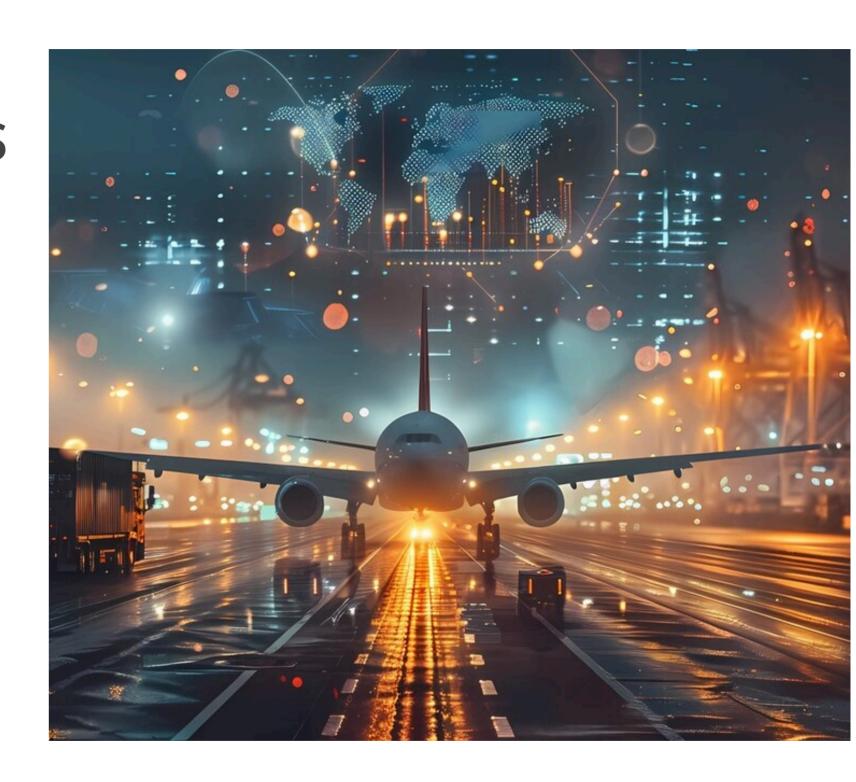# ANALYSIS OF THE FLIGHT DELAYS AND AIRLINES: INSIGHTS AND VISUALISATION

INTRODUCTION TO THE FLIGHT DELAYS ANALYSIS

we're going to talk about flight delays and how different airlines handle them. Flight delays can be a big hassle for travelers, but they also give us a chance to learn about airline performance.
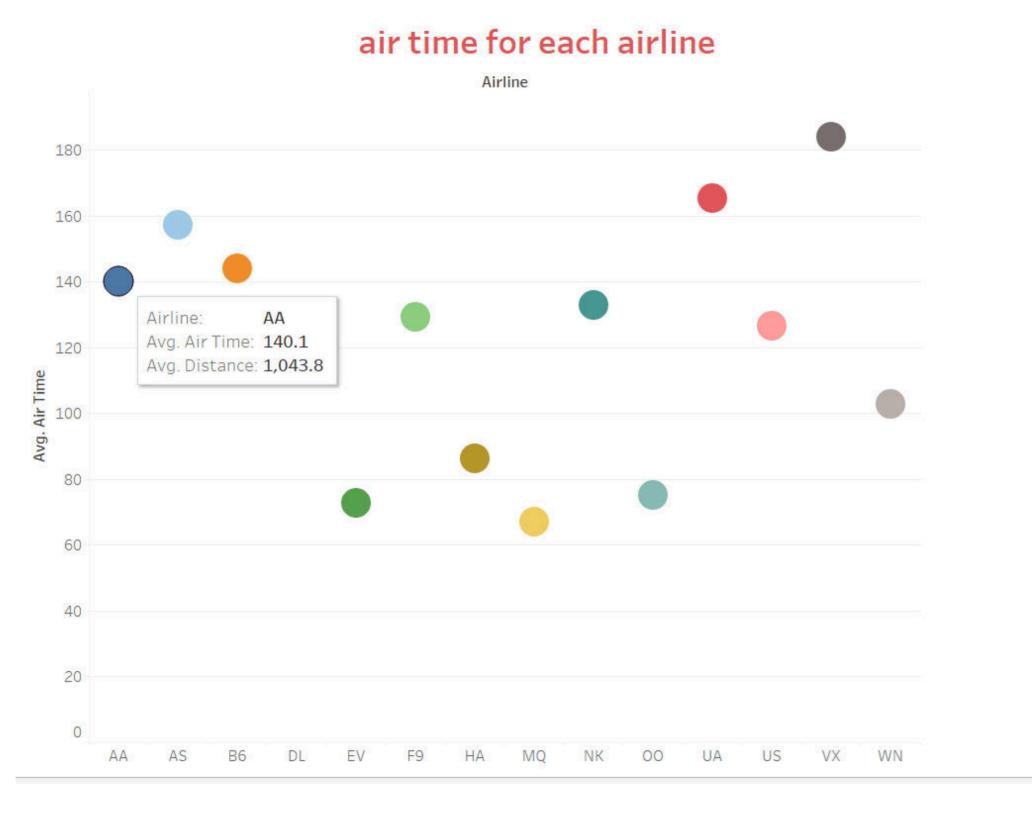
DATA SET OVERVIEW

