



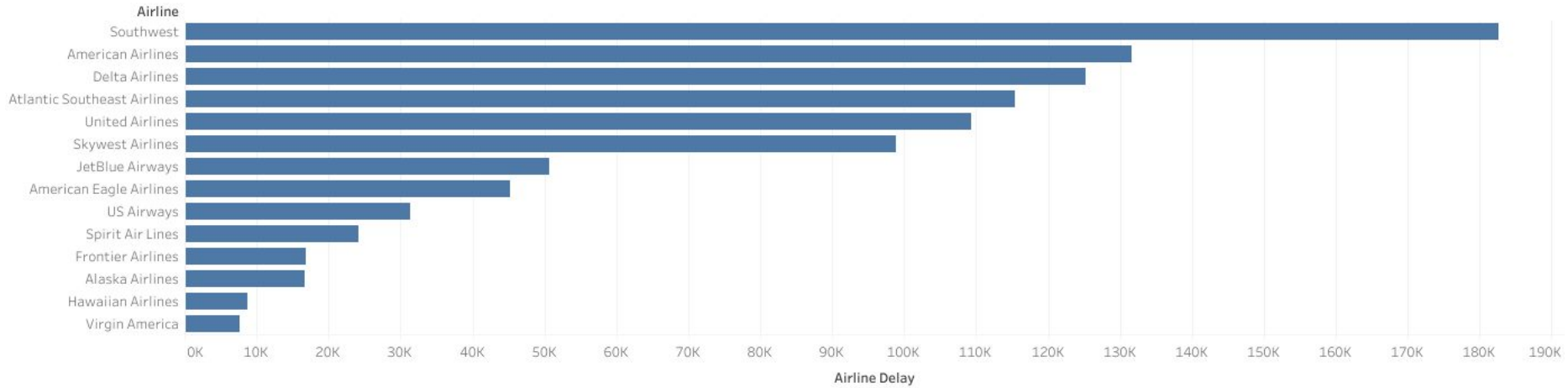
Flight delays in the US

Quality of airlines and airports

Which airlines or airports have the worst delays?

