

## Data Dashboard Project: Tableau

### Insight 1

**Worksheet Link:** [https://public.tableau.com/views/AvgFlightDistancebyAirline/Q1?:language=en-US&publish=yes&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/AvgFlightDistancebyAirline/Q1?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link)

**Q1:** What is the average distance of flights for each airline? Which airline has the highest average flight distance?

**Summary:** In this visualization we see that the airline Virgin America (VX) had highest average flight distance amongst the 14 total airlines, with an average flight distance of 1,419 miles. Additionally, as seen in the tooltip, VX also has the highest average airtime (184 min.) with United Air Lines closely following at 165 minutes. At the bottom of both averages is American Eagle (MQ) with an avg distance of 423 and airtime of 67.

**Design:** I chose to represent the avg flight distance by airline using a bar chart due to its suitability for comparing and visualizing numerical values across different categories. The categorical data being the various airlines and the numerical values being the avg flight distance. I chose one plain color so that the viewer wouldn't be distracted by looking at multiple colors with no real meaning but can instead focus on what's being told by the visualization.

**Resources:** N/A

### Insight 2

**Dashboard 1 Link:**

[https://public.tableau.com/views/HowDoWeatherDelaysandCancellationsVarybyState/Dashboard1?:language=en-US&publish=yes&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/HowDoWeatherDelaysandCancellationsVarybyState/Dashboard1?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link)

**Q2:** Which state(s) experienced the highest number of weather delays and flight cancellations, and how does it compare to other states? Is there a correlation between the frequency of weather delays and cancellations in different states?

**Summary:** As seen in the visuals, Texas (TX) comes in first in terms of weather delays and flight cancellation frequency. The scatter plot reveals a clear positive correlation between weather delays and cancellations. As weather delays increase, so do the number of flight cancellations. This finding suggests that adverse weather conditions significantly impact flight operations, leading to a higher likelihood of cancellations. Both weather delays and flight cancellations appear to be most frequent in the time of February, right before spring.

**Design:** In this dashboard, I selected to use a map to illustrate weather delays across different states given the colors or shading that is used to represent the frequency of delays, with darker being more frequent, and its ability to display geographical information, allowing viewers to quickly identify areas with significant disruption. The scatter plot was chosen to identify a correlation between the two variables being analyzed, and by observing the scatter plot, it can be easily seen whether or not there

was a correlation between the data. The line plot showcases the fluctuation of cancellations and weather delays across different months. These were plotted as dual axis with two different colors so that relation can also be seen and the viewer would be able to observe any seasonal patterns or trends that may exist. It also aids in identifying peak periods. The colors remained minimal so that the viewer can focus on what's being communicated in the data and the bar plot used employed a color scale similar to the map to display the cancellations by state.

**Resources:** N/A

### Insight 3

**Dashboard 2 Link:** [https://public.tableau.com/views/CancellationFactors/Dashboard2?:language=en-US&publish=yes&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/CancellationFactors/Dashboard2?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link)

**Q3:** Which factor or reason caused the highest number of cancellations in 2015? How does each reason vary throughout the year?

**Summary:** The pie chart reveals that the most common cause of cancellation in 2015 was due to adverse weather. Notably, February experienced the highest number of weather-related cancellations, while September witnessed the lowest. Additionally, cancellations attributed to the National Air System were most prevalent during February, while Airline/Carrier-related cancellations peaked during the summer months from June to September, surpassing both weather and National Air System-related reasons with a significant count of 491.

**Design:** The pie chart was chosen to represent the distribution of cancellation reasons, with each slice of the pie or color representing a different reason allowing the viewer to quickly grasp the most prevalent and less common factors. The bar chart enables viewers to compare cancellation reasons and identify most frequent ones at a glance. Each bar representing a specific reason with its length directly proportional to its frequency. The line plot visualization allows for tracking the variations in cancellation factors across different months to observe peaks and trends if any.

**Resources:** N/A