AIRLINE PASSENGER SATISFACTION

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LIST OF CONTENT

Introduction

It is necessary to do an evaluation of service which provides by the airline to know whether passengers are satisfied or not

Goals

1. Determine what factors that might be affect the level of passenger satisfaction
2. Predict the customer satisfaction
3. Giving recommendations to increase performance of an airlines

56,7 %
Neutral or Dissatisfied

46,3 %
Satisfied

About Feature

Demographic
General information or passenger identity

- Gender
- Age
- Customer Type
- Class
- etc

Service
Services from airline which provided to passengers

- Online Boarding
- Food and Drink
- Seat Comfort
- Leg Room Service
- etc

Exploratory Data Analysis

Passenger Condition

45025 customer are satisfied about the services which provided by airline and 5579 customer are neutral or dissatisfied

Satisfied
43.3%

Neutral or Dissatisfied
56.7%
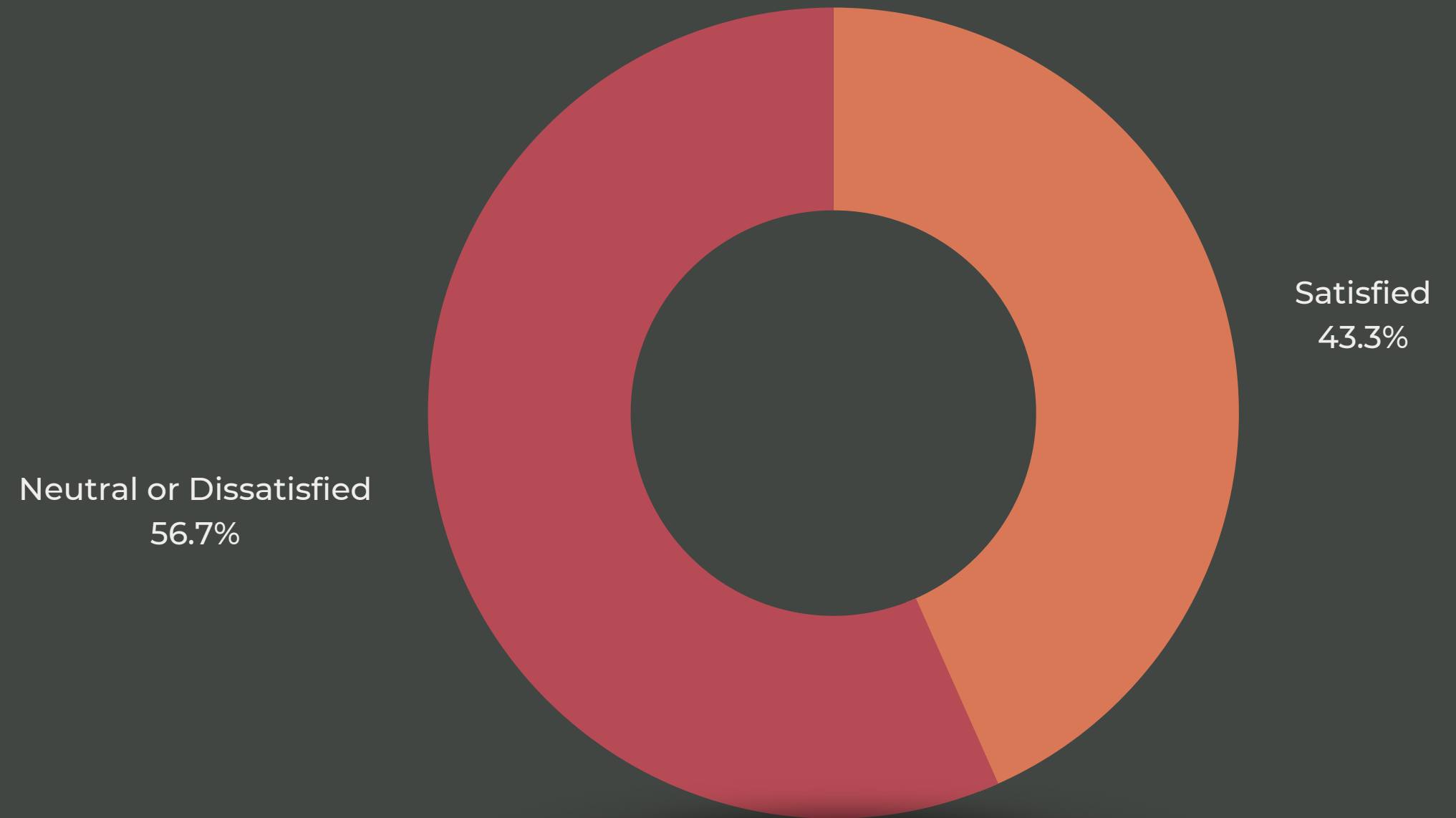
Business Question

