

Flight Delays and Cancellations

Insight 1 – What causes the Cancellations?

[Link to the public Dashboard](#)

This dashboard gives us an overview of what are the factors surrounding the delays: day of the week, month of the year, airline. It also sees into the most common cancellation reasons.

- Weather is the most common reason why flights get cancelled, causing more than half of the cancellations. 2397 flights were cancelled because of the weather during the year 2015. This insight can be seen in a bubble chart, this design was chosen because it provides an easy understanding of the possible values and a clear view of the most common reasons by varying the size.
- Monday is the day of the week that more cancellation gets, having 630 cancelled flights due to weather reasons only. On the other hand, Friday is the day with the least amount of cancellations, having only 379 in total compared to the 1038 cancellations on Monday. This insight is shown in an insight table because we can combine more than one variable, yet see at first sight what the most common and less used values are because it has also been colored.
- February is the month with more cancellations (1058), followed by January with 605, in contrast with the total amount of flights, February is also the month with less flights along the year. This insight has been represented with a line chart because it shows the trends across the months, and it makes it easier to notice the ups and downs.
- American Eagle Airlines Inc. has the bigger amount of cancellations in average, a 5% percent of their flights got cancelled during 2015. This is quite high if we compare it with Atlantic Southeast Airlines, that has almost double the amount of flights (14.149 vs 27.172) but almost the same amount of cancellations (723 vs 800), resulting on a percentage of 2.94% cancellations of the total flights. This insight was represented with a tree map because it's based on simple data (airline - delays) but shown in a visually attractive format.

Insight 2 – What causes the delays?

[Link to the public Dashboard](#)

This dashboard consists of three worksheets that look at the flight cancellations from different perspectives: Destination, Month, and day of the week.

- Although Arrival delays are seen all over the world in the different destinations, the biggest sum of delays appear in Chicago, IL airport (111,111). It is important to note, that even though we can see delays in different countries around the world, the concentration is in the US because of the nature of the dataset we are analyzing. This insight can be seen in a colored map because is a nice way to show a spatial variable, like it is the city. It provides the data but also additional information on the location itself.
- The average delays, both for departure and for arrival, have a similar distribution across the month, both averages peak on June (9.81 average arrival delay and 14.160 average departure delay) and have the lowest point in September.

This insight has been represented with a line chart because it shows the trends across the months, and it makes it easier to notice the ups and downs. Also to compare between the different averages that the graph is showing.

- By looking at the delays across the days of the week, again can be seen that the behavior of the average delay is similar between the arrival and the departure values. Being Monday the day with the highest averages for both measures (6.578 Avg. Arrival Delay and 11.391 Avg. Departure delay)

This visualization can be seen in a bar chart because days of the week is a categorical variable, and it also provides an easy comparison between both averages by combining the bar charts for both values.

Insight 3 – What are the most common flights?

[Link to the public Dashboard](#)

This dashboard consists of four worksheets that look at the amount of flights from different perspectives: Destination State, Airline, Month, and day of the week.

- The most common destination is CA with a total sum of 33.331 flights, followed closely by TX with 32.612. Nevertheless, the amount of flights is well distributed across the destination airports in the US.
This insight can be seen in a colored map because is a nice way to show a spatial variable, like it is the state. It provides the data but also additional information on the location itself.
- The most common airline is Southwest Airlines Co. with a total amount of 59.437 flights, the second most used airline is Delta with over 10.000 flights less (41.516).
This insight can be seen in a bubble chart, this design was chosen because it provides an easy understanding of the possible values and a clear view of the most common reasons by varying the size.
- July is the month with the biggest record of flights (26.810) and February the month with the least amount of flights (22.404). This can also be related to the first insight; were it was seen that February is also the month with the biggest amount of cancellations.
- Monday is the day with the biggest amount of flights (41.016), yet all days of the week seem to have a similar amount of flights. There is a trend to have less flights over the weekend, specially during Saturday, where the lowest amount of flights can be found (33.039).
This visualization can be seen in a bar chart because days of the week is a categorical variable.