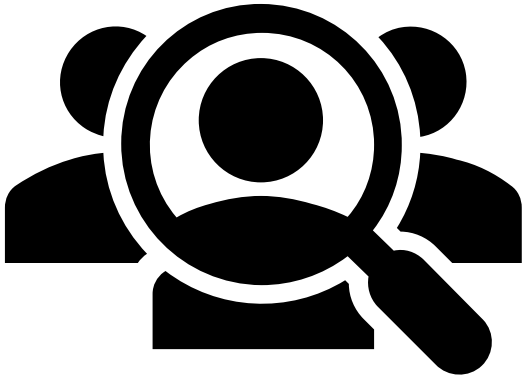
Aircraft Safety Analysis for Tujenge Limited

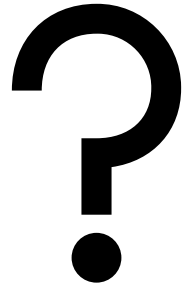
An overview of accident data and aircraft recommendations

Business Understanding



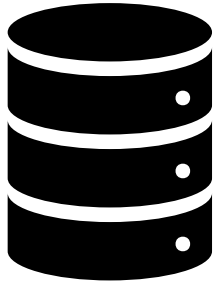
- Tujenge Limited offers luxurious transportation and accommodation services.
- The company is expanding into aviation to avoid delays in third-party airlines.
- The goal is to identify the safest and lowest-risk aircraft for purchase.

Problem Statement



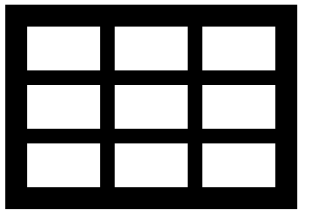
- Tujenge Limited faces delays using third-party airlines.
- The goal is to purchase aircraft that are low risk and provide reliable service for both private and commercial use.

Data Overview



- Dataset from NTSB, including aviation incidents from 1962 to 2023.
- Contains 90,348 records and 31 columns with various data points.

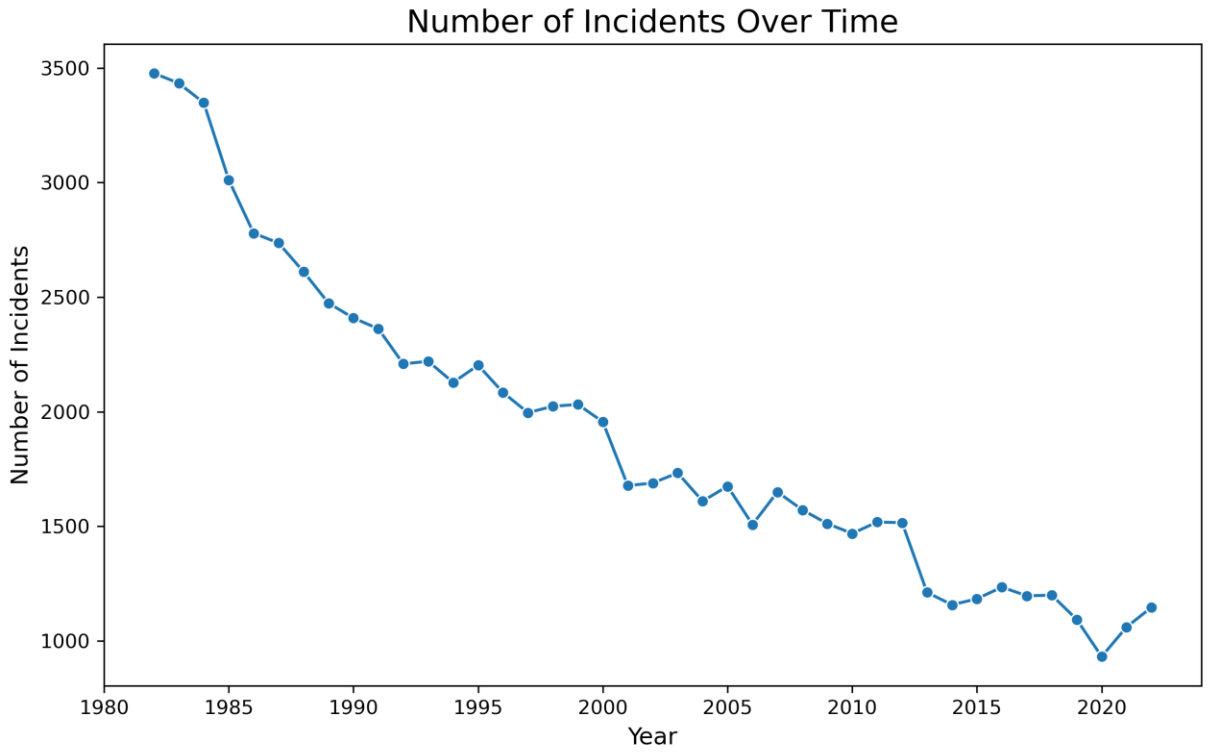
Data Preparation



The data was prepared by removing duplicates, Imputing missing value and dropping rows and columns