Worst airline delay

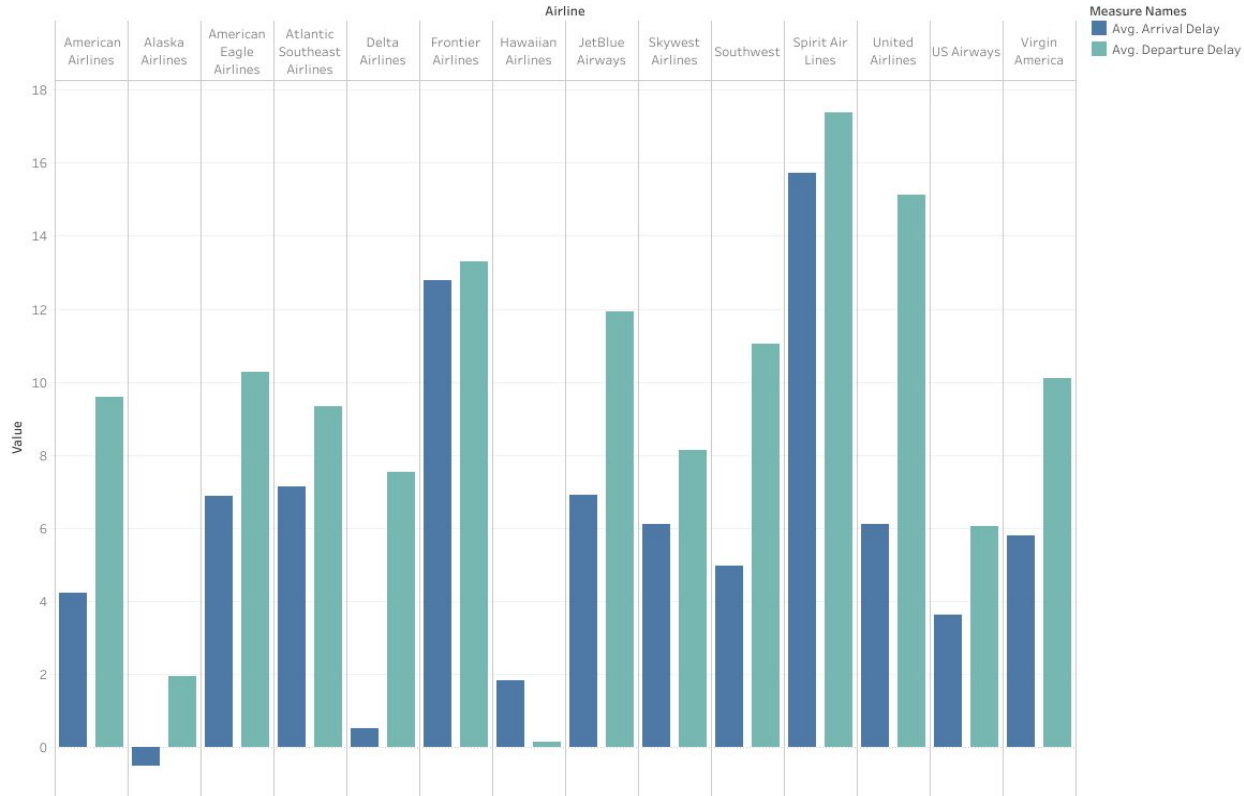
Worst airline delay



The bar chart shows Worst airline delay, being relevant the top five airlines- Southwest, American Airlines, Delta Airlines, Atlantic Southeast Airlines, and United Airlines, respectively. Southwest is the airline with the worst time delayed within the group of the carrier in the US, more than 182,260 delayed minutes, that means four and a half months.

Performance of airline by arrival and departure delay

Performance of airline by arrival and departure delay



The bar chart shows that Spirit Airlines is the carrier with more arrival and departure delayed minutes, although the worst delayed carrier is