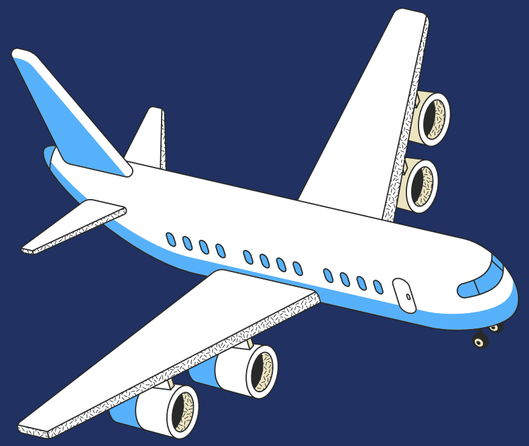
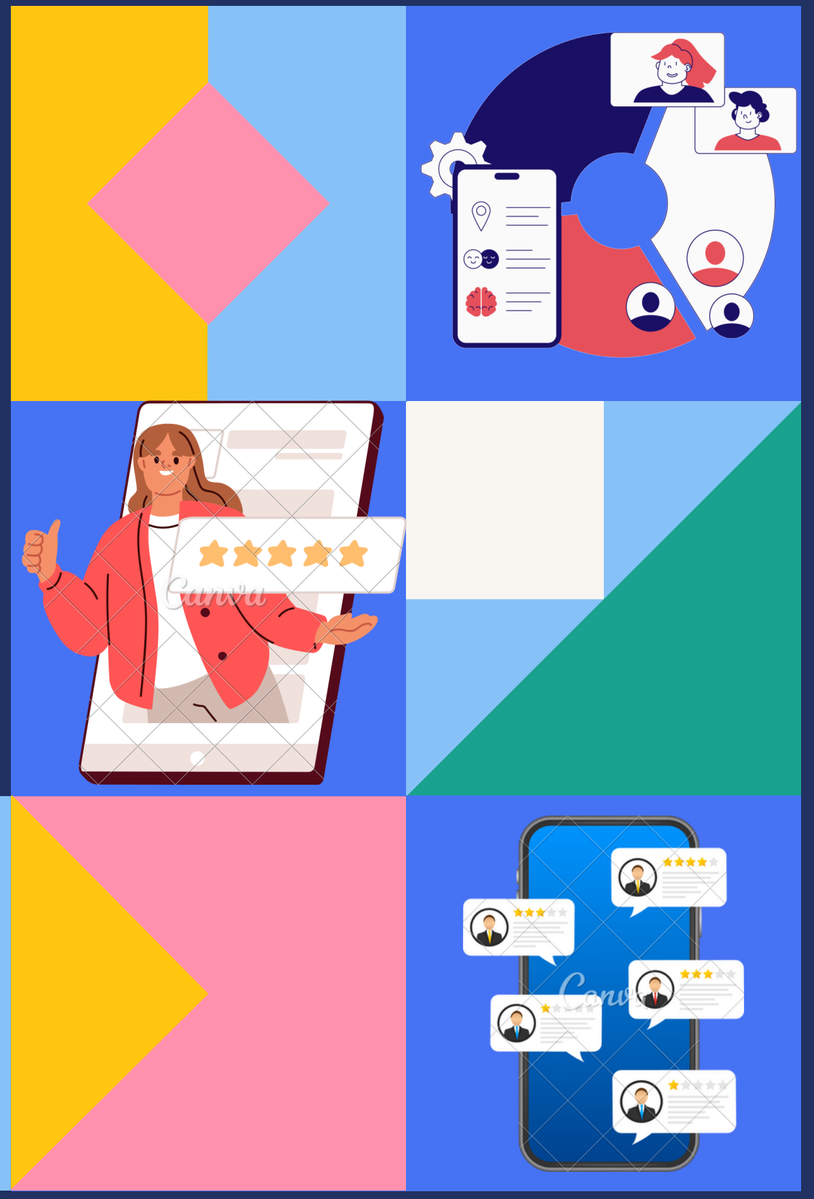


Airlines Customer Satisfaction



Overview

Introduction

Post-pandemic surge in air travel has led to increased operational challenges.

