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DSC640-T302
2.3 Project Task 1: Dashboard

The theme of the dashboard focuses on a comparison between airline and motor vehicle travel. The two main sets of visualizations are stacked bar chart and line graphs. A third column contains a geographical heat map and a bar chart. The design of the charts is simple and straightforward. Similar color schemes for the two main sets of charts and sizing aid in visual comparison. Limitations and considerations in the design and the impacts to the data displayed is further discussed below.

Injuries and fatalities for both modes of travel are displayed in the stacked bar charts. This visualization is appropriate given there are two sets of quantity-based data for a single x-axis. The same color scheme and period to assist comparison between the two. One challenge with the comparison is the magnitude of difference between the two sets of numbers. I added data labels, but the size some of the information cannot be displayed. The overall message in an absolute sense is conveyed, there are millions more injuries and tens of thousands more fatalities for motor vehicle travel. The line charts also help show the frequency of use and can be used to infer rates of injuries and fatalities with each mode used.

The second set of graphs (second column) are line charts displaying the number of flight hours and miles traveled per year. The period for these is the same as the stacked bar charts for this set as well. There are two challenges here, with the first being the unit of measure is in flight hours for airline travel and miles for driving. While not the same, they show the general trend for each mode of transportation and then can be compared back to the stacked bar charts for injuries and fatalities. When presenting this during the initial meeting, I would come prepared to speak to the injuries and fatalities per flight hour and mile driven. The second challenge is due to the space and size, the y-axis does not start at zero. I attempted to change this, but visually it is not appealing. I do not have material concerns with this, as the purpose is merely to provide the reader an understanding of the trend and how much each mode of transportation is used.

The final set of graphs (third column), heat map and bar chart are based on Google search data for the term “airline safety”. The heat map shows the geographic location of the highest popularity of the term in the last year. The bar chart shows the trend in term of popularity index. The purpose of these is to help drive discussion on certain markets and determine where the source of the information being conveyed in the media. Both charts break from the period used for the prior four charts for purposes of conveying recency with the problem statement. The heatmap uses popularity index by region within the last year while the bar chart uses the last 10 years. The time periods are clearly marked but would need to be reiterated during discussion.

Another discussion point would be whether to display the rates of injury and fatalities based on comparable units. Should we convert flight hours to miles to compare equitably to driving? Additional discussion would touch on what is missing from my teammates perspective and what would further strengthen our approach. I would feel confident entering a meeting with fellow data scientists and management of our team to discuss what the next steps prior to meeting with executive leadership.

Sources and References
Files submitted in zip folder

https://www.ntsb.gov/safety/Pages/research.aspx

https://www.ntsb.gov/safety/data/Pages/AviationDataStats2019.aspx

https://www-fars.nhtsa.dot.gov/Main/index.aspx

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