Airline Passenger Satisfaction Prediction Models

Model

All ⌄

Model	f1-score	precision	recall	support
LightGBM	0.98	0.98	0.98	2345
Random Forest	0.98	0.98	0.97	2345
Decision Tree	0.97	0.97	0.97	2345
KNN	0.97	0.97	0.97	2345
SVM	0.97	0.96	0.97	2345
AdaBoost	0.95	0.93	0.97	2345
LabelPropagation	0.94	0.92	0.97	2345
Label Spreading	0.94	0.94	0.94	2345
LogisticRegression	0.94	0.93	0.94	2345
Naive Bayesian	0.92	0.94	0.90	2345
DummyClassifier	0.70	0.54	1.00	2345

Best Performing Model

LightGBM

0.98
f1-score

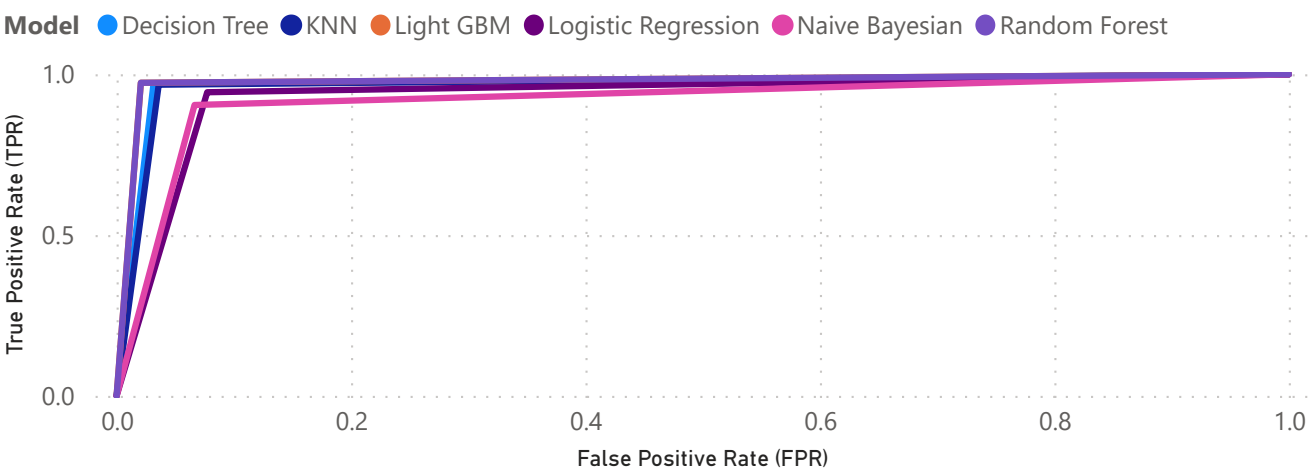0.98
precision

0.98
recall

2345
support

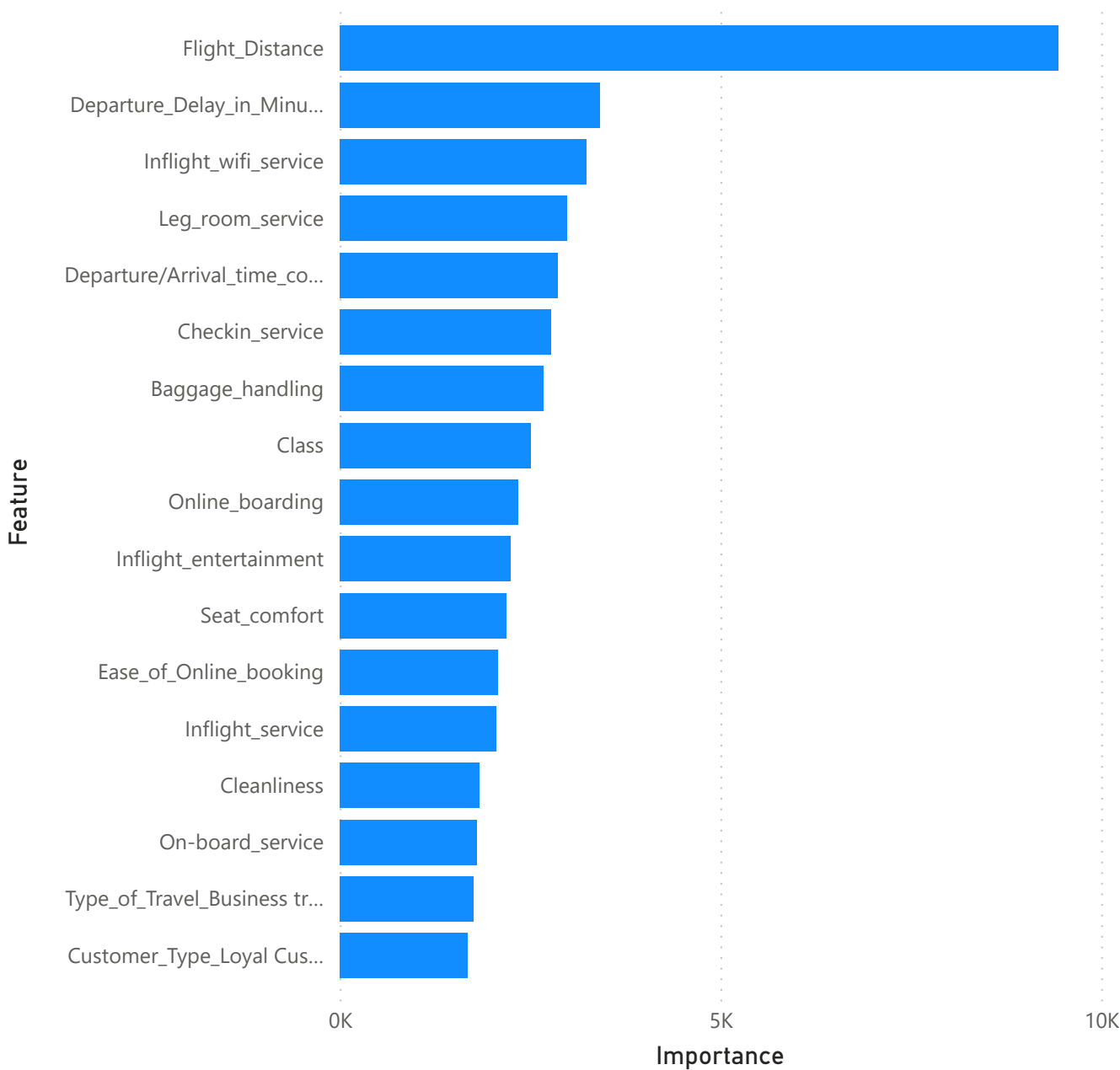| Select all | Decision Tr... | KNN | Light GBM | Logistic Re... | Naive Baye... | ⟩ |

