



UNDERSTANDING & PREDICTING

Airlines Passenger Recommendations

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Problem Identification

- ❖ As of 2020, there are over 5,000 passenger airlines throughout the world.
- ❖ In the domain of competing airlines, one of the most effective way to increase business is by deriving maximum passenger recommendations to an airline.
- ❖ Recommendation can depend on a range of facilities provided by the airline including seat comfort, food served, cabin staff, etc.
- ❖ In this project, we understand and gain insights to which airline features most influence a general passenger's recommendation.
- ❖ We build a model to then predict a passenger's recommendation using travel experience.

Problem Statement

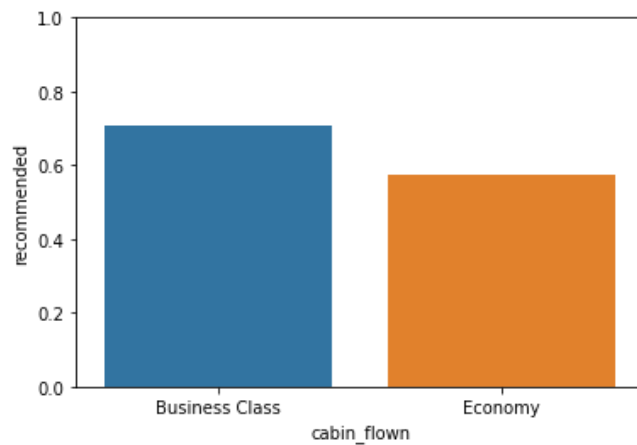
Which airline features most influence the passenger's airline recommendation? Build a model to predict a passenger's recommendation using his travel experience.

Data Used

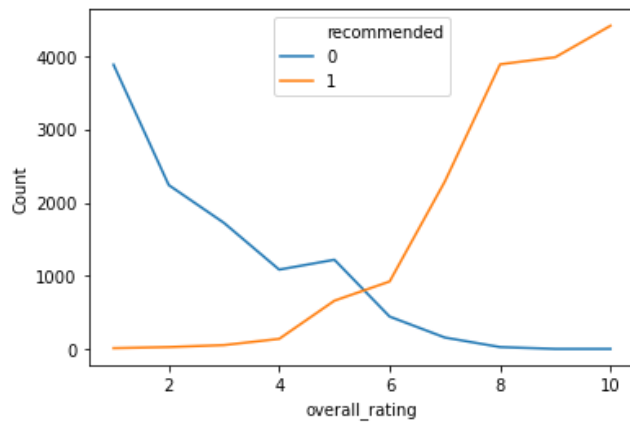
The dataset used consists of following airline features and passenger details:

- Passenger – name, country
- Airline name
- Cabin flown – Economy/Business/First class
- Seat comfort
- Food & Beverages
- Inflight entertainment
- Cabin staff
- Value for money
- Overall rating

Data Insights

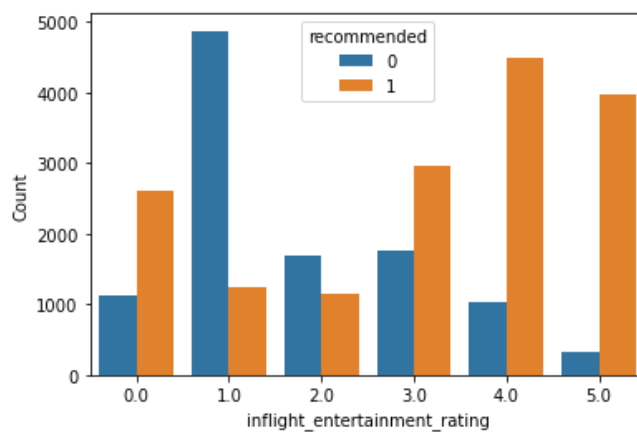


70% of Business class passengers recommend, while just 55% Economy passengers recommend the airline.