The U.S. Department of Transportation's(DOT) Bureau of Transportation Statistics tracks the on-time performance of domestic flights operated by large air carriers. Summary information on the number of on-time, delayed, canceled, and diverted flights is published in DOT's monthly Air Travel Consumer Report and in this dataset of 2015 flight delays and cancellations.

air time for each airline

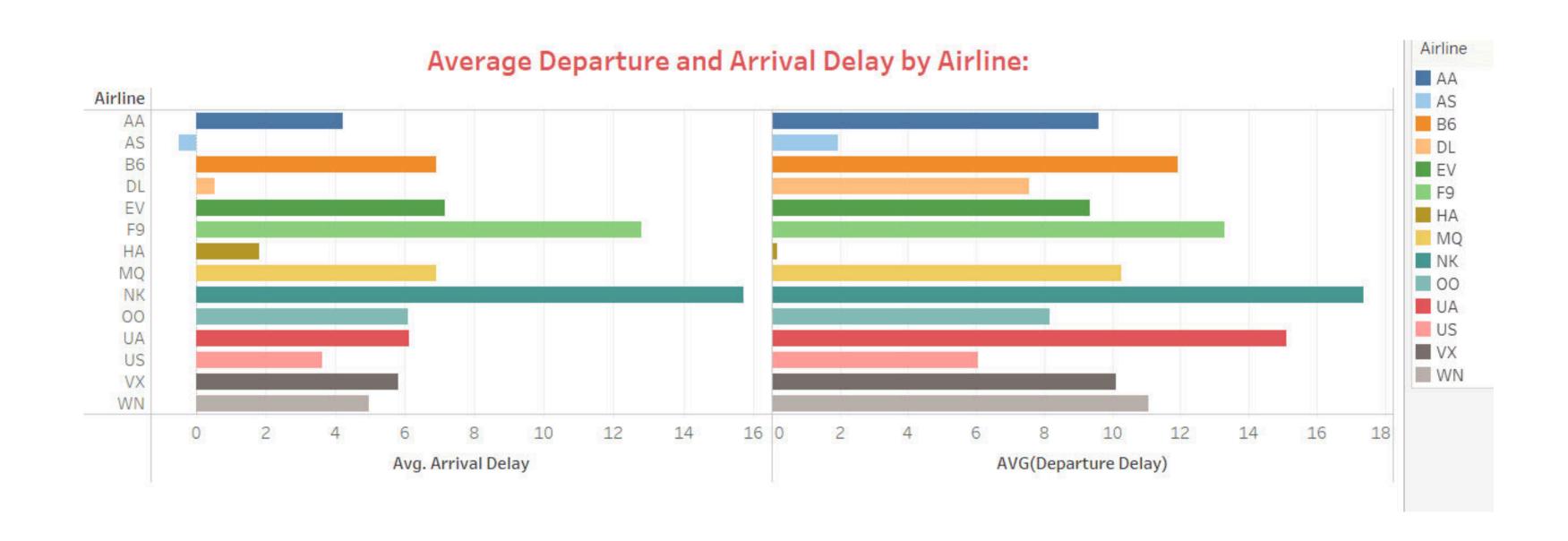## CHART SHOWS THE AIR TIME FOR EACH AIR LINE DETAILED BY THE DISTANCE

This analysis shows the variation in flight durations across airlines. Longer air times may indicate a focus on long-haul flights, while shorter times suggest a focus on regional or domestic routes. These differences offer insights into each airline's operational strategy and network scope.

