PHASE ONE

PROJECT

Introduction

Project purpose

Provide the company with the necessary insights to successfully enter the aviation industry by identifying aircraft options that pose the lowest risk

The project involves a thorough analysis of various aircrafts, focusing on critical risk factors such as safety performance, maintenance costs, operational efficiency, and market viability. By employing data cleaning, imputation, analysis, and visualization techniques

Process steps

Data Understanding

Loading the provided data set and filtering the required field for this project

Data Analysis and Cleaning

Filling the relevant missing values

Data Visualisation

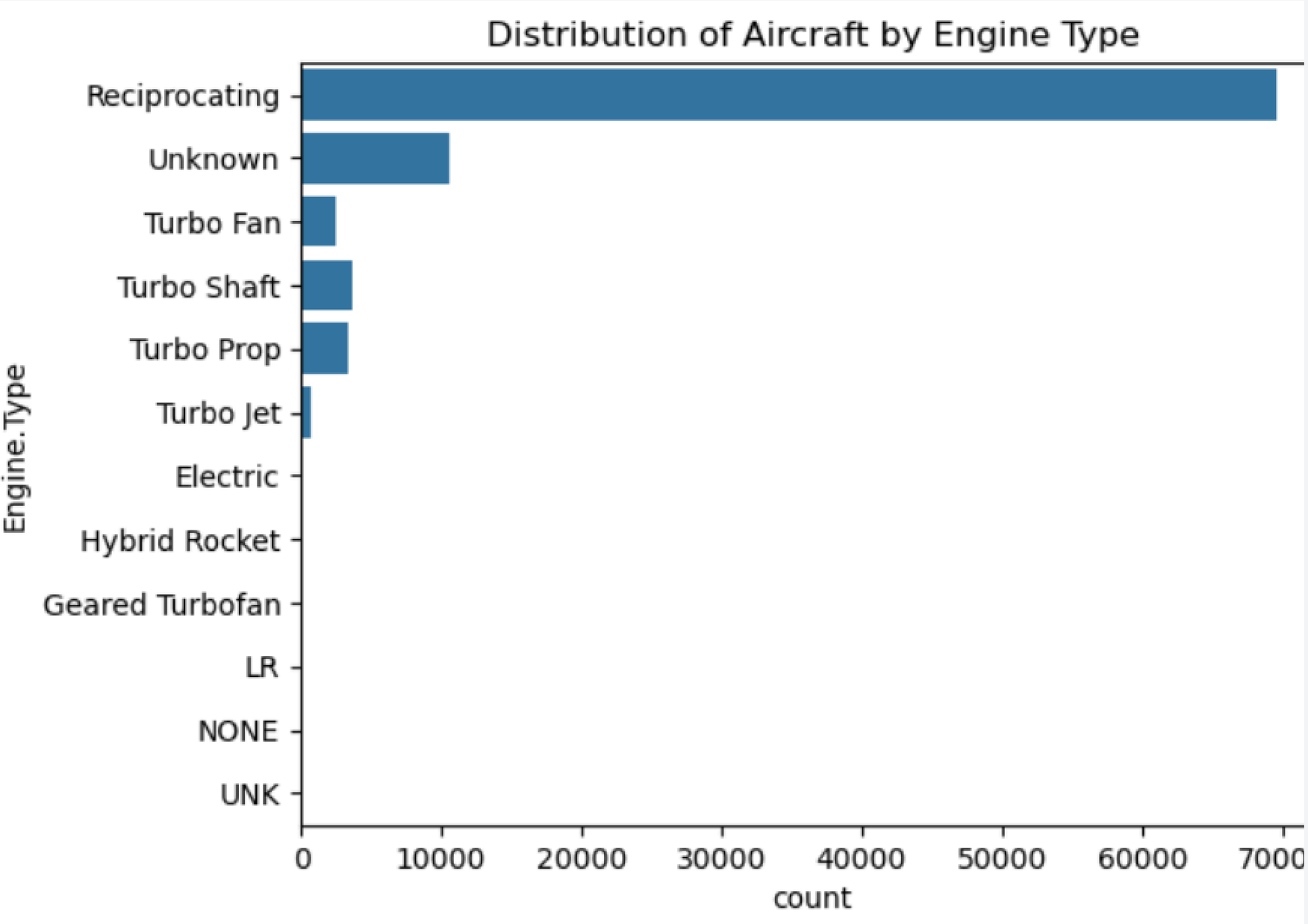
Presenting the data in visual form to provide a clearer understanding

