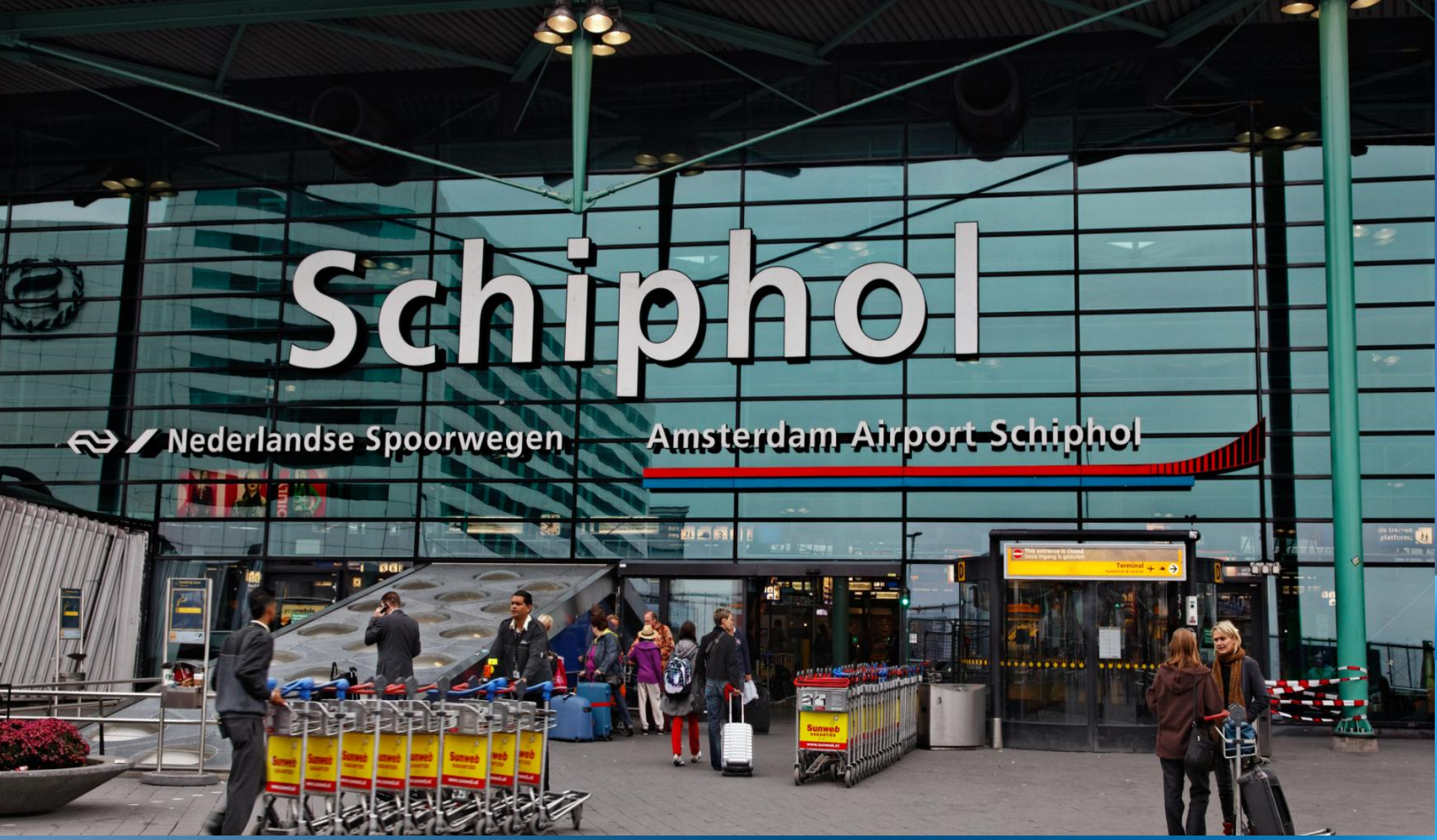


Air Traffic Analysis

By: Preeya S Chauhan

Reasons for Selecting Schipol Airport

- Schiphol is the 4th Largest airport in Europe
- It is the **world's third busiest airport by international passenger traffic** in 2021
- it is the **third-busiest airport in Europe** in terms of passenger volume and the **busiest in Europe** in terms of aircraft movements.