CHART SHOWS THE AVERAGE DEPARTURE AND ARRIVAL DELAY FOR EACH AIRLINE

This analysis shows clear differences in departure and arrival delays across airlines.
These insights help travelers choose airlines and guide airlines in improving their services.

Average Departure and Arrival Delay by Airline:

departure delay for origin airport

Origin Airport

Origin Airport: CMX
AVG(Departure Delay): 33.06

AVG(Departure Delay)

BIL BJI BMI BOI BPT BQN BRO BTM BTV BUR BZN CAK CDV CHA CHS CIU CLE CLT CMI CNY COS CPR CRW CVG DAB DAY
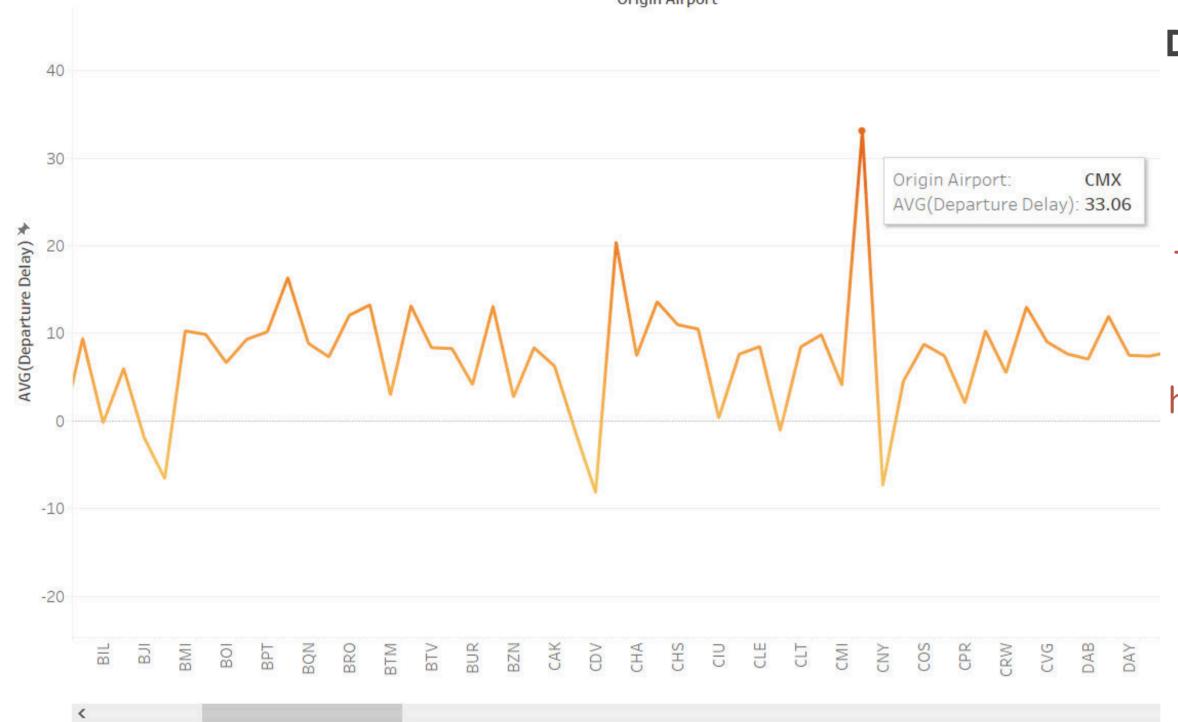
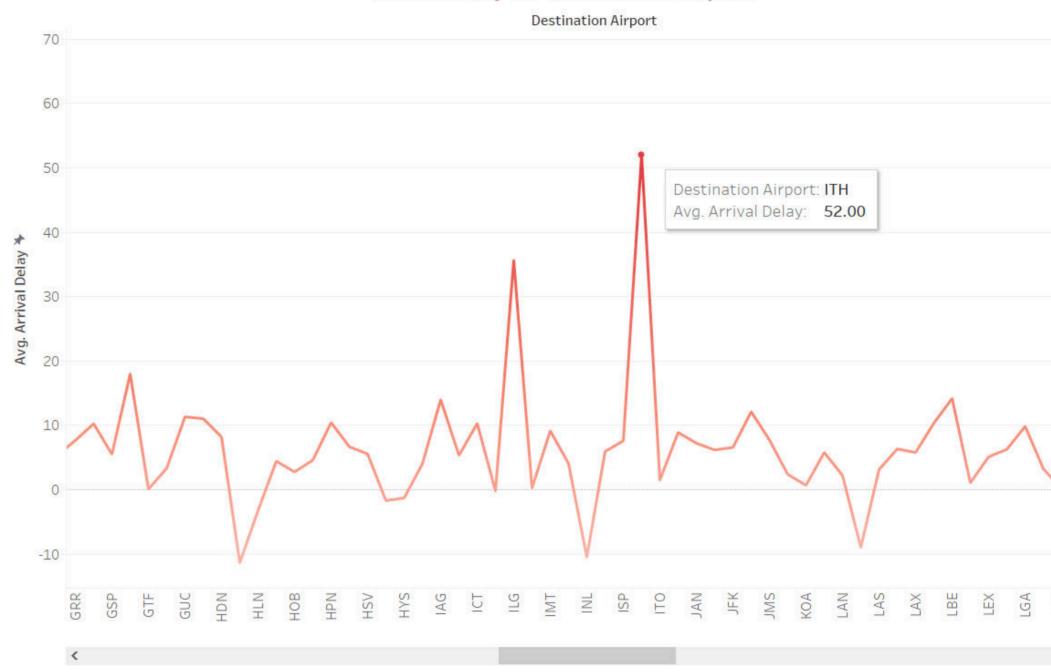**CHART SHOWS THE AVERAGE DEPARTURE DELAYACROSS DIFFERENT ORIGIN AIRPORTS**