ROC Curve by Model

Model ● Decision Tree ● KNN ● Light GBM ● Logistic Regression ● Naive Bayesian ● Random Forest

Light GBM Feature Importances

Business Insights

Satisfaction by Flight Distance
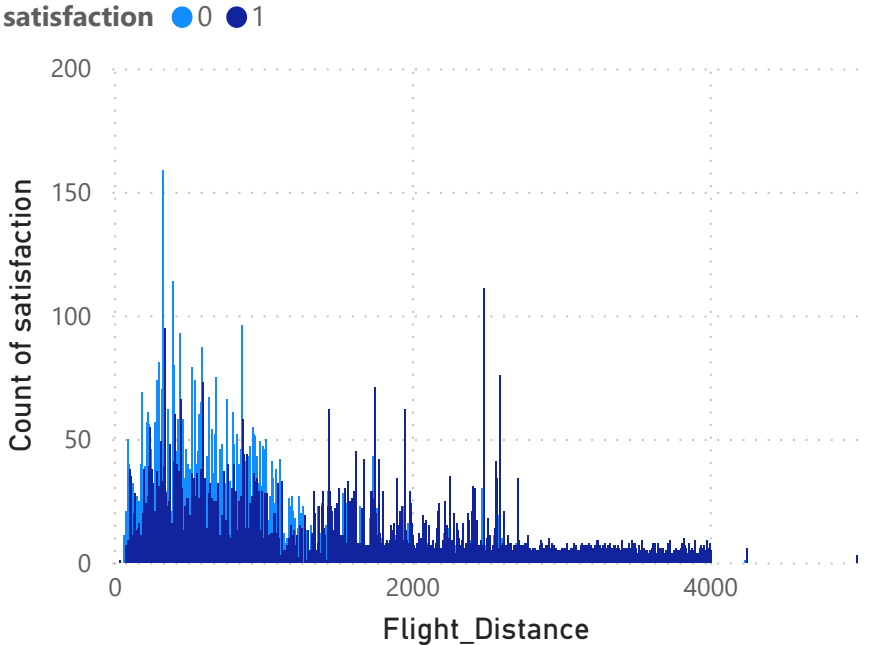
satisfaction ● 0 ● 1

Satisfaction by Inflight Wifi Service

Satisfaction

19.96K (45.42%)

