XYZ COMPANY

Airline Business Analysis

Summary

This project was undertaken to provide insights to executives at XYZ Company who require this information to make a decision as to whether the company will move forward with its investment into the airline industry.

The findings of this study were that the business has strong incentive to diversify due to the trends presented from this study, however the risks associated with the business are extremely high. Market trends show that North America has the highest amount of accidents, hence the highest amount of traffic and would therefore be a great place to invest.

Outline

- Business Problem
- Data
- Methods
- Results
- Conclusions

Business Problem

To diversify its portfolio, the company is entering the aviation industry, aiming to purchase and operate aircraft for commercial and private use. However, it lacks knowledge of the associated risks.

The task is to identify aircraft with the lowest risk levels, analyze factors influencing accidents or incidents, and deliver actionable insights to guide the new aviation division in making informed purchase decisions.

Data

The dataset, *Cleaned_AviationData.csv*, contains key information on aircraft incidents and accidents, including aircraft type, operational purpose, weather conditions, injury severity, damage level, and aircraft age. It provides structured data to analyze patterns, identify risk factors, and evaluate the safety performance of different aircraft categories, helping to inform decisions for safe and efficient aviation operations.

Methods

We prepared the data by cleaning and organizing it to ensure accuracy and consistency, focusing on relevant factors like aircraft type, weather, and accident outcomes. Using Tableau and Python, we analyzed patterns and relationships in the data to identify key risk factors and trends influencing aircraft safety. These insights were visualized through intuitive charts and dashboards to support clear and actionable decision-making for the aviation division.

Results

The analysis identified key factors influencing aircraft safety, including weather conditions, aircraft age, and operational purpose.

Insights revealed that choice of airline brands and poor weather conditions significantly increase accident risk. Commercial aircraft showed higher overall risk compared to private operations.

These findings provide a clear framework for selecting low-risk aircraft, helping the aviation division make informed purchase decisions aligned with safety and operational efficiency goals. The results directly address the business problem by minimizing risks and guiding investment in safer, more reliable aircraft.

Through data analysis, the following insights were drawn:

1. Countries with the most number of accidents were more likely to have more air traffic into the country.

2. Commercial flights had a significant number of accidents compared to private flights and non-civil flights. Non civil flights refers to military aviation, aerial work, general aviation etc.

3. Out of all accidents that occured, a significant of them caused substantial damage on the aircraft. Only a few caused minor damages to the aircraft.

4. The analysis revealed the airlines that were more prone to accidents than others

Conclusions

From the analysis, the following action points are recommended:

1. The company should consider investing in countries with high traffic into those countries. Due to the fact that many people travel into these countries there is a strong market for flight tickets into and out of those countries.

2. The company should also consider investing in other types of flights that are not commercial.

3. The company should consider opportunity cost that comes with venturing into the airline business. The risk of completely foregoing on their investments in the event of an accident.

4. The company should consider investing in Grumman Airline due to the low number of injuries and should avoid investing in Boeing airlines due to their extremely high number of injuries.

Thank You!

Email: stellah.mishi@student.moringaschool.com
GitHub: @stellahmnene