Southwest, as was pointed in the previous graph. The average of delayed minutes of arrival is 15.73 and departure 17.37, being the exit slight greater than the entry. The carriers with the best standard of time of arrival and departure are Alaska Airlines and Hawaiian Airlines. The best mean of arrival time - Alaska Airlines having positive performance on early entry -0.49 seconds, this means without delay. Hawaiian Airlines has a few seconds of delayed exit 0.17.

State airport ranking by arrival and departure delay

State airport ranking by arrival and departure delay



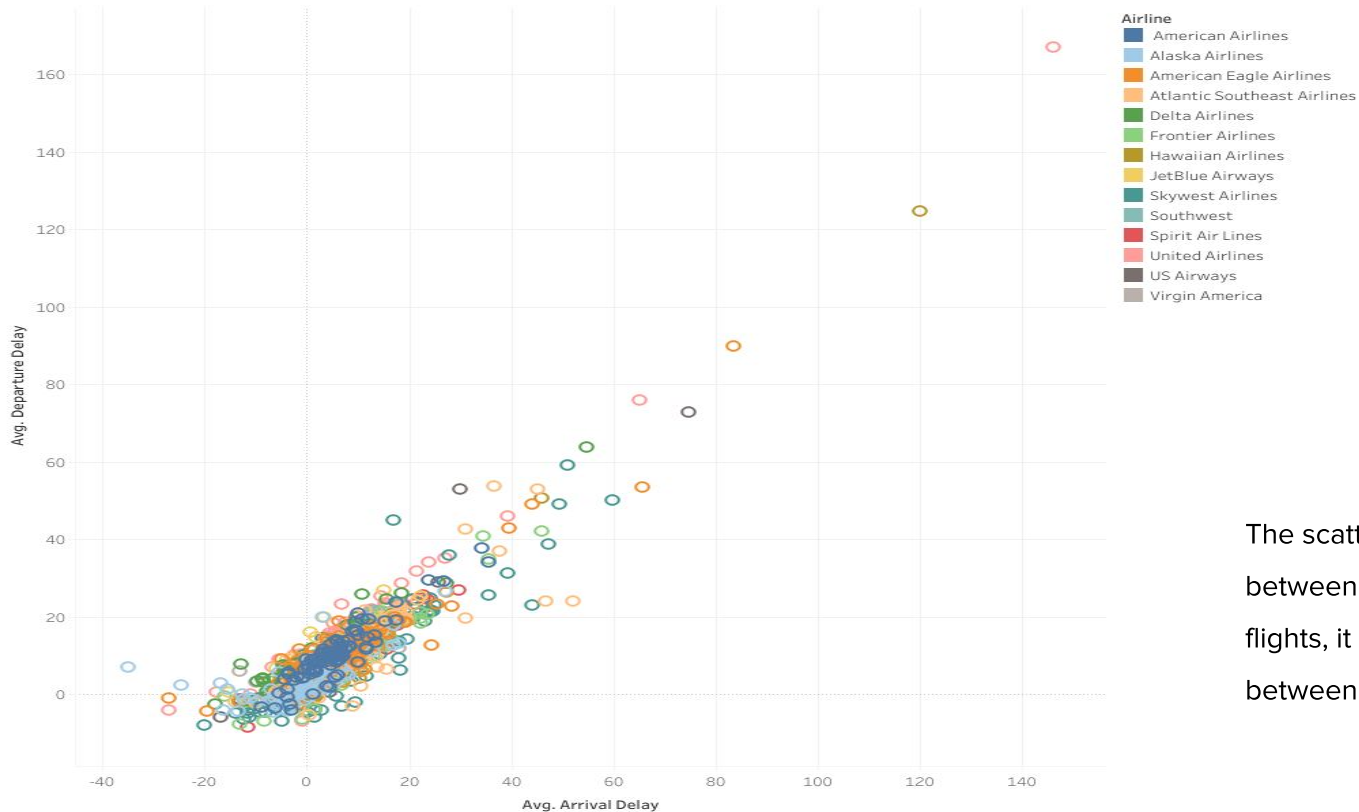
This map compiled all the states and the airports by the delayed exit-entry.

