Aviation assessment of Aircraft Risk Analysis

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Data Science – Phase 1 Project

Business Understanding

- The company need to expand into aviation but is not sure of the aircraft to purchase and the risk involved on the options they’ll go for.
- We went into answering this questions by identifying the safest aircraft to purchase through data analysis.

Objectives

- To apply our analysis and outcome from the aircraft incident data
- identifying low risk aircraft from patterns and trends of the analyzed data
- provide insights and recommendation for decision making in aircraft purchase

Data Set

- Our aviation data, sourced from the National Transportation Safety Board has 90348 rows and 31 columns
- The key features that stood count on the columns for our analysis were the make and model of the aircrafts, number of accidents coursed and the type of injuries(minor, major &fatal) incurred.
- We checked out for null values, dropped columns with high missing values and filled in figures on nulls for columns of interest.
- We used tools like numpy, pandas for the analysis and graphical presentation for visualization.

Exploration

- For visualization, we used bar charts for the analysis of model and make in comparison to total uninjured
- A line graph for the analysis of total injured, total uninjured over time
- Finally, a pie chart that gave analysis of top causes of incidents.

Insights and findings

- We fount that most accidents occurred at take-off, when cruising and at when approaching landing
- Highest number of injuries occurred in the years 1982,1996 and 2000 but subsided of the years.
- We also deduced from the bar graph that the models and make with the fewest number of uninjured were Cessna and Piper

Conclusion and Recommendation

- From the analysis, we find that
- Cessna and Piper models stood out as the optimal models for consideration as they posed the least risk over 5 years
- have the highest safety record.

Further findings on aircraft operation together with the cost benefit analysis is recommended

THANK YOU