* 1. **Taylor Imhof  
     Bellevue University | DSC 640  
     Final Project Milestone 1: Dashboard (Write-up)  
     7/29/2022**

Dashboard Write-up

For the purposes of this final project, I opted to follow the provided business scenario of combating the negative publicity surrounding the safety of airline travel. I felt this would be an interesting problem to dig into, as I have dealt with anxiety when traveling by air. I also thought that I could uncover some interesting insights that might illuminate why so many people tend to experience anxiety when flying.

Selecting The Right Data

After perusing the provided datasets from the initial section, I selected the Airline Safety and Accidents and Fatalities Per Year data sets. Since I planned on comparing the airline data with vehicle data, I also brought in some [data](https://www.iihs.org/topics/fatality-statistics/detail/yearly-snapshot) from a table I found at IIHS that captures vehicle fatality data since 1975 (IIHS, 2022).

Loading The Data Into Power BI

Getting the datasets loaded into Power BI was easy using the application's helpful interface. However, I did run into an issue where the tool automatically summarized some of the columns, but all I had to do was change an option in the Transform pain. Once I had the data loaded and in the desired format, it was time to start making some visualizations.

Creating The Visualizations

First, I wanted to get a sense of how the accident data trended for each airline. For this, I created a simple table visualization showcasing the incidents and fatalities information in the Airline Safety dataset. While tables are not the most pleasing graphic, I still feel they provide decent insights. After creating the graphic and adding the relevant fields, I sorted the table in descending order based on the number of fatalities. An interesting insight I found was that there were many instances of incidents that resulted in very few or even no casualties. I thought this would be interesting to report in a future milestone, as this indicates as technology has increased throughout the years, so has aircraft safety measures in the event of an accident.

I also wanted to view how the data trended over time. To do this, I created a scatterplot highlighting the sum of all airline crashes yearly (from 1918 - 2022). After reviewing this graph, a trend that stood out to me was the massive spike during the early 1940s. Of course, this has to be the result of military aircraft used during the Second World War. Another interesting spike took me some time to formulate a potential reason for it around 1970. After creating some later visualizations, I concluded that this resulted from numerous aircraft accidents involving Russia's flag-carrier Aeroflot. After parsing the data a bit more, I discovered that this single airline experienced nearly 80 airline incidents between 1985 and 1999, which resulted in only 129 fatalities.

I created another scatterplot to understand further the relationship between accidents and fatalities using these two features. The graphic showed both metrics declining at a moderate pace, with a few upward spikes here and there. The graph further reinforces that not every aircraft incident results in fatalities. To gauge how the incidents have differed overall between the 80s/90s and the 200s, I created a pie chart capturing these two slices. The portion making up the 80s/90s incidents was much larger than the more recent portion.

I also decided it would be useful to have some overall metrics that captured how the underlying average accident data appeared. To accomplish this, I created a few Card visuals and calculated a few new measures within Power BI. I created a card that showcased average yearly accidents, deaths per accident, and yearly fatalities.

Lastly, I created a scatterplot for both the 80s/90s and 2000s splits that displayed incidents versus fatalities by each airline. It also captured the average seat kilometers per week metric, which I used as the size property. I initially thought that the higher these metrics, the relative fatality would also be high. After reviewing the graphic, this appeared to hold. However, this was where I spotted the Aeroflot outlier that I mentioned earlier.

I felt that this milestone provided an excellent experience working with Power BI to create visualizations and explore underlying data trends. As I progress through the following milestones, I hope that I can identify more compelling insights to enhance my overall storytelling efforts.

References

IIHS. (2022, May 01). Fatality Facts 2020 Yearly Snapshot. Retrieved from https://www.iihs.org/topics/fatality-statistics/detail/yearly-snapshot