California, Texas, Florida, Illinois, and New York are the states with more delay according to his airports.

At Illinois, the Chicago O'Hare International Airport has worst delayed of departure and arrival time. These delayed times represent - Entry delay of 98,900 minutes equivalent to 68 days and Exit delay of 161,133 minutes equal to 112 days.

Relation arrival and departure delay

Relation arrival and departure delay

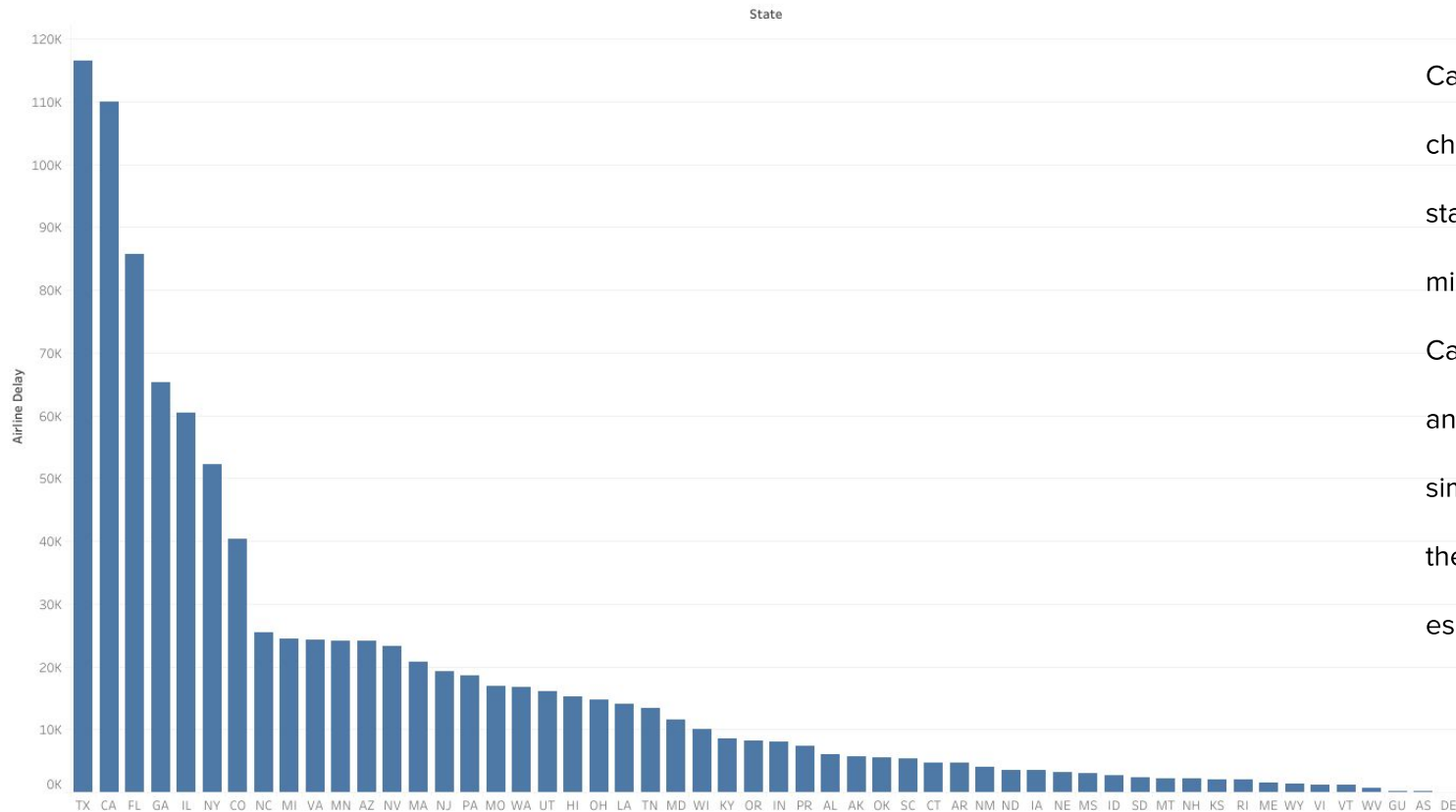


The scatter plot shows a tied relationship between the delayed departure and entry of flights, it is a positive and robust correlation between the average of delayed minutes.

What causes delays?

Delayed airline minutes according to States airports

Delayed airline minutes according to States airports



Cause of delay by state bar chart shows the top five of states with more delayed minutes which are Texas, California, Florida, Georgia, and Illinois, respectively. It is similar to the results shown in the previous question, especially on the map.

Arrival and departure delay by month and airline

Arrival and departure delay by month and airline



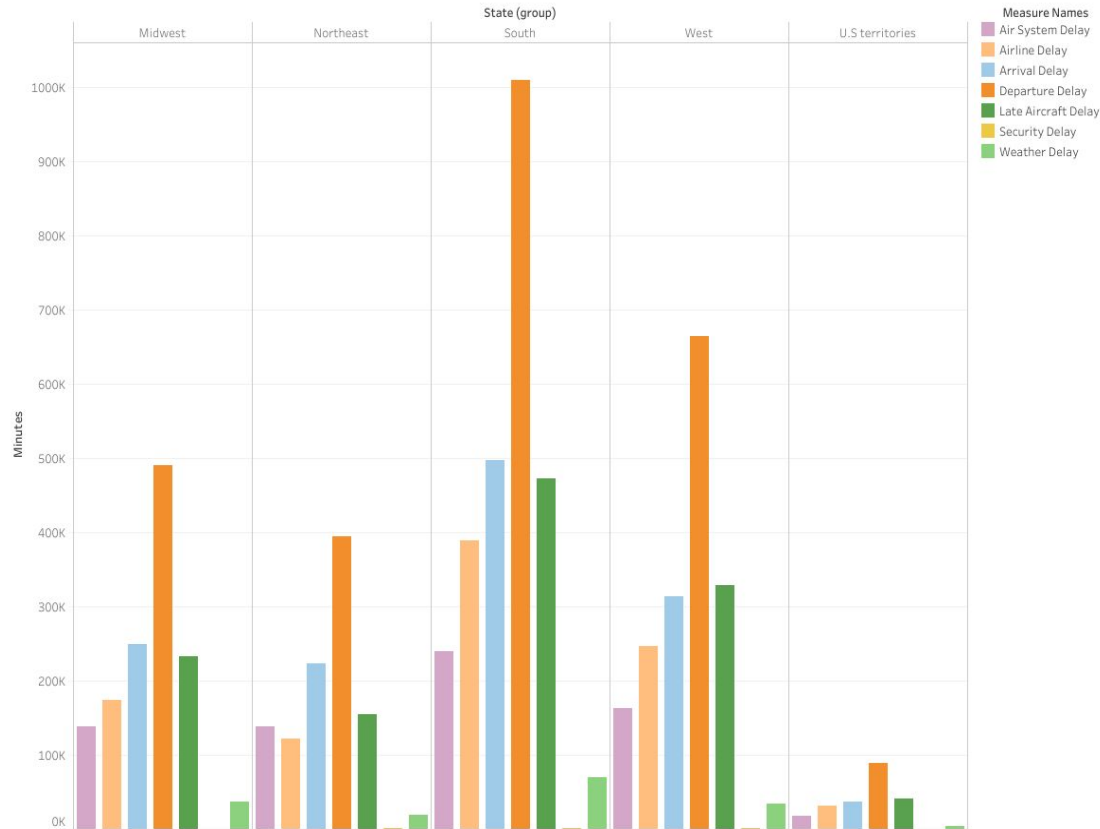
Month graph shows three picks on the line chart, the first in February, second on June, and the last on December. Highlighting the three high values are related to the seasons Winter and Summer.

