Analyzing the Impact of Airplane Accidents on U.S. Travel

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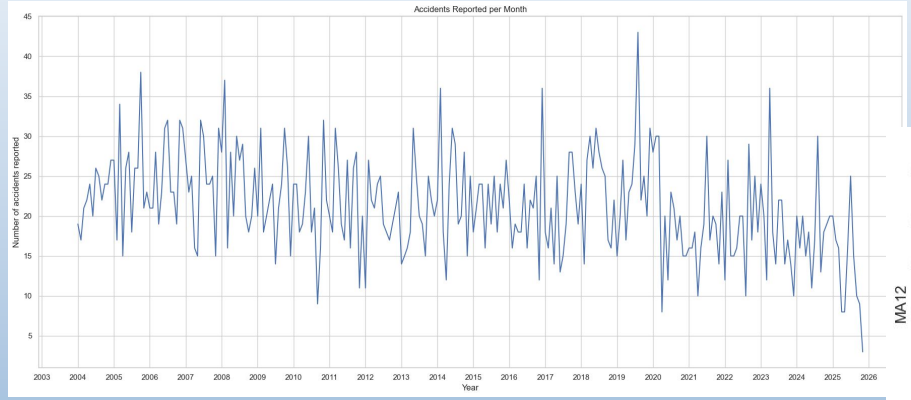
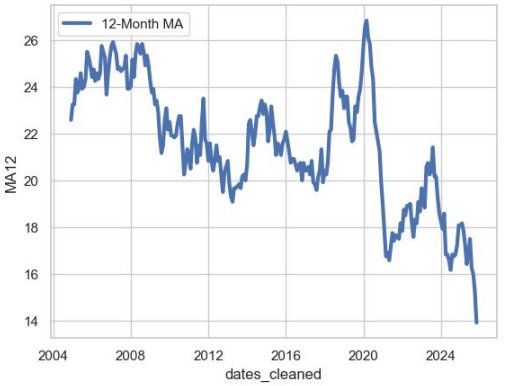
DATA SOURCES AND APPROACH

DATA SOURCE	DESCRIPTION	PROCESSING APPROACH	Purpose
Aviation Safety Network	Webpage that contains all airplane accidents including information regarding accident date, number of fatalities, and country of origin	Web Scraping	Analyze frequency, as well as the amount of fatalities, per accident
SerpAPI	Google Search Trending Score	API	Public Attention on “Airplane accidents” and “Airplane crashes”, scored 0-100.
BTS Airplane Enplanement	U.S. Air Carrier Enplanements (amount of travelers)	CSV	Number of passengers on U.S. airlines, both domestically and internationally

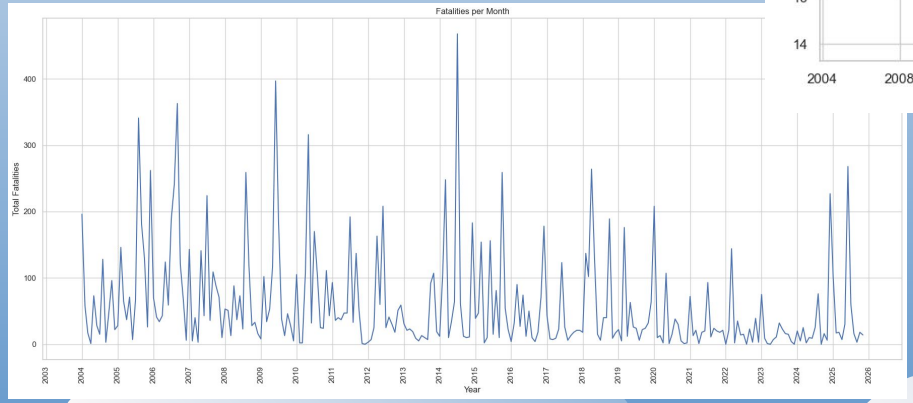
Accidents / Fatalities

Accidents per month:
Year with the most accidents was 2006, with 303. Time of the year with most accidents was July with 504 accidents. The month with the most accidents in total was August 2019, with 43 accidents.



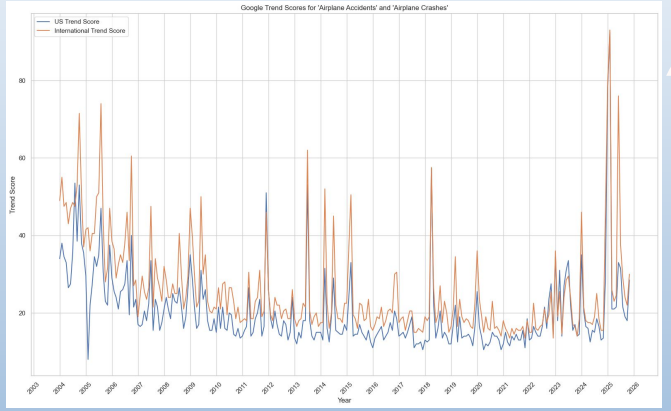


Fatalities per month:
Year with the most fatalities was 2005, with 1360. Time of the year with most fatalities is July with 1930 fatalities. The month with the most accidents in total was July 2014.