Prescriptive

Air Travel ↑

Customer Satisfaction ↓

What factors are Impacting customer satisfaction?

Predictive

Look for patterns In data to improve satisfaction.

What factors predict customer satisfaction?

Prescriptive Hypothesis

HYPOTHESIS 1

Gender Affects Baggage Handling Rating

HYPOTHESIS 2

Service Class Affects Check-in Rating

Predictive Hypothesis

HYPOTHESIS 3

Gender Predicts Cleanliness Rating

HYPOTHESIS 4

Service Class Predicts Onboard Service Rating

DATASET

Source: Kaggle Dataset

- Survey feedback from passengers on various service aspects
- Likely came from third-party data collectors.
- Reflects actual flight experiences.

- Dataset Size:
  - 129,880 cases in population
  - 5,000 sampled
- Unit of Analysis: Independent Customer Ratings
- Record: Independent customer, unlinked to others.

DATA DICTIONARY

GENDER	• Categorical variable (Male, Female) • representing whether the passenger is male or female, via surveys during the flight to capture demographic data.
Class	• Categorical variable (Economy, Economy Plus, Business), • Recorded based on the service class purchased by the passenger, used to differentiate service levels.
Check-in Service Rating	• Numeric variable (1-5) • Captures passengers' satisfaction with the check-in process, collected through post-flight surveys.
Baggage Handling	• Numeric variable (1-5) • Captures passengers' rating of baggage handling services, collected through surveys after the flight experience.
Cleanliness Ratings	• Numeric variable (1-5) • Captures Passengers' rating of cleanliness of services of flight, collected through surveys after the flight experience.
Onboard Service Rating	• Numeric variable (1-5) • Captures Passenger's rating of onboard services (e.g., meals, Wi-Fi), collected via customer feedback surveys after the flight.

Numeric Variable	N	Mean (SD)	Range	Distri-bution	Variable Type	Hypothesis
Baggage Handling	5000	3.675 (1.100)	1.0~5.0	Not Normal	DV	H1
Check in Services	4999*	3.248 (1.319)	1.0~5.0	Not Normal	DV	H1
Cleanliness	5000	3.385 (1.239)	1.0~5.0	Not Normal	DV	H3
Onboard Service	5000	3.265 (1.314)	1.0~5.0	Not Normal	DV	H4
Categorical Variable	**N**	**Mode**	**-**	**Distri-bution**	**Variable Type**	**Hypothesis**
Class	5000	Eco	-	Multi-nominal	IV	H2 and H4
Gender	5000	Female	-	Binary	IV	H1 and H3

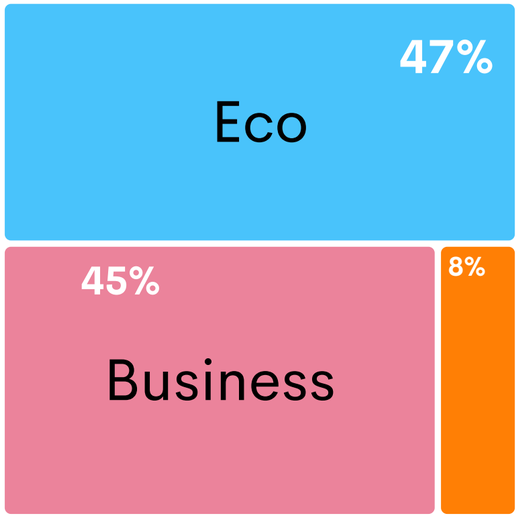
TABLE

DESCRIPTIVE ANALYTICS

* One Outlier (Removed)

