

The background features a dark blue grid. A white line chart with circular markers is overlaid on the grid, showing a fluctuating trend. The chart starts at a low point, rises to a peak, falls to a trough, and then generally trends upwards with some minor fluctuations.

Aviacion Mexicana: *Facing Post-Pandemic Challenges*

**This investigation is brought to you
by:**

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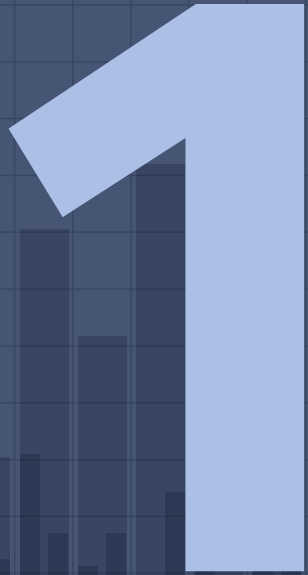




Are **loyalty programs** a valid
strategy for airline companies to
overcome **post-pandemic
hardships**?

Why is this important?

The whole world changed in 2020, but the air transport industry was one of the most affected...



Pandemic impact on Air Travel

- According to IATA, 1.8 billion passengers flew in 2020, a **decrease of 60.2%** compared to the 4.5 billion who flew in 2019.
- The total industry passenger **revenues fell by 69%** to \$189 billion in 2020, and net losses were \$126.4 billion in total.
- On average, there was a **\$71.7 loss incurred per passenger** in 2020.

Loyalty Programs



Companies have been actively looking for ways to spend their resources effectively and efficiently. With no dollar to spare, they are looking into many alternatives that have the most impact in recovering their operations.

Are they relevant? How can they help?

80%

of a company's future revenue will come from just 20% of existing clients.

5%

Higher costs to acquire a new customer over keeping an existing one satisfied and happy.

Project Development:

Building a Machine Learning Model

STEP 1 - Decision Making

The model chosen was logistic regression. These models are used to analyze data and, mathematically **determining the probability of new samples belonging to a class.** There are only two possible answers.

STEP 2 - Application

For this investigation, the objective was to **predict whether new purchasing clients will be loyal or disloyal.** The purpose of predicting this outcome is to create better loyalty programs and to dedicate resources to the right customers.

STEP 3 - Validation

After creating the model, it was confirmed that **this particular data could be correctly analyzed using this strategy.**

Data Preprocessing

In order to clean and prepare the data for the model, several steps were established. They go as follows:

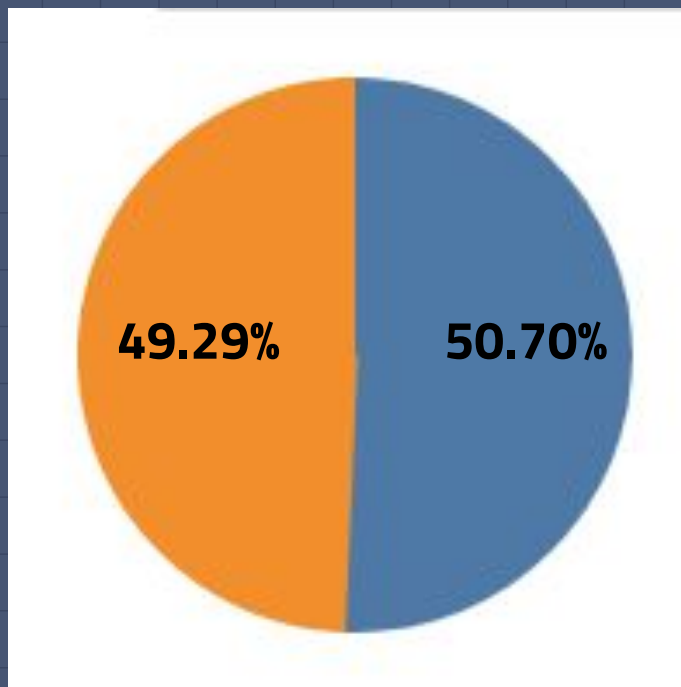
1. It was first checked for **null or empty values**. If so, they were dropped from our dataframe.
2. Secondly, every column was **defined as either numerical or categorical**.
3. Identifying **unique values** in every column.
4. Based on those unique values, categorical columns were **encoded to transform them into numerical values**.
5. **Bins were created for several numerical columns** in order to better use data for analysis.
6. Several **columns were dropped** because they were identifiers of some sort.
7. Data was then **sent to Postgresql using Amazon Web Services**.



