Tech company

Business PROJECT

OVERVIEW

The project originates from a business problem where a certain company would like to expand its portfolio to the aviation sector and with this comes the purchase of various assets especially aircrafts. The business would like to purchase aircrafts with minimal risks inorder to gain profits. With the given dataset, of accidents from 1962-2023 in the US, the geographical factors, identification of low risk aircrafts, financial viability of low risk aircraft and the correlation between aircraft age and risk are able to be determined.

BUSINESS UNDERSTANDING

The company is looking to expand into the aviation industry because they want to diversify its portfolio which can bring about many benefits like risk reduction, exposure to opportunities, protection against market votality and smoother returns. It is even more important to conduct this analysis since the company lacks knowledge about the risks associated with aircraft. The goal is to determine which aircraft presents the lowest risk and provide insights for informed purchasing decisions, minimized financial losses and safety for operations.

DATA ANALYSIS AND UNDERSTANDING

The National Transportation Safety Board provided a dataset on civil aircraft accidents from 1962 to 2023, covering incidents from international seas and the United States. AviationData.csv was chosen due to its higher data quality compared to USState_Codes.csv. The dataset provided essential information like aircraft models, incident types, geographic locations, and safety records, making it ideal for analyzing low-risk aircraft. Data cleaning and analysis methods, such as handling missing values, sorting and filtering, detecting outliers, and aggregating data, led to key insights, such as identifying low-risk aircraft models, correlations between aircraft age and safety records, and the impact of geographic factors on accident rates.

RECOMMENDATIONS

The company should prioritize aircraft models with low risk, considering their maintenance history. This will help the company make safer investments. Geographic factors should also be considered, as certain areas have higher accident rates, so selecting aircraft that perform well in those environments can mitigate risks. A cost-benefit framework should be implemented to evaluate potential aircraft purchases, balancing cost and safety. Regular data review should be established to ensure safety records and cost factors remain current, allowing the company to adapt to changing market conditions and maintain an optimal fleet over time. These steps will help the company make informed decisions and maintain an optimal fleet.

NEXT STEPS

The company should implement recommendations for acquiring low-risk aircraft models, conduct further analysis on specific models, collect data on performance metrics, establish a regular monitoring system for safety and performance, and engage stakeholders to ensure alignment and support for the new aviation division's strategy. These steps will help translate insights into actionable strategies for enhanced safety and operational efficiency in the new division.