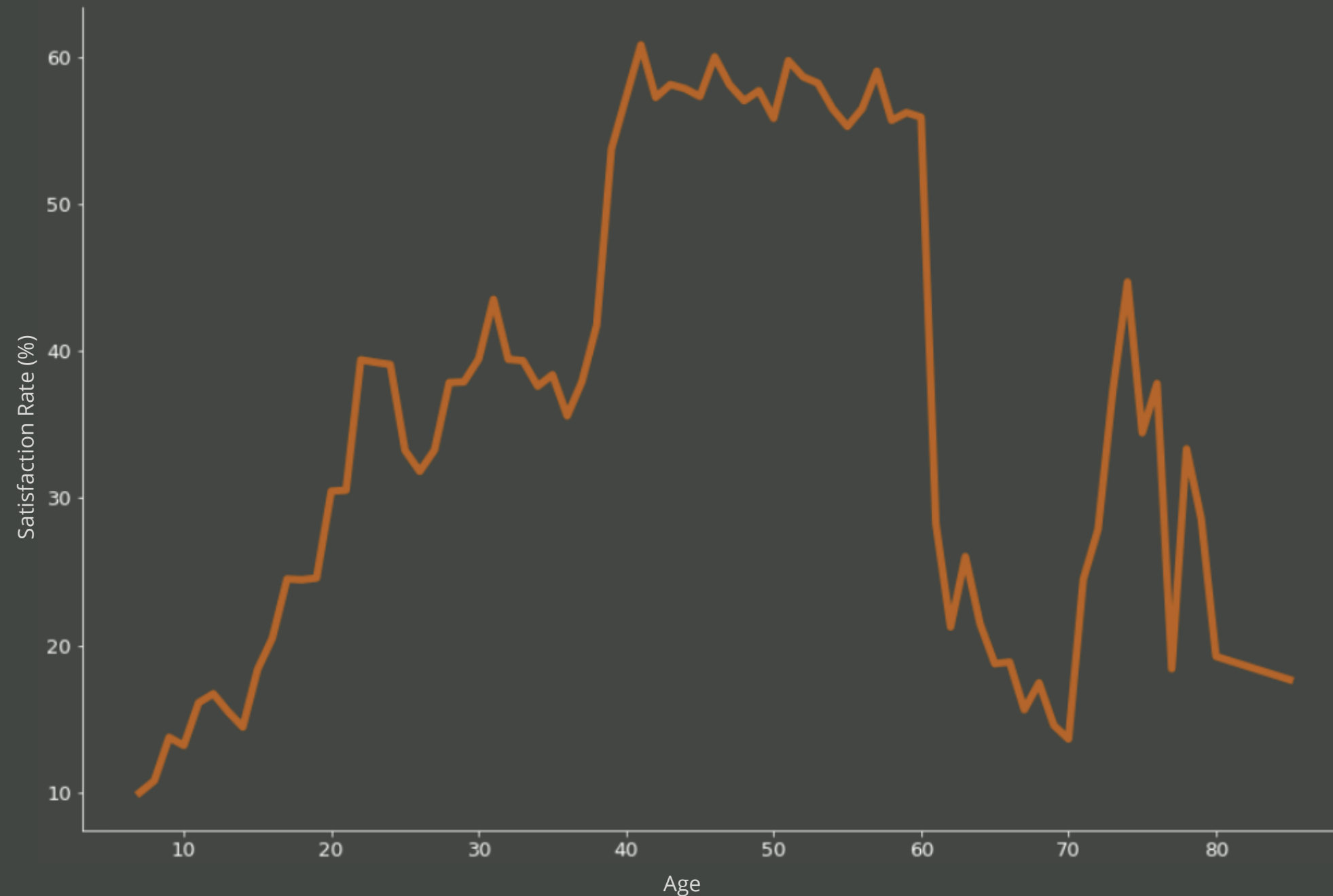**01** How is the affect of the satisfaction rate based on age?

02 How is the affect of class, type of travel, and customer type to satisfaction rate?

03 How is the affect of flight distance against type of travel and type of class which has been choosen by loyal and not loyal pessenger?

04 How is the affect of arrival delay and departure delay against satisfation rate?

05 What service that has big rate and low rate?

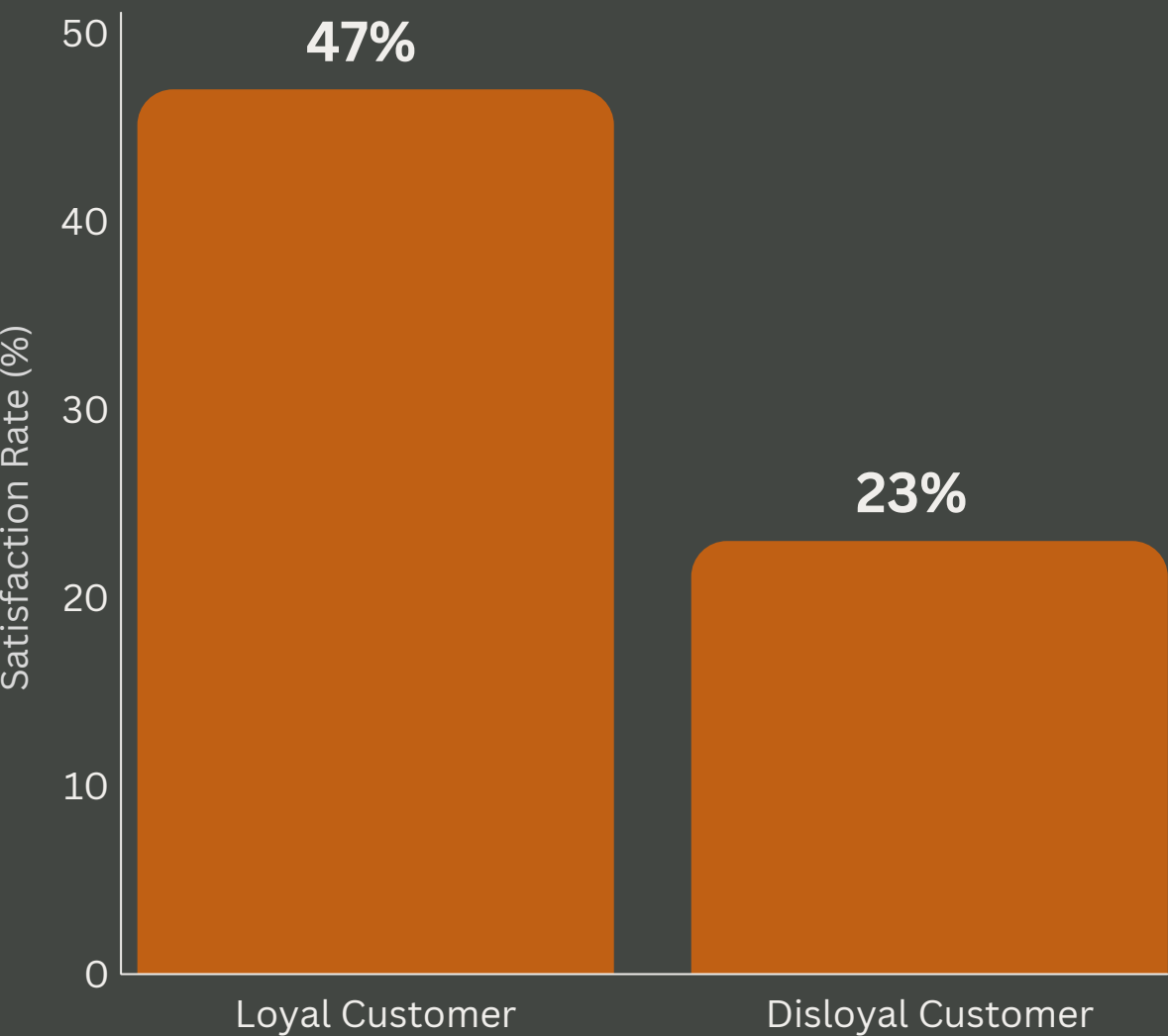**Satisfaction Rate Based on Age**

How is the affect of the satisfaction rate based on age?