INFOGRAPHICS

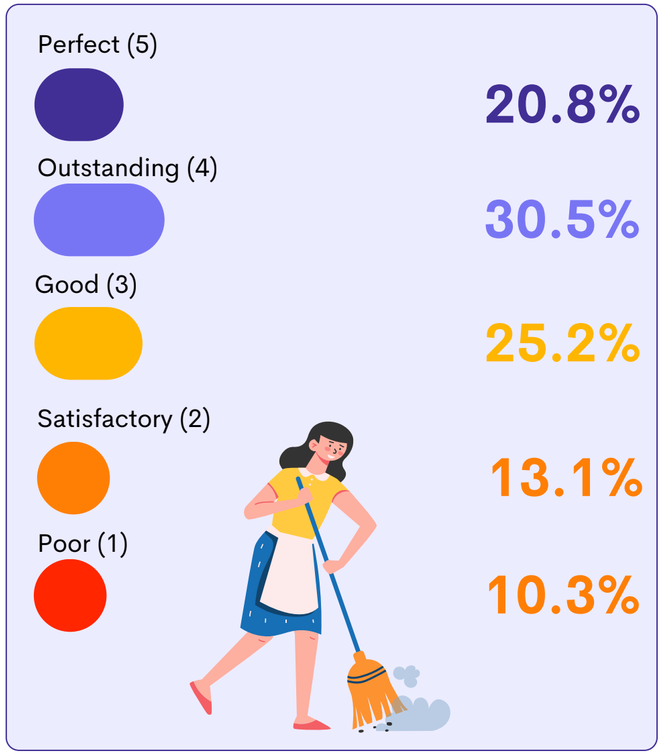
Airline Class



ECO Is the most preferred choice closing followed by **BUSINESS**

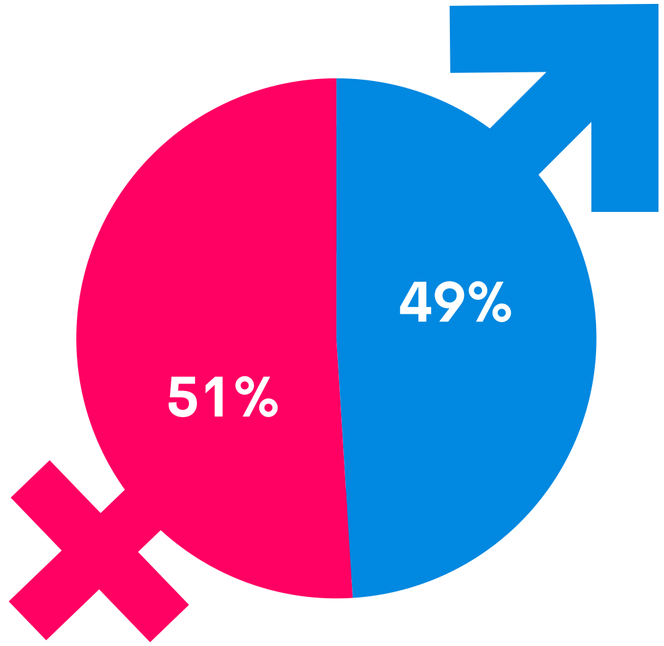
While **ECO PLUS** trails far behind both.

Cleanliness Rating



The most common score for Cleanliness is **4** Followed closely by **3** And **5**

