Flight Delays and Cancellations

I chose the project Flight Delays and Cancellations to create three different visualisations and gather some useful insights. This data comes from a Kaggle dataset which tracks the on-time performance of US domestic flights operated by large air carriers in 2015. Analysing the data, I tried to understand what are the major causes for delays and cancellations in US domestic flights and how they vary by time, airports and states.

Correction : I use Line chart instead of bar chart to represent the numerical data over a time series (Months).
Insight no 1: What are the major causes of flight delays and how do they vary by month?
Summary : I have chosen this question to look at different reasons for flight delays. If I normalise the data, where a delay occurred to the total number of flights flown, I can see that late aircraft is the biggest contributor followed by Airline delay. Whereas weather and security induced delays are the least common.
Digging a bit deeper it turns out the middle of the year (summer months) has the highest delay with reasons primarily being elevated departure, arrival, and airline delays. Whereas, the winter months account for elevated weather related delays but not significant compared to other delays. September seems to be the month with the least delays overall.
Design: Bar and Line chart are used for visualisation. I choose different shades of blue and orange to assist people with colorblindness.
Link : Project4Dashboard1 | Tableau Public
References:
(1) Tableau isn't reading my CSV / Text file Correct (+ Bonus Excel Tip that has baffled many People!) - YouTube
https://www.youtube.com/watch?v=Bl1IqcCuyLI&t=238s

Correction : I correct the X-axis of the line graph, to accurately show the date range of the investigated months on the axis
Insight no 2: What are the reasons for flight cancellations?
Summary: There are three main reasons for flight cancellation, namely airline/carrier, weather, and national air system. By looking at the visualisation, I can see that weather is the biggest contributor to flight cancellation, accounting to about 54% of all flights cancelled, followed by the airline carrier and lastly national air system. Filtering these by months shows winter months are the worst hit by cancellations and summers/autumn months are the least prone to cancellations. The difference in lowest (September) to highest (February) amount of cancellations by month is about 10x.

Design: A bar chart is used for airline cancellation reasons and a line chart is used to show the relationship between cancellation and the month of the year.
Link : Project4Dashboard2 | Tableau Public
References:
https://www.youtube.com/watch?v=Acmf4u-8ImM
https://www.tableau.com/learn/articles/best-beautiful-data-visualization-examples

Correction :I minimise the categories to only the top 10, to improve the readability of the data from the graphs.
Insight no 3: Flight cancellation by state and airports
Summary : In this dashboard I have four different graphs. The map shows average cancellations by state on a map with a colour gradient depicting a trend. I have bar charts for the top 10 total number of cancellations by state and top 10 normalised / average cancellations by state (a more fair representation) and lastly top 10 average cancellations by airport.
Interestingly Texas, Illinois, California have the highest number of cancellations but as there are a large number of flights from there, normalising the data leads to Vermont, Rhode Island and New Jersey taking the top spot.
Design : I chose map and bar charts to visualise cancelled flights. By using a map I can quickly see geospatial trends in data.
Link : Project4Dashboard3 | Tableau Public
References :
What is Data Visualization: Definition, Examples, Principles, Tools | OWOX BI
https://www.tableau.com/solutions/maps?utm_campaign_id=2017049&utm_campaign=Prospecting-ALL-ALL-ALL-ALL-ALL&utm_medium=Paid+Search&utm_source=Google+Search&utm_language=EN&utm_country=DACH&kw=&adgroup=CTX-Trial-Solutions-DSA&adused=DSA&matchtype=&placement=&d=7013y000000vYhH&gclid=CjwKCAjw6raYBhB7EiwABge5Kl9yyGV4p4lwnjyRdxHqx-yTVxin0mWMtJYYusffgXa7XsNOWWxKnBoCcNAQAvD_BwE&gclsrc=aw.ds