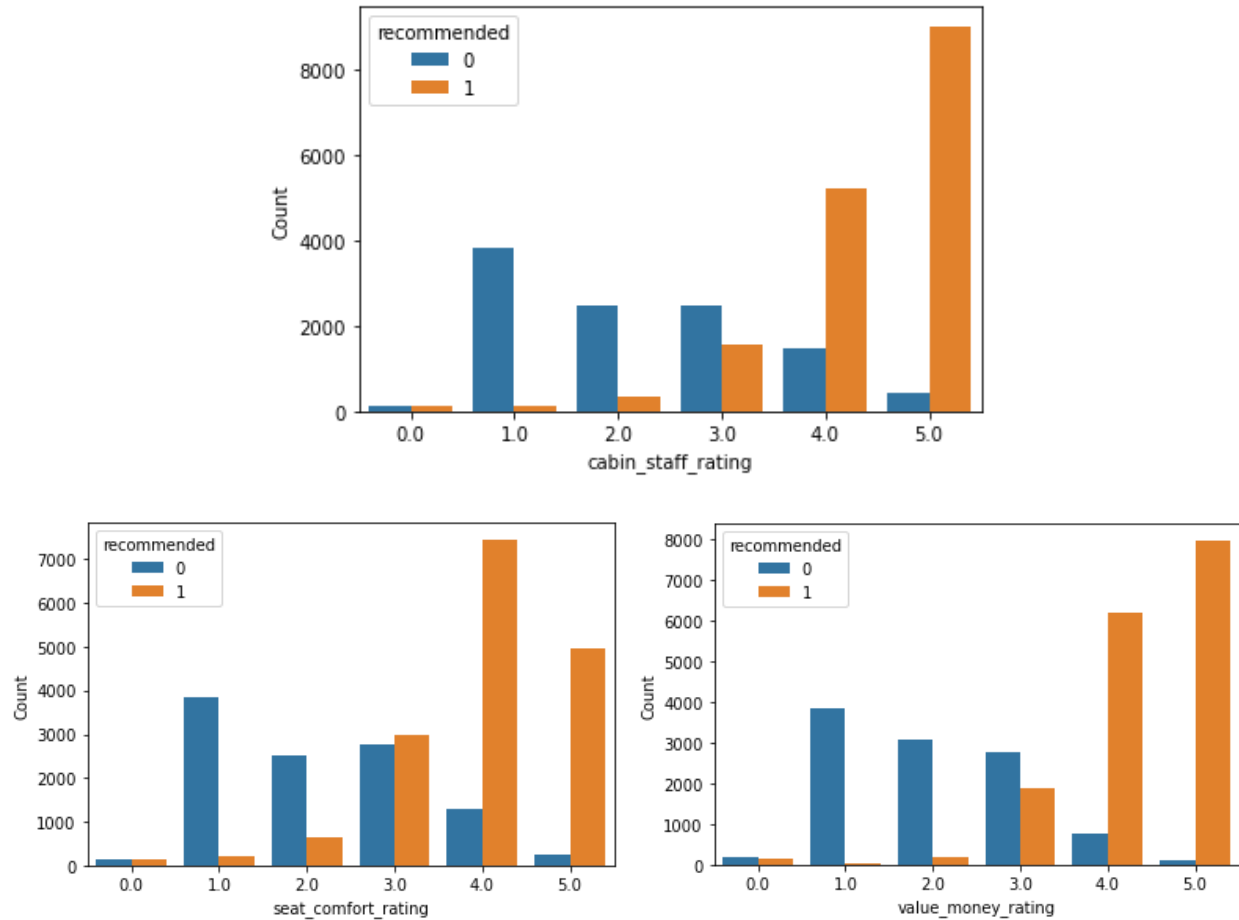
Recommendation is mostly certain if the overall rating is greater than 6.

Further analysis is needed to precisely predict the recommendation.

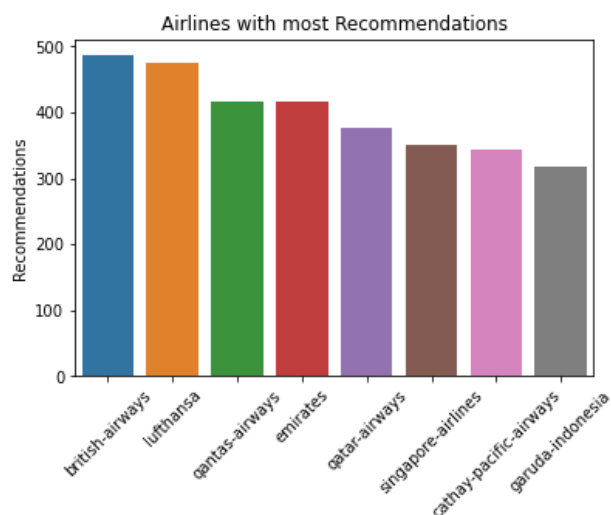


Inflight Entertainment is not quite influencing the recommendation, and has the least correlation with recommendation, i.e., 0.36

Observe the following 3 bar plots for: Cabin staff, Seat comfort, Value for money



Recommendations are significantly low for the Cabin staff feature even at 4.0, when compared to other features like Seat comfort and Value for money.



These are the top 8 Airlines with maximum passenger recommendations.

Machine Learning Model Applied

- As the task is focused on increasing and predicting the recommendations to an airline, this can be classified as a Supervised model.
- Data is split into training and testing datasets on a 75/25 basis.
- Recommendation is our response variable, and airline features will be the predictive variables.
- 3 Predictive Models are built using Logistic Regression, K-Nearest Neighbours(KNN), and Random Forests.
- KNN model has the best performance with an accuracy of 94.95%

Model Deliverables

- ✓ Predicted recommendation, given other airline features.
- ✓ Top factors which most influence any airline recommendation.

Model Performance

- Accuracy = 94.95%
- Precision = 96.2%
- Recall = 94.4%

Final Recommendations / Conclusion

- ❖ Business class passengers tend to recommend 14% more than Economy class passengers.
- ❖ Inflight Entertainment is not very important for increasing airline recommendations.
- ❖ Cabin Staff experience is quite sensitive, and only a perfect experience mostly leads to a positive recommendation.
- ❖ We built a predictive model that can predict a passenger recommendation from his travel experience.