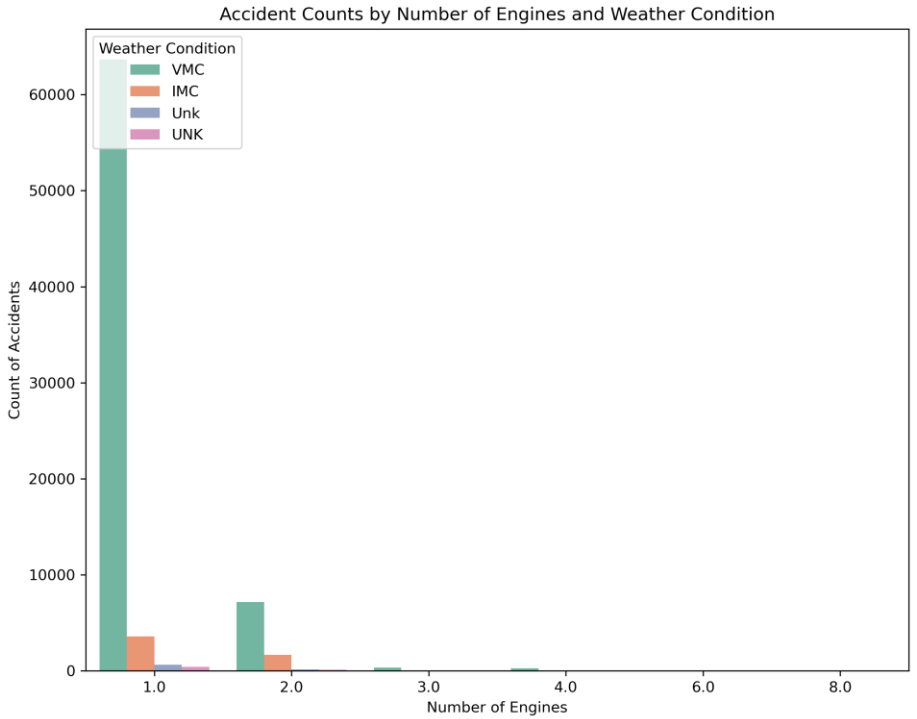
Key columns: Aircraft model, injury severity, damage level, number of engines.

Data Analysis



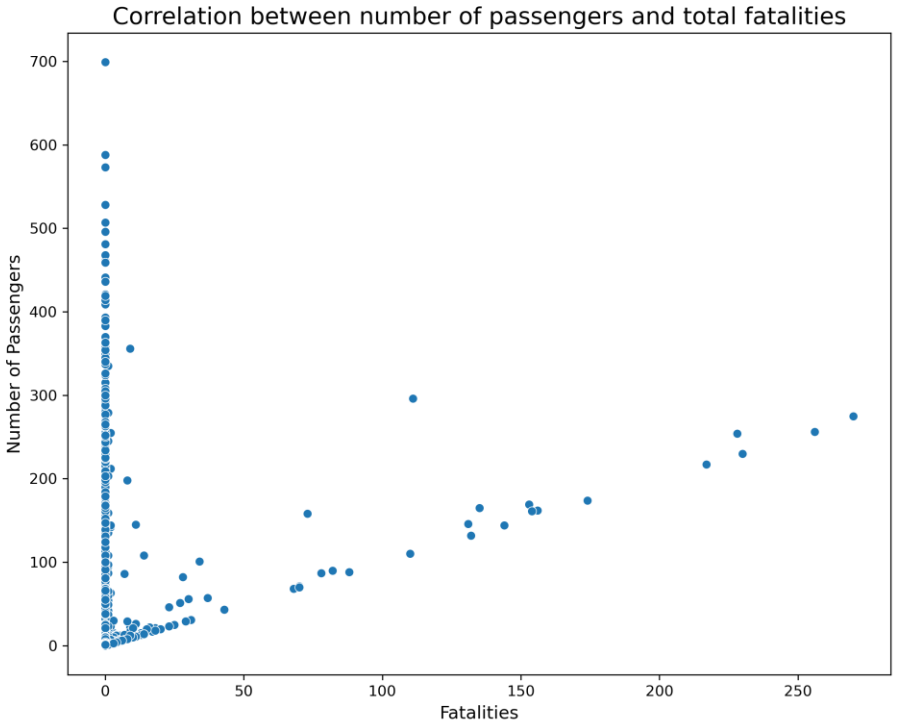
From the chart above we can clearly see that the number of accidents have been declining with time. This can be facilitated with the technological improvements and also the rules and regulations that have been enacted by aviation authorities.

Data Analysis



We can see that most accidents happened during `Visual Meteorological Conditions(VMC)` where the pilot can clearly see. This shows that the percentage at which weather condition leads to accidents is very minimal

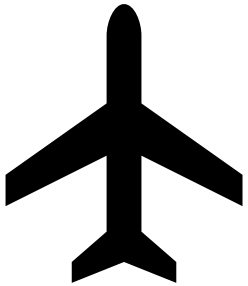
Data Analysis



From the above scatter plot we can see that there is a low positive correlation between the entities

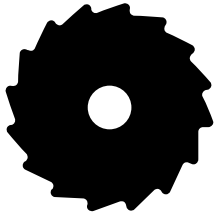
Recommendations

1. The company should consider purchasing recently manufactured aircraft to ensure they are equipped with the latest technology, enhancing safety and efficiency.



2. The company's pilots should undergo rigorous assessment and continuous training to ensure they possess the necessary skills to operate the aircraft safely.

3. Aircraft with more engines may be more suitable for the organization, as data shows they are associated with a lower number of accidents.



Conclusion

- In summary, this analysis has identified significant trends and patterns related to aircraft incidents and accidents. The insights gained will assist Tujenge Ltd. in making informed decisions as they purchase the most suitable aircraft for their entry into the aviation industry. This analysis provides a foundation for enhancing safety and reliability in their operations.
- Further research on this topic is highly recommended to continually improve safety standards and contribute to a safer global aviation landscape.

THE END

Q&A

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