ORIE 5741 Final Project Proposal

Can we predict airline customer satisfaction?

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Introduction

In today's highly competitive airline industry, ensuring customer satisfaction is paramount for airlines to maintain a competitive edge and foster customer loyalty. Understanding the factors that influence customer satisfaction during air travel is crucial for airlines to enhance their services and improve overall customer experience. Traditional methods of collecting feedback through surveys or customer feedback forms may only sometimes provide timely and comprehensive insights into passenger satisfaction. Therefore, we want to make use of past survey data and build predictive models to offer a more efficient and proactive approach to understanding and predicting customer satisfaction.

Data Description

We will be using a dataset from Kaggle called Airline Passenger Satisfaction: https://www.kaggle.com/datasets/teejmahal20/airline-passenger-satisfaction/data

The dataset consists of two subsets: a training dataset (80% of the full dataset) used for model training and a testing dataset (20% of the full dataset) used for validation purposes. The dataset contains 25 columns, with the training dataset comprising 103,904 entries and the testing dataset containing 25,976 entries. Each entry in the dataset represents a unique passenger journey and includes information such as gender, customer type, age, type of travel, class, flight distance, and various satisfaction ratings for different aspects of the journey, including inflight wifi service, departure/arrival time convenience, online booking experience, seat comfort, cleanliness, etc. There is an

additional column dedicated to the satisfaction level, indicating whether passengers rated their experience as satisfactory, neutral, or dissatisfactory — serving as the target variable for prediction.

Problem Statement

Given the context outlined in the introduction and the past survey data, our question is: Can we predict airline customer satisfaction?

Project Value

By analyzing the dataset and predicting airline customer satisfaction, airline companies can identify areas for improvement in their services and amenities, leading to enhanced customer experiences and increased customer loyalty. Predictive models can assist airlines in allocating resources more effectively by focusing on aspects of the travel experience that have the most significant impact on customer satisfaction, resulting in cost savings and improved operational efficiency. This project promotes a data-driven approach to decision-making within the airline industry, enabling airlines to make informed decisions backed by empirical evidence, rather than relying solely on intuition or past experiences. Ultimately, the ability to predict and optimize customer satisfaction can lead to improved business performance, including higher revenue, increased market share, and a stronger brand reputation.

Repository Link

https://github.com/Peta0228/Airline-Satisfaction-Prediction