Visualization of Flight Delays and Cancellations by Tableau

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Insight 1

https://public.tableau.com/profile/lakshya.mutneja#!/vizhome/WhichairporthasthemostflightcancellationinAmericaFinalPro/cancel_airport?publish=yes

Dashboard

Top Ten airport has the most flight cancellation in America.

Summary

From the tree map we can see that Chicago O'Hare International Airport has the most flight cancellation (454 counts),followed by Dallas/Fort Worth International Airport (342 counts).San francisco International Airport have the fewest with only 114 cancelled flights.

In this case, we are using Tree map to display hierarchical data. Like which airport has the most flight cancellation in the US. There is a correlation between size where we are able to see their patterns.

As we were told in video lectures that Tree Mapping is ideal for showing large amounts of items in a single visualization simultaneously.The boxes here are grouped by items that are close in hierarchy.

Insight 2

https://public.tableau.com/profile/lakshya.mutneja#!/vizhome/Insight2FinalProject_15891308182040/Insight2FinalProject

Dashboard

Most frequently arrival delayed airlines with cancelled at most domestic airports in 2015

Summary

According to the chart we can see that there are around 14 airlines to carry out US domestic flights in 2015. WN(Southwest) Airlines has the worst records 58,438 arrival delays and 59,437 flight cancellations from US domestic airports.

In this case we are using the Horizontal Bar Chart which helps us to know which categories have higher numbers compared to other categories.

Insight 3

https://public.tableau.com/profile/lakshya.mutneja#!/vizhome/WhatcausesdelayspermonthandairlineInsight3FinalProject/FlightDelayminsCauseperMonthAirline?publish=yes

Dashboard

What causes delays per month per Airline?

Summary

This visualization answers- how much delay is generated by each reason for any airline in every Month?

With the help of charts we can get to know what are the reasons per month if any flight is getting delayed each month and it is an essential point in increasing the productivity of any airline by decreasing delays. To know this I am able to join the flights and airlines file and have used Area Chart (Continuous) using multiple matures.

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.
A person can select the airline and month of which they want to see the total delay of flights of each reason like late aircraft, security, weather etc. according to the dataset.
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. It is fascinating to know that the provided dataset of 2015 does not have any data for the month of October.

Design:

There were 11 months and 5 different reasons for every flight to be delayed so the complexity is present and we have to deal with it. To make it easier to analyze, I have created filters. From the right side of the worksheet, one can choose a particular month and airline to see its total delay in minutes for each reason by hovering over the visualization.

Resources

1) https://www.youtube.com/watch?v=9xqHA732LMA&feature=youtu.be
2) https://towardsdatascience.com/the-ultimate-cheat-sheet-on-tableau-charts-642bca94dde5
3) https://www.educba.com/tableau-chart-types/