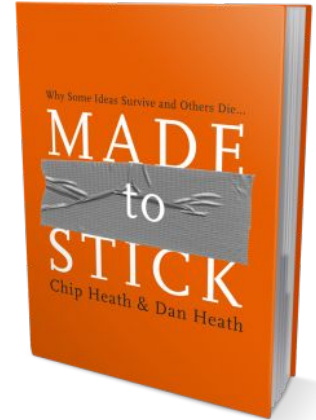

Data-Driven Insights for Aviation Market Entry

By, Nelson Muia

Project Overview

- To diversify the organizations portfolio by venturing into the aviation industry.
- To target specific niches within the industry, particularly, the Private flights market, and the Commercial flights market.
- To use ensure we reduce the risk of venturing into this new market, by relying on data-driven insights.



1. Source of data

The National Transportation Safety Board that includes aviation accident data from 1962 to 2023 about civil aviation accidents in the United States and international waters.

→ Apply data preparation methods

Cleaning the data, so as to remove missing values, and imputing it bring clarity

→ Apply data analysis

Compare and contrast and generates hypothesis, and inturn insghts

→ Visualization and advisory

From the insights add value to decision making by directors

Business understanding

The key stakeholders, who are the directors what to venture into the aviation industry and want to make sure it turns out profitable.

The questions we need to answer:

- Which aircraft make are safest, thus posing lowest risk?
- Which aircraft make among the safest are best for Private flights?
- Which aircraft make among the safest are best for Commercial flights?

Business understanding

- ❑ By answering those questions, we ensure our organizations, is strategic, it creates value, and captures value as well.

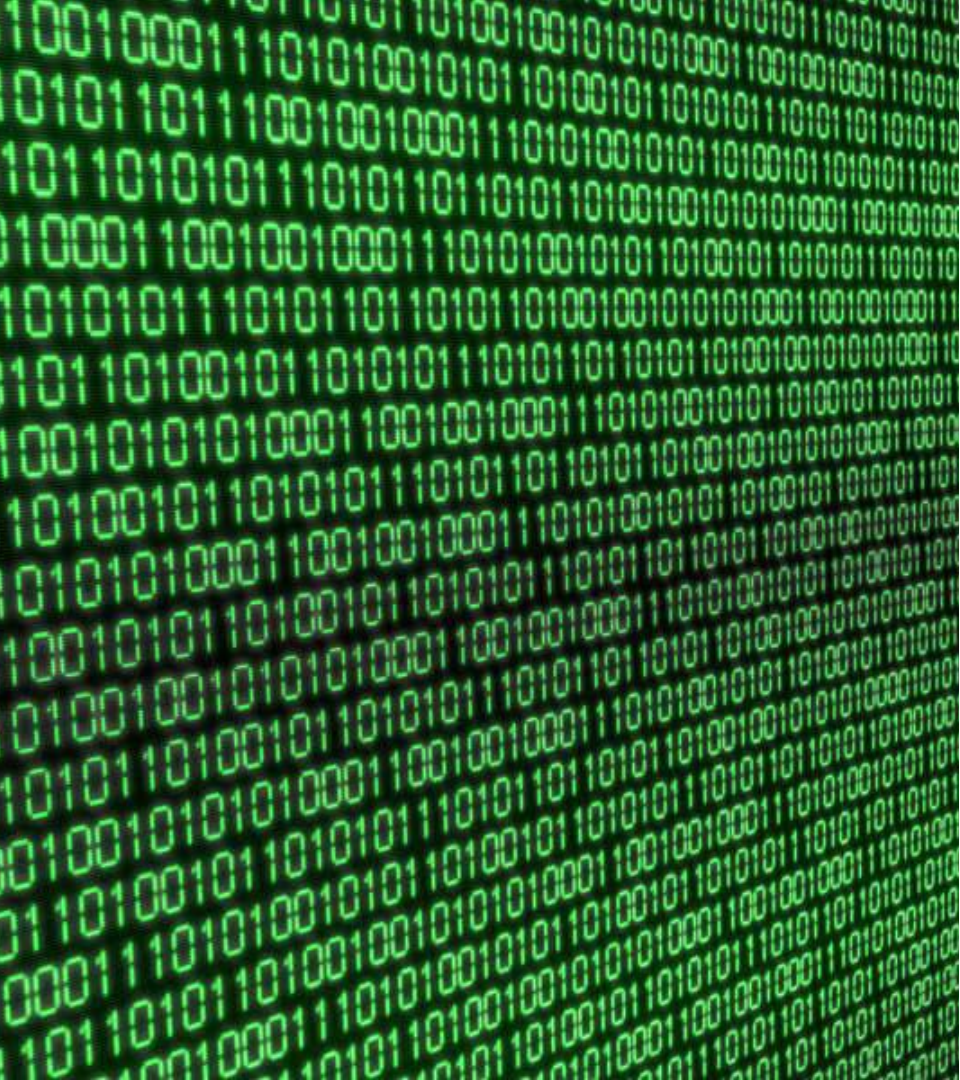
For us to ensure we generate actionable insights based on our objective, **DATA UNDERSTANDING** is pivotal. Our dataset has data from the USA, and across the world/





