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Assignment: Project Task 2 – Executive Summary

**PRESENTATION TO INTERNAL TEAM**

I plan to present this dashboard to my internal team. I’ll go through each graph and explain the findings.

**Incidents per Airline – *Treemap***

I chose a treemap to display the number of incidents per airline for three reasons. First, I wanted to display as much information as possible right off the bat, while maintaining a visualization that was simple to read and understand. Second, the treemap neatly organized the data in order of largest to smallest in common English reading order (top-down, and left-right). Third, and most importantly, the treemap shaded the airlines so that the darker ones were easily distinguished as the airlines with a larger number of incidents.

The tree map helps us to understand if the issue of airline safety is shared evenly between all airlines or if is it predominantly focused around specific airlines. The map shows a fairly diverse distribution of incidents, with Aeroflot experiencing the most incidents.

**Incidents per Airline – *Bar Chart***

While the treemap showed a brief glimpse into the airline with the most incidents reported, I decided to make a second plot that would show the number of incidents per airline in order to have each airline represented. In this graph, I kept with the same color for incidents as the previous graph, and subsequent graphs will maintain the same sense of color cohesion so that it will be easier to understand.

From this graph, it is easy to see that the mainstream airlines are the ones that have the most complaints, likely due to the increased popularity and number of passengers, which leads into the next graph.

**Airline Passengers per Month (1995-2005) – *Line Chart***

I chose a continuous line plot to represent the number of airline passengers per month per year because it outlined a clear increase/decrease between timeframes. Overall, the chart appears to indicate that the number of passengers was rising until September 2001, likely due to the terrorist attacks with hijacked planes, and has since been slowly rising again. As of 2005, the number of passengers flying exceeded the numbers in 1999.

The number of planes in the sky grows with the number of passengers needing to fly. With more flights, this naturally means more chances for incidents to occur, but it does not mean that there is a correlation between the quantity of planes in the sky and the overall safely of an individual plane.

**Fatal Accidents per Airline – *Stacked Bar Chart***

I chose a stacked barplot to represent the number of fatal accidents per airline because it showed the total number of fatal accidents, while also distinguishing between accidents that occurred between the years 1985 - 1999 and 2000 – 2014. This is helpful because it allows us to compare the number of fatal accidents over a 15-year span in the past, with the number of fatal accidents in the following 15 years.

The graph shows that the number of fatal accidents for almost every airline, including all mainstream airlines, was actually lower in the more recent years than in the past, despite the increased number of passengers, and therefore planes, over that 30 years.

**Incidents (’85-’99 vs ’00-’14) – *Pie Chart***

I wanted to show the exact number of incidents overall in order to provide proof that the latter time period had less fatal incidents overall, so I chose to use a pie chart because it made the comparison easy to see. I followed the same color scheme as the previous graph for the two time periods for clarity.

The last graph showed less fatal incidents in recent years per airline than the years before that.

**Airline Sentiment – *Packed Bubble Plot and Horizontal Bar Graphs***

Lastly, I made a packed bubble plot to represent the sentiment analysis that was pulled from Twitter during 2015. This plot allowed me to use size to highlight the difference in the number of comments across the emotional spectrum, with added color for readability.

I also added horizontal bar graphs to show the range of emotional comments for each airline in order to determine if the negative sentiment was directed towards all mainstream US airlines or a single airline.

This graph shows the negative sentiments is predominant across all airlines. This would indicate that the negativity is not directed to any one airline or that airline’s practices in general, but rather to the airline industry as a whole.

**OVERALL**

I believe a lot of the negativity surrounding flying is due to media attention. A sentiment analysis taken from Twitter regarding airline tweets was overall largely negative. People’s reactions to airlines could correlate to negativity that gives off the impression that airlines are not safe to fly. It is difficult to believe that negativity spread so profusely among all airlines pinpoints safety more than it does media influence in public opinion.

The terrorist attack on 9/11/2001 caused a dip in the number of passengers flying for the following few years after. The number of passengers slowly climbed back up within those next few years, but after the attack, it reached the lowest point it had been at in several years. It is highly likely that the public reaction to this attack hurt the credibility of airlines, causing people to believe that flying was no longer safe.

There is a significantly larger number of incidents for Aeroflot than any other airline. This suggests that a good portion of the incidents reported might be a result of the handling or ownership of that airline rather than a safety concern for flying in general. Overall the number of fatal accidents has decreased in the past 15 years from what it was 15 years before that.