This chart highlights that most airports experience average departure delays within a manageable range, but CMX has a notably higher delay, which could warrant further investigation to understand and address the cause.

THE CHART REVEALS VARYING DEPARTURE DELAYS AT DIFFERENT AIRPORTS
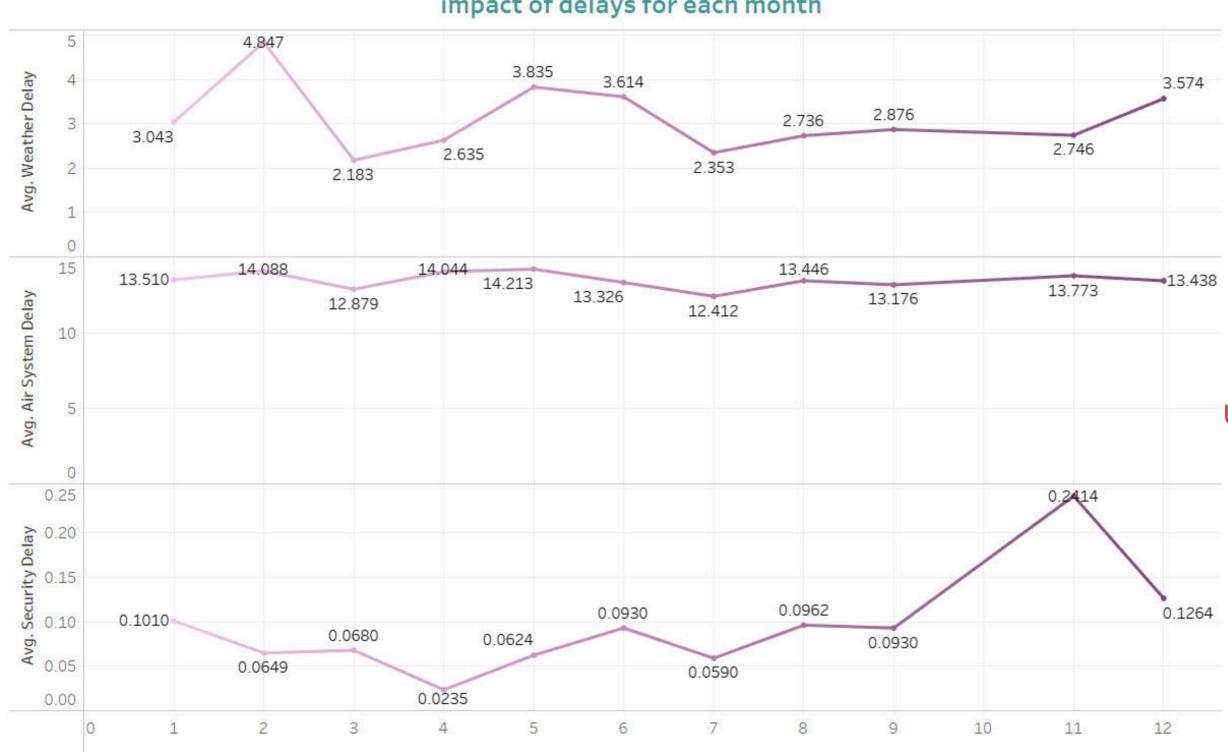
Airports with longer delays may face operational challenges, while those with shorter delays indicate better efficiency. Travelers should consider these delays when choosing airports to minimize wait times and improve their travel experience.