STRATEGY N°2

DATA VISUALISATIONS

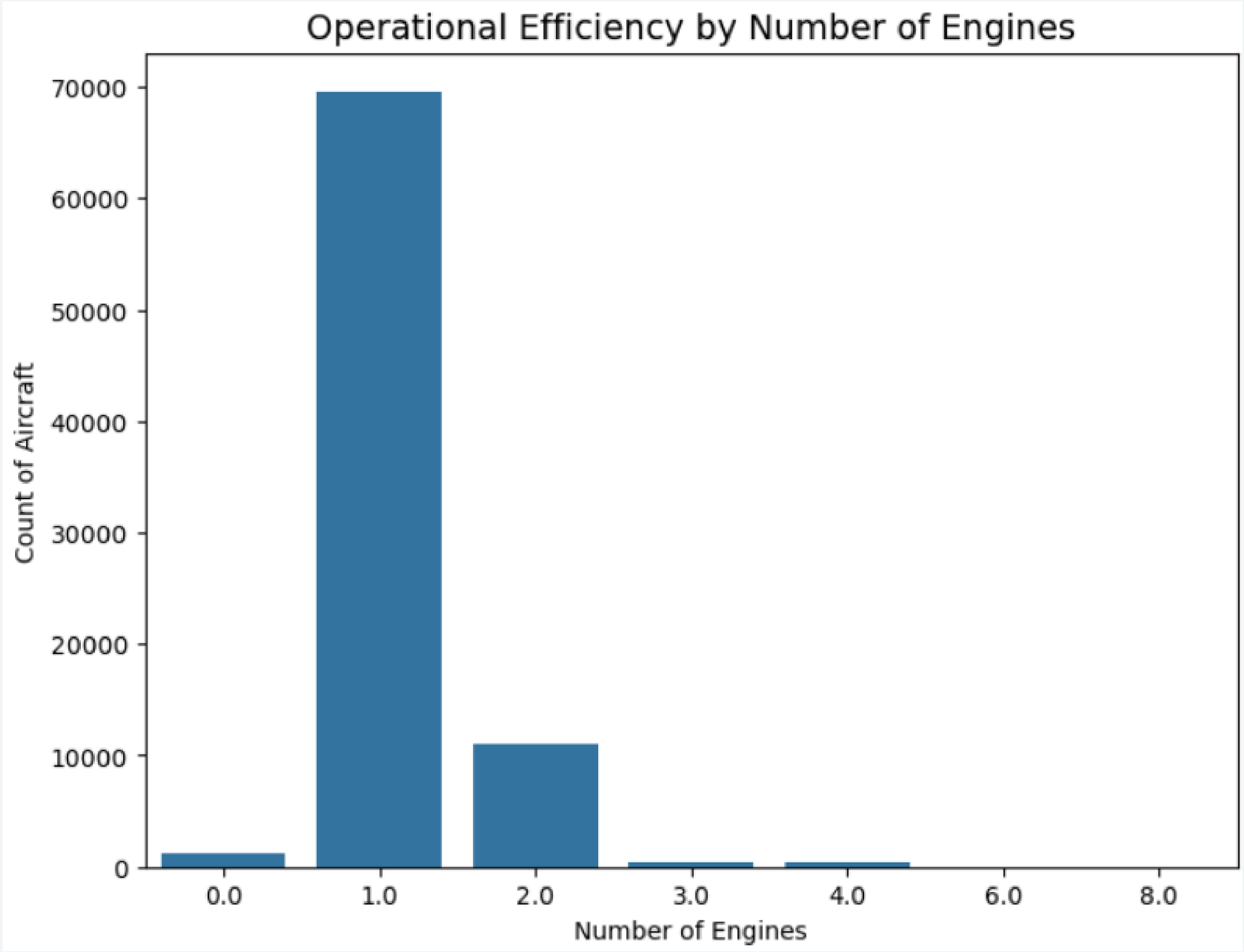
EXPLAINING :OPERATIONAL EFFICIENCY,SAFETY PERFORMANCE AND RISK ASSESSMENT

Horizontal Bar Plot explaining Operational Efficiency using Engine Types



This plot shows the distribution of aircrafs by Engine Type, providing insight into how operational efficiency may vary based on the type of engine used in different aircraft. The count of aircraft for each engine type is displayed on the horizontal axis, making it easier to compare across categories.