DATA UNDERSTANDING

- The data comprises of information about numerous aircraft makes of different model.
- The number of accidents each make has been involved in between 1962 and 2003.
- The different categories of trips which the different aircrafts frequently engage, e.g. Business, Personal, Instructional e.t.c.



DATA ANALYSIS

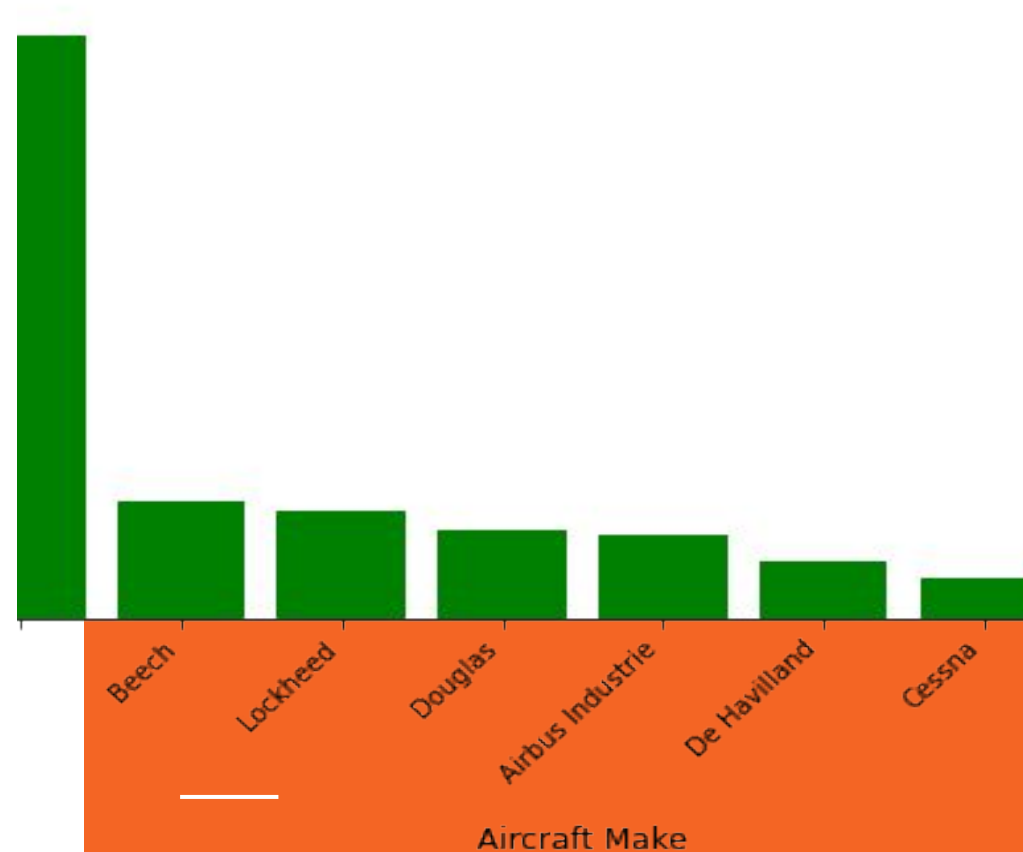
We conducted our analysis using data science techniques and tools such as Pandas library, and Matplotlib, which enable us to prepare, clean, manipulate, and visualize data.

CONCLUSION

- Cessna and Beech consistently top the safety rankings.
- When are key consideration are put together.