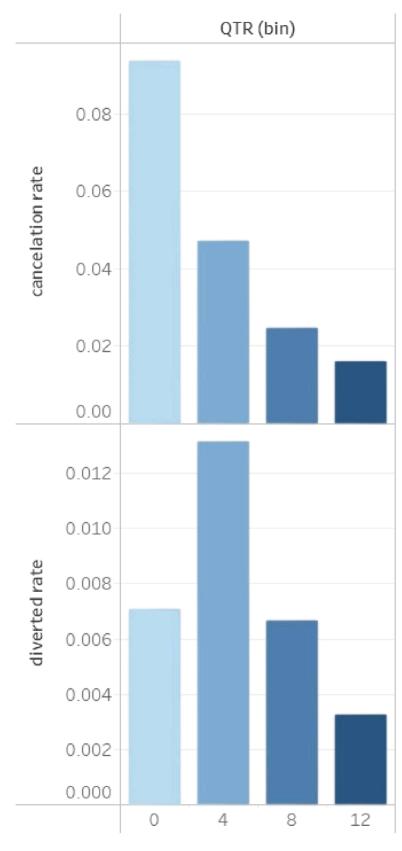arrival delay for destination airport
Destination Airport

Destination Airport: ITH
Avg. Arrival Delay: 52.00

THE CHART DISPLAYS THE AVERAGE DELAY DURATION FOR EACH MONTH, CATEGORIZED INTO THREE TYPES: SECURITY, AIR SYSTEM, AND WEATHER.

Weather delays have the longest average duration, especially in winter, followed by air system and security delays. Air system delays show less seasonal variation. Without specific delay units, exact magnitudes are unclear, but understanding the context (e.g., location) could offer more insights.

impact of delays for each month

Avg. Weather Delay

4.847
3.835
3.614
3.574
3.043
2.876
2.736
2.746
2.635
2.353
2.183

Avg. Air System Delay

14.088
14.044
14.213
13.510
13.446
13.773
13.438
13.326
13.176
12.879
12.412

Avg. Security Delay

0.2414
0.1010
0.0930
0.0962
0.1264
0.0680
0.0624
0.0930
0.0649
0.0590
0.0235

cancellation and diverted rate per quarter

THE CHART DISPLAYS THE CANCELLATION AND DIVERTED RATES ACROSS FOUR QUARTERS

Without specific information about the units for the cancellation and diverted rates, it's difficult to interpret the exact magnitude of these rates.