A close-up, slightly blurred photograph of a stack of newspapers. The top newspaper's masthead 'WORLD BUSINESS' is visible, along with a page number 'B3'. The text is oriented vertically. A semi-transparent grid pattern is overlaid on the entire image. In the bottom left corner, there is a text overlay in white.

**Big picture: How
does data look like
today?**

Gender

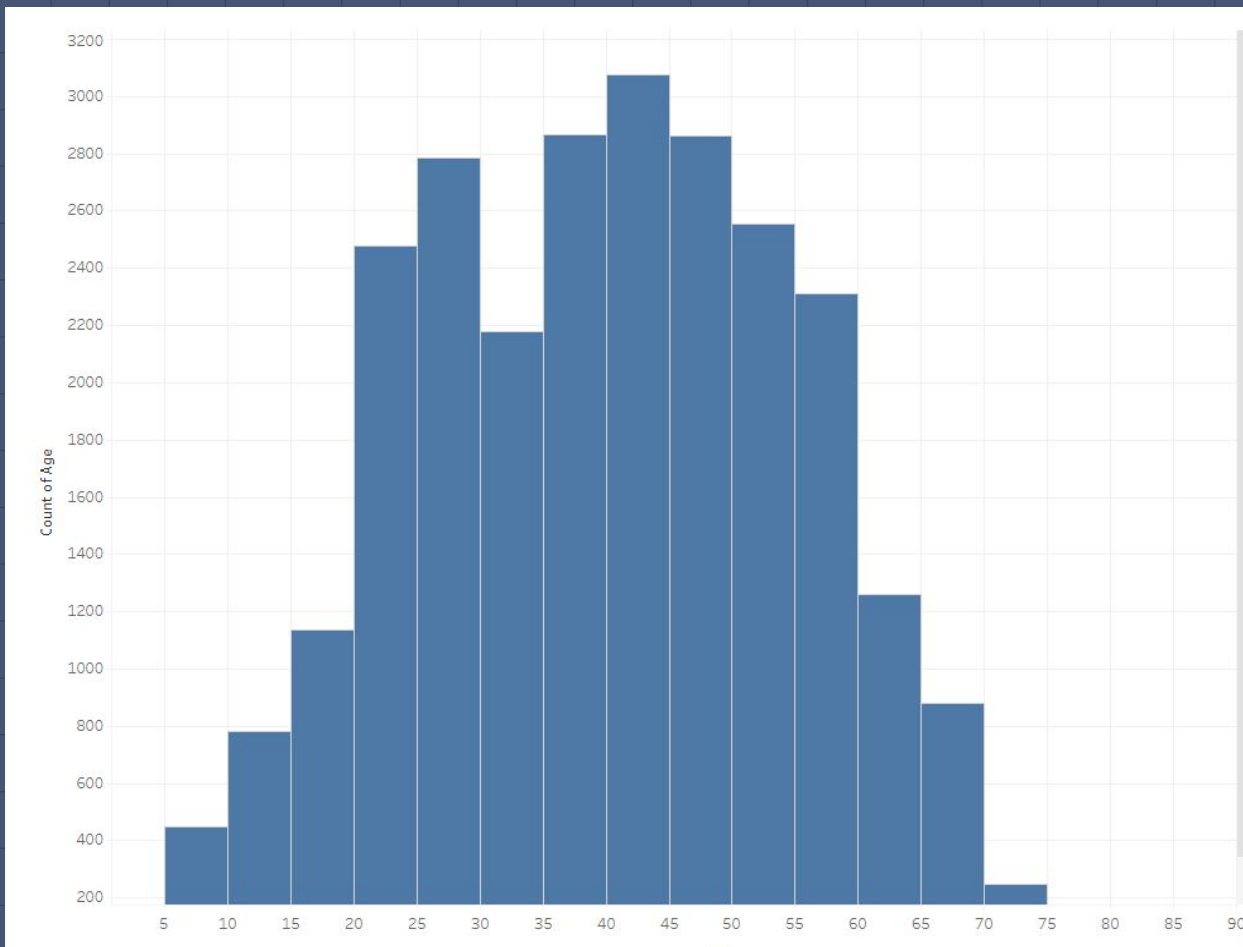


Gender

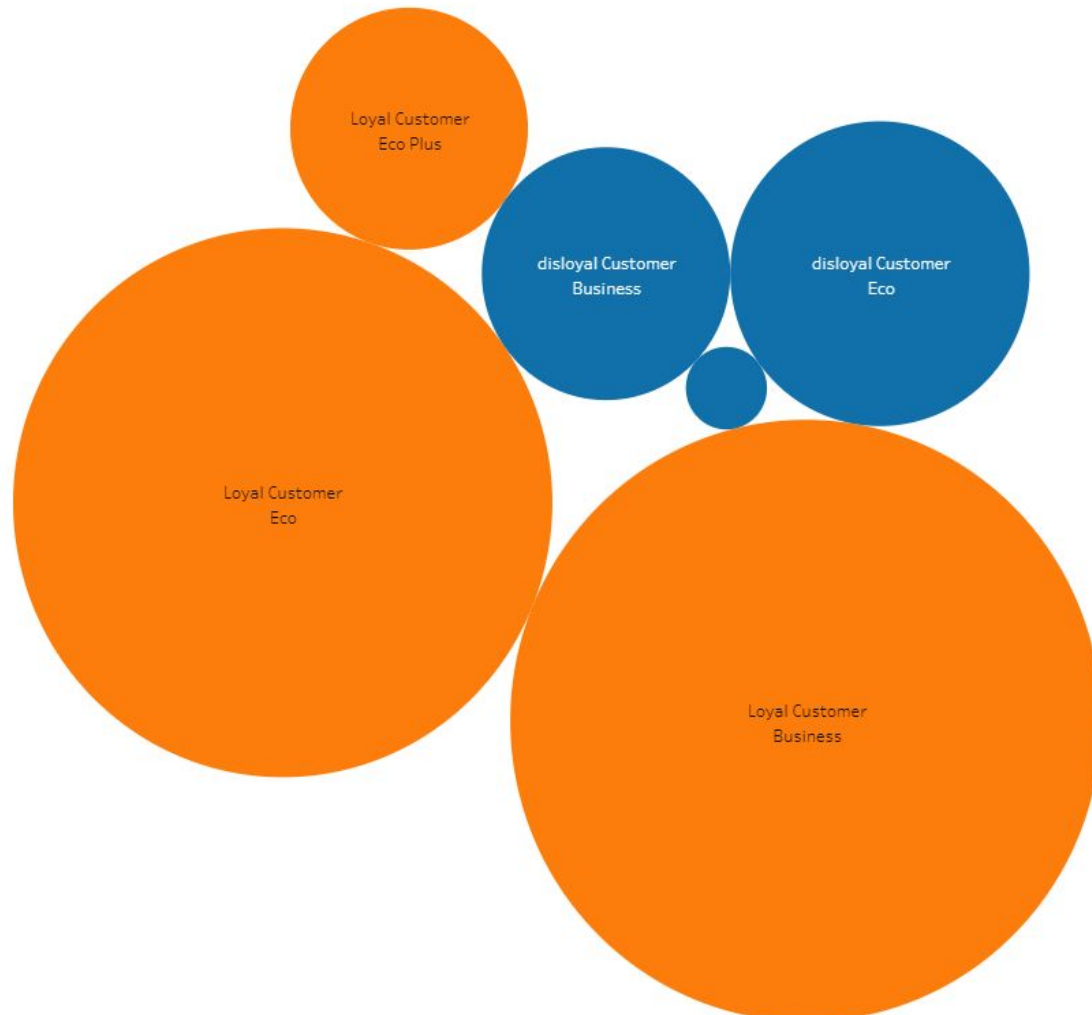
Female

Male

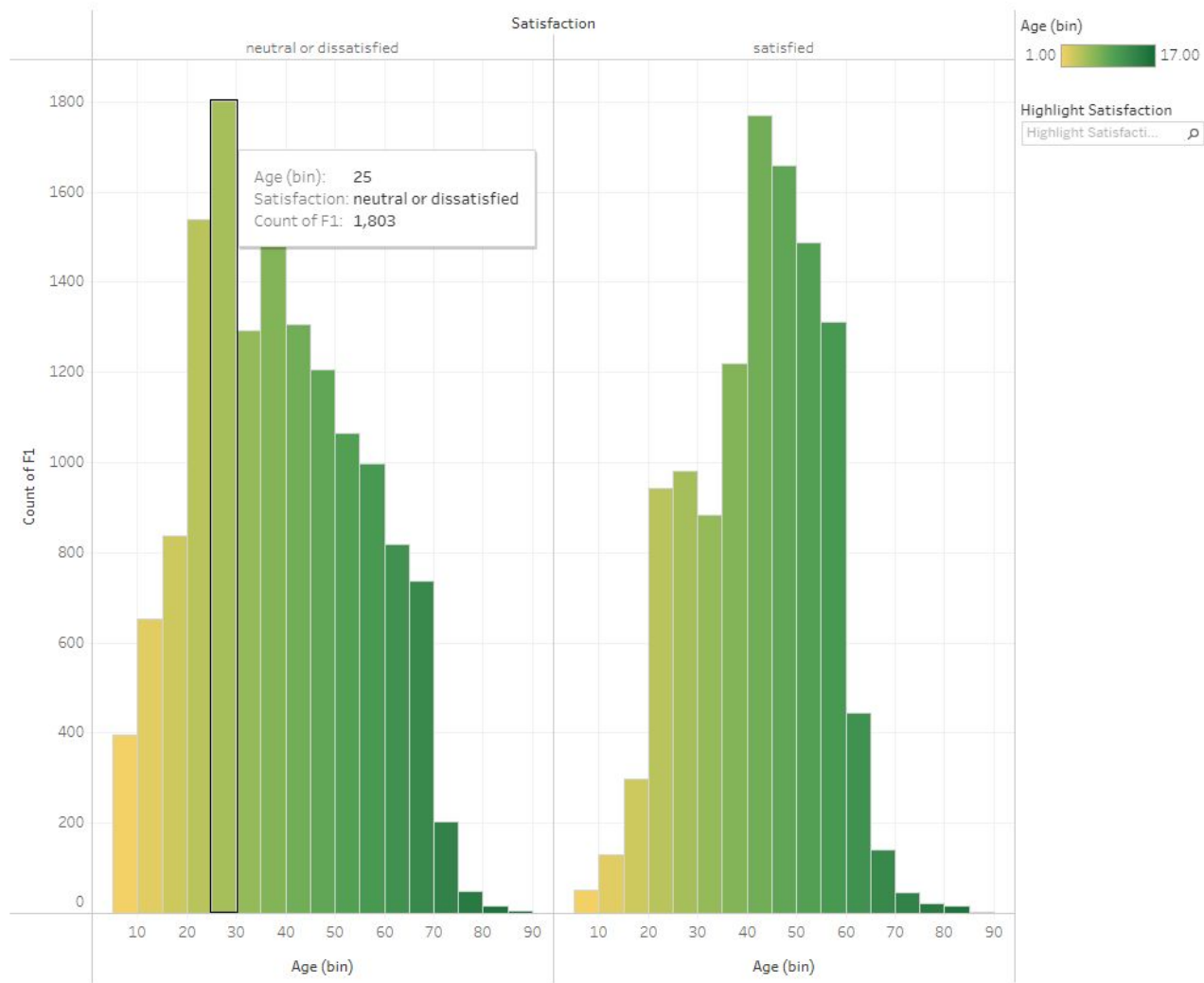
Age distribution



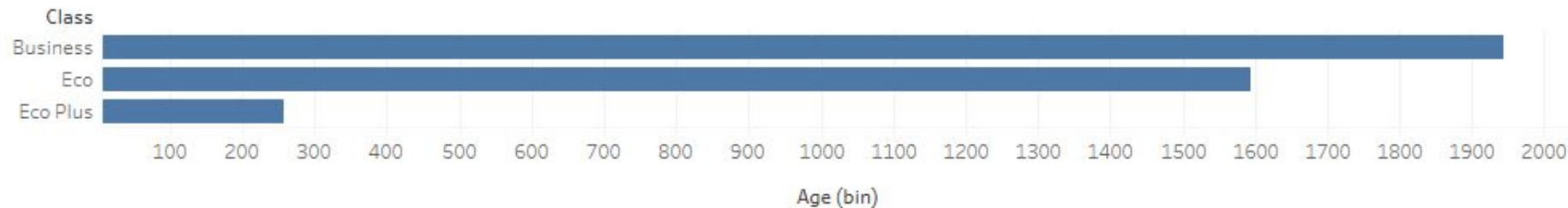
Customer Type: Loyal vs Disloyal



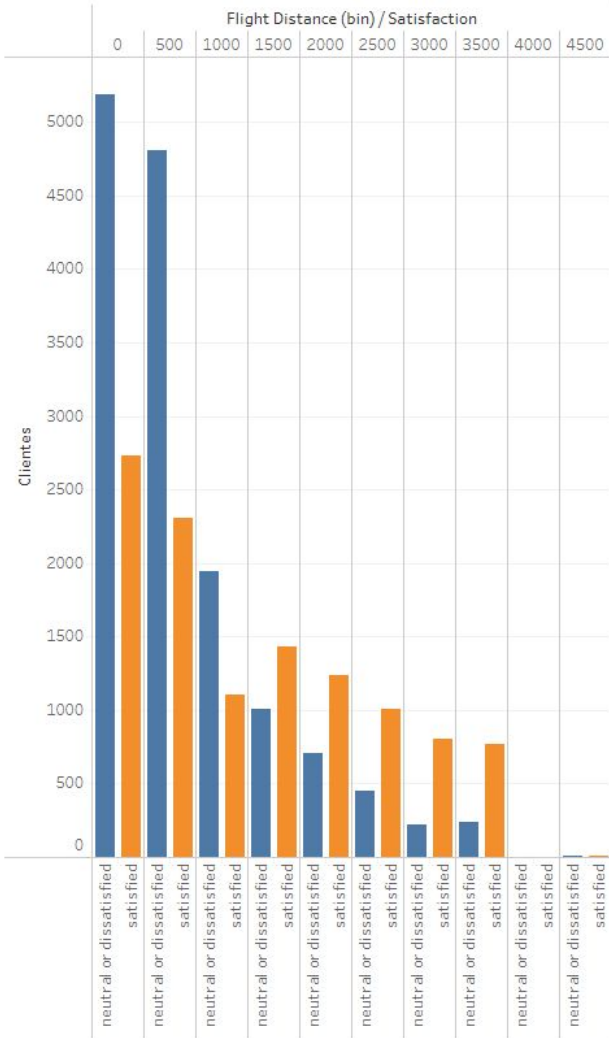
Satisfaction by age