Gender Demographics

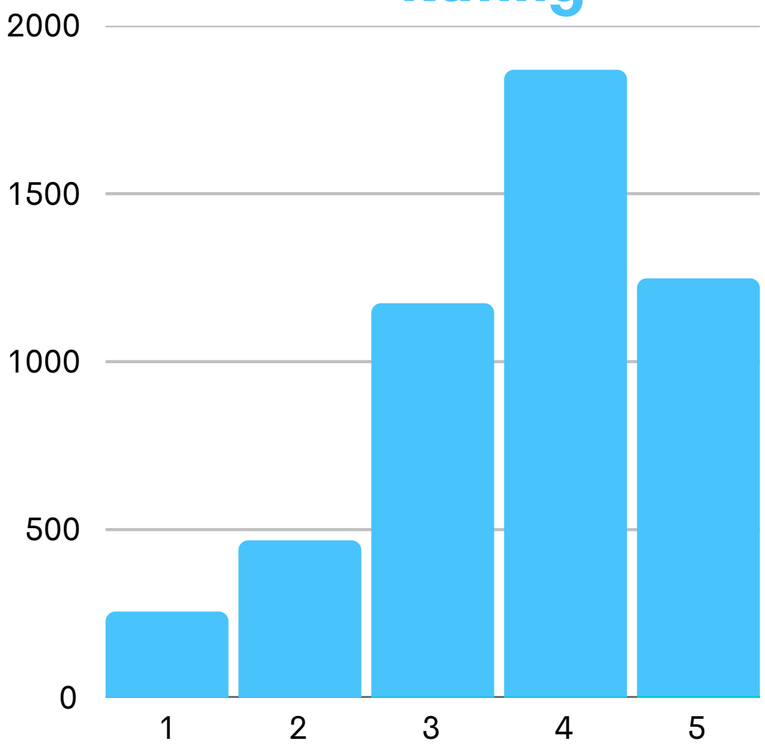


Of 5000 ratings sampled **2548** were from female passengers

The remaining **2452** were male

INFOGRAPHICS

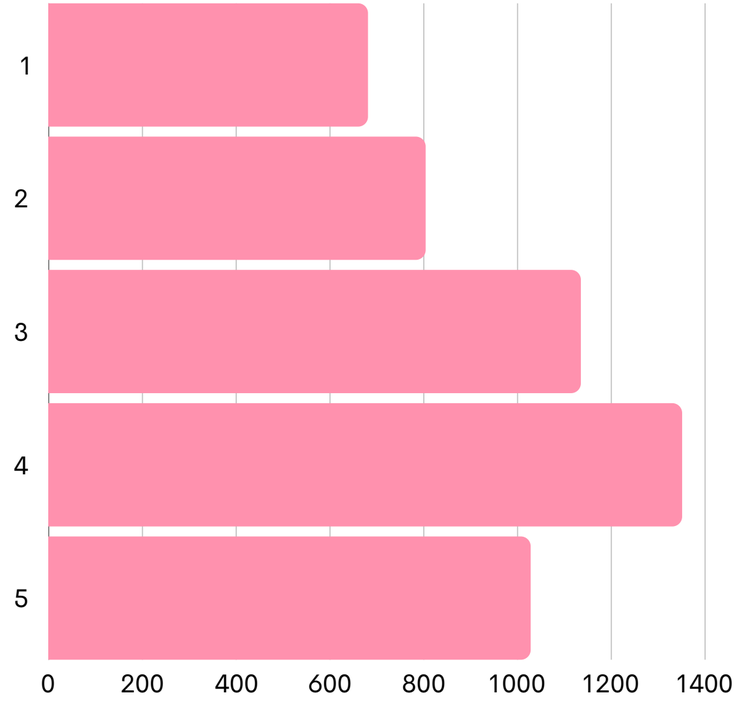
Baggage Handling Rating



A Baggage Rating of **4** is the most comon

4 is the most common rating for Check In Service

Check In Service Rating



On Board Service Rating

1	2	3	4	5
11.9%	18.7%	22.3%	24.9%	22%

Nearly one quarter of Customers rate On Board Service at **4**

