

## **Data Appendix**

### **Original Data**

Data Dictionary for all initial data in the DATA folder. This includes the following files:

- April.csv
- August.csv
- Dec.csv
- Feb.csv
- Jan.csv
- July.csv
- June.csv
- March.csv
- May.csv
- Nov.csv
- Oct.csv
- Sept.csv

| <b>Column</b> | <b>Description</b>  | <b>Potential Responses</b> |
|---------------|---|----------------------------|
| FL_DATE       | Date that the flight is departing   | 1/1/2023                   |
| OP_UNIQUE     | Unique carrier code of the airline departure  | 9E                         |
| ORIGIN        | Origin Airport Code   | DTW, ATL, ORD              |
| DEP_DELAY_NEW | Difference in minutes between scheduled and actual departure time. Early departures set to 0. | 0 or any other integer     |
| CANCELED      | Canceled Flight Indicator (1=Yes & 0=No)  | 0 or 1                     |
| CARRIER_DELAY | Time in minutes for delay caused by the carrier   | 0 or any other integer     |
| WEATHER_DELAY | Time in minutes for delay caused by the weather   | 0 or any other integer     |

|                     |  |                        |
|---------------------|--|------------------------|
| NAS_DELAY           | Time in minutes for delay caused by the NAS                            | 0 or any other integer |
| SECURITY_DELAY      | Time in minutes for delay caused by the National Aviation System (NAS) | 0 or any other integer |
| LATE_AIRCRAFT_DELAY | Time in minutes for delay caused by a late aircraft                    | 0 or any other integer |

### **Analyzed Data**

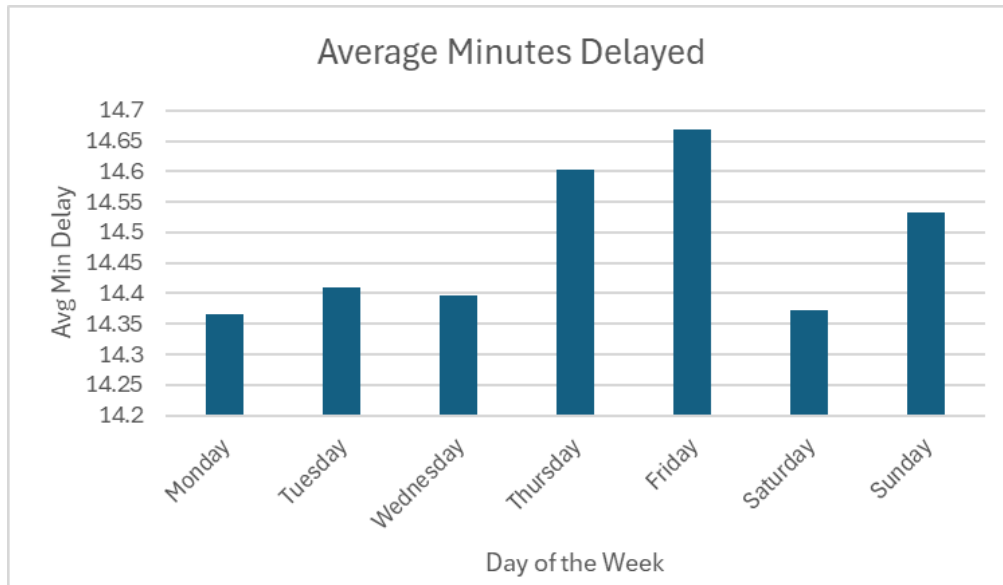
The analyzed dataset is a dataset consisting of all initial data combined into one dataset. It also includes the day\_of\_week column which indicates the day of the week a flight departed. To create this dataset, we combined all the data into one file through google sheets/excel, added a new column for day\_of\_week, ran a formula to determine the day of week, and filtered out airports not being studied.

Data Dictionary for **Airports2023.xlsx**.

