Report

Visualization 1: Delay Type

URL: https://public.tableau.com/profile/temitayo.ilori#!/vizhome/Project1_403/DelayType?publish=yes

Chart Type: Stacked bars. I used the average of each delay type to create the visualization.

Design: The objective of creating this visualization is to find out the composition of different delay types for each airline and compare the average delay type for each airline. The reason for choosing a Stacked bar is that it is the most suited for visualizing compositions of a group.

Summary/ FIndings: The airline with the most average delay is NK (Spirit Airlines) while HA (Hawaii Airlines) has the least average delay. An interesting finding is that AS (Alaska Airlines) has a negative average Arrival Delay, meaning, averagely, it arrives before time.

Visualization 2: Animated Delay Type

URL:
https://public.tableau.com/profile/temitayo.ilori#!/vizhome/Project1_403/AnimatedDelayType?publish=yes

Chart Type: Stacked bars with filter on date. I used the average of each delay type and date to create the visualization.

Design: The objective of this chart is to find out how the different types of delay vary by day. To do this, I calculated the date from the Year, Month and Day.

Summary/ FIndings: The delay vary significantly by day. For example, on January 8, 2015, Hawaii Airlines had an average Airline Delay of 707.5 minutes while on most other days, the delay is only a few minutes. There must have been a serious issue with the airline on the day.

Visualization 3: Cancellation

URL:
https://public.tableau.com/profile/temitayo.ilori#!/vizhome/Project1_403/Cancellation?publish=yes

Chart Type: Tree Maps. I used the sum of cancelled flight, Cancellation Reasons and Airline to create the visualization.

Design: The objective of creating this visualization is to find out how the total number of cancelled flights varied between the airlines.

Summary/ Findings: The Cancellation Reason field has only 0 and 1 responses for uncancelled and cancelled flights respectively. The sum of this field was used to get the total cancellation for each airline. Of all cancellations without reasons, WN (Southwest Airlines) has the most (448) while VX (Virgin America) has the least (13).

Visualization 4: Forecast

URL: https://public.tableau.com/profile/temitayo.ilori#!/vizhome/Project1_403/Forecast?publish=yes

Visualization Type: Line chart. I plotted the Average Total Delay against date which I earlier calculated.

Design: The objective of this visualization is to be able to predict delay. I chose the Line chart because it is most suited to forecasting.

To do this, I first calculated the Total Delay by finding the sum of the seven types of delay. Then I plotted Average Total Delay against the date. Then, I substituted zero for null. After plotting the line chart, I created Forecast of one month (by days) with the options of Additive Trend and Additive Seasonality. I used 95% Confidence Level for the Prediction.

Summary/ Findings: The description of the forecast is below:

Options Used to Create Forecasts

Time series:	Day of Date
Measures:	Avg. Total Delay
Forecast forward:	31 days (Jan 1, 2016 – Jan 31, 2016)
Forecast based on:	Sep 3, 2015 – Dec 31, 2015
Ignore last:	No periods ignored
Seasonal pattern:	7 day cycle

Avg. Total Delay

Initial	Change From Initial		Seasonal Effect		Contribution		
Jan 1, 2016	Jan 1, 2016 – Jan 31, 2016		High	Low	Trend	Season	Quality
155.5 ± 78.9	53.7	Jan 31, 2016 21.6	Jan 29, 2016	-19.2	7.7%	92.3%	Poor

The forecast of Average Total Delay for January 1, 2016 is 158.0. Similarly, it is expected to be 215.6 on January 31, 2016. The forecasts for the remaining days of the month can be seen in the tooltips.

Visualization 5: Dashboard

URL:
https://public.tableau.com/profile/temitayo.ilori#!/vizhome/Project1_403/Dashboard1?publish=yes

I created a dashboard to include the forecast and Cancellation visualizations.

Visualization 7: Story

URL: https://public.tableau.com/profile/temitayo.ilori#!/vizhome/Project1_403/Story1?publish=yes

I created a story with the Animated Delay chart, Cancellation and Forecast visualizations, giving a brief explanation of each.