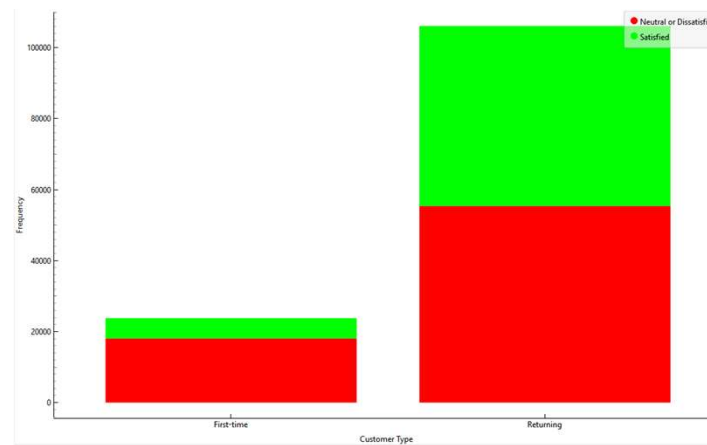
## Key Problems in Passenger Satisfaction and Dissatisfaction:

- Flight Delays – Passengers don't like waiting for long hours.
- Service Quality – Good staff behavior and clean planes matter a lot.
- Seat Comfort & Travel Class – Business class passengers may have a different experience than economy class passengers.
- Flight Distance & Purpose – Business and holiday travelers may have different needs.
- Loyal Customers vs. New Passengers – Some passengers fly often, while others travel rarely. Understanding them helps improve service.

## Why This Matters?

- Airlines can use this study to improve their service, increase customer satisfaction, and make better business decisions.
- Knowing what makes passengers happy can help airlines gain more loyal customers.

# Which percentage of airline passengers are satisfied? Does it vary by customer type? What about the kind of travel?



## Airline Passengers Satisfaction

- Less than half of the passengers (about 44%) are satisfied, while the majority (56%) are neutral or dissatisfied.
- More passengers had an average or bad experience rather than a good one.
- The difference between the two groups suggests that there's room for improvement in customer satisfaction.

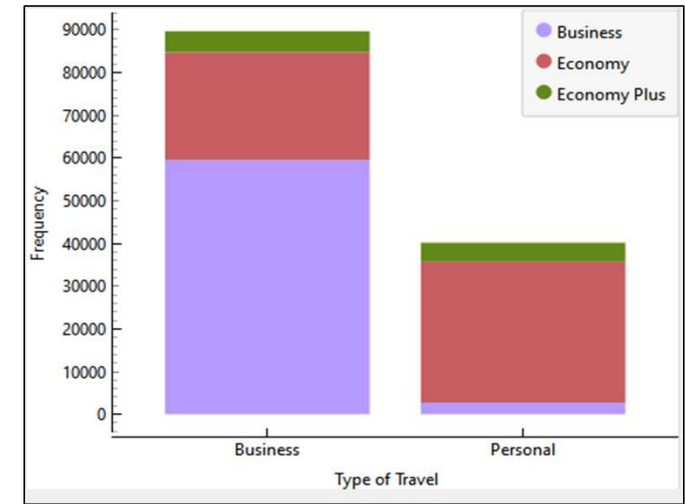
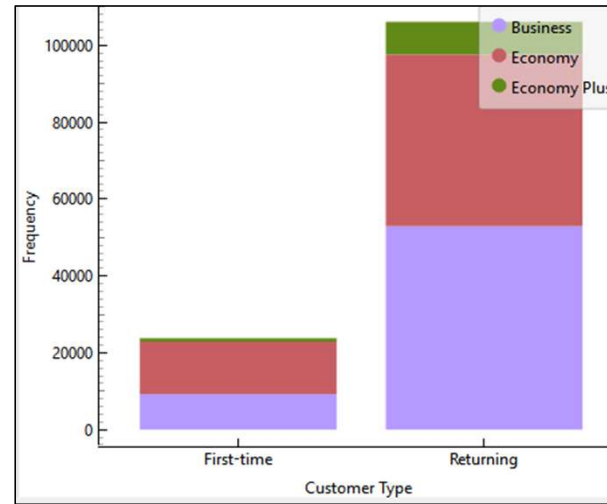
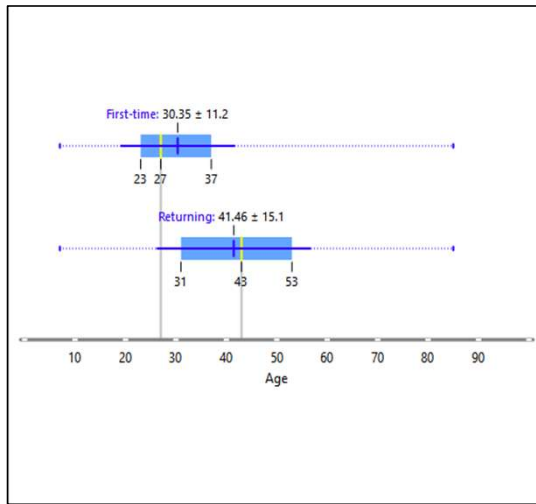
## Satisfaction by Customer Type (First-Time vs. Returning Passengers):

