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Course: DSC640 Data Presentation & Visualizations

Assignment: Project Task 2 – Executive Summary Supporting Documentation & Design Justification

GitHub Link: <https://github.com/madelinebauer/DSC640DataVisualization/tree/master/Project>

Currently, there is a mixed feeling about the safety of air transportation perceived by the public. The primary goal of this presentation is to show that air travel is a safe mode of transportation today compared to both highway transportation and to the earlier days of air travel.

Slide 1 gives an overview from 2015 in regard to the public's perception of airlines in general. The bar charts shows that the majority of tweets posted online were negatively associated with airlines in the United States. Negative tweets included more than just safety measures, but overall airlines do not have a good reputation with the public. I chose a red color to represent the 'negative' bar as it relates to bad/negative. I chose blue to represent the 'positive' bar as it is pretty neutral and contrasts well to the red for any audience members with visual disabilities.

Slides 3–5 aim to show that safety should not be a true concern by the public. Specifically, slide 3 clearly illustrates that the number of air fatalities is far lower than the number of highway fatalities for all years ranging from 2000-2019. I chose to create a line graph to represent the trend of fatalities over time. I color coordinated the title with the line colors on the graph to eliminate the need for a legend or extra labels on the graph. Slide 4 compares the number of fatalities per airline. It is evident that the top three airlines with the most fatalities are not airlines with home ties to the United States. The bar chart was arranged in decreasing order to clearly decipher the airlines with the most fatalities. The value was also included by each bar because the graph is large, which makes looking down to the x-axis challenging. Slide 5 compares total air incidents to total fatal air incidents for two separate time periods: 1985–1999 and 2000–2014. Having these scatter plots next to each other with the same scaled axes

we can easily see that the number of both incidents and fatalities are decreasing in recent years.

Slide 6 is a pie chart showing the different concerns passengers have prior to taking flight. Only 11% of the total concern is for safety measures. The leading concerns, which account for 65% of the total, include flight delays or cancellations as well as airline fees such as checked bags, seat assignments, etc. While there may be talk about the public perceiving air travel as unsafe, this pie chart clearly shows that safety is not the main concern for the general public.

Slide 7 shows the trends for revenue and number of fatalities. The number of fatalities is decreasing over time while the revenue is increasing. This suggests that the public may be starting to change their perception of air travel. The x-axis for each graph is identical to easily compare the year, but I kept the graphs separate because their y-axis labels are different.

In conclusion, we can continue pushing this trend to the public as the data reflects that air travel is in fact safe. While there may be public chatter relating to air travel safety, we also know that it's not the most common concern that passengers have prior to taking flight. This is helpful to us as we continue changing the public's perception. We should continue to push out blog posts, ads, and infographics to continue informing the public that air travel is safe.

Data Sources

- Total Airline Fatalities and Highway Fatalities Dataset:
<https://www.bts.gov/content/transportation-fatalities-mode>
- Airline Safety Dataset: <https://github.com/fivethirtyeight/data/tree/master/airline-safety>
- Operating Revenue Dataset:
[https://www.transtats.bts.gov/Data Elements Financial.aspx?Qn6n=K](https://www.transtats.bts.gov/Data%20Elements%20Financial.aspx?Qn6n=K)
- Passenger Concerns Dataset: <https://www.statista.com/statistics/306872/most-common-concerns-of-air-travelers-us/>
- Worldwide airline fatalities Dataset:
<https://www.statista.com/statistics/263443/worldwide-air-traffic-fatalities/>
- Twitter Sentiment Analysis Dataset: <https://www.kaggle.com/crowdflower/twitter-airline-sentiment>