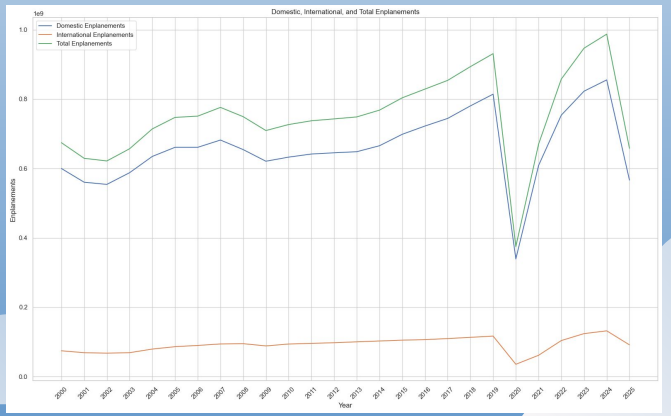


Google Search Trends

Observing the differences in Google Trends between the United States and the Entire World. With a correlation coefficient of 0.905, it is safe to assume the U.S. receives news similarly to the rest of the world.

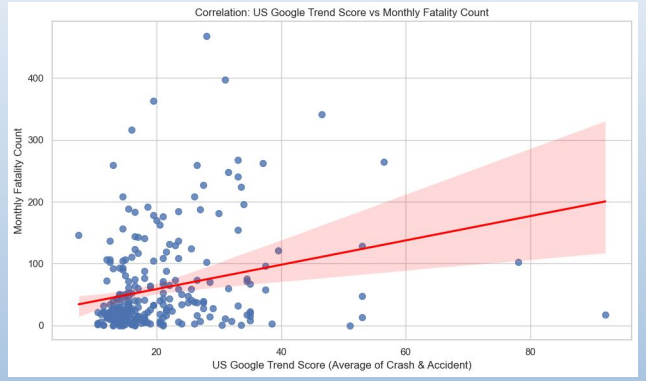


Observing American airline carriers, there is a strong correlation of 0.916 between domestic and international flights. External factors affect them equally, for the most part.



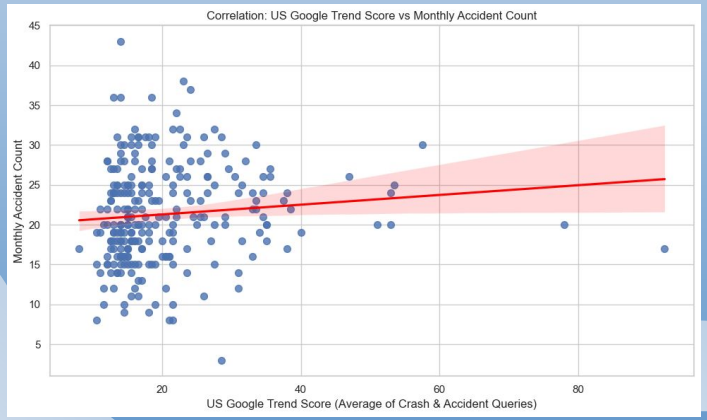
Accidents/Fatalities vs. Relevancy

U.S. Trends vs. Monthly Fatality Count: 0.2629. Low correlation.

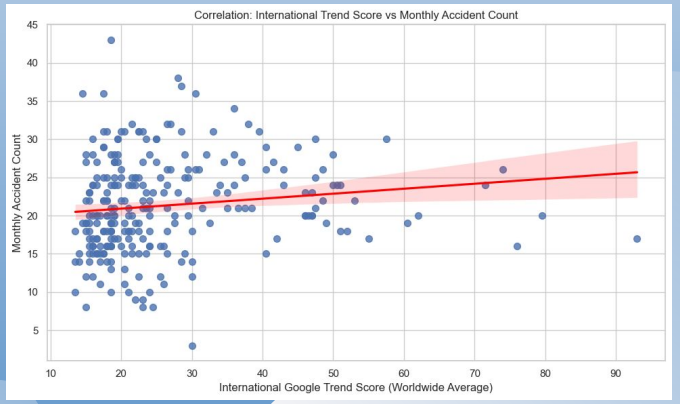


International Trends vs. Monthly Fatality Count: 0.4380. Moderate correlation.

U.S. Trends vs. Monthly Accident Count: 0.2629. Low correlation.

