Aircraft Safety Analysis

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Summary

Business Problem:

- Interested in commercial and private aircraft enterprises
- Requires knowledge of safest aircraft

Methods used:

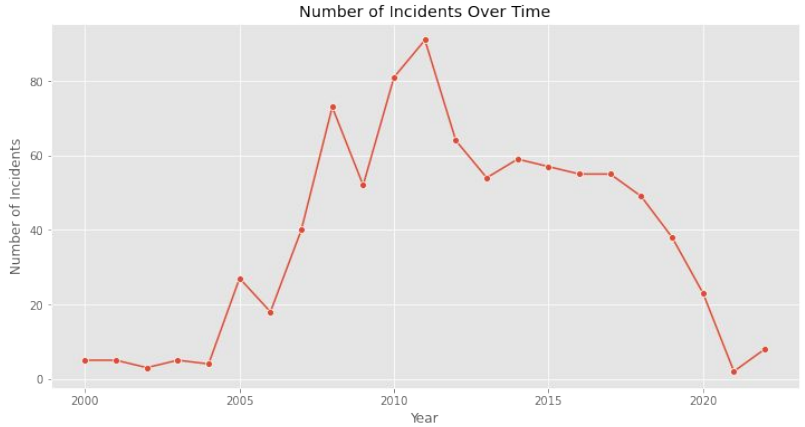
- Utilized different data analysis methods to prepare, clean, and statistically model data of potential candidates
- Further research into aviation

Outline

- Business Problem
- Data
- Methods
- Results
- Conclusions

Business Problem

My company has decided to expand into new industries.Specifically, they are interested in purchasing and operating airplanes for commercial and private enterprises.



Data

The data provided for this analysis is from the National Transportation Safety Board.

What does it include?

- Aviation accident data from 1962 to 2023

Key variables include:

- Make
- Model
- Number of Engines
- Engine Type
- Injury count

Methods

Data Prep:

- Checking Shape and Values
- Formatting Values
- Confirming Data Types

Data Clean

- Dropping Irrelevant Columns
- Handling Missing Data
- Imputation of Required Data

Results

Business Recommendations:

1. For commercial use, consider aircraft from Embraer, Boeing, and Airbus, which show the lowest fatal injury rates.

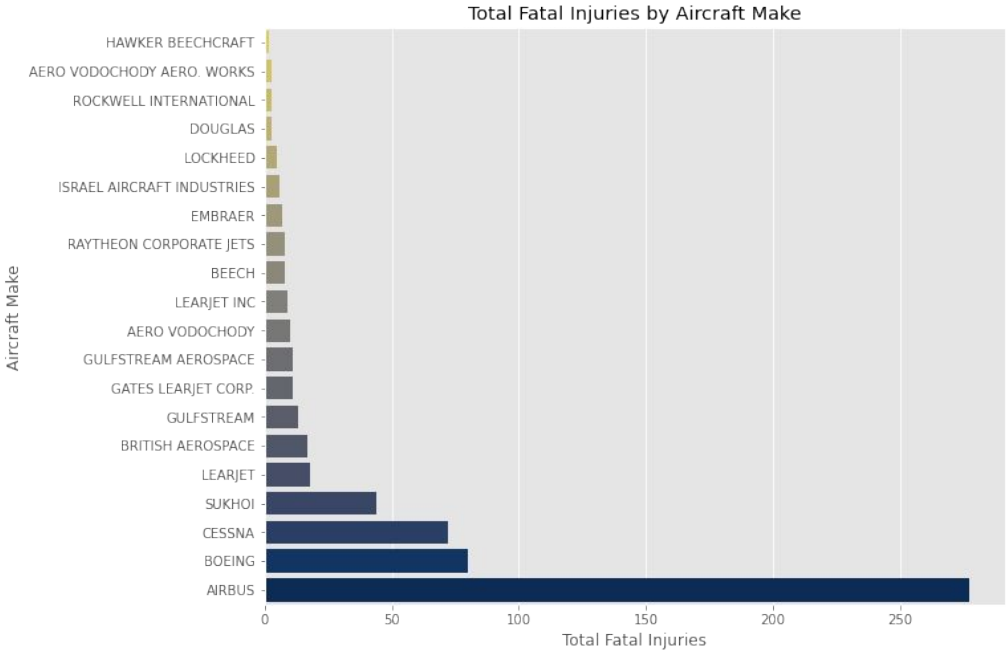
2. For private aircraft, Embraer, Raytheon Corporate Jets, and Gulfstream are recommended based on their safety records.

3. Prioritize aircraft with three or more turbo or jet engines and those built after 2015 to benefit from the latest safety features and technologies.