Overall, the chart highlights a significant decrease in both cancellation and diverted rates from the first to the fourth quarter, suggesting potential improvements in operational efficiency or customer satisfaction.
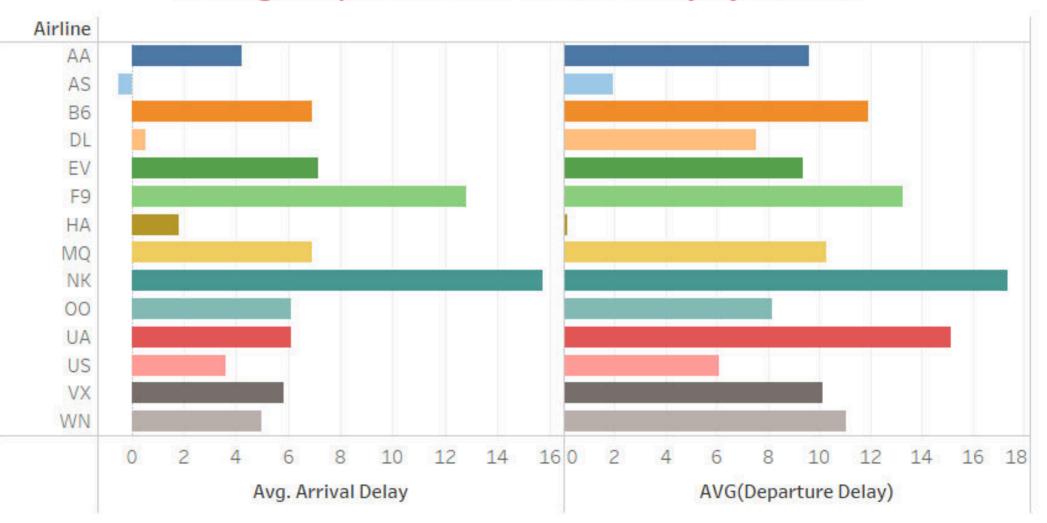
AIRLINE PERFORMANCE DASHBOARD

Effectively compare the average airtime, departure ,and arrival delays for multiple airlines.
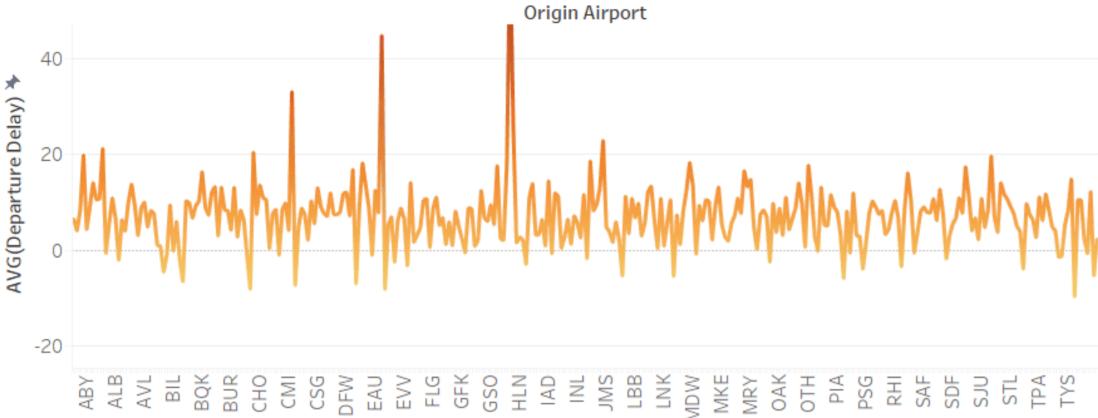Enables quick identification of airlines with high delays or outliers in airtime.

Overall, the dashboard offers a clear and actionable snapshot of airline performance metrics.