Ratings of **3** and **5** trailed right behind

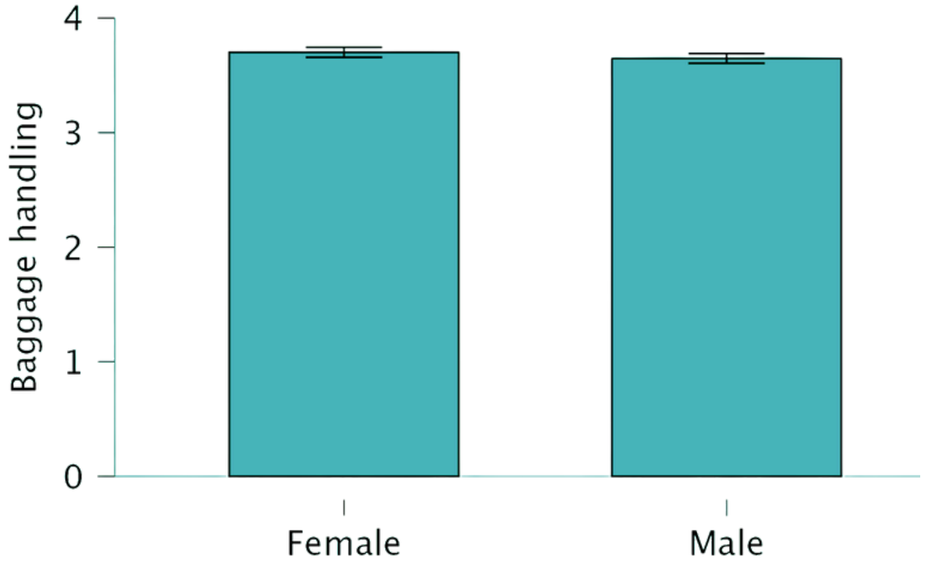
PRESCRIPTIVE ANALYTICS

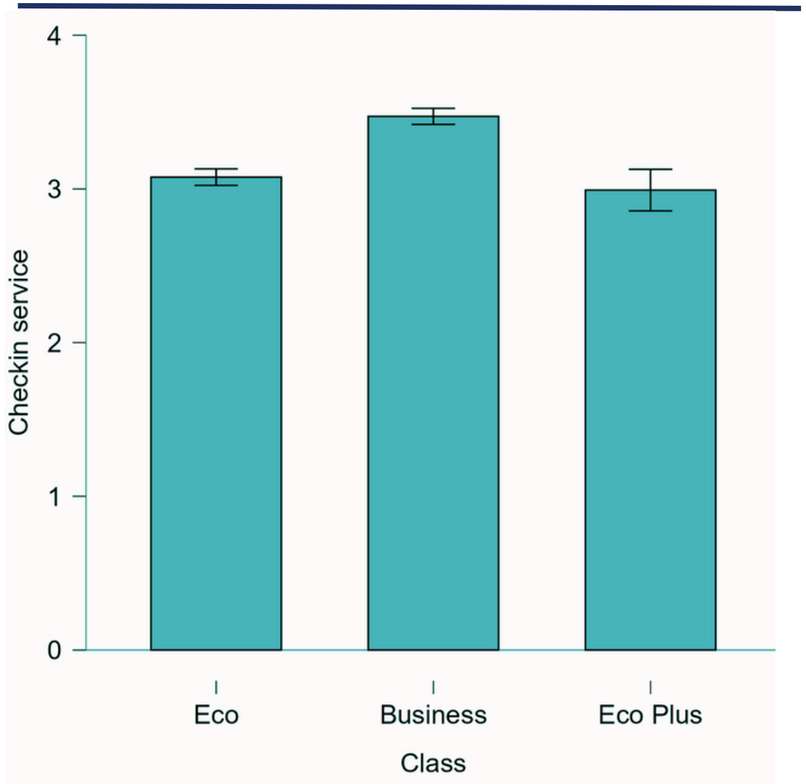
GENDER (IV)	DOES NOT AFFECT → Independent Sample T- Test	BAGGAGE HANDLING (DV)

Test statistic t = **1.701** and p = **0.089** signifies that Gender **does not** significant affect Baggage Handling.

CLASS (IV)	DOES AFFECT → ANOVA	CHECK-IN SERVICE (DV)

Check-in service ratings shows a significant difference between Airline classes with F = **61.015** and p **<.001**