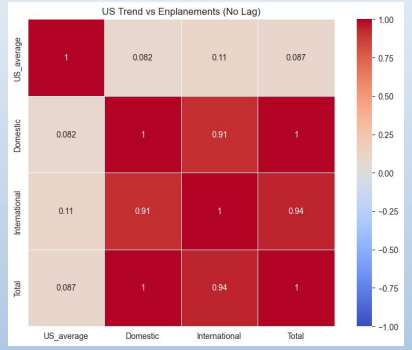


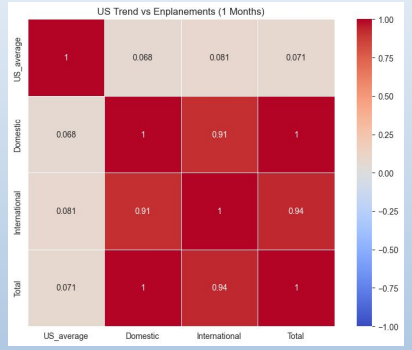
International Trends vs. Monthly Accident Count: 0.1345. Low Correlation.

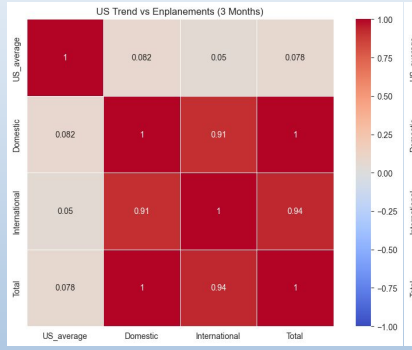


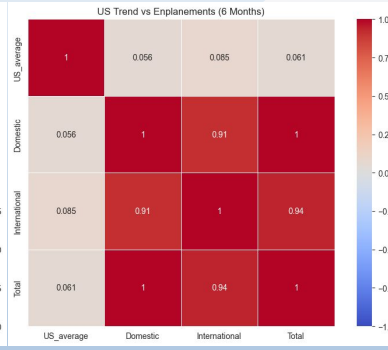
Relevancy/Fear vs. Enplanements

US Trend (relevancy) vs. Enplanements. Heat maps were taken for the month of, then at intervals of 1 month, 3 months, and 6 months of lag to account for bookings.









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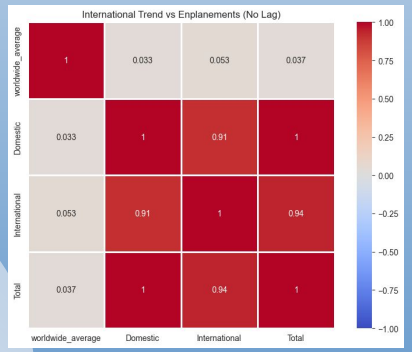

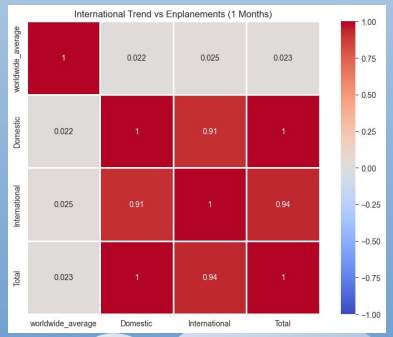

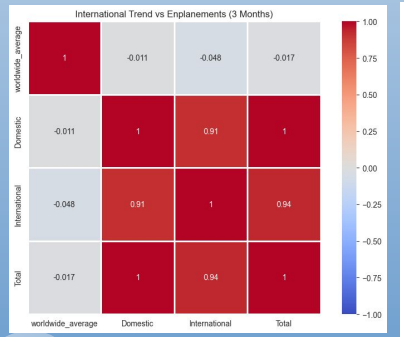

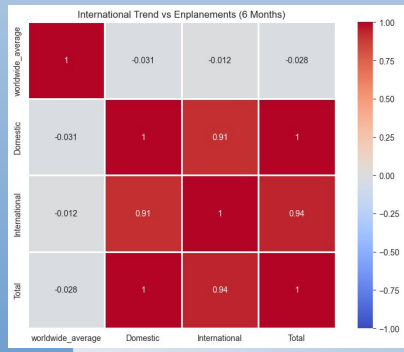

Summary and Challenges

There did not appear to be a significant correlation between airplane accidents and relevancy (quantified through Google Search Results). Even with time lag incorporated into a heat map, public attention and relevancy did not seem to play a factor into affecting airline bookings.

Data was limited in terms of enplanements, and as a result, only U.S. carriers were able to be observed. International data was still kept as some U.S. carriers fly international flight, but this data is not reflective of the world as a whole. The use of Google Search relevancy can be skewed and does not take into account other factors of an accident that would make it more noticeable, such as public figures, or the circulation of news through social media, which could expand its reach.

THANK YOU

QUESTIONS?