- Most of the passengers who have age between 40-60 tend to be satisfied with the airline
- Passengers who have aged under 40 years old and over 60 years old, tend to feel dissatisfied with the airline

How is the affect of class, type of travel, and customer type to satisfaction rate?
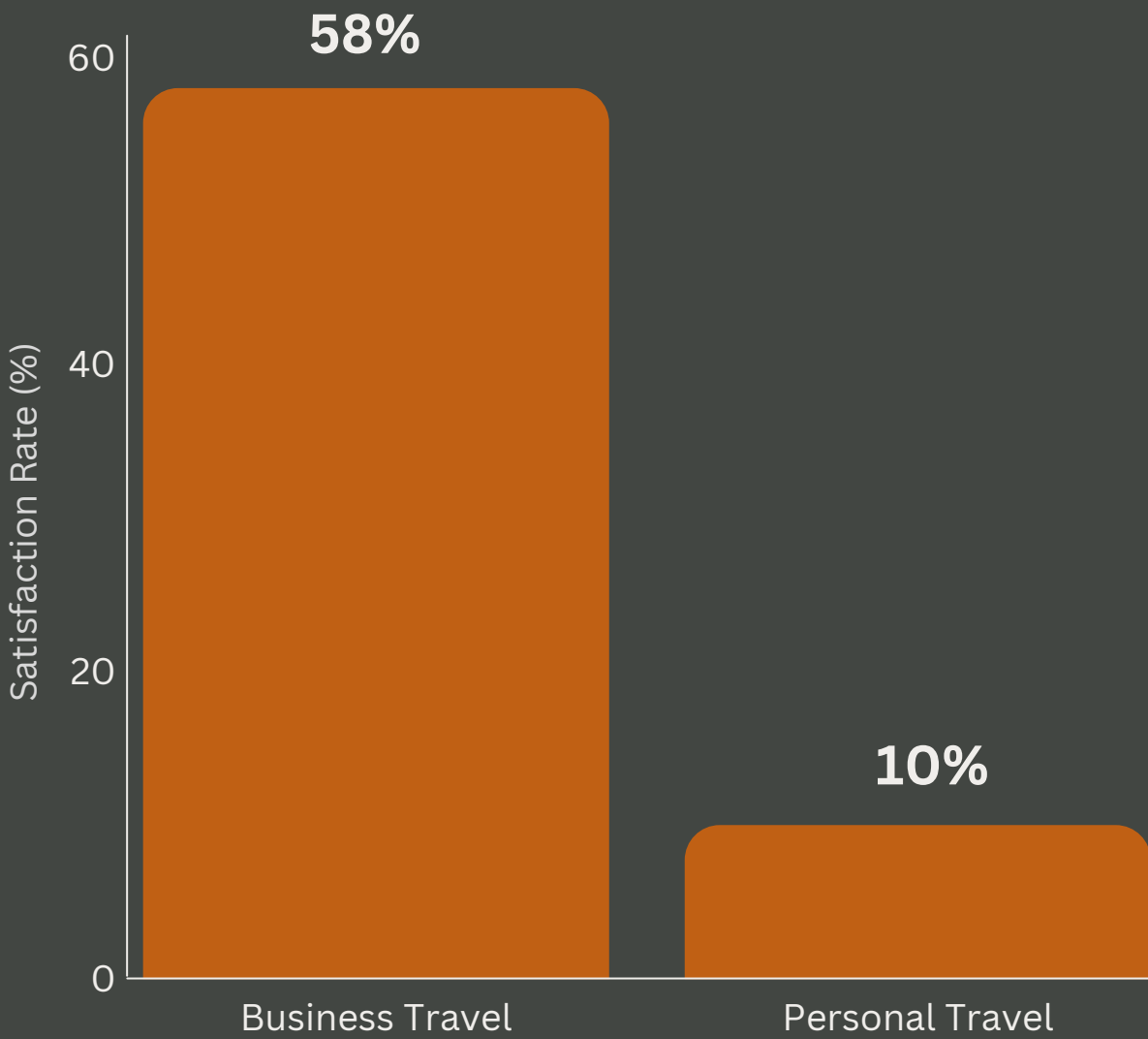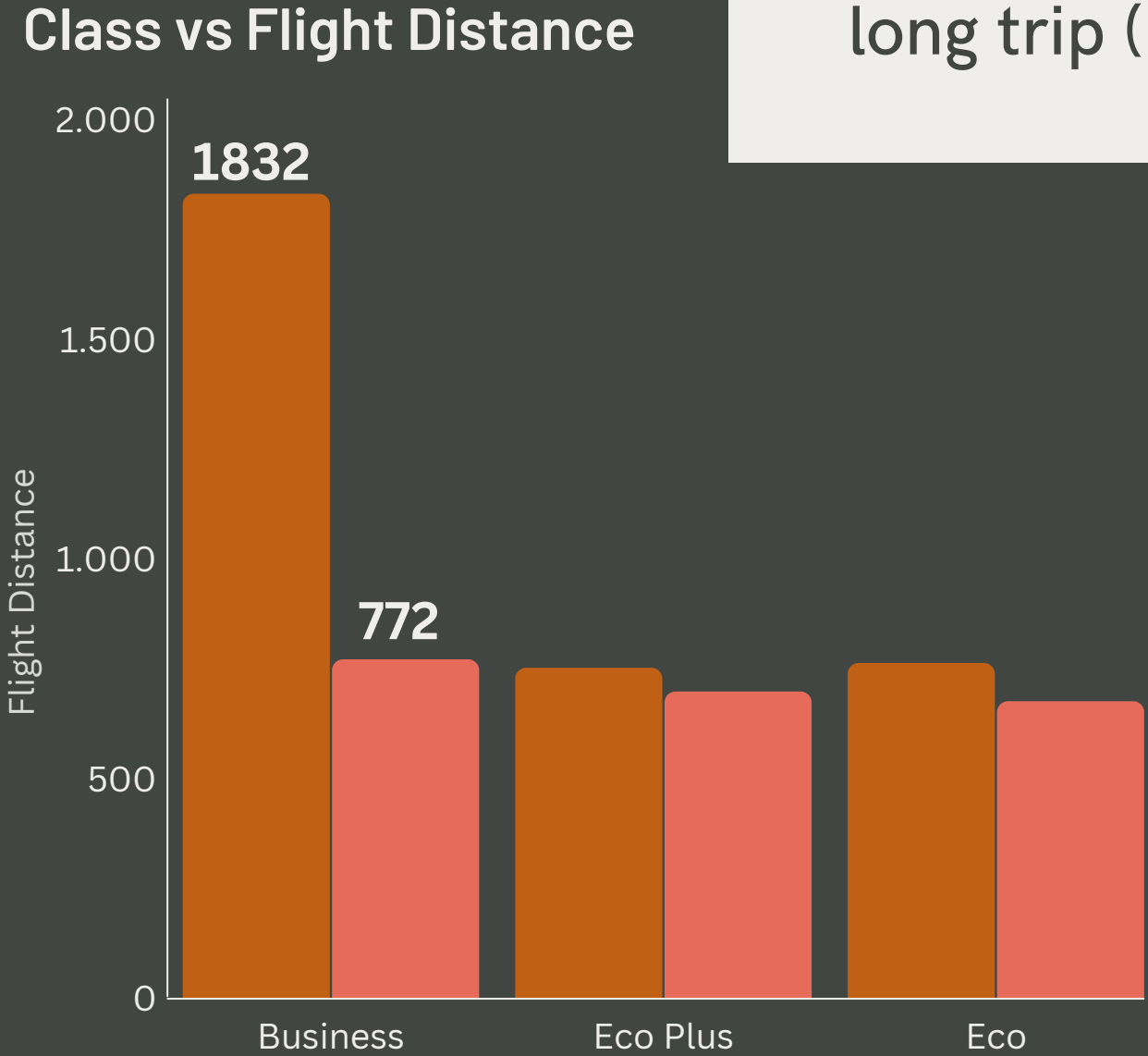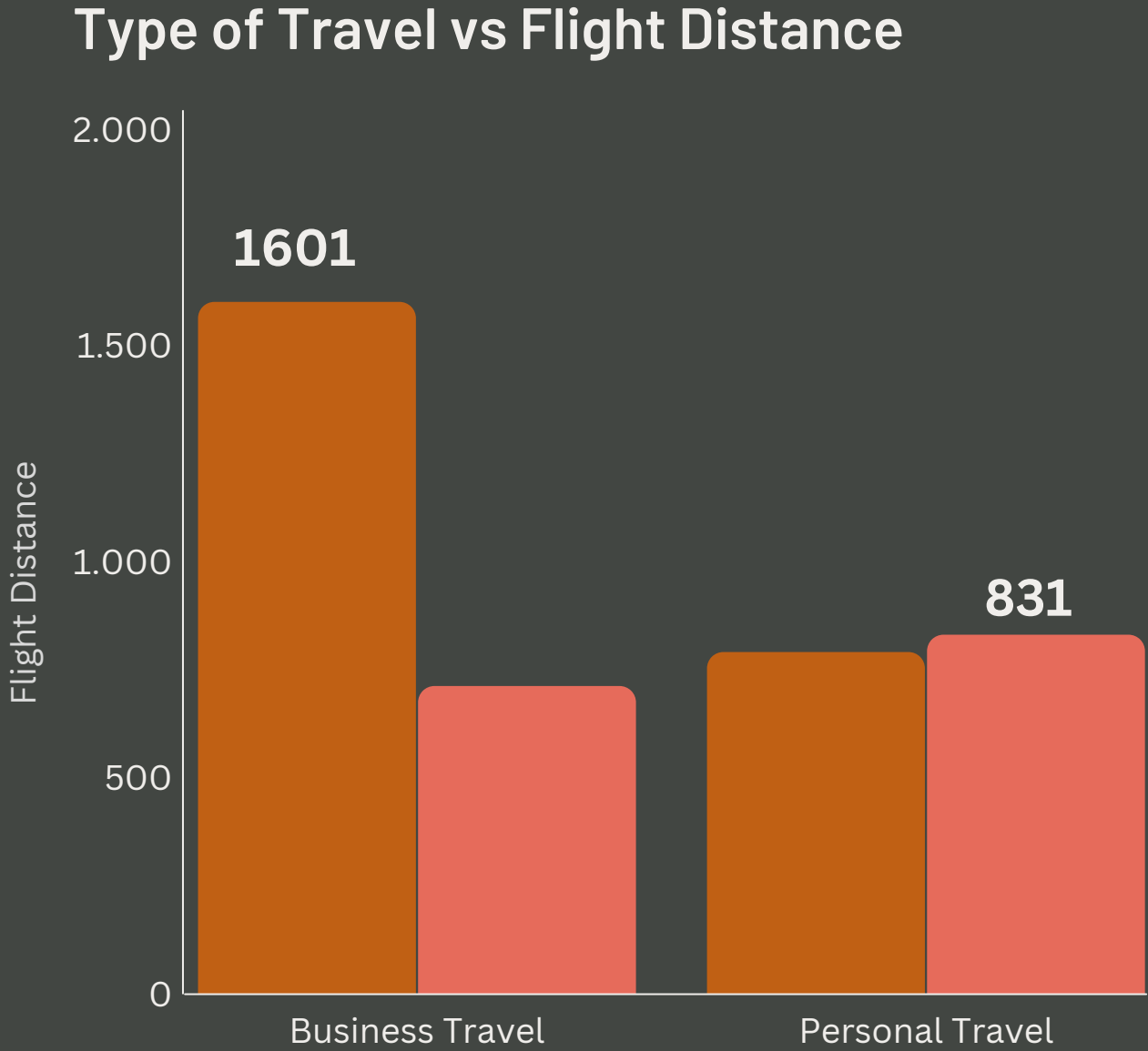