AIRPORT DELAY ANALYSIS DASHBOARD

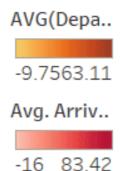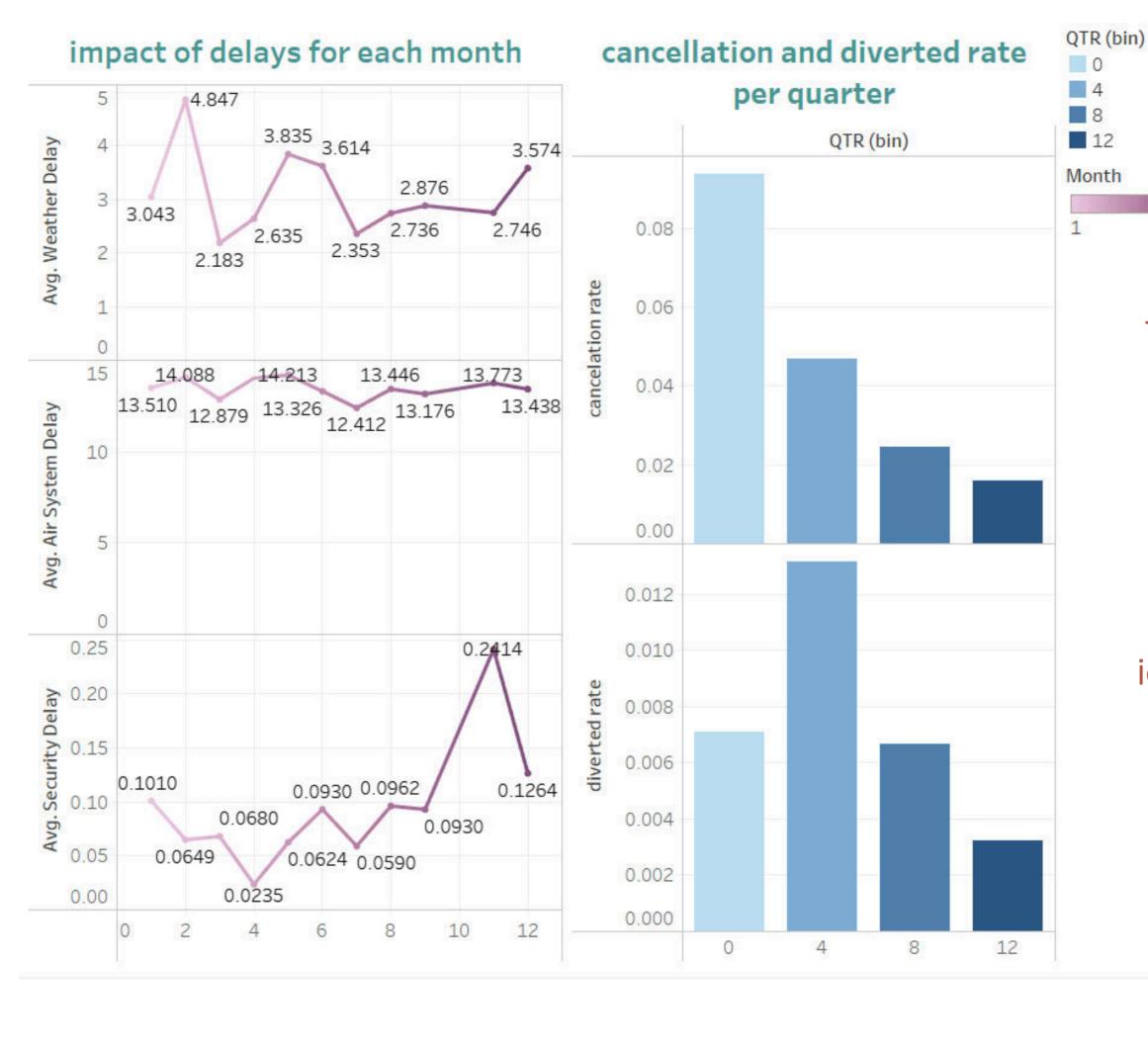The dashboard provides a comprehensive overview of airport performance across a range of origin and destination airports.
The visualization allows for quick identification of airports with significant delays.
The dashboard can be used to identify airports requiring improvement in performance.
Overall, this dashboard is a valuable tool for airport management and decision-making.

FLIGHT DELAY IMPACT ANALYSIS DASHBOARD

This dashboard offers a comprehensive overview of flight delays and cancellations.By visualizing average delay durations by type (security,air system,weather) and month,alongside quarterly cancellation and diversion rates,this dashboard enables quick identification of trends and patterns.This information is crucial for understanding the factors contributing to flight disruptions,allowing for targeted improvement strategies and enhanced operational efficiency.

Thanks!

ahmedshafik2002106@gmail.com
+20 1009800841