- 47.81 % of repeat traveling customers are satisfied and customers who are traveling for the first time are 23.97 % satisfied.
- Returning passengers have a much higher satisfaction rate than first-time passengers.
- This shows that returning customers have more trust in airline than the first-time traveling customers due to better loyalty services.

## Satisfaction by Travel Type (Business vs. Personal):

- 58.37 % of customers traveling in business are satisfied, whereas 10.13 % of customers traveling in personal are dissatisfied.
- This shows personal travelers have a much lower satisfaction rate than business travelers.
- This suggests that airlines provide better service for business travelers, while personal travelers may not receive the same level of attention.

# What is the customer profile for a repeating airline passenger?



## Customer profile for a repeating airline passenger:

- Customers between 31 to 53 years old are returning customers.
- The average age of returning passengers is around 43 years.
- Most returning passengers travel in Business or Economy class.
- A large portion of returning passengers are business travelers.
- Some return for personal travel, but the majority are flying for work.
- Business travelers are more loyal to the airline than the personal travelers.

# Does flight distance affect customer preferences or flight patterns?

## 1. Age and Satisfaction Patterns

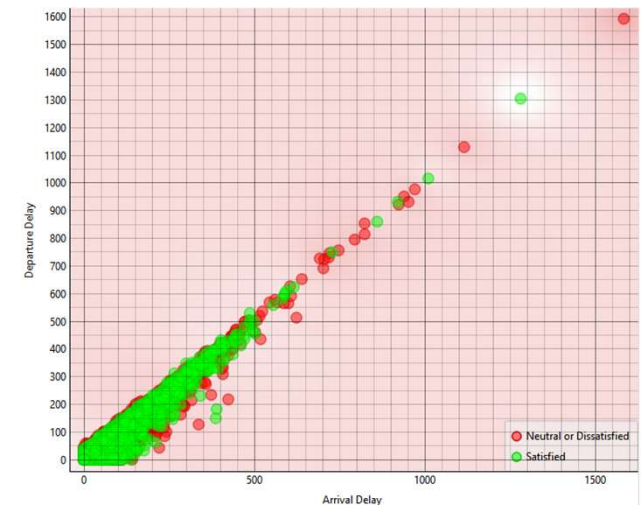
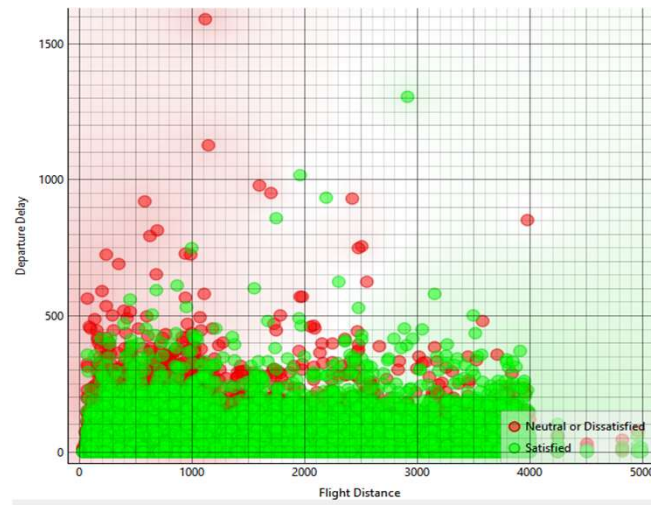
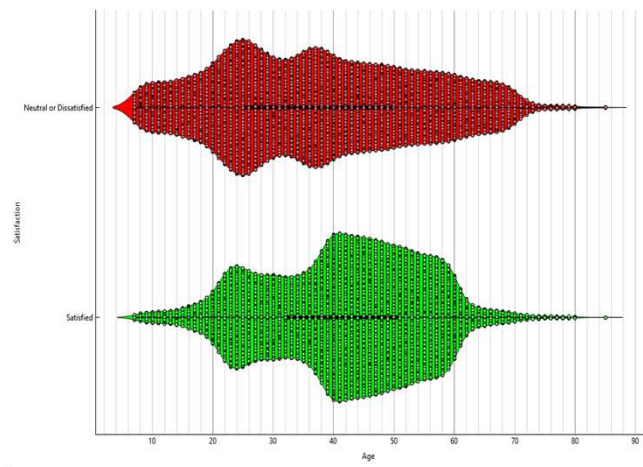
- Younger passengers (20-40 years) have both satisfied and dissatisfied groups, but more dissatisfaction is seen in younger travelers.
- Older passengers (40-60 years) are more likely to be satisfied, meaning they may have different expectations or experiences.