| <b>Column</b>       | <b>Description</b>  | <b>Potential Responses</b> |
|---------------------|---|----------------------------|
| FL_DATE             | Date that the flight is departing   | 1/1/2023                   |
| day_of_week         | Day of the week the flight departed   | Sunday                     |
| OP_UNIQUE           | Unique carrier code of the airline departure  | 9E                         |
| ORIGIN              | Origin Airport Code   | DTW, ATL, ORD              |
| DEP_DELAY_NEW       | Difference in minutes between scheduled and actual departure time. Early departures set to 0. | 0 or any other integer     |
| CANCELED            | Canceled Flight Indicator (1=Yes & 0=No)  | 0 or 1                     |
| CARRIER_DELAY       | Time in minutes for delay caused by the carrier   | 0 or any other integer     |
| WEATHER_DELAY       | Time in minutes for delay caused by the weather   | 0 or any other integer     |
| NAS_DELAY           | Time in minutes for delay caused by the NAS   | 0 or any other integer     |
| SECURITY_DELAY      | Time in minutes for delay caused by the National Aviation System (NAS)                        | 0 or any other integer     |
| LATE_AIRCRAFT_DELAY | Time in minutes for delay caused by a late aircraft   | 0 or any other integer     |

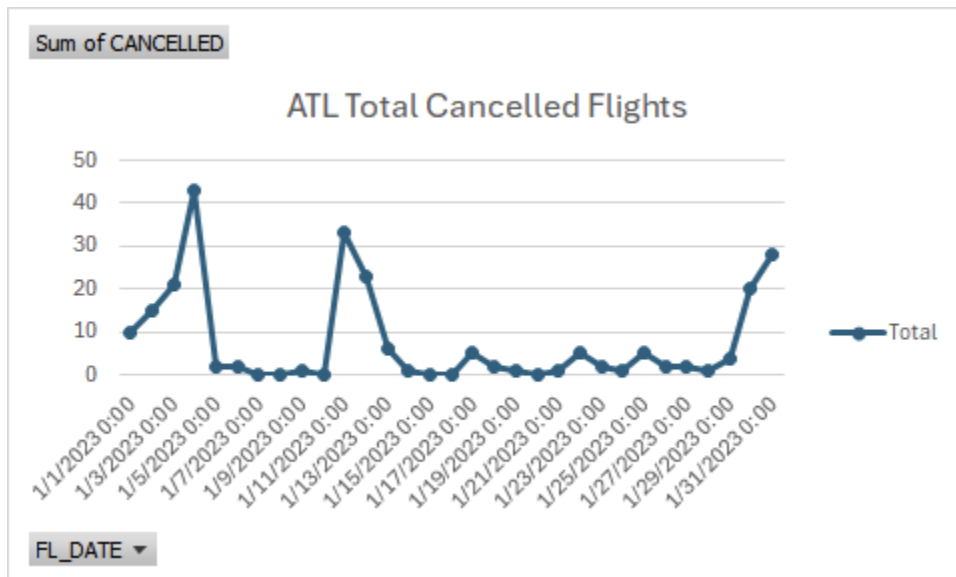
**Figure 1.**

A histogram displaying the average minutes delayed per flight across DFW, ATL, & ORD, per day.



