

Delay Flight Analysis Report

This report presents an analysis of flight delays using Power BI dashboards. The purpose is to identify the major causes of flight delays, assess airline performance, and recommend strategies to reduce delay occurrences. The data was uploaded and cleaned in Power Query, with necessary data type adjustments and calculated measures to extract key performance indicators (KPIs).

Key Performance Indicators (KPIs):

- Count of Airlines: 10
- Count of Flights: 240
- Average Distance of Flights: 972 km
- Highest Flight Delays by Airline: Saudia and Royal Jordanian
- Highest Delay by Origin: Dubai and Doha
- Most Common Delay Category: Minor (43.75%)

Insights from Dashboard:

1. **Airlines:** Saudia and Qatar Airways operate the highest number of flights, but also experience significant delay minutes, suggesting possible scheduling congestion.
2. **Origins:** Dubai and Doha are the most frequent origins and contribute the most to total delay minutes, likely due to heavy air traffic.
3. **Delay Category:** Minor delays account for nearly 44% of total flights, indicating that short operational issues (like boarding and taxi delays) are the main cause.
4. **Day of Week:** Fridays and Sundays show the highest total delay minutes, possibly due to increased weekend travel demand.
5. **Month Trend:** January records the highest delay time, possibly linked to winter conditions and holiday rush.

Recommended Solutions:

- Improve scheduling efficiency and buffer time for high-traffic routes.
- Enhance communication between ground and air operations to minimize boarding delays.
- Deploy predictive analytics to anticipate weather-related disruptions.
- Increase staff and gate resources during weekends and peak months.
- Monitor airline-specific delay patterns and adjust flight frequency accordingly.

Process Summary:

1. Uploaded the dataset to Power Query.
2. Cleaned the data by removing duplicates and handling null values.
3. Changed data types for numeric and date columns.
4. Created calculated columns (e.g., Total Delay Minutes, DistanceKM, Delay Category).
5. Built Power BI visuals to track flight count, delay minutes, and performance trends.

Dashboard Visuals:

