Data Visualization in Tableau

Arrival airport delays in the United States

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First version:

https://public.tableau.com/profile/vist5571#!/vizhome/delays_3/Story1?publish=yes

Final version:

https://public.tableau.com/profile/vist5571#!/vizhome/delays-final/Story1?publish=yes

Summary:

In this Tableau story, I explored the arrival delays at the airports of the United States. The story shows some aspects of this delays, the connection between delays and airport traffic, airline and month of the year. The user can filter the information on the last dashboard by airline and year for more specific information. The original data didn't contain per flight information what is mostly used in the Tableau story, I used the "calculated field" option to get this data.

Design:

I began this story with a preconception. I thought that there must be a strong connection between the arriving flight number and the average delay. But I found there isn't a strong correlation. High traffic airports can have good or average delay time as well. Because for me this was a small surprise, I thought that I will start my story with this discovery. Later I showed other aspects of flights and delays, and in the last page the user can further explore the data with the filters.

1. feedback was my wife, I resisted her suggestion to make a very very colorful story, but her other suggestions were implemented.

Maybe my last page a bit crowded, but I wanted to make a playground, tried multiple variations, this is the last one.

The original opening map on the first page showed all the Pacific Ocean because of some small airports. For the opening I zoomed into the core part of the United States.

I dropped the filter in the third page. I have only a few years, so zooming in isn't necessary, we can check the information of a particular year easily without a filter. But I think this doesn't really matter.

I dropped the Delay/Flights – Cancelled/Flights scatter plot because it didn't fit the continuity of the Tableau story.

2. feedback was by Udacity.

I implemented extra filter actions in chart areas by "Use as Filter".

Converted integers to month names inside Tableau.

I implemented a new filter in the last page, where people can explore a subset of airports by the average monthly arrival flights. In the second feedback I was suggested to use a subset of high traffic

airports instead of all airports, which can be made by “Create>Set”, but I wanted to show the low traffic airports as well because my first finding is related to them.

I altered labels, created titles for pages and wrote instructions to interact with the elements of the charts.

Feedbacks:

1. feedback:

“This bluish theme is boring, you should use far more color.”

“I don’t like the layout of the last page, don’t know how would it be good, but this isn’t.”

“Maybe you shouldn’t show the ocean because of some islands, zoom in!”

“I think the filter on the third page is unnecessary.”

“Hm . . .are you sure you don’t want more color?”

“This page doesn’t fit the story.”

2. feedback – from Udacity

“There are hundreds of airports in this dataset, most of which will be unknown and irrelevant to most people. Try subsetting the data on airports by flight volume. By doing so you'll make your data easier to work with and your findings easier to present. For example, the map would plot much less densely if you had fewer airports.”

“Go through and look carefully at all the labels and titles on your charts. Make sure they would make sense to someone unfamiliar with the dataset. For example, what does Avg. Arrival Flights mean exactly?”

“You can use the captions to explain how to read or interact with the charts as well.”

“Charts are more user-friendly when they include titles. In my experience people almost instinctively look for titles in the upper margin of a chart to help figure out what a chart is plotting. Please add concise but descriptive titles to all of your charts.”

“Please change the month numbers to their full word or abbreviation.”

Suggestion for more sophisticated filter actions.

Resources:

For this Tableau story I downloaded the data from https://www.transtats.bts.gov/OT_Delay/OT_DelayCause1.asp. For downloading the “Airline On-Time Statistics and Delay Causes” there was an option to filter the carriers, airports and years. I downloaded the data for all available carriers and airport between 2010 and 2017.