10 July 2018

US Flight Delays 2008

Tableau Stories:
Version 1: https://tabsoft.co/2zpRnJX
Final Version: https://tabsoft.co/2KYNdO0

Summary:

The visualization created using the Tableau story linked above depicts flight delays (both departure delays and arrival delays) in the United States in 2008. Airport hubs were defined as airports with more than 100,000 flight departures in 2008. The takeaways from the visualization are that some carriers, such as United and American, have longer delays on average than others. Also, delays are generally longer in the summer and winter months, and generally worsen as the day progresses.

Design:

I knew from the start that I wanted to create a visualization to delve into flight delays with this dataset. Specifically, I wanted to focus on factors that a passenger could control such as carrier, time of year for travel, scheduled flight departure and arrival times, and the day of the week for flying. I first wanted to create a map to draw in the audience, as the map shows airports all over the U.S. so any U.S. resident would be able to have an interest. Sizing the airports based on the number of records (flights) gives a clear depiction of which airports are the hubs (with the most flights). Continuing with the airport hubs, I wanted to see if the airport location or number of flights departing had any relationship with delays. Grouping to only include the airports with more than 100,000 departing flights for the year made the visualizations more digestible for the viewer since there were less points to take in.

Displaying the delays by carrier, I wanted the viewer to be able to first see the carriers with the longest delays. The carriers at the top are recognizable names for anyone that flies regularly. I displayed the number of flights as well to get the viewer thinking that number of flights may affect the average delay, leading in nicely to the next sheet. The departure and arrival delays were displayed side by side when possible to show both values and to show that departure delay is always greater than the arrival delay on average. At the same time, it also shows departure delay and arrival delay follow the same general trends.

Based on the feedback I received, I changed labels to tooltips where the labels made the visualization more confusing. I also used a different color palette for the flight delays by type visualization to make each type of delay more clear. Originally, I thought it might be best to use one color for the three causes of most significant delays but it ended up being confusing. I also altered captions and added a visualization with the number of flights over each month.

Feedback:

The feedback I received on the first draft of the visualization was:

- The labels with the number of flights for each airport on the Airport Hub Delays plot make the visualization confusing since they don't correlate with the size

- The caption for the slide with airport hubs is confusing and should better portray that the focus is on the hubs in the plots
- The caption on the flight delays by type shouldn't be first-person
- The colors on the flight delays by type plot make it confusing to determine what is what
- Should remove the labels with the number of flights for each carrier on the delays by carrier plots, and remove the mention of "smaller airlines" in the caption as these confuse the viewer as to what the finding is
- If possible, add a plot with the number of flights over each month for 2008 to see if more people fly in the summer and winter

Resources:

N/A