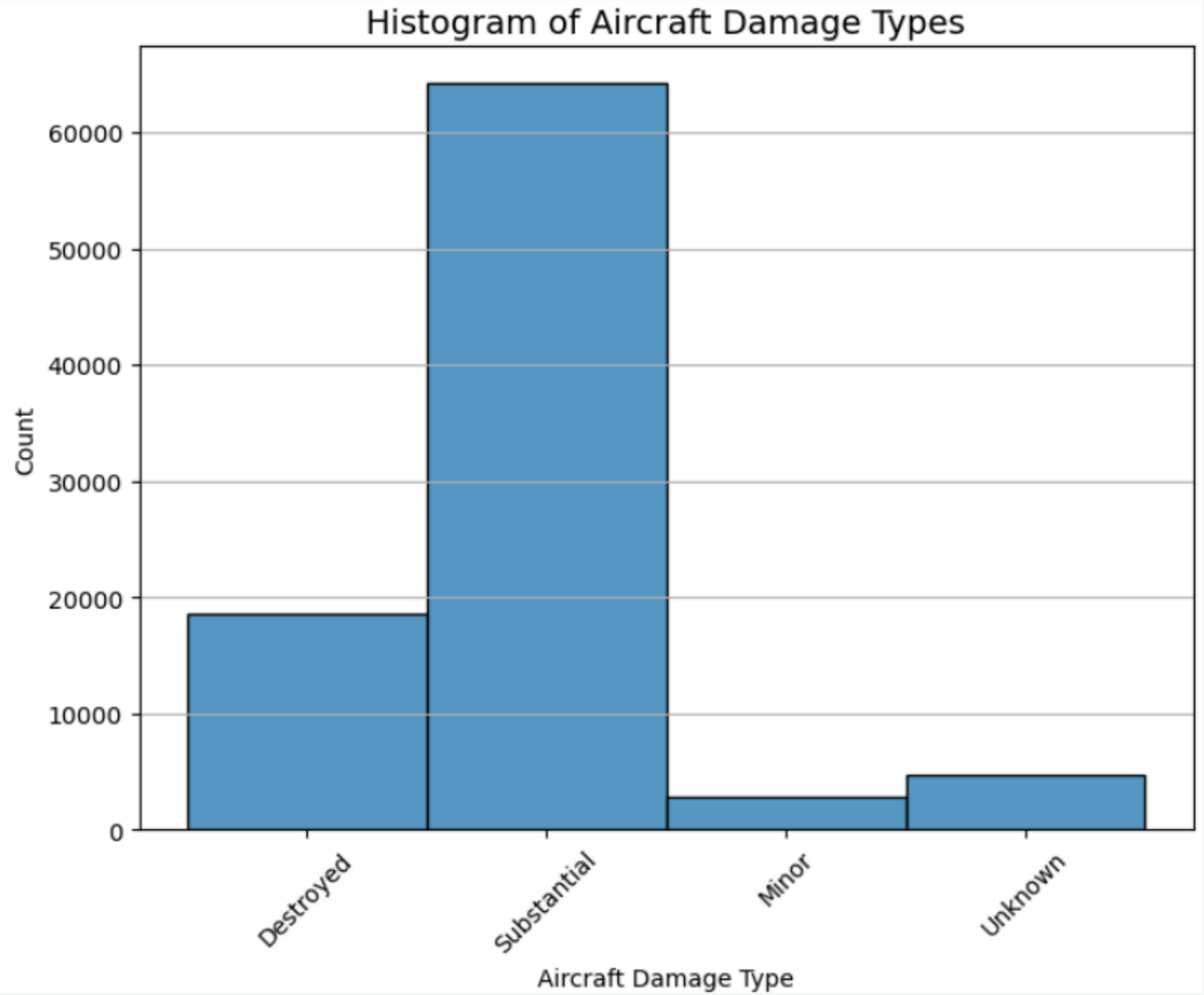
Visualization of Number of Engines



The plot shows the number of aircraft for each engine type (such as turbofan engines, or turbojet engines). Since reciprocating engines has the highest count. Then it might correlate with certain advantages like cost-effectiveness, reliability, or operational efficiency.

