FLIGHT DELAY STUDY

Executive Summary

Airplane Delays! Almost everyone has experienced them, but why do they occur? This project delves into the data to find out the causes and implications of flight delays. Delays will be investigated by airport, route, region, cause and how many passengers they affect. Airport data will be analyzed by the number of passengers they serve, and by which carriers are the most problematic. Airlines will be analyzed by route to see which are chronically problematic. Weather factors will be analyzed by FAA region to see if these habitually cause havoc. And passenger totals by air carrier will be inspected to see who is causing the greatest bottlenecks.

Motivation

Most everyone has experienced the frustration involved with airplane delays. Who are the culprits? Or, what are the culprits? This is the motivation behind this project; to find the reasons behind most of the delays experienced by passengers.

Data Question

The primary question is: What or who are behind flight delays? In answering this question the following insights will be obtained:

Which airport serves the most delayed passengers?
Which aircraft have the most equipment delays?
Which FAA regions have the most weather delays?
Which delays by route affect the most passengers?
Which airlines are the most likely to cause passengers to miss connecting flights?

Minimum Viable Product (MVP)

The MVP will include the following:

1. Python graphs by either Matplotlib or Seaborn to show key findings
2. Power BI Dashboard will be implemented to show relationships between passengers, airports, regions and carriers
3. Geospatial data will show delays by FAA region
4. Canva will be implemented as an overall presentation aid

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Schedule

A Gantt Chart of the project schedule can be viewed @:

Project Schedule Link - Gantt

Data Sources

Airport ID and location information

Airline Callsign and Associated Country

Airline Route Information including Source and Destination Information

On-Time Arrival Performance by Carrier and Airport; Delay by Cause 2010-2020

U.S. Monthly Air Passengers by Route 2000-2020

FAA Region Data

Known Issues and Challenges

Explain any anticipated challenges with your project, and your plan for managing them. Be sure to include:

Average rate information by airline and route has been requested from OAG in order to assess financial implications from delays. This information is not considered crucial to the project, but would enhance it. The company has responded but may not release this information for educational purposes.