German Airports in the Global Air Network

An Analysis of Connectivity and Operations

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GitHub: https://github.com/swethasays/MADE

Overview

Purpose: Analysing the role and integration of German airports in the global air network.

Data-Driven Analysis: Utilize various datasets to assess airport operations and their worldwide significance.

List of Datasets: German airports, global airports, airlines, airplanes, and airroutes.
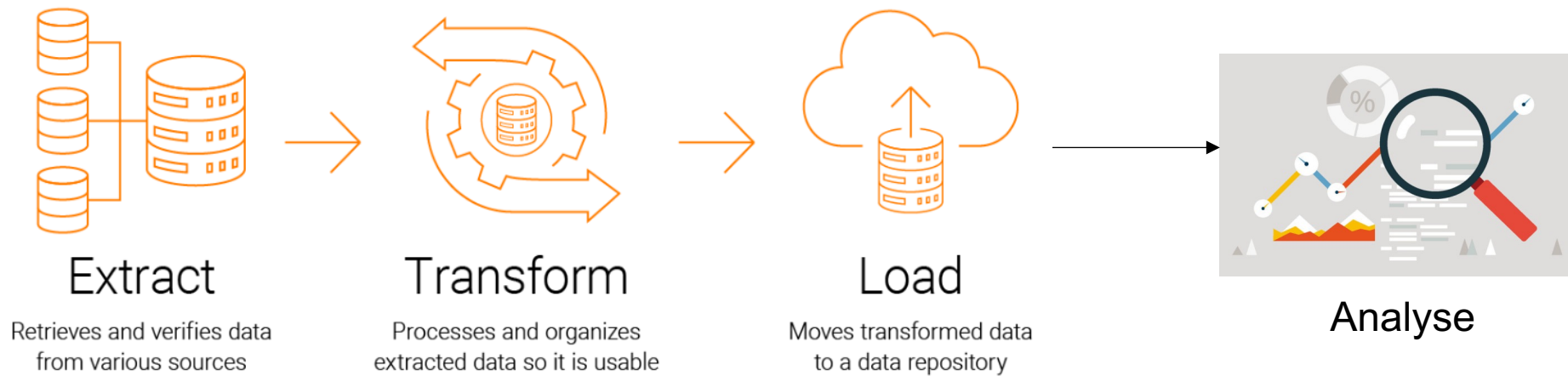
Focus Areas:

- Examine international connectivity of German airports.

- Analyse operations of major airlines at these airports.

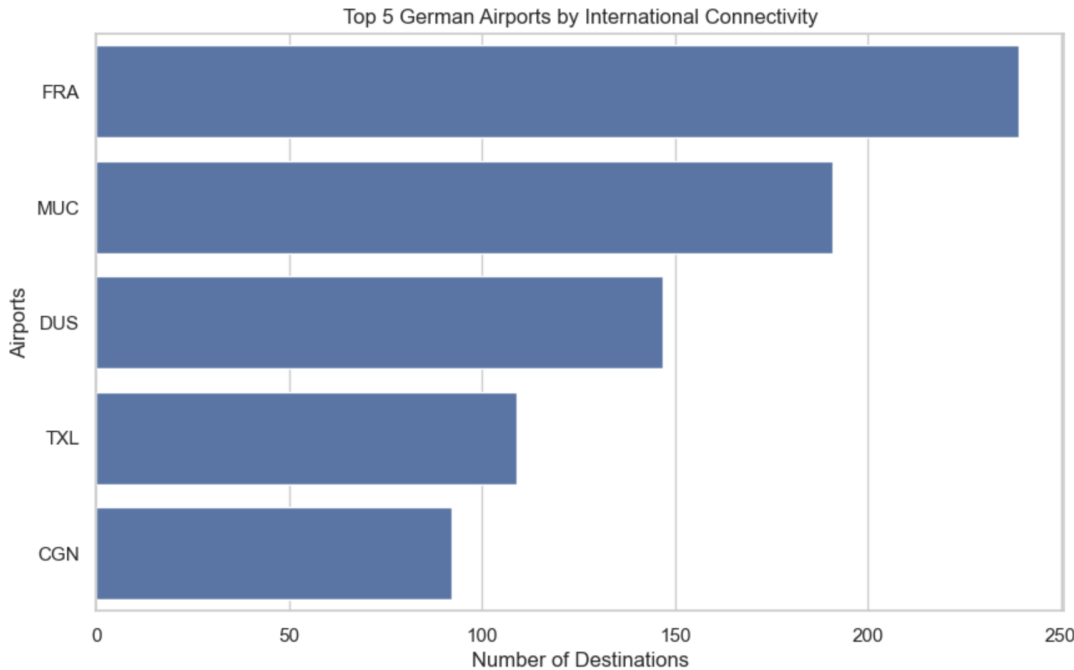- Investigate the most commonly used aircraft types.

Data Sources

1. Airports in Germany:

- This dataset contains detailed information about German airports, including location, size, type, and other relevant details.