Satisfaction Rate Based on Type of Customer

Loyal Customer	Disloyal Customer
47%	23%

Satisfaction Rate Based on Class

Business	Eco Plus	Eco
69%	24%	18%
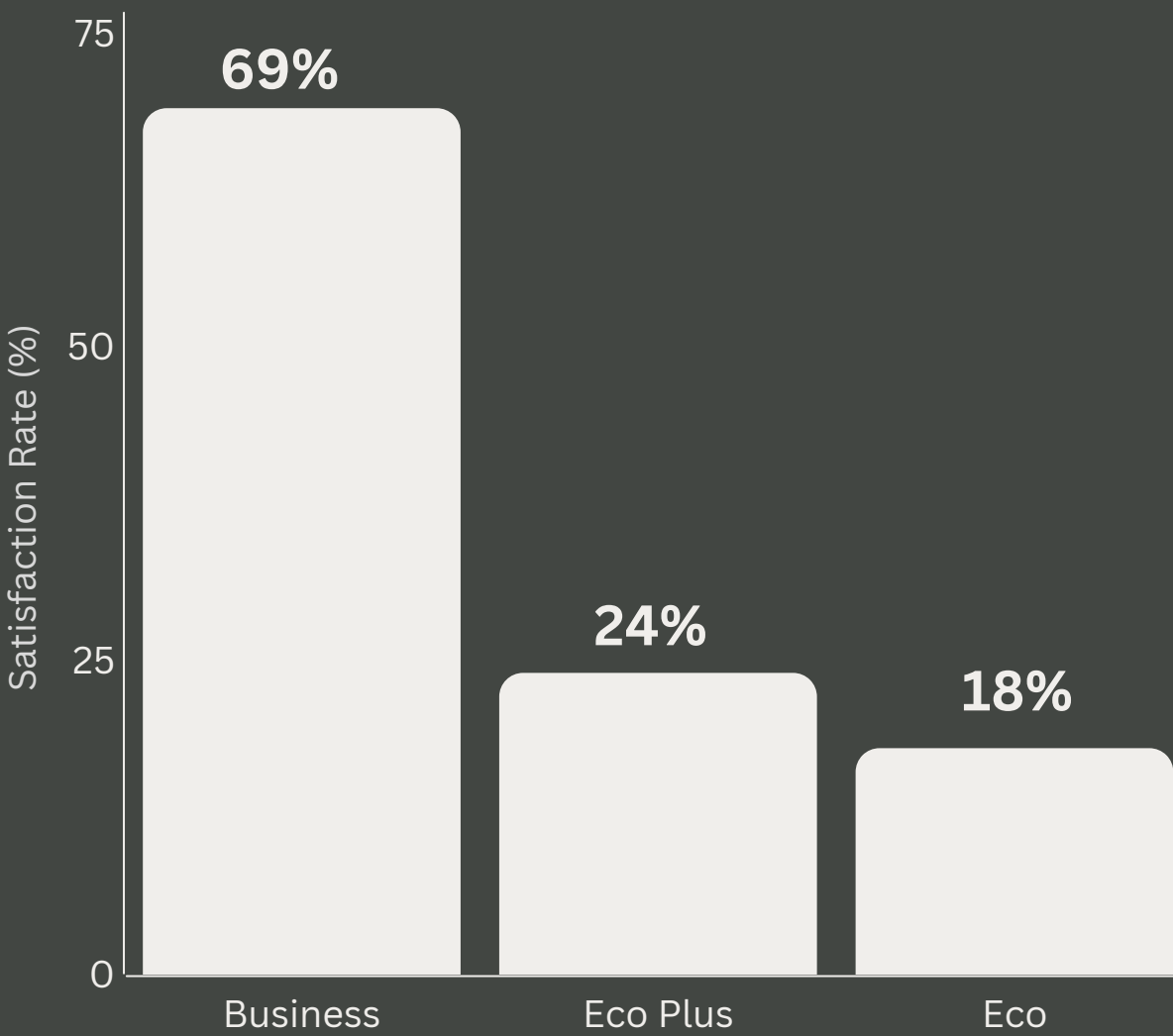
Satisfaction Rate Based on Type of Travel

Business Travel	Personal Travel
58%	10%

How is the affect of flight distance against type of travel and type of class which has been choosen by loyal and not loyal pessenger?

