

Aviation Risk Analysis

Identifying Low-Risk Aircraft for Business Operations

BUSINESS PROBLEM

Key Points:

- The company plans to enter the aviation industry
- Aircraft operations involve safety and financial risks
- Management needs data-driven guidance on aircraft selection

Key Question:

Which aircraft options present the **lowest operational risk?**

DATA OVERVIEW

Data Used

Key Points:

- Source: National Transportation Safety Board (NTSB)
- Coverage: 1948–2023
- Records of aviation accidents and incidents
- Includes aircraft type, phase of flight, injuries, and dates

This data allows us to analyze risk patterns over time.

Aircraft Manufacturer Risk

Bar Chart: Avg Fatal Injuries by Manufacturer

Insight:

- Some aircraft manufacturers show consistently lower fatal injury rates

Recommendation:

Prioritize aircraft from manufacturers with lower historical fatality averages

Risk by Phase of Flight

Bar Chart: Avg Fatal Injuries by Phase of Flight

Insight:

- Takeoff, approach, and landing phases are the most dangerous

Recommendation:

Focus training, procedures, and safety investments on high-risk flight phases

Accidents Trends Over Time

Line Chart: Accidents Over Time

Insight:

- Aviation accidents have generally declined over time

Recommendation:

Use long-term safety trends to guide fleet expansion and operations planning

Interactive Risk Dashboard

Interactive Risk Dashboard

Key points:

- Explores risk by aircraft, year, and purpose of flight
- Allows decision-makers to drill into specific scenarios

 *Tableau Dashboard Link*

https://public.tableau.com/views/AviationRiskAnalysis_17658707461710/Dashboard1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

Business Recommendations

Business Recommendations

1. Select aircraft with lower historical fatal injury rates
2. Invest in safety measures focused on high-risk phases of flight
3. Use historical trends to support long-term aviation strategy

Next Steps

- Deeper analysis by aircraft model
- Incorporate cost and maintenance data
- Ongoing monitoring using the dashboard

THANK YOU

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