Objectives

- Analysis on Aircraft Movement traffic ,Passengers Movement, Cargo and Mail transport
- Forecasting Passenger Movement, Flights traffic and Cargo transport (Time Series Analysis)
- Hypothesis Tests
- Most popular destinations (Inbound and outbound travellers)

Source

- Realtime time data through CBS NL
- Data Period (Jan’ 2019 to Aug’ 2023)

Air Traffic Analysis

Data analysis through tableau dashboard on the following parameters:

- Flight Traffic
- Passenger movement
- Cargo transport
- Mail transport

Link to the dashboard:

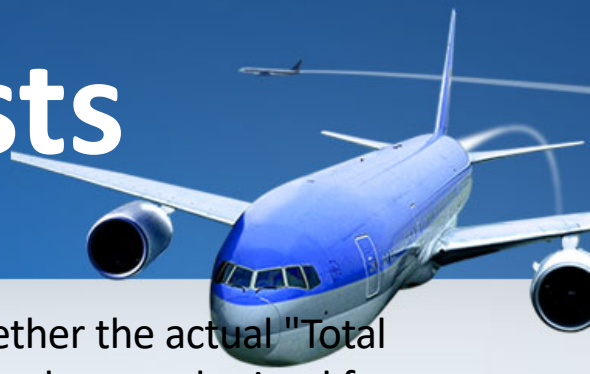
https://public.tableau.com/app/profile/preeya.singh.chauhan/viz/Book4_16989632827720/AirTraffic_Dashboard?publish=yes

Air Traffic Forecast

- Air Traffic forecast is done through “Time series forecasting” on tableau on
  1. Passenger Movement
  2. Flight Traffic
  3. Cargo Movement

- Link to the dashboard:
- https://public.tableau.com/app/profile/preeya.singh.chauhan/viz/Book4_16989632827720/AirTraffic_Dashboard?publish=yes

Hypothesis Tests



Passenger Movement: To perform a hypothesis test to determine whether the actual "Total Passenger Movement" for the next year is greater than the estimated value we obtained from a forecasting model.

- In this case, we can use a one-tailed hypothesis test
- Estimated value = Estimated value for the next year from the forecasting model
- Actual Values = Previous data points
- Null Hypothesis (H0): The actual "Total Passenger " for the next year is equal to or less than the estimated value.
- Alternative Hypothesis (Ha): The actual "Total Passenger " for the next year is greater than the estimated value

  t-statistic: -0.041387780269382946

  P-value: 0.9689702371834088
- The results we obtained indicate that the t-statistic is negative, and the p-value is close to 1. This suggests that there is no significant evidence to reject the null hypothesis. In other words, the data does not provide strong support for the idea that the actual "Total Passenger movement" for the next year is greater than our estimated value

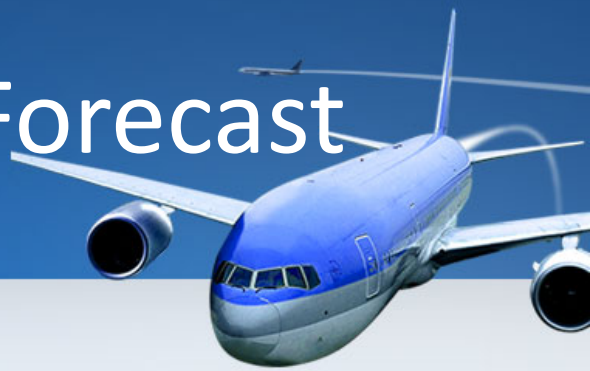
Continued…

Flight Traffic: To perform a hypothesis test to determine whether the actual "Total Flight transport" for the next year is greater than the estimated value we obtained from a forecasting model.

- In this case, we can use a one-tailed hypothesis test
- Estimated value = Estimated value for the next year from the forecasting model
- Actual Values = Previous data points
- Null Hypothesis (H0): The actual "Total Flight Transport" for the next year is equal to or less than the estimated value.
- Alternative Hypothesis (Ha): The actual "Total Flight Transport" for the next year is greater than the estimated value

In both cases above we failed to reject the Null Hypothesis. This means that, based on the data and the analysis, there is insufficient evidence to conclude that the actual "Total flight Transport" for the next year is greater than our estimated value.

Reference in Sync with Forecast



- Shortage of staff spells chaos at Schiphol Airport – Holland Times
- Schiphol to limit passenger numbers due to labour shortfall (airport-technology.com)
- Possible passenger ceiling at Schiphol again due to staff shortage, travel agency angry | NL Times
- Court rules Schiphol Airport must cut 40.000 flights in 2024 (iamexpat.nl)

Thank You !