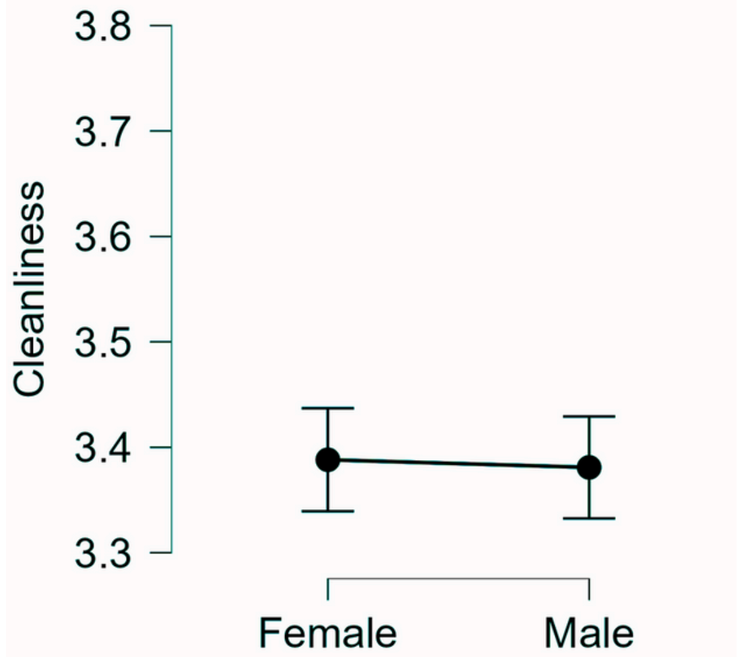
PREDICTIVE ANALYTICS

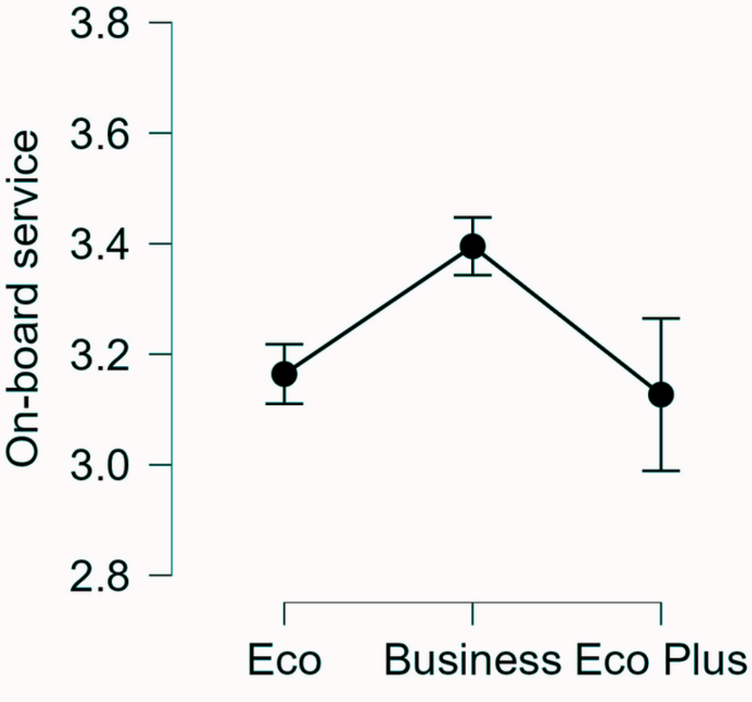
GENDER (IV)	DOES NOT PREDICT → Linear Regression	CLEANLINESS (DV)

Gender is **not** a significant predictor of Cleanliness rating, $F(1, 4998) = 0.043$, $p = 0.836$

CLASS (IV)	DOES PREDICT → Linear Regression	On-Board Satisfaction (DV)

Class significantly predicted On-board service ratings, $F(2, 4997) = 20.301$, $p < .001$





PREDICTIVE EQUATIONS

Gender
Male - 1
Female - 0

Cleanliness Rate Y (hat) = 3.388 -0.007*Gender (Male)

Predicting Female Cleanliness Rating
= 3.388 - 0.007* (0)
= 3.388
Case Actual Rating = 4

Class
Eco Plus - 1
Business - 0
Eco - 0

Onboard Service Y (hat) = 3.164 + 0.231*Business Class - 0.037*EcoPlus

Predicting onboard service for Eco Plus class
= 3.164 - 0.037* (1)
= 3.164 - 0.037
= 3.127
Case Actual Rating = 4