- Metadata URL: https://data.world/ourairports/7f64d31f-365d-460d-bb0c-04a19929bbff

- Data URL: https://query.data.world/s/sjwvpaxrfji5s5mnwexv4zisexgui7

2. Global Airports, Airlines, Airplanes, and Routes:

- These datasets provide extensive information on global airports, airlines, airplanes, and their routes.

- Metadata URL: https://data.world/tylerudite/airports-airlines-and-routes

- Data URLs:

  - https://query.data.world/s/rdfvb4syvuuwi3iwv7r3eyphvo7bsk.   [Airports]

  - https://query.data.world/s/rucpufmwf7l5dgp5uxvhuniplfurxl   [Airlines]

  - https://query.data.world/s/pc6c3caazxld7lwjvbcnci6eziol5q   [Airplanes]

  - https://query.data.world/s/ehlhxizkunqbenzmuhrgymdfn3shh4   [Routes]

Extract — Retrieves and verifies data from various sources

Transform — Processes and organizes extracted data so it is usable

Load — Moves transformed data to a data repository

Analyse

Analysis 1 - Connectivity

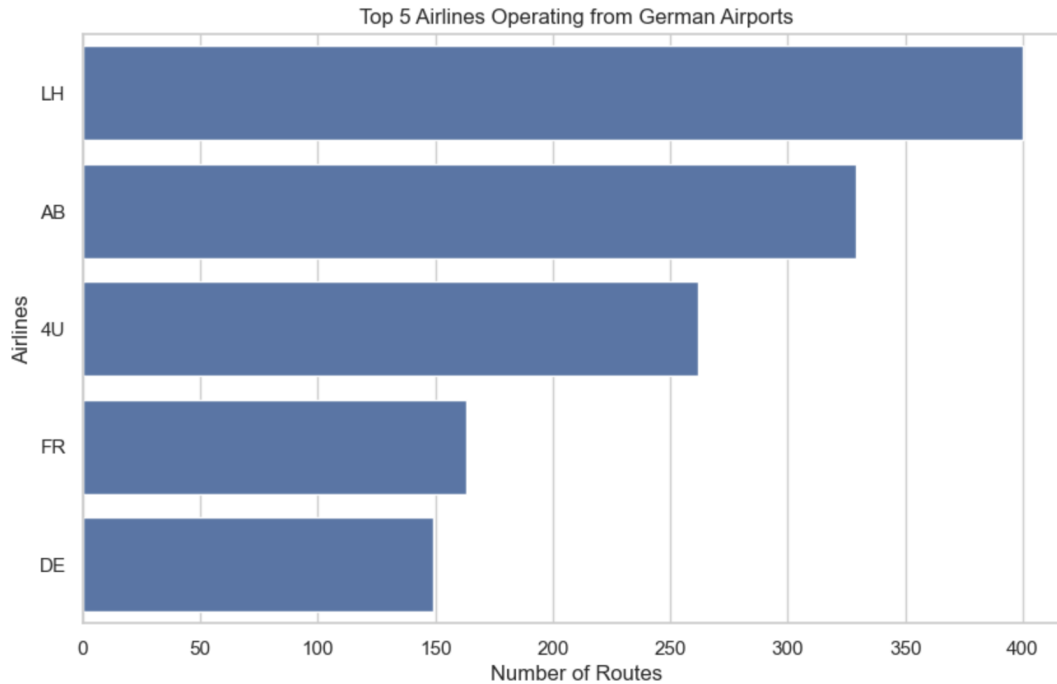## Top 5 German Airports by International Connectivity

Analysed extent of international connections established by German airports.

Findings:

- Top Airports: Frankfurt am Main (FRA) and Munich (MUC) lead in international connectivity.