Total Fatal Injuries by Aircraft Make

This visualization illustrates for each aircraft make:

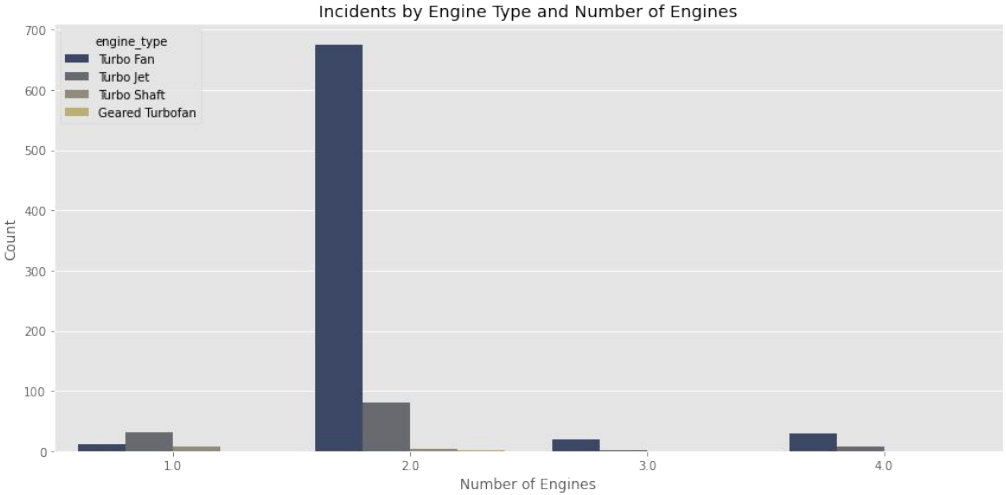
- Total count of incidents
- Top 20 lowest incidents



Incidents by Engine Type and Number of Engines

This visualization illustrates:

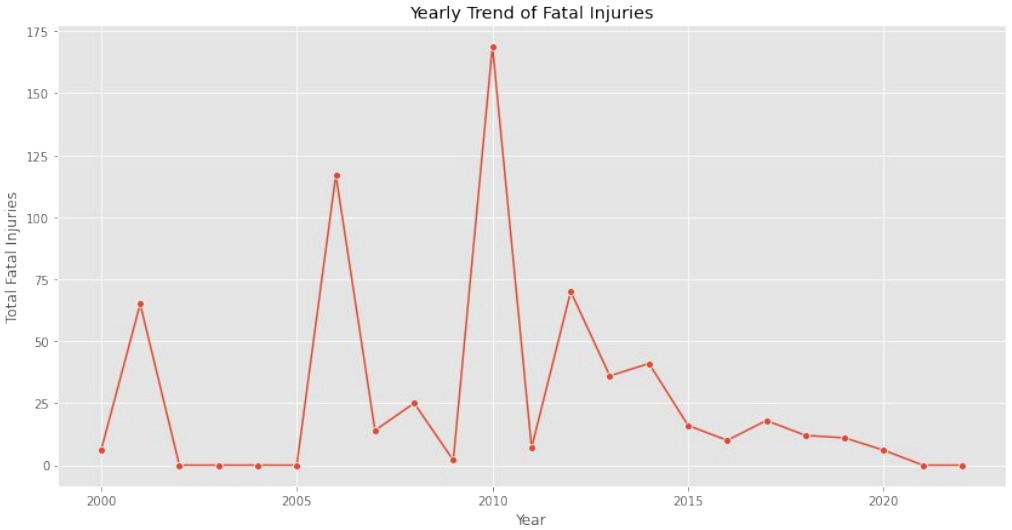
- Incident count for Engine Type and Engine Count



Yearly Trend of Fatal Injuries

This visualization illustrates:

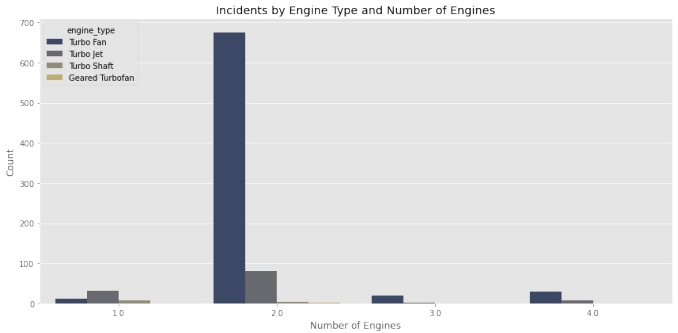
- A total count of fatal injuries over time

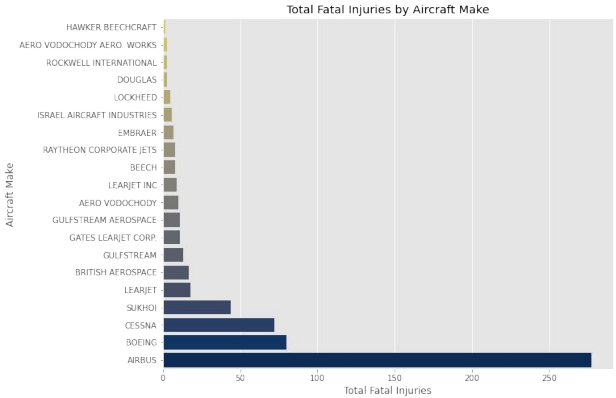


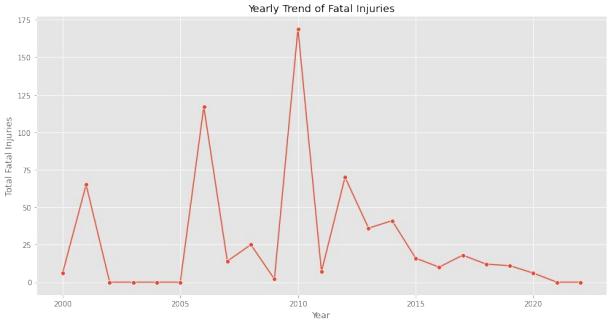
Conclusions

In summary:

Prioritizing aircraft with three or more engines will increase safety. Using listed companies for both commercial and private use will also increase safety.







Thank You!

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