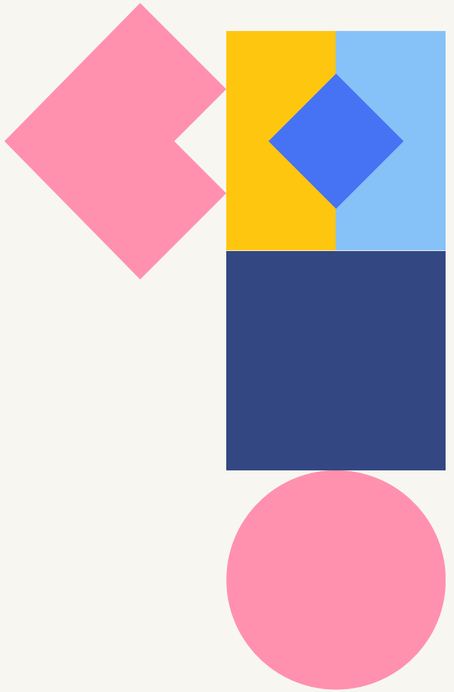
RECAP OF KEY FINDINGS

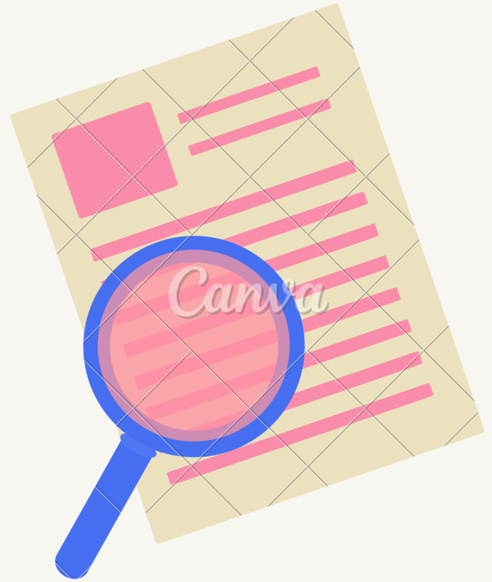
H1 Gender DOES NOT AFFECT Baggage Handling rating.
Contradicts Siu (2019) study.

H2 Airline Service Class AFFECTS Check-In rating
Validates Sezgen et al. (2019) study.

H3 Gender DOES NOT PREDICT Cleanliness rating.
Contradicts Eriksson (2022) study.

H4 Airline service class PREDICTS onboard service rating.
Validates Park et al. (2020) study.





LIMITATIONS & CONCERNS

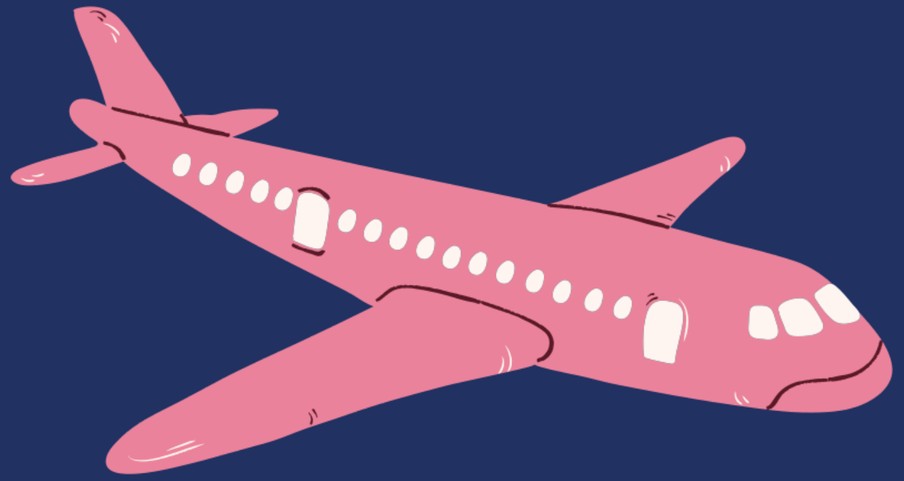
LIMITATIONS

- **Lack of generalizability**
- **Low representation of Eco Plus class**
- **Limited literature**
  - **New Zealand**

CONCERNS

- **Ethical concern of focusing on gender**
- **Models may struggle with accuracy due to human error**

Recommendations



- Keep cleanliness and baggage handling standards equals for male and female passengers
- Increase check in and on board services for Eco Class
- Maintain current quality for all classes