Flight Delays and Cancellations

Overview

In this project we are trying to figure out the problem with Flight Delays and Cancellation in the US. there's so many questions that come to mind when we think about this problem but what is the real reason behind it, not just our Instincts, so I came with a few questions and I tried to explore the Data and Analyze it and came up with these insights.

Which Airline has the worst Delay?

Since the number of flights Vary from airline to another it won't be a fair comparison if we used the SUM aggregation, that's why I used the AVERAGE function.

Bar Chart: i used the Average Departure Delay, Average Arrival Delay and Airline Name.

Alaska Airline average Arrival Delay is Phenomenal with (-0.49) which means it arrives before the expected time and they have a Decent Departure Delay in 2nd Place with (1.94).

Spirit Air Lines has the Worst Avg Arrival and Departure Delays with (17.37) Departure Delay, and (15.73) Arrival Delay.

Bottom Left Line Chart: it's a Dual Axis line chart that have months in X axis and (Sum of Arrival Delay on the left and Sum of Departure Delays on the right) in Y axis.

During May until June the airlines have the Worst record 380k Departure and 248k arrival delay. September on the other hands have the best record with -17k arrival delay and 114k departure delay .

Bottom right Line Chart: we have the reason of Delays .

We can Specify the Airline and months that we want to explore from the Dashboard.

Note: there's no records of "October" in the Dataset.

Which Airport has the worst Delay?

Since the number of flights from each Airport is different so I used the AVERAGE function.

- Right Map: shows the average Arrival Delay the more Red it gets the better which means the flights are reaching the airport faster than the expected time.
    - Canyonlands fields had the best arrival delay (22.43)mins.
    - Guam international airport has the worst Arrival Delay (47)mins.
- Left Map: shows the average Departure Delay the more Red it gets the better which means the flights are taking off earlier that expected.
    - Valdes airport has the best Departure delay (-9.75) mins.
    - Guam international airport has the worst Departure Delay (63.1)mins.

Bottom Line Chart: sum of Arrival and Departure Delays over the months.

We can Specify the Airports and months that we want to explore from the Dashboard.

Note: there's no records of "October" in the Dataset.

[Insight 3](#) (Clickable)

What is the state that has the highest flight cancellation?

Texas has the highest number of cancellation with 661 canceled flight.

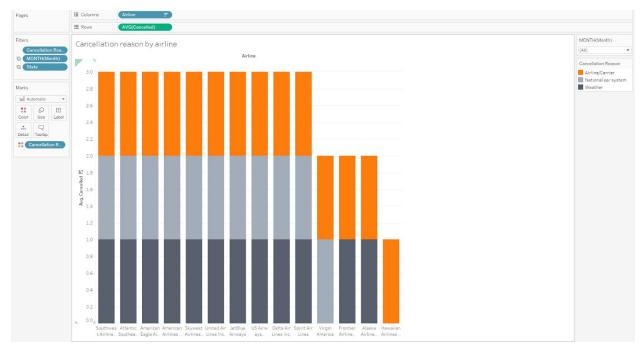**What is the most common reason to cancel a flight ?**

It's the weather with 2397 flights.

What are the most frequent airlines that cancel their flights?

Depending on the aggregation I used two methods (sum/average) the average method is more accurate.

But I ended up using the Sum function in the Dashboard and the most frequent airline that their flights get canceled is "Southwest Airline".

I took a screenshot while I was working just to keep in mind the result when we use the average function and most airlines had 3 cancel flights on average.

How many flights does each airline have?

Southwest Airline has the most flights with 59362 flights in 2015. And Virgin America has the least number of flights with only 2978 flights in the whole year.

The rest of the data are provided in the Dashboard.

How big is the fleet of each airline?

America Airline Has the biggest Fleet in the list with 1017 Airplanes in their fleet.

The rest of the data are provided in the Dashboard.