DATA VISUALIATION

FLIGHT DELAYS AND CANCELLATIONS

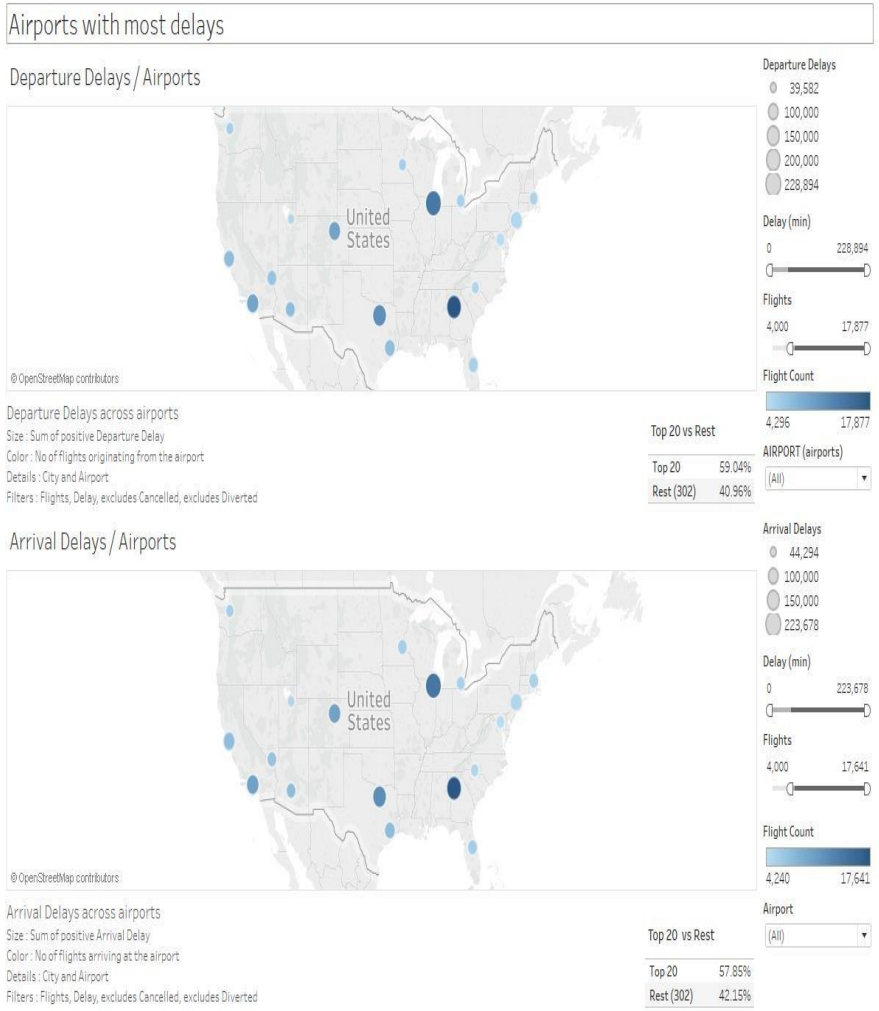
https://public.tableau.com/profile/ashish.gandhi#!/vizhome/Flight_Delays_15896650712350/LateAircraft-YearTrend

ANALYSIS APPROACH INSIGHTS

The Prime objective of this insight is to find the airports with the worst delays and examine the analysis of delay causes.

The flight_data.csv has about 275000 flights recorded of which about 2% are cancelled or diverted. In most of our analysis we excluded the cancelled and diverted flights except where we analyze flights cancellation made by Airliners.

Insight - Out of all the flights operating across the airports, some top 20 airports account for about 60% of the delays. Overall the increase in delays seems to be weakly correlated to the number of flights operating at the airports as we see many airports with increasing flights having greater delays but we also see some airports that have it backwards . (e.g. Chicago Intl airport has more flights & higher delays when compared to Dallas Fort Worth airport however when compared to Atlanta airport it has more delays but fewer flights.