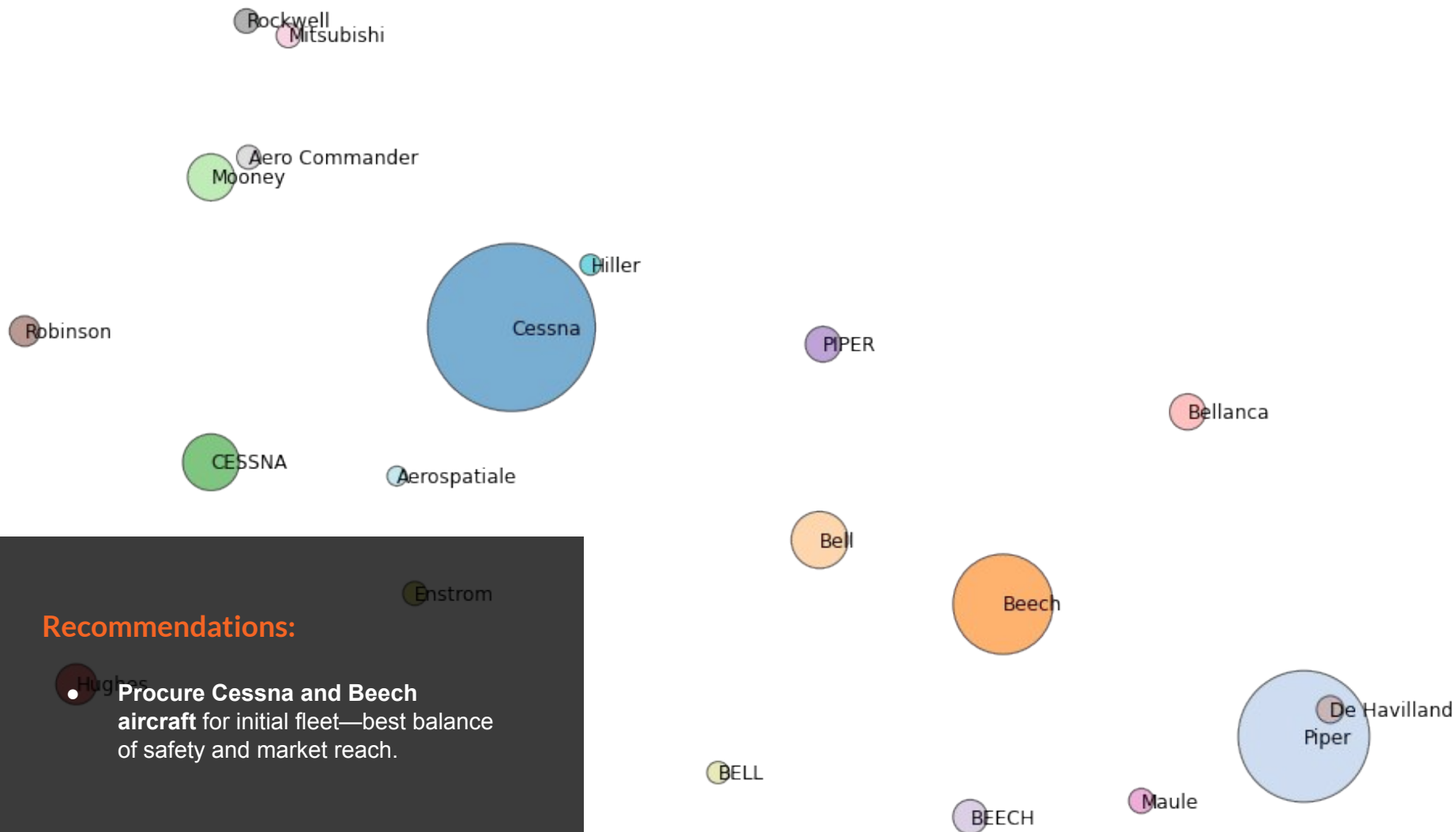
Insight:

- **Cessna** and **Beech** lead in both business and personal flights.
- High versatility and market penetration across flight purposes



Insight:

- Only **Cessna** and **Beech** appear in the quadrant with both **high safety** and **high usage**.
- **Piper** and **Mooney** have strong presence but fall short on safety.



Recommendations:

- Procure Cessna and Beech aircraft for initial fleet—best balance of safety and market reach.

Top 20 Aircraft Makes Used for Personal Flights

