

Flight Delays and Cancellations Tableau Dashboard

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For
—
Business Analytics Nanodegree
—
Udacity

Insight 1

Which airlines have the worst delays?

<https://public.tableau.com/profile/sagar.patil4079#!/vizhome/Insight1BANanodegree/AirlineDelay>

We can make out from the worksheet that Southwest Airlines Co. has highest time delay of 931,259 minutes and Hawaiian Airlines Inc. has lowest of 7,082 minutes of delay.

I have joined the flights and airlines file, created calculated field which sums up departure delay and arrival delay as Net delay and created Bar Chart visualization. When we hover over this, we can see the details like full name of the airline, total time in minutes this airline's flight has been delayed from the dataset.

Insight 2

What are Causes of Delay per Month, per Airline and per State

<https://public.tableau.com/profile/sagar.patil4079#!/vizhome/Insight2CausesofDelayperMonthandperAirline/Causes>

We can see from the visualization that, “Late Aircraft Delays” is the reason behind maximum flight delays in each month except September month and “Security delays” causes least time delay.

To analyse what are the reasons per month any flight is getting delayed each month is an essential point in increasing the productivity of any airline and decrease delays.

I have joined the flights, airlines and airport files and have created Overlapped Line chart using multiple measures. Here, months and measures name (late aircraft delay, security delay, airline delay, air system delay, and weather delay) are chosen as columns and the value of measures are rows. One can select the airline, month and state of which they want to see the total delay of flights of each reason like late aircraft, security, weather etc. according to the dataset.

Here I was considering separate line chart for each delay but overlap makes it easy to focus on comparing different delays. Different colours used to differentiate between the types and confusion can be avoided. With this insight stakeholders can focus on the appropriate causes.

Additionally, I have also Provided filter according to State and Airline. The aim of the filter is to see which Airline or Which State has which types of delay according to month.

Insight 3

Dashboard

https://public.tableau.com/profile/sagar.patil4079#!/vizhome/Insight3Dashboard_15881416046390/Dashboard1

This dashboard shows three charts Flight Cancellation Map, Causes of Delay per Month and Net Delay per month.

It Answers questions such as which is the state having highest cancellations of flights? Which Airline has highest cancellations with respect to state? What are reasons behind delays with respect to state or Airline? Which month has highest and lowest delays of flight according to state or Airline?

Flight Cancellation Map shows which state has the most flight cancellations. The darker colour, the more cancellations occurred in that state.

According to the map, Texas (661) and Illinois (537) are the states with the biggest number of flight cancellations.

In Area line chart, we can see which the most delayed flights are for each month. The reason why I have chosen this kind of graph is because it allows me to visualize clearly a trend in data over intervals of time, in this case, 12 months.

In General, we can see Month 6 is having highest number of delays and Month 9 is having least delays.

In Overlapped Line Chart, we can see from the visualization that, "Late Aircraft Delays" is the reason behind maximum flight delays in each month except September month and "Security delays" causes least time delay.

I have provided the filters for Month, Airline, and State in this Dashboard which is applied to all the related charts and with selection of each we can get filtered insights.

INSIGHT 3 Continued...

The Line chart was chosen to easily differentiate the delay reasons and its advised for timeline as we are plotting with respective month. The area Line chart was chosen for the same reason as line chart and as there is so comparative measure here so area line chart was chosen. The Map was chosen because its easier to identify the region which is causing delay and easy to communicate.

Insight 4

Which Airports have the worst delays?

<https://public.tableau.com/profile/sagar.patil4079#!/vizhome/Insight4AirportshavingHighestDelays/Airport?publish=yes>

We can make out from the worksheet that Chicago O'Hare International Airport has highest time delay of 316610 minutes.

I have joined the flights and Airport file, created calculated field which sums up departure delay and arrival delay as Net delay and created Tree map visualization. When we hover over this, we can see the details like full name of the airport, total time in minutes this airport's flight has been delayed from the dataset.

I have used tree map in this visualization because tree maps are clean and less confusing. I had considered Packed bubbles visualization but to me it looked confusing as though sizes were different but they were not organised where as in tree maps sizes are also organised and darker the colour has high delay time lighter the colour has low delay.

Aim of creating this visualization is so that airports having highest delays can be identified and avoided for travel.

Thank You