- Diversity in Destinations: These airports connect to a wide range of destinations across continents, emphasizing their global reach.
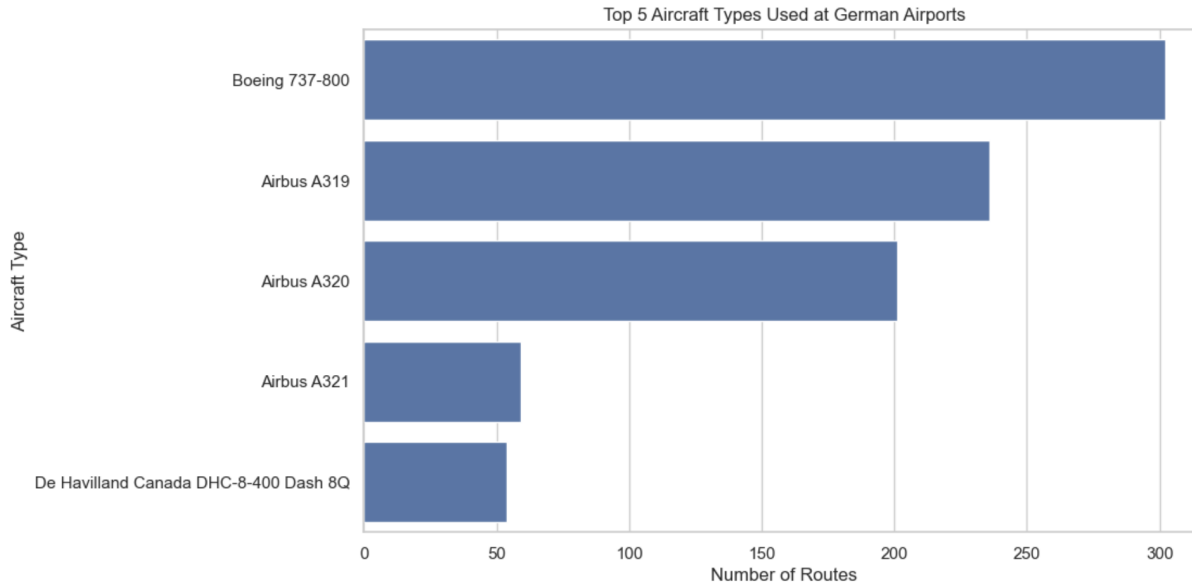
Analysis 2 - Airline Operations

Top 5 Airlines Operating from German Airports

Identified top airlines based on the number of routes they operate from German airports

Findings:

- Dominant Airlines: Lufthansa (LH) leads, followed by Air Berlin (AB) , Germanwings (4U), Ryanair (FR) and Condor Flugdienst (DE).

- Major Hubs: When compared with analysis 1, Frankfurt and Munich airports are primary bases for Lufthansa, showcasing their central role in the airline's operations.
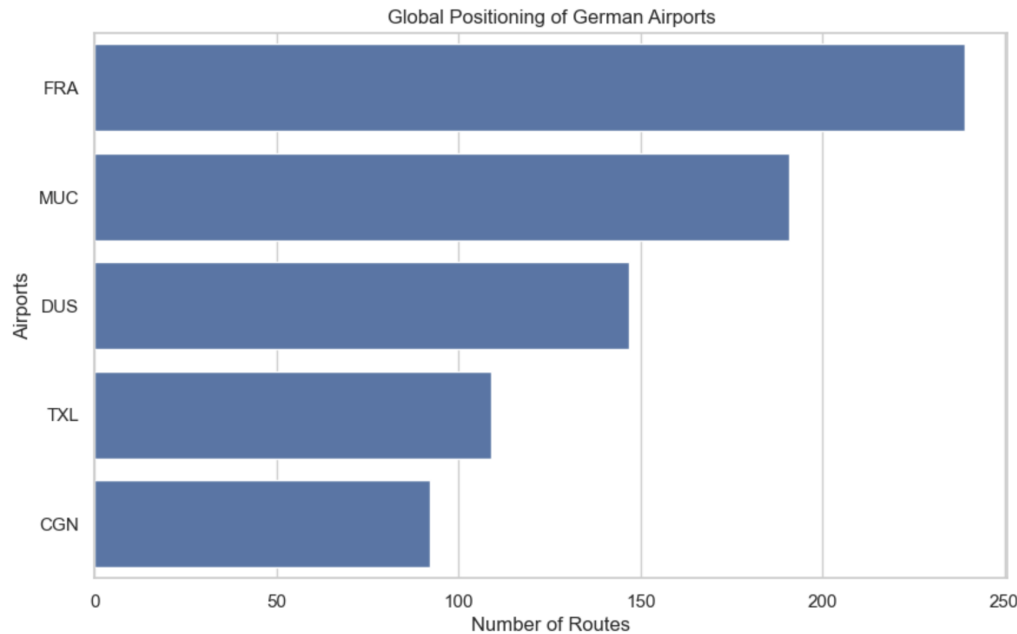
Analysis 3 - Aircraft Usage

Top 5 Aircraft Types Used at German Airports

Identified the most frequently used aircraft types at German airports.

Findings:

- Top Aircraft: The Boeing 737-800 and Airbus A319 series are the most utilized.

- Frequent Usage: These aircraft types are favoured for both domestic and international flights due to their efficiency and capacity.

Analysis 4 - Global Comparison

Global Positioning of German Airports

To position German airports within the global aviation network.

Findings:

- Global Standing: Frankfurt (FRA) and Munich (MUC) airports rank highly in terms of international connectivity and passenger traffic.

Conclusion

1. **Connectivity**: Frankfurt and Munich are leading in global connectivity, indicating their pivotal role in international routes.

2. **Airline Operations**: Dominance of Lufthansa and other major airlines underscores the competitive landscape and operational efficiency.

3. **Aircraft Usage**: Preference for Boeing 737-800 and Airbus A319 reflects operational efficiency and route adaptability.

4. **Global Comparison**: German airports, especially Frankfurt and Munich, maintain a competitive strength globally in terms of traffic and connectivity.

Thank You!