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**Deliverable:** Project Proposal for Data Science and Business Intelligence Group Project

**Deliverable Date:** April 14, 2021

**Project Title:** Airline Passenger Satisfaction

**Data Retrieved From:** Kaggle. Airline Passenger Satisfaction (training: n = 103,904; testing: n = 25,976). <https://www.kaggle.com/teejmahal20/airline-passenger-satisfaction>

**Potential Data Fields (Adapted from Kaggle):**

| * *Gender:* Female, Male * *Customer type:* Loyal customer, disloyal customer * *Age:* The actual age of the passengers * *Type of travel:* Purpose of the flight - personal/business travel * *Class:* Travel class in the plane of the passengers (Business, Eco, Eco Plus) * *Flight distance:* Distance of this journey * *Inflight wifi service:* Satisfaction level of the inflight wifi service (0:Not Applicable;1-5) * *Departure delay in minutes:* Minutes delayed at departure * *Arrival delay in minutes:* Minutes delayed at arrival * *Satisfaction:* Airline satisfaction level (satisfied, neutral or dissatisfied) | * Satisfaction level of:   + *Gate location*   + *Food and drink*   + *Online boarding*   + *Seat comfort*   + *Inflight entertainment*   + *On-board service*   + *Leg room service*   + *Baggage handling*   + *Check-in service*   + *Inflight service*   + *Cleanliness*   + *Departure/Arrival time convenience*   + *Ease of online booking* |
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**Business Problem Addressed:**

Airlines must analyze customer satisfaction to improve service quality. In a customer satisfaction survey for long-haul flights, Delta Air Lines scored 810 on a 1,000-point scale for customer satisfaction. Southwest Airlines scored 826 points, and JetBlue Airways scored 823 points. Improvements in customer satisfactions scores can increase consumer confidence and airline reputation. As a result, travelers will fly more on the airlines with the highest reputations.[[1]](#footnote-0)

**Implementation of Results:**

We will implement logistic regression to identify the features that most significantly influence airline satisfaction. To effectively perform this regression, we must convert our response variable, airline satisfaction level, from text to binary form. In other words, 1 will represent a satisfied customer, and 0 will represent an unsatisfied or neutral customer. Regression results will inform analysts of service areas the airline can modify to raise customer satisfaction levels and outperform competitors.

**Data Instance and Useful Features:**

The main data variables we will include in the data instance are Id, gender, customer type, age, type of travel, class, flight distance, inflight wifi service, and departure/arrival time convenience.

**Target Variable:**

The response variable is customer satisfaction, which, as previously mentioned, will be converted from character to binary format. Each instance represents a customer.

**Added Business Value:**

It is important for an airline, and any company in general, to understand which factors contribute the most to customer satisfaction. Once a company knows that, they can choose which points of the customer experience to focus more or less on to ensure satisfied customers. In the airline industry, satisfied customers could lead to repeat customers, referrals, and overall goodwill. These satisfied customers could also be targets for things like airline rewards credit cards.

1. David Kaplan. “What are the keys to airline passenger satisfaction now?” Kambr Media, 2020. https://www.kambr.com/articles/the-keys-to-airline-passenger-satisfaction [↑](#footnote-ref-0)