Only the carriers Delta Airlines (DL) and Atlantic Southeast Airlines (EV) follow the exact pattern with these three picks of delays along the year, the rest of the carriers are busy at least in one of this season of the year. Be aware of this dataset with missing values - October.

U.S Regions and territories delay

Diverse causes of delay according to U.S regions and territories

Diverse causes of delay according to U.S regions and territories



The bar chart presents the general reasons for the delay. Some of the reasons are related to the air system, airline, arrival, departure, late aircraft, security, and weather. In overall, the primary reason for the delay is by Departure late (relating to aircraft and airline), and the least reason is by Security checks, it is the same pattern in all regions.

According to the regions graph, the South has more delayed minutes than the other places, in general, with a max value of 1,010,147 minutes to Departure delay, being equivalent to 701 days. Along the five groups, the average max value comes from Departure delay, and the minimum average comes from Security delay 1,764 minutes- approximately one day. As shows this graph, we assume that TSA security lines do not represent the main reason for late flights.

Airline delay by U.S regions and territories

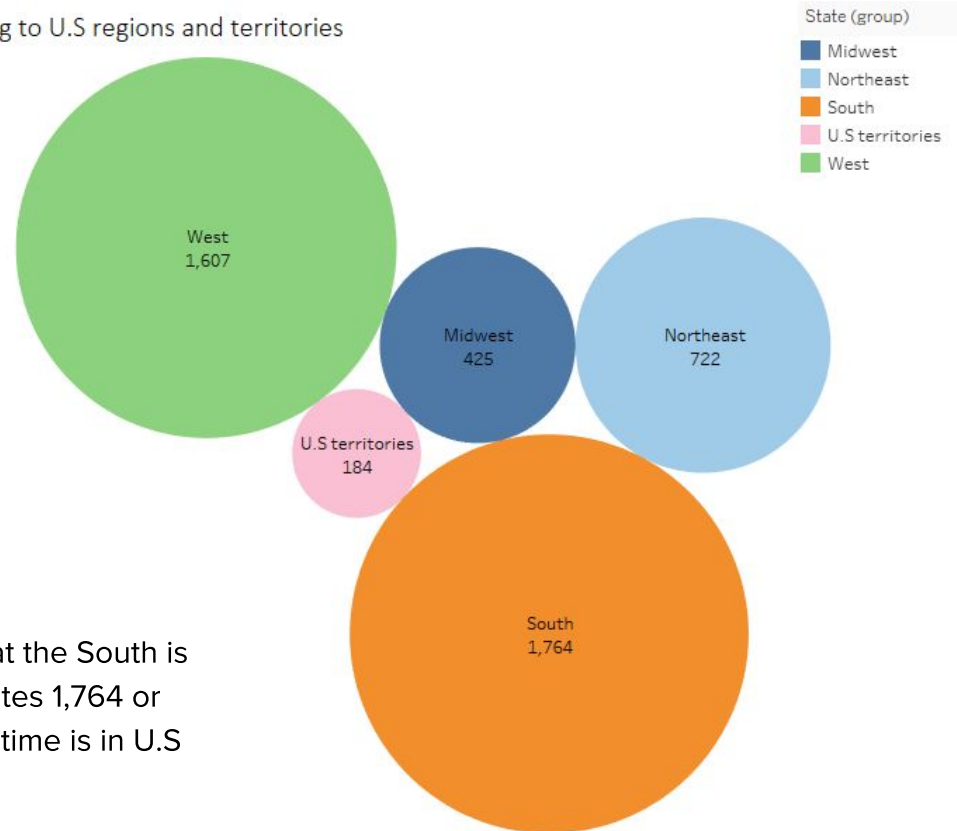
Airline delay by U.S regions and territories



This bar graph shows the airline delays. For example, in the South, there are four carriers with critical delayed minutes, Southwest (WN), Atlantic Southeast Airlines (EV), American Airlines (AA) and Delta Airlines (DL), respectively. The low performance of Southwest airline confirms diverse graphs aforementioned.

Security delay according to U.S regions and territories

Security delay according to U.S regions and territories



Security delay dot graph shows that the South is the region with more delayed minutes 1,764 or approximately a day, and the least time is in U.S territories with 184 minutes.

Works Cited

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- 11) Francihelena Uzcategui, *Security delay according to U.S regions and territories*; 01/08/2018; <https://goo.gl/TnwOpB>

Tools used: MS Excel and Tableau.