PHASE 1 PROJECT: RISK ANALYSIS FOR AR_AIR'S EXPANSION

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INTRODUCTION

- The project showcases AR_Air's problem in its expansion to diversify its portfolio by informing on the potential risks for the new venture through a data-driven approach
- The data outcomes are used to recommend to AR_Air's management the lowest-risk airplanes to be purchased for their operations.

BUSINESS PROBLEM

- AR_Air is deliberate on its expansion plans but challenged about the risks involved in executing them. Thus, the need to gain more knowledge for a better understanding and development of actionable insights

Business Aim

- To diversify the business portfolio by venturing into air transport business

Business Interest

- To purchase and operate airplanes for private and commercial enterprises

BUSINESS OBJECTIVE

- To determine the airplane with the lowest risk for AR_Air to start the new endeavor

Business Questions/Metrics

- How often do airplanes cause accidents (annually)?
- What type of airplanes are more prone to accidents for private and/or commercial flights?
- What are the major causes of airplane accidents?

Business Gap

- AR_Air needs to know the potential risks of aircraft, with emphasis on airplanes, to suit their interests, address the objective, and answer their queries

METHODOLOGY

Secondary data source:

- National Transport and Safety Board [Online] at; https://www.kaggle.com/datasets/khsamaha/aviation-accident-database-synopses

Data Analysis Tool

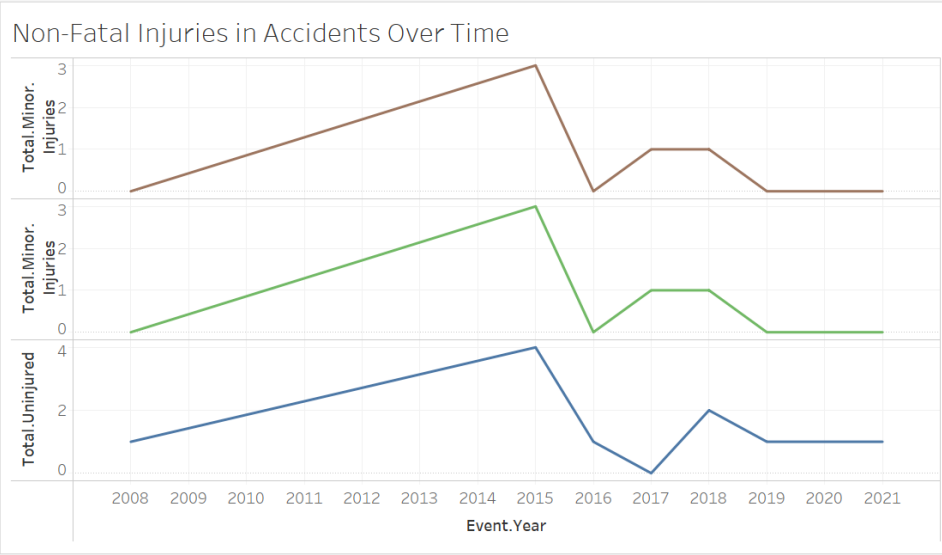
- Python (Jupyter Notebook)

Data Representation

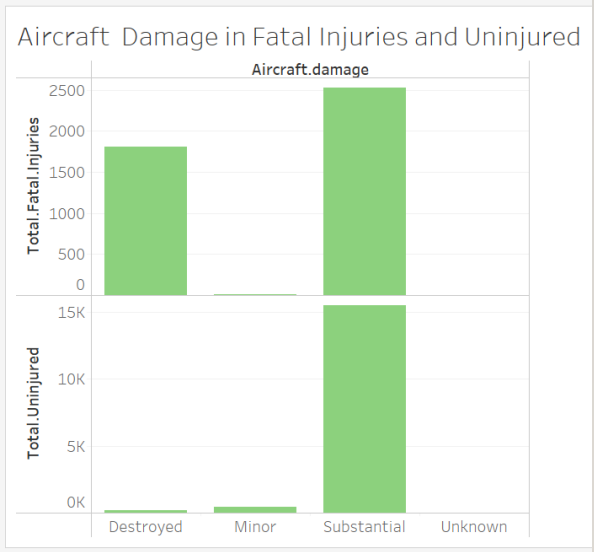
- Tableau Public version 2024.2

DATA VISUALIZATION

NO CORRELATION IN DIFFERENT INJURIES OVER TIME



SUBSTANTIAL DAMAGE EVIDENT IN BOTH FATAL INJURIES AND UNINJURED



RECOMMENDATIONS

i. Future airplane accidents should not be predicted from the previous years since no correlation exists.

ii. A wide range of airplanes of makes with low risks exist that AR_Air should consider for their private and commercial operations, such as Degraw, LEINEKE WALTER L, DOVA AIRCRAFT SRO, DARROW, STEPHEN TAYLORCRAFT CORP, etc

iii. AR_Air should invest in continuous professional development among pilots to reduce aviation accidents.

iv. Purchase and operations decisions for air transport ventures should not be made solely on safety data

v. More research is required for better decision-making in the new venture