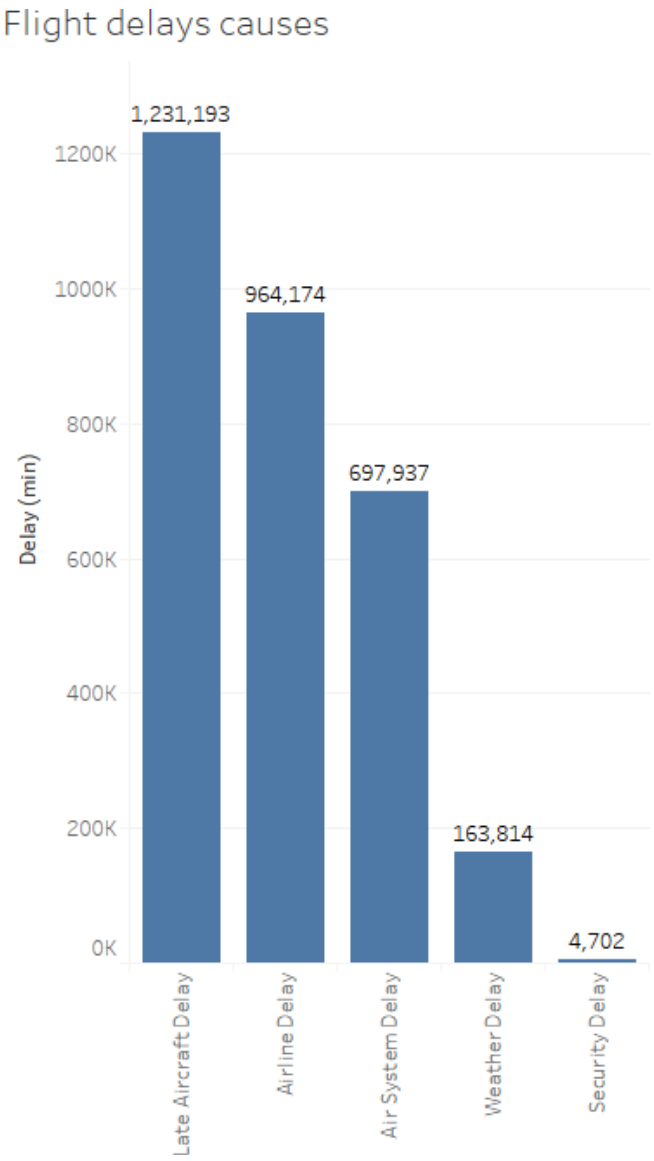


ANALYSIS APPROACH DESIGN CHOICES INSIGHTS

Our second objective is to try and find the major causes of the delays that are taking place.

Since Bar charts work well on categorical values, and delay types are categorical variables.

Insight – There are several reasons that we came across while answering the questions with the help of visualization and dashboard. Hence, Late aircraft, Airline, Airsystem delays seem to be the major causes for delays. While security delay is the least impactful.



ANALYSIS APPROACH INSIGHTS

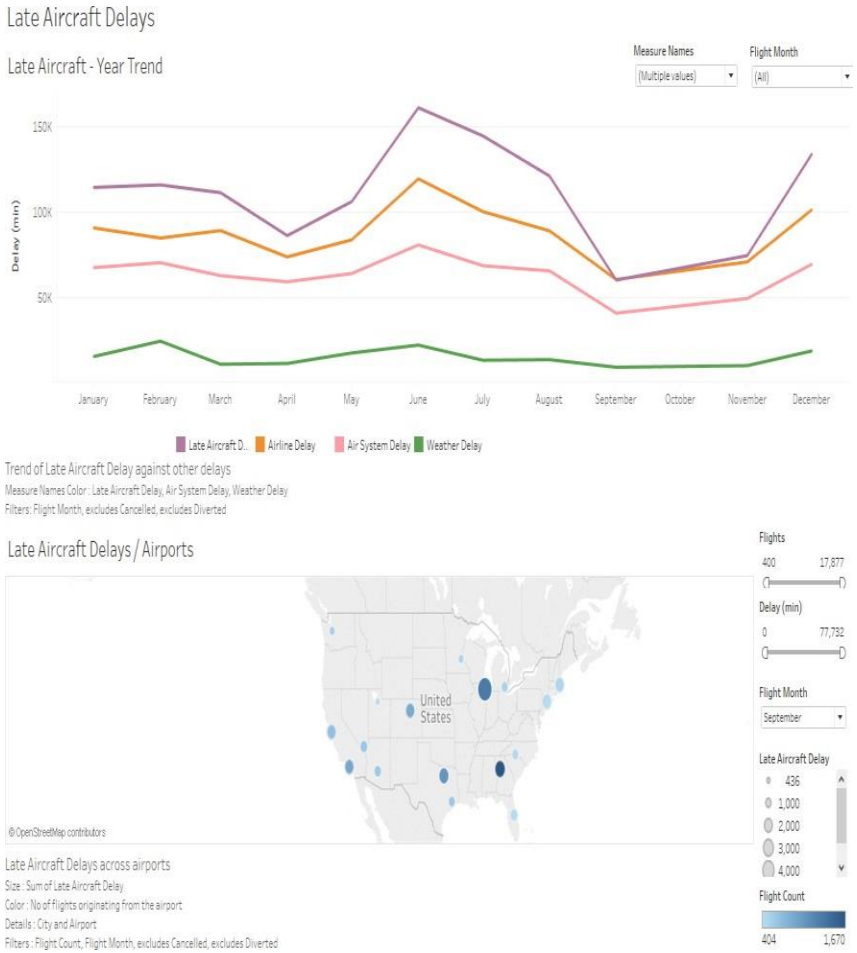
Out of the two given charts, in the first we analyze the trend of the late aircraft delays during the year against other delays.

