

DAND Project 8 - Create a Tableau Story

Christina Lentz

1. Links to Tableau visualizations:

First version:

https://public.tableau.com/views/DANDProject8/CountsvsDelays?:embed=y&:display_count=yes

Final version:

https://public.tableau.com/views/DANDProject8-Final/Storyofthe2008FlightDelayData?:embed=y&:display_count=yes&publish=yes

2. Summary

The data focuses on the year 2008, and the flight delay information from RITA. To begin with, I looked at how the number of delays compared to the total number of flights for each airport. As expected, the largest number of flights and delays occur at the some of the busiest airports in the country, such as Atlanta and Chicago.

After this, I wanted to see how the percent of delayed flights varied across airlines and airports. We see that Aloha and Hawaiian airlines have fewer delays than other airlines; however, a disproportionate amount of their flights are short flights between Hawaiian islands, which are short and are easier to keep on time. The remainder of the airlines fall between 86.65% and 77.72%, with US Airways the best and American Airlines the worst. For airports, we see very high rates of delays at some extremely regional, nearly rural airports, located in fairly extreme locations like Alaska. When considering general trends in flight delays, these airports are more of the exception, so we also can look just at the 25 busiest airports, of which Newark has the highest rate of delay.

Next, I wanted to look at the reasons for delay. When we break it out, we see that NAS delays, carrier delays, and late aircraft delays are the most frequent reasons for delay, followed by weather, and with a very small number of delays due to security issues. When we look at how these vary over time, we see that while there are more delays total in certain months, the ratio between the different types remains quite similar. We can also look at how things vary around the map with month - the biggest difference is in weather delays, as we can see where the weather issues were centered around as different cities have high weather delays in different months.

As a frequent traveler, I was surprised that weather is such a small percentage of the delays. If we look, though, at the average length of delay, we can see somewhat why - while weather delays are less frequent, they are on average the longest delays. They are also followed closely in this regard by late aircraft delays, which are separately

defined, but some of which follow in a chain from a weather delay, and are what I, as a traveler, would have thought of as a weather delay. If we add up all of the minutes of delay, weather delays lag behind. So they are not the most common, but they are the longest when they do occur, as opposed to a NAS delay which is very common, but is less than half the length of a weather delay, on average.

3. Design

I chose to use a story to display my sheets, to tell the whole story of the data with the ability to have comments explaining the flow. I also chose to put related sheets together into dashboards, to help clarify things. Within the story, I chose to keep consistent colors throughout the story to help keep clear which type of delay we were dealing with.

After receiving feedback, I changed what was in my tooltips to be more concise. I also created aliases for all of the airline names, so that they were more consistent with what the average reader would be familiar with. I also added a caption to one sheet, to explain the different types of flight delays.

4. Feedback

I asked for feedback on an early draft from my husband, who is a scientist/engineer and quite familiar with reading and interpreting data. The feedback was as follows:

1. Remove Cancelled from first sheet, not part of story
2. What are the different delay types?
3. Clean up tooltips so they are less repetitive and axes to be clearer
4. Shorten airline names
5. Last sheet - weather causes the longest delays, but how much total delay time is due to weather?
6. Organize the sheets more logically

5. Resources

- https://onlinehelp.tableau.com/current/pro/desktop/en-us/parameters_swap.htm
- https://aspmhelp.faa.gov/index.php/Types_of_Delay
- <https://kb.tableau.com/articles/howto/stacked-bar-chart-multiple-measures>
- <https://community.tableau.com/thread/110059>
- https://onlinehelp.tableau.com/current/pro/desktop/en-us/functions_functions_logical.htm