## 2. Impact of Flight Distance on Satisfaction

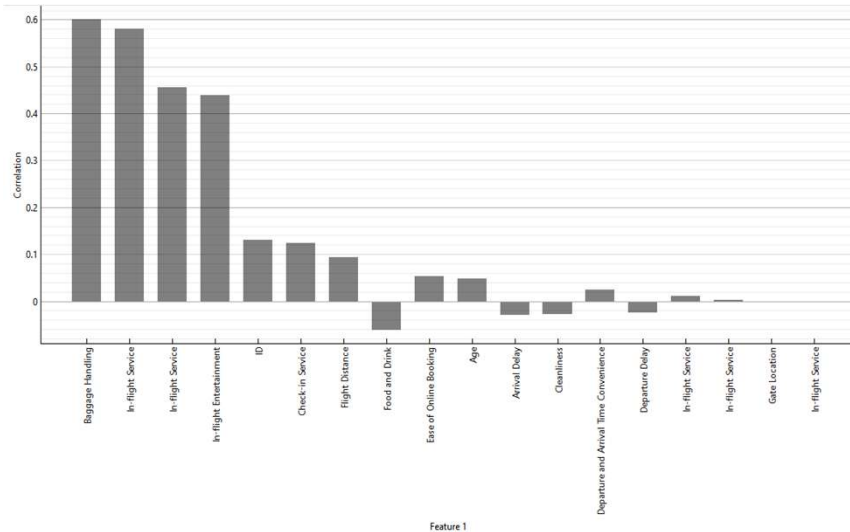
- Shorter flights (less than 2000 km) have a mix of satisfied and dissatisfied passengers.
- As flight distance increases beyond 3000 km, satisfaction improves, with more points appearing.
- This suggests longer flights may offer better services, comfort, or perks, leading to higher satisfaction.

## 3. Impact of Delays on Satisfaction

- Departure and arrival delays strongly impact satisfaction—flights with high delays (more than 500 minutes) show more dissatisfaction (red).
- Shorter delays (under 200 minutes) still have a mix, but more passengers remain satisfied.
- Dissatisfaction is highest when both departure and arrival delays are long, showing that timely service is critical.