- Most of loyal passenger using airline for business travel which need about 1600-1750 km
- Most of loyal customer usually choose business class because because of the long trip (1750-2000 km)
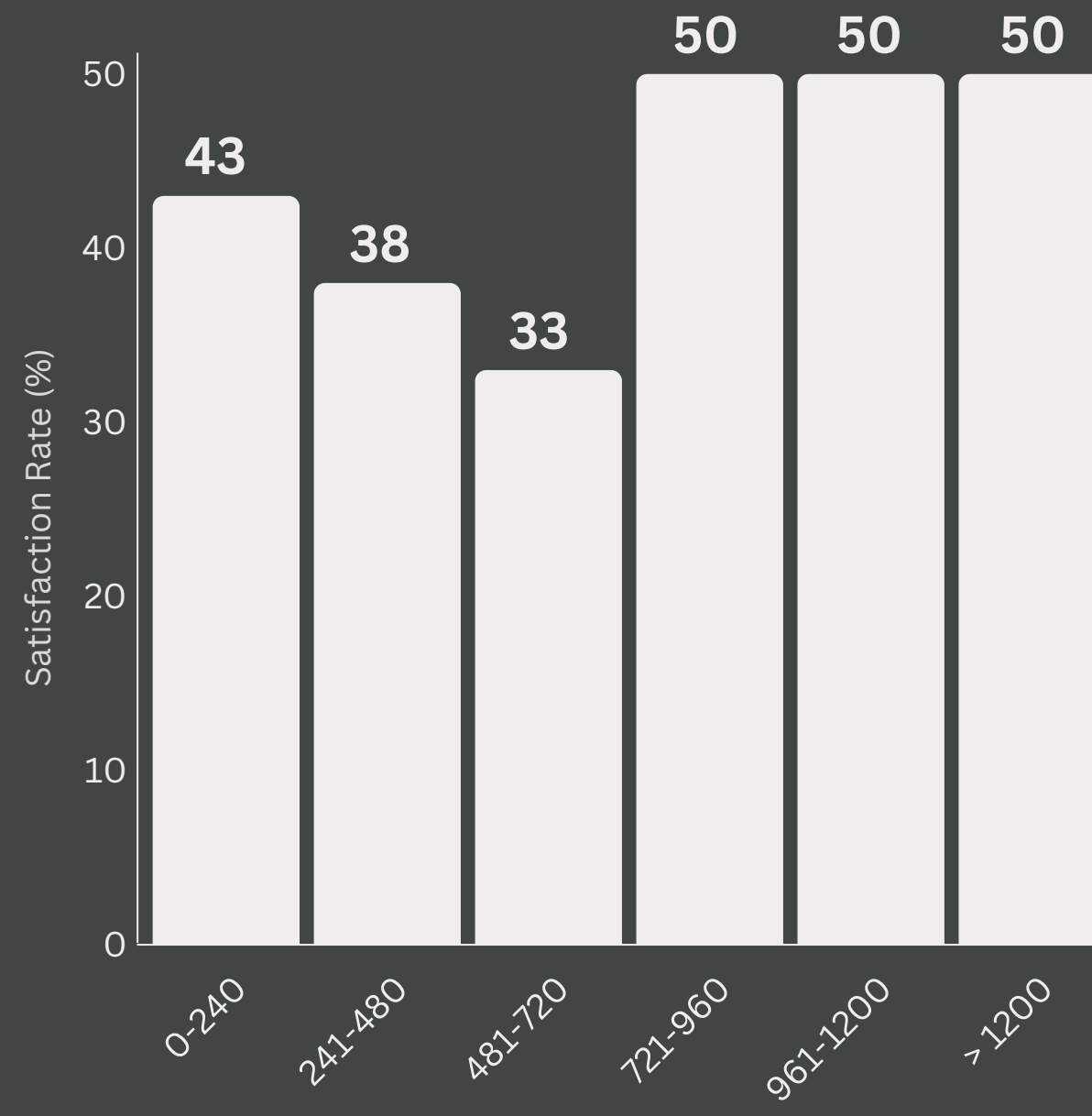
Type of Travel vs Flight Distance

Class vs Flight Distance

How is the affect of arrival delay and departure delay against satisfation rate?

- Biggest satisfaction rate is when the departure is late for 0-240, 721-960, 961-1200, and >1200 minutes
- We can assume that the rate of satisfaction in high condition when the departure is above 721 minutes. Usually, airlines already inform the passenger about these condition
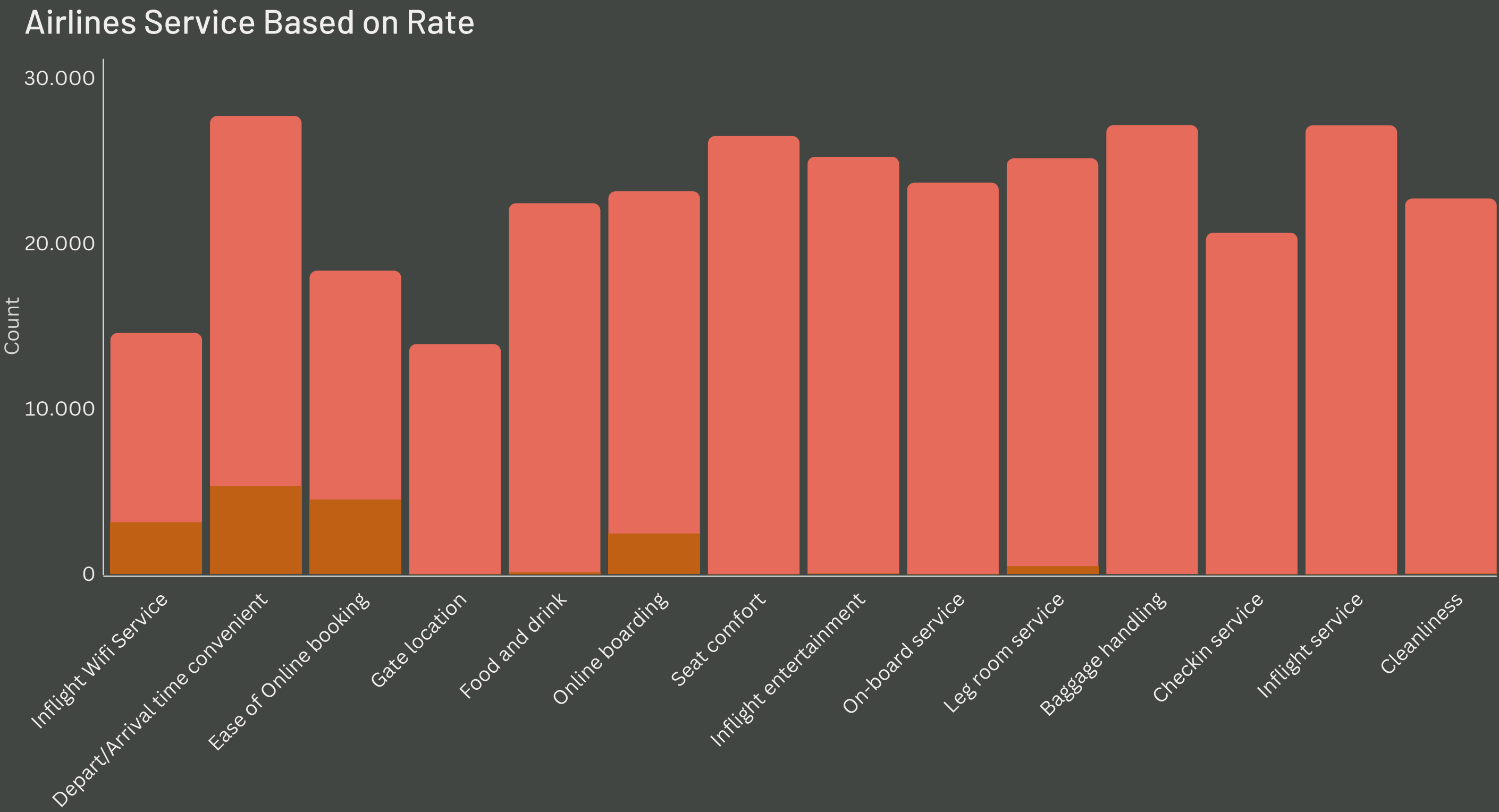- The condition of departure and arrival late has similar values because they have high correlation