24K (54.58%)
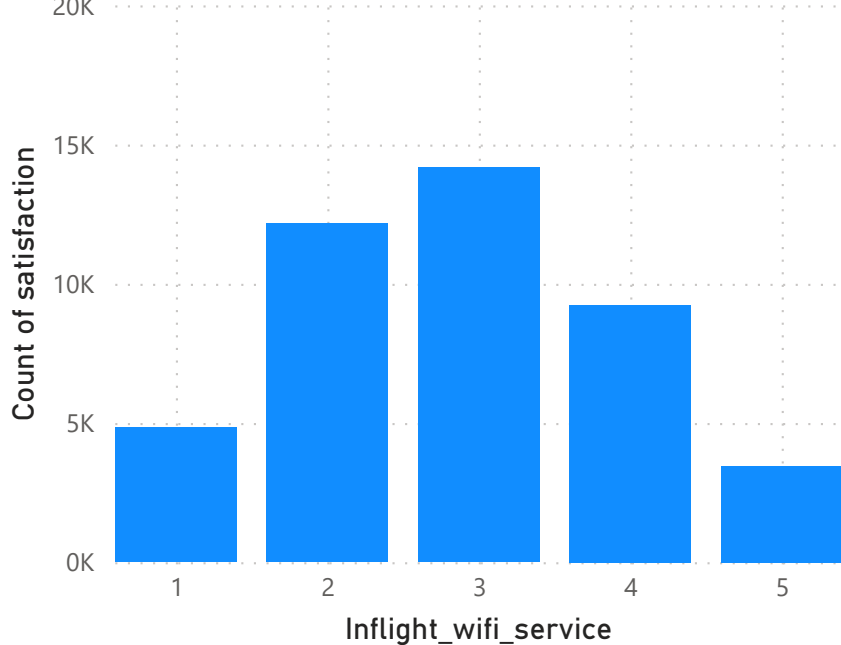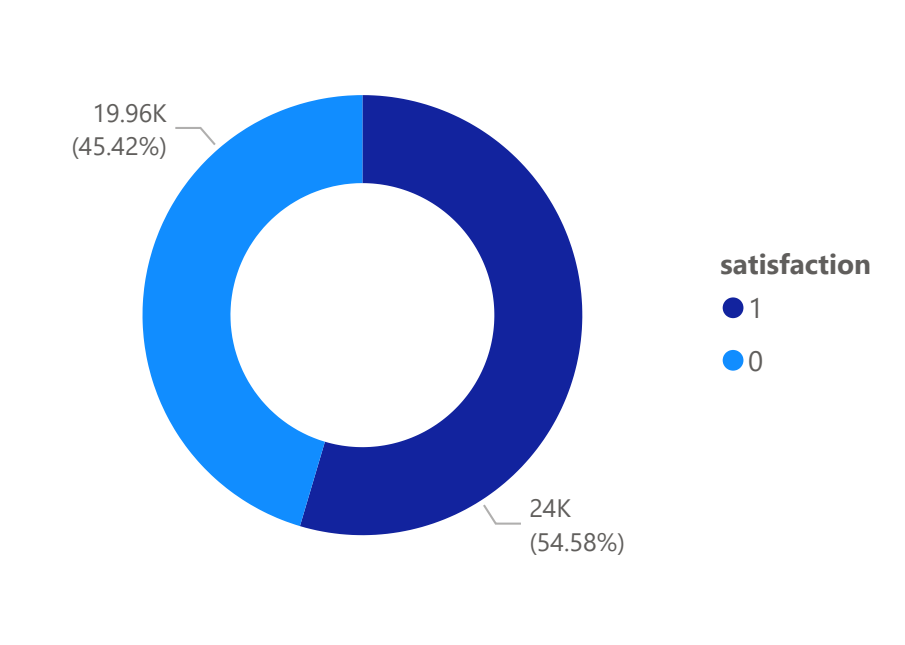
satisfaction
● 1
● 0

1.32K
Average flight distance

43.96K
Count of satisfaction

Satisfaction Ratio

0.55 !
Goal: 0.75 (-26.49%)
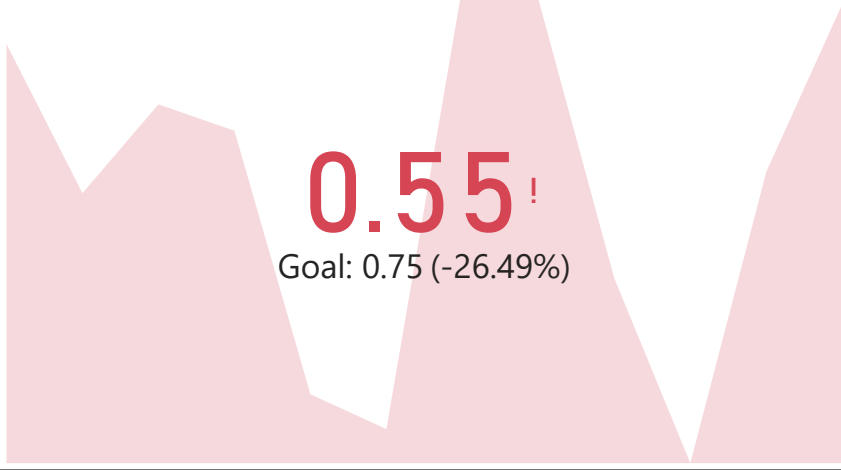
Average Departure Delay by Month

6.58 !
Goal: 5 (-31.55%)

Customer Insights

Cleanliness

| Select all | 2 | 4 |
| 1 | 3 | 5 |

Baggage_handling

| Select all | 2 | 4 |
| 1 | 3 | 5 |

Ease_of_Online_booking

| Select all | 1 | 3 | 5 |
| 0 | 2 | 4 | |

Count of Leg_room_service by Leg_room_service

Count of satisfaction by satisfaction

Satisfaction Ratio

0.55

Goal: 0.75 (-26.49%)

Age

| 7 | 85 |

41.59
Average of Age

41325
Sum of Customer_Type_Loyal...

32716
Sum of Class

3.67
Average of On-board_service