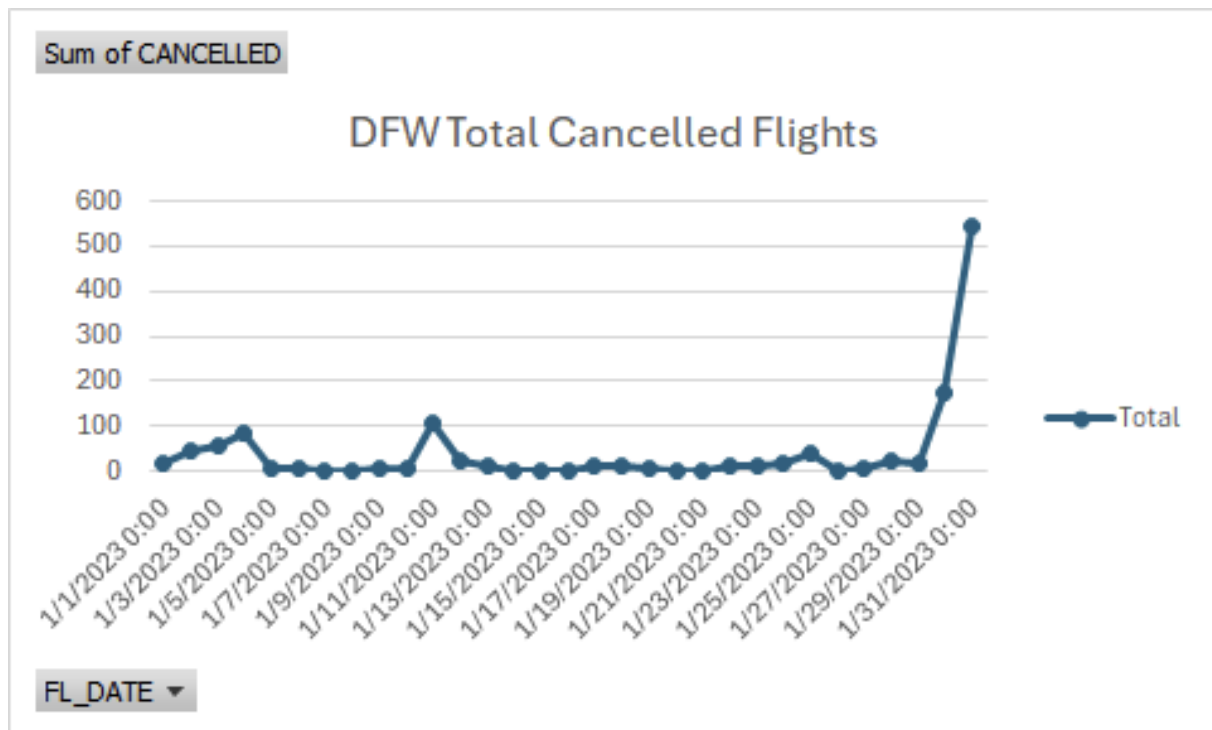
**Figure 2.**

A histogram displaying the number of total canceled flights per day in January for ATL.



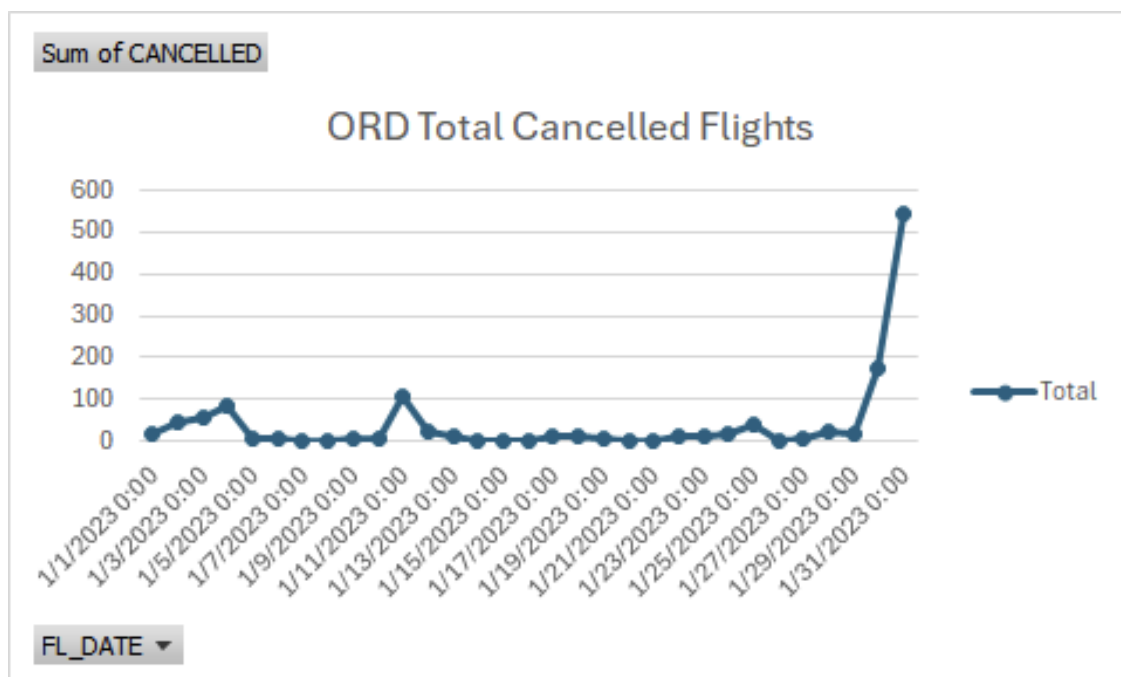
**Figure 3.**

A histogram displaying the number of total canceled flights per day in January for DFW.



**Figure 4.**

A histogram displaying the number of total canceled flights per day in January for ORD.



## References

- [1] U.S. Department of Transportation. (n.d.). OST\_R: BTS: Transtats. Available: [https://www.transtats.bts.gov/DL\\_SelectFields.aspx?gnoyr\\_VQ=FGJ&QO\\_fu146\\_anzr=b0-gvzr](https://www.transtats.bts.gov/DL_SelectFields.aspx?gnoyr_VQ=FGJ&QO_fu146_anzr=b0-gvzr) [Accessed Feb. 29, 2024].