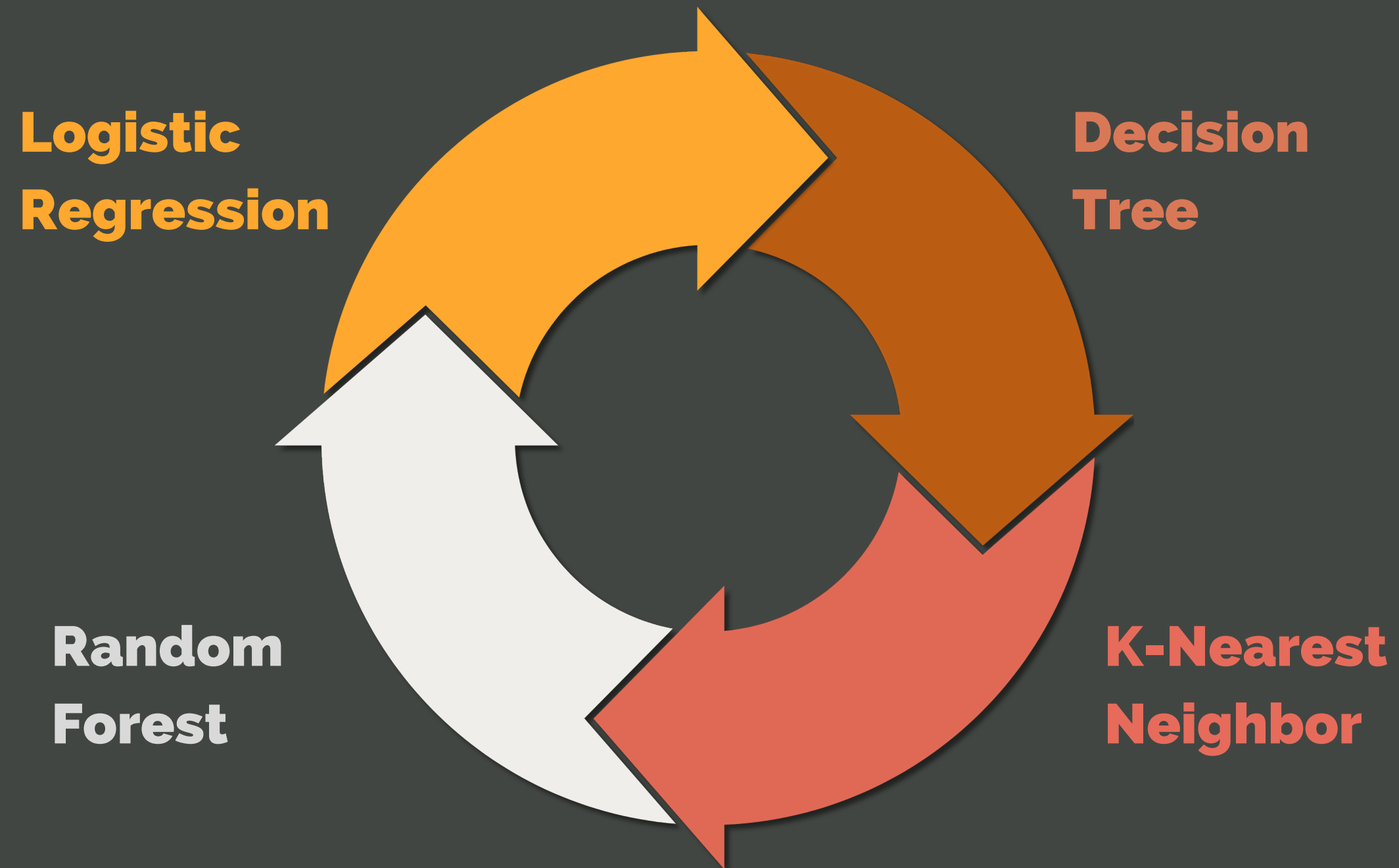## Satisfaction Rate Based on Departure Delay
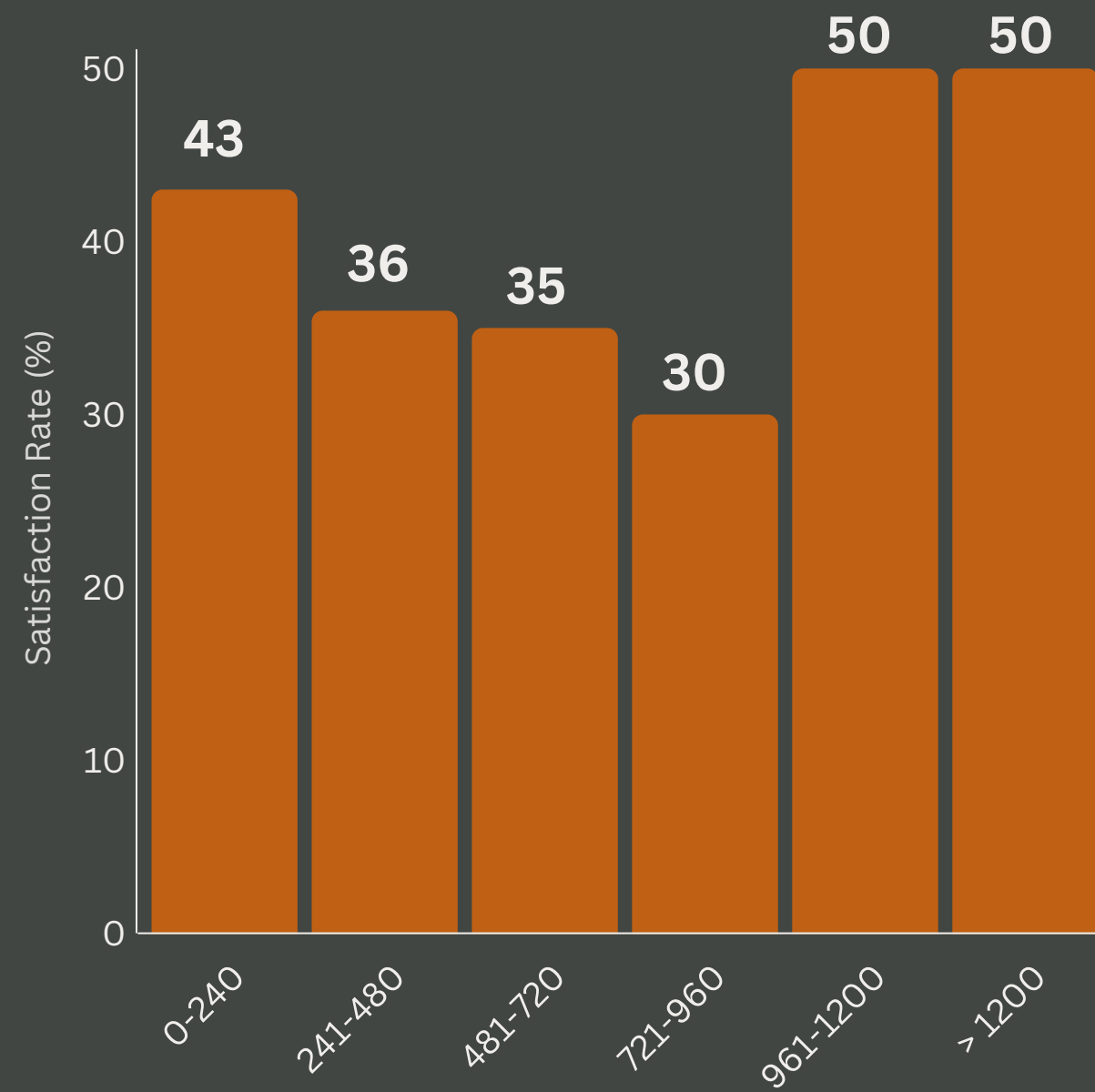
Satisfaction Rate Based on Arrival Delay

