Aviation accidents - Project

Valerie Wamwitha Kigo

Project overview

Analyzed historical Aircraft accidents data in order to uncover trends and insights related to injuries, types of aircrafts involved locations and flight conditions.

GOALS

To identify factors linked to aircraft accidents and injuries and explore ways to better understand and potentially reduce Aviation risks.

Data Source

- Aviation Accident Dataset is from Kaggle.
- Key features includes;
- Accident date and Location
- Aircraft make and model
- Type f flight and weather conditions
- Injuries(fatal, serious and minor)
- Flight phase(eg. Takeoff)

Data Preparation

What was done before analysis:

Cleaned the data.

- Converted date fields int usale columns.
- Combined injury columns into a single total injury column.
- Created a combined aircraft name for a analysis.
- Replaced unique data with nan.

Key Insights

Analyzed top 10 countries with the highest injuries and found United States to be the highest.

Analyzed the top 10 Aircrafts with the highest accidents and found Cessna,Piper and Beech was the most reported

In Accident by phase of flight it was found that accidents often occur during Cruise, Takeoff and Approach.

Analyzed that the most used Aircraft is Cessna

Analyzed using fatal and serious injuries against total injuries to get their ratios

The ratio showed the riskiest aircraft to purchase using make and model with the injury severity

Heat Map

Using Accidents by country, a heat map was created showing which country had the highest total injuries

As indicated in the analysis United States has the highest total injuries.

Summary

Most injuries occur in a few key countries and during Cruise or takeoff.

Certain aircraft types appear more frequently in reports like Cessna.

Accidents are influenced by flight phase, engine type, and weather, Make and Model.

Accident frequency varies over time.

The riskiest plane to purchase is Boeing 747-122

Next steps

- Integrate more external data like airline or weather APIs.

- Explore the impact of regulatory or technological changes

- Normalize injuries by total flights per aircraft type t estimate risk.

- Add more recent data to update findings

THANK YOU

Questions?

Linked in https://www.linkedin.com/in/valerie-wamwitha-44ba912a0/