# Which factors contribute to customer satisfaction the most? What about dissatisfaction?

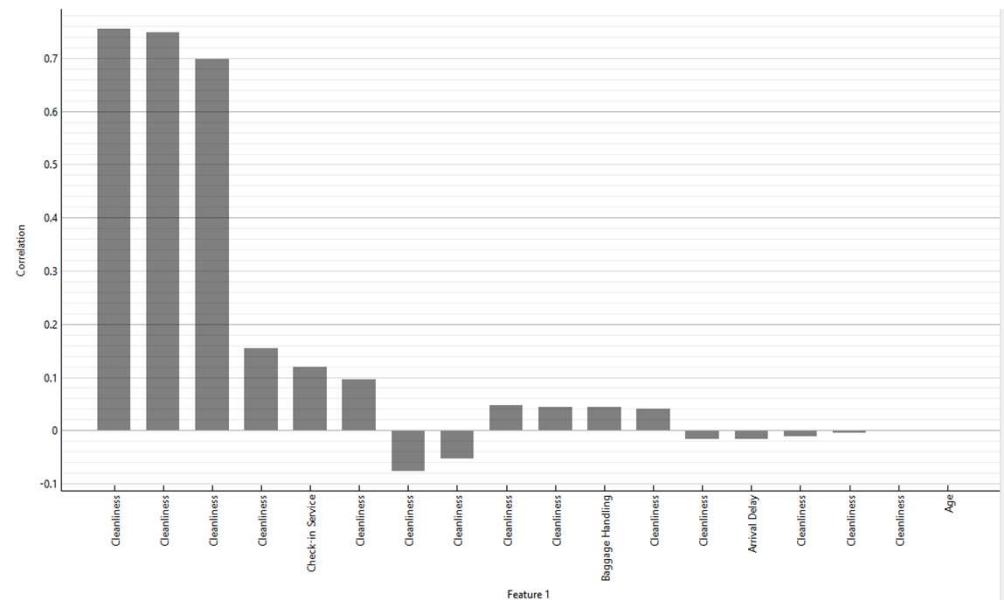


## Key Factors Leading to Customer Satisfaction:

- Smooth Baggage handling and In-flight services play big roles in making passengers happy.
- Entertainment options (movies, music, WiFi) are key to keeping customers satisfied, especially on long flights.
- 40-45 years old customers are mostly satisfied.
- Check-in services and Food quality impact moderately on satisfaction.

## Key Factors Leading to Customer Dissatisfaction:

- Poor Food Quality and Lack of Cleanliness are major reasons for passenger complaints.
- Uncomfortable Seats and Limited In-Flight Entertainment contribute to dissatisfaction.
- Complicated Check-in and Online Booking Issues create a frustrating experience for travelers.
- Passengers who rate seat comfort and cleanliness below average (around 3 or lower) are often dissatisfied.
- Flight Delays (departure and arrival) significantly increase frustration and lower satisfaction ratings.