SAFETY PERFORMANCE VISUALISATIONS

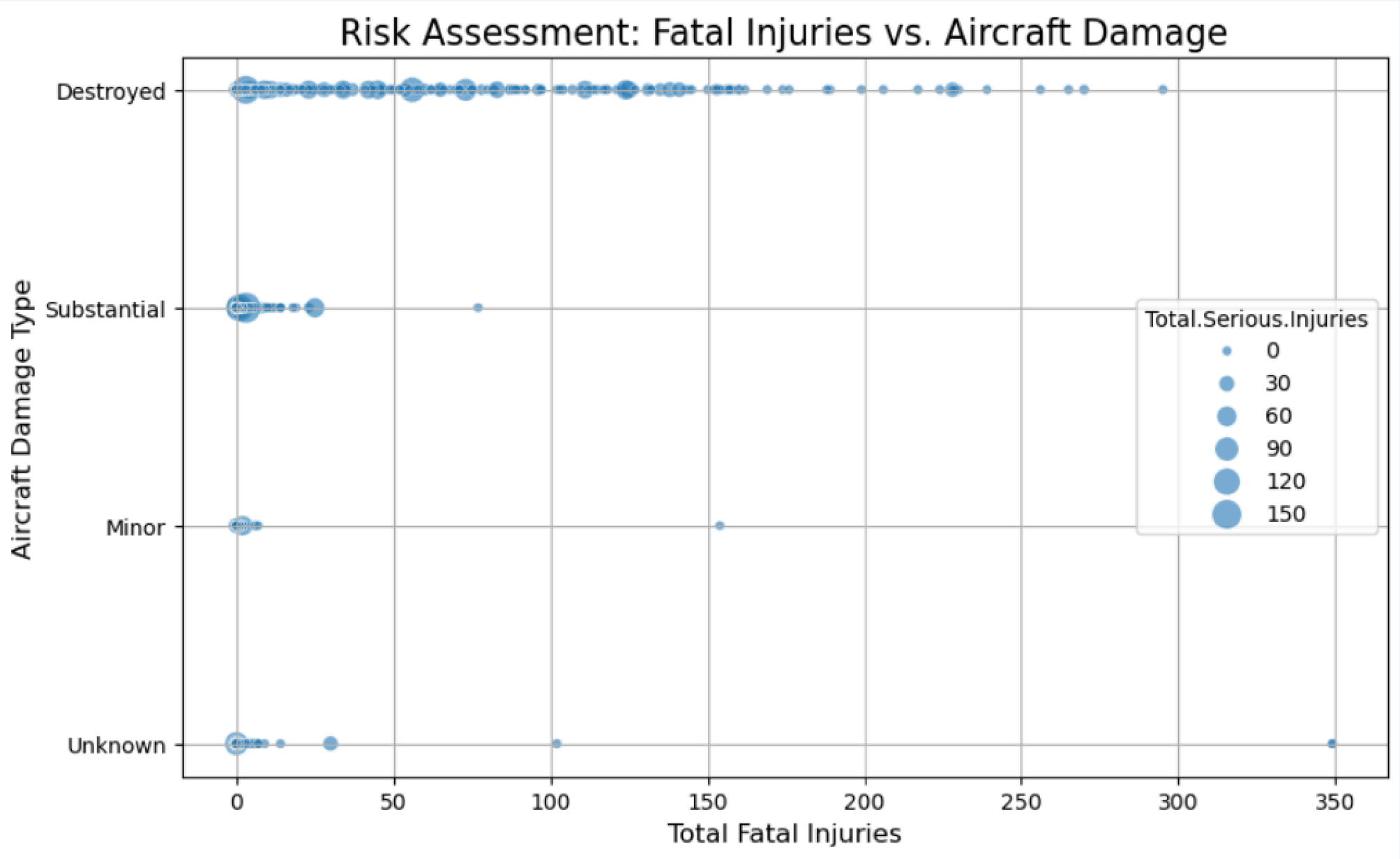
Histogram of Aircraft Damage Types Against Their Count



The histogram displays the frequency of each type of aircraft damage. A high bar for a particular category means that this type of damage is more frequent in aircraft incidents. Since substantial damage has the highest count, it indicates that this is the most common damage type reported in incidents.

RISK ASSESSMENT VISUALISATIONS

Scatter Plot for Risk Assessment: Fatal Injuries vs. Aircraft Damage



This scatter plot visualizes the relationship between total fatal injuries and aircraft damage in aviation incidents. The size of the points represents the number of serious injuries, providing a multidimensional view of risk factors associated with aircraft accidents.

PROFESSIONAL INSIGHTS AND RECOMMENDATIONS

- With regards to operational efficiency,for commercial purposes Models with 1 engine type are prefferred.As they’re cost effective in the aspect of fuel reservation. However, for private purposes aircrafts with 4 engines are preffered
- As per the risk assessment visuals, Models with minor damage types are recommended for they’re durability
- In terms of maximizing returns, investing in models with reciprocating engine types are the way to go for commercially ofcourse. Turbo Jet engines may be advised for private purposes to fit the need to arriving faster.

THANK YOU

Useful links:

Tableau Dashboard

Github link