MACHINE LEARNING MODEL

Logistic Regression

Decision Tree

Random Forest

K-Nearest Neighbor

What Are We Going to Do?

TARGET Minimize False Positive

Our focus is to minimize false positive because if the model predicts passengers are satisfied but the real is not satisfied, We can't give compensation to the passenger who really feel not satisfied and it will increase the churn of passenger

FEATURE IMPORTANCE
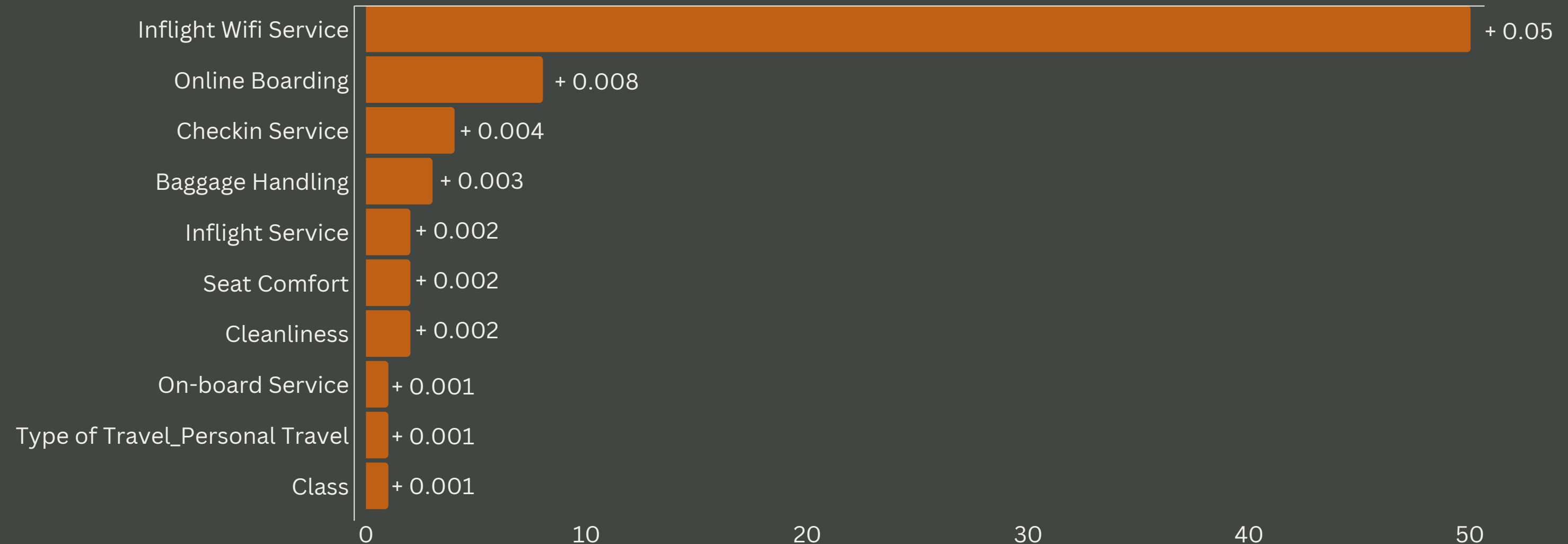
- Based on feature importance, there are 10 features that affect the rate of passenger satisfaction.
- From the picture above, inflight wifi service is the feature which can increase the rate of passenger satisfaction.

Recommendation

1. Improve the service for **the class Eco**
2. Improve the services of **Depart/Arrival time convenient, Ease of Online booking, and Online boarding** because most of passengers give small rates
3. **Food and drink, leg room service** are still in the good category because there are only a few passengers who give small rates, but these two services **still need to be reviewed**
4. **Make feedback** to passengers about what services should be improved in order to minimize passenger dissatisfaction
5. **Improving service performance** by adjusting the needs for customers **aged 0-35 years old and >60 years old**

Thank You

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