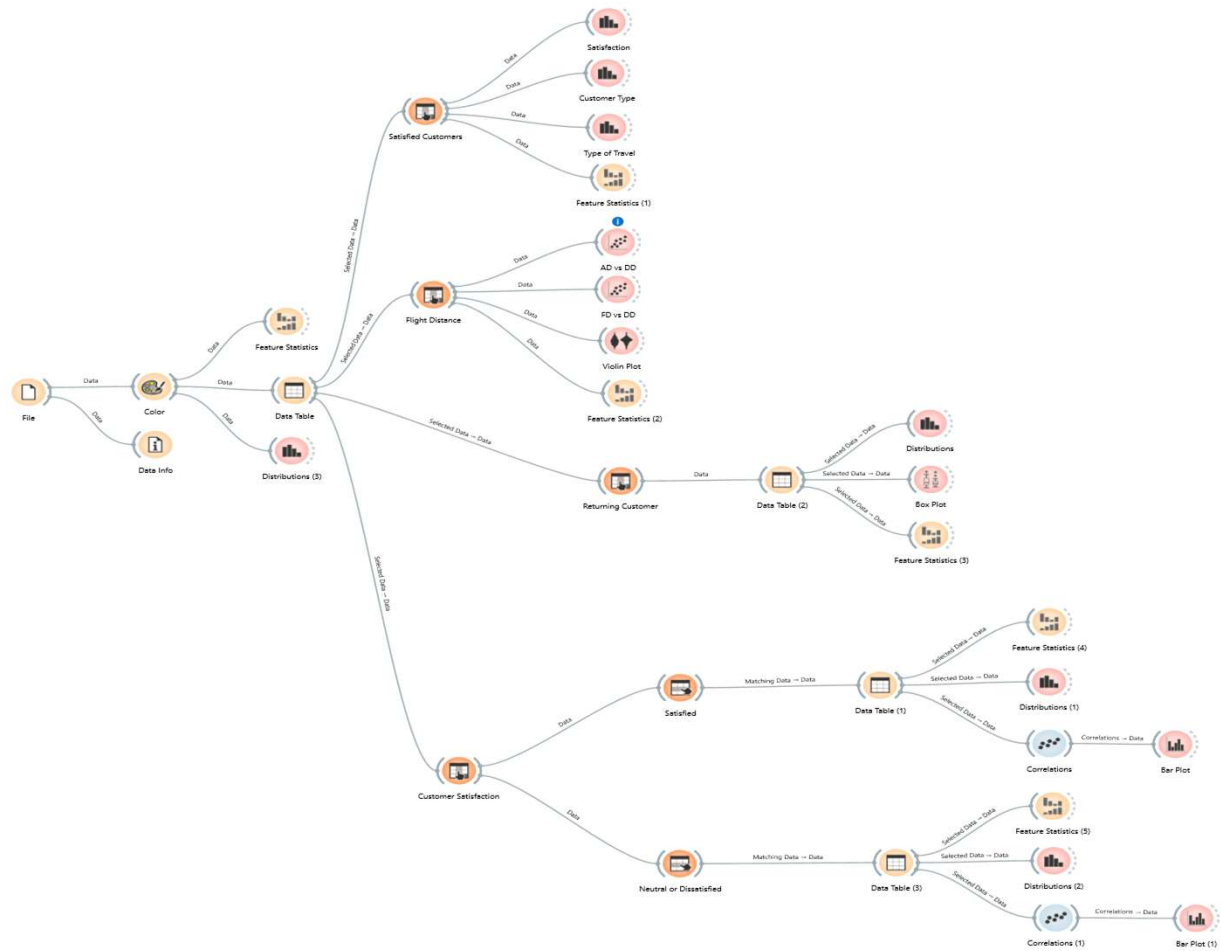


# Data Dictionary

Features	Type
ID	Numerical
Age	Numerical
Flight Distance	Numerical
Departure Delay	Numerical
Arrival Delay	Numerical
Departure and Arrival Time Convenience	Numerical
Ease of Online Booking	Numerical
Check-in Service	Numerical
Online Boarding	Numerical
Gate Location	Numerical
On-board Service	Numerical
Seat Comfort	Numerical
Leg Room Service	Numerical
Cleanliness	Numerical
Food and Drink	Numerical
In-flight Service	Numerical
In-flight Wifi Service	Numerical
In-flight Entertainment	Numerical
Baggage Handling	Numerical
Gender	Categorical
Customer Type	Categorical
Type of Travel	Categorical
Class	Categorical
Satisfaction	Categorical

Name	Mean	Mode	Median	Dispersion	Min	Max	Missing
ID	64940.5	1	64940.5	0.58	1	1298800 (0%)	
Age	39.43	39	40	0.38	7	850 (0%)	
Flight Distance	1190.32	337	844	0.84	31	49830 (0%)	
Departure Delay	14.71	0	0	2.59	0	15920 (0%)	
Arrival Delay	15.09	0	0	2.55	0	15840 (0%)	
Departure and Arrival Time Convenience	3.06	4	3	0.5	0	50 (0%)	
Ease of Online Booking	2.76	3	3	0.51	0	50 (0%)	
Check-in Service	3.31	4	3	0.38	0	50 (0%)	
Online Boarding	3.25	4	3	0.42	0	50 (0%)	
Gate Location	2.98	3	3	0.43	0	50 (0%)	
On-board Service	3.38	4	4	0.38	0	50 (0%)	
Seat Comfort	3.44	4	4	0.38	0	50 (0%)	
Leg Room Service	3.35	4	4	0.39	0	50 (0%)	
Cleanliness	3.29	4	3	0.4	0	50 (0%)	
Food and Drink	3.2	4	3	0.41	0	50 (0%)	
In-flight Service	3.64	4	4	0.32	0	50 (0%)	
In-flight Wifi Service	2.73	2	3	0.49	0	50 (0%)	
In-flight Entertainment	3.36	4	4	0.4	0	50 (0%)	
Baggage Handling	3.63	4	4	0.32	1	50 (0%)	
Gender	Female					0 (0%)	
Customer Type	Returning					0 (0%)	
Type of Travel	Business					0 (0%)	
Class	Business					0 (0%)	
Satisfaction	Neutral or Dissatisfied					0 (0%)	

# Orange Workflow





# Final Observations

- Less than 50% of passengers are satisfied, with first-time and personal travelers showing lower satisfaction.
- Returning and business travelers report higher satisfaction, likely due to better services and familiarity.
- Long-haul flights (above 2000 km) have better satisfaction, while short-haul flights face more complaints due to limited services and delays.
- Delays (departure & arrival) are a major cause of dissatisfaction, especially for short-distance flights.
- Key satisfaction drivers include baggage handling, in-flight service, entertainment, and cleanliness.
- Dissatisfaction is mainly caused by delays, baggage issues, poor food quality, and uncomfortable seating.
- Airlines should focus on improving short-haul flight experience, minimizing delays, and enhancing economy-class comfort.