Since this was a a time-series data, so line was the obvious choicewith different lines representing different categories.

Insight: The late aircraft delays seem to be the fallout of the air system and airline delays.They follow similar pattern. Spikes of delay are much higher in summer and winter breaks. The reason for the drop in September seems unclear even though we see a drop of 6% in flights and 8% less distance travelled when compared to June but looking at the data in January & February shows an opposite trend i.e. fewer flights and distance travelled when compared to September yet higher delays.

On inspecting the data, we found that late aircraft delays are strongly relate to departure delays and hence we select departure airports to analyze late aircraft delays in the second chart. For this a map makes sense to show the airports. In our analysis , the late aircraft delays are differentiated by size and we add the flight count along with month filter.

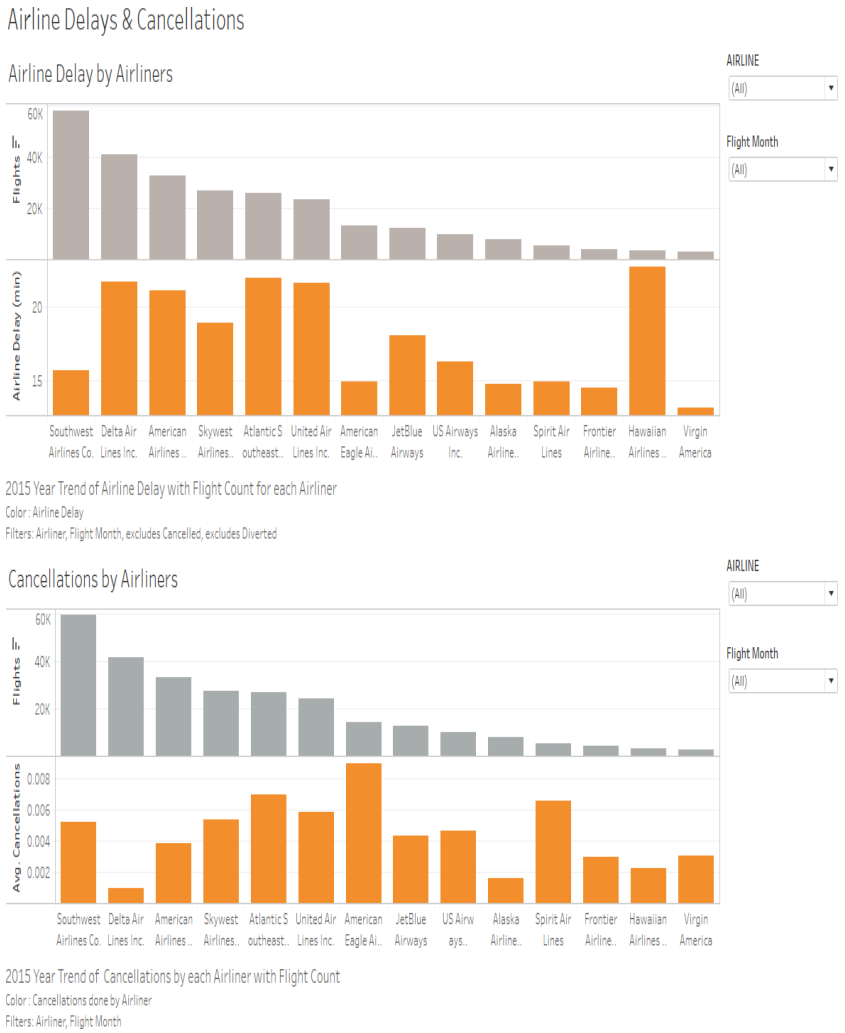
Insight: We se the same airports pop up as in the previous analysis about departure and arrival delays. Also we see the increase in delays seem to weakly correlated to the number of flights operating at the airports backing our previous find.



ANALYSIS APPROACH INSIGHTS

In these couple of charts, we compared different airlines, across many items linke number of flights operated by the airliners, avg. airline delay per flight or cancellation made by the airlinerof the total operating flights. Since we have a fliter to exclude cancelled and diverted flights in delay analysis, we have to split the steps in two charts. One for airline delay with filtered flight counts and another to include cancelled flights with toal flight counts. In either case Bar charts would be an ideal choice, Since we are comparing the different airliners against each other.

Insight: Airline delays are not linear with the no. Of flights operated by the airliner. Delta Air, American Airlines, Atlantic southwest, United Airlines Inc and Hawaiian Airlines fair badly when compared to others. Atlantic SW, American Eagles, spirit airlines have the most average airliners cancellations which indicate higher cancellation rates to the toal flights operated by the airliners. On using the month filter we could see the spike in cancellation during summer and winter breaks



THANK YOU