Travel Class by Age



Satisfaction by Flight distance

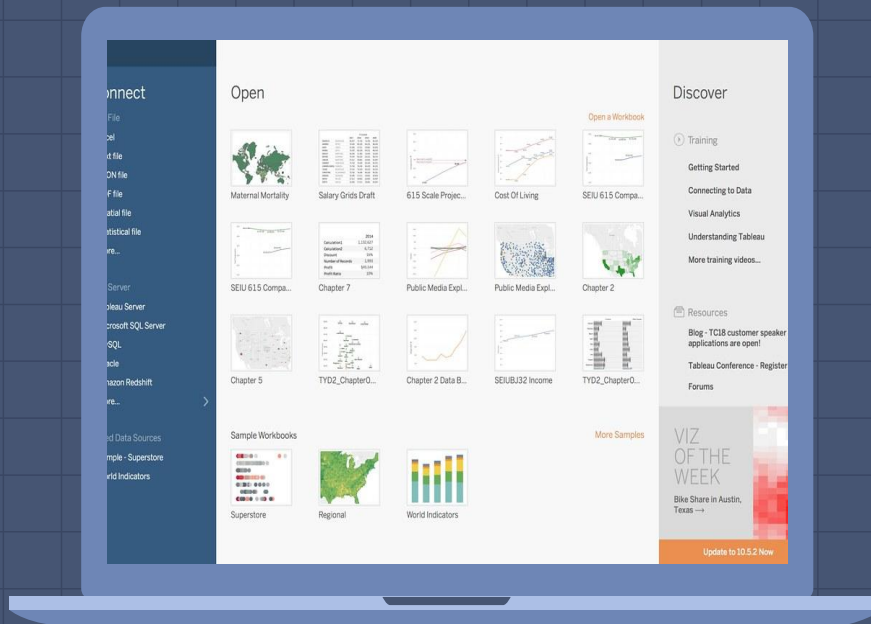


Satisfaction

- neutral or dissatisfied
- satisfied

Why Tableau?

- We choose Tableau to create our dashboard because it is a powerful tool with data visualization capabilities and data can be analyzed very quickly.
- One of the most interesting tools that Tableau provides is interactivity. Some of the graphs created can be modified by the viewer using several filters in order to make a deeper analysis.
- The tableau dashboard can be viewed publicly here: https://public.tableau.com/views/SatisfactionFinal/PassengerSatisfaction?:language=en-US&:display_count=n&:origin=viz_share_link



THANKS!

