



# Tweets: Airlines' Sentiments

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# ACTION STEPS

## **1. Data Cleaning:**

- Examining variable kinds and verifying relevance to the goals of the analysis was part of the data cleansing process.

## **2. Variable Exploration and Visualization:**

- Important variables for investigation were found during the preliminary review. We looked more closely at these important factors in order to get any possible insights.

## **3. Predictive Analysis for Airline Sentiments:**

- A variety of predictors were applied in order to examine the dataset and derive conclusions. To evaluate the analytical power of several predictor types, they were mixed together.

# Main Goal

By examining the sentiments sent through tweets, this study aims to improve the operational effectiveness and consumer happiness of airline firms. These opinions are divided into two groups: favorable and negative. These groups represent how the general public feels about the airlines and how they respond to them. To comprehend the advantages and disadvantages from the viewpoint of the customer, a thorough sentiment analysis is essential. Moreover, the research will encompass the identification and investigation of plausible predictive variables that may augment the precision and pertinence of the sentiment analysis. By doing this, we hope to offer useful information that could help airline firms perform better overall by enhancing customer happiness and service.

# Cleaning Data

## Before

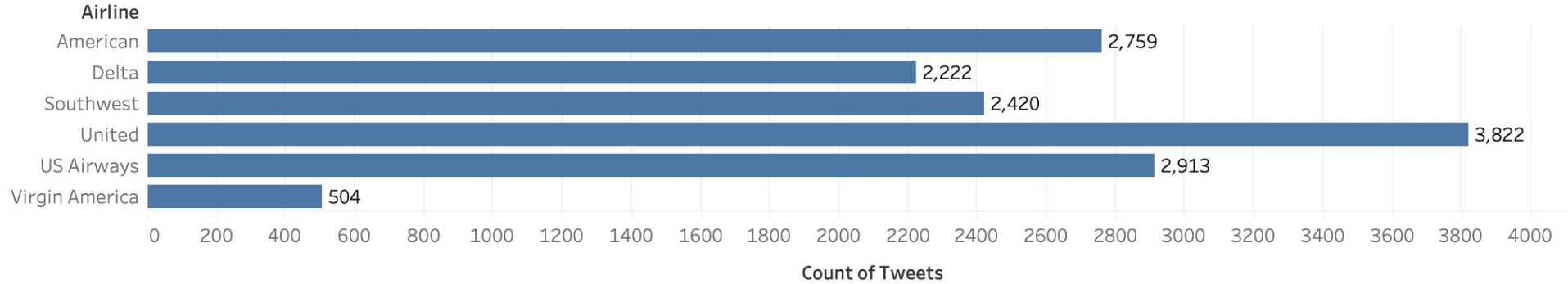
Tweet\_ID  
Airline Sentiment  
Airline Sentiment Confidence  
Negative Reason  
NegativeReason Confidence  
Airline  
Airline Sentiment Gold  
NegativeReason Gold  
Retweet\_Count  
Tweet Coord  
Tweet Created  
Tweet Location  
User Timezone



## After

Tweet Id  
Airline Sentiment  
Airline Sentiment Confidence  
NegativeReason  
Airline  
Retweet Count  
Tweet Created  
User Timeline

# Tweets



Our data indicates that United Airlines is the most discussed airline on social media platforms, followed closely by US Airways. This information allows us to delve deeper into understanding the popularity of different flights. Airlines that generate higher volumes of tweets benefit from greater public visibility, making them prominent subjects of conversation. Furthermore, having a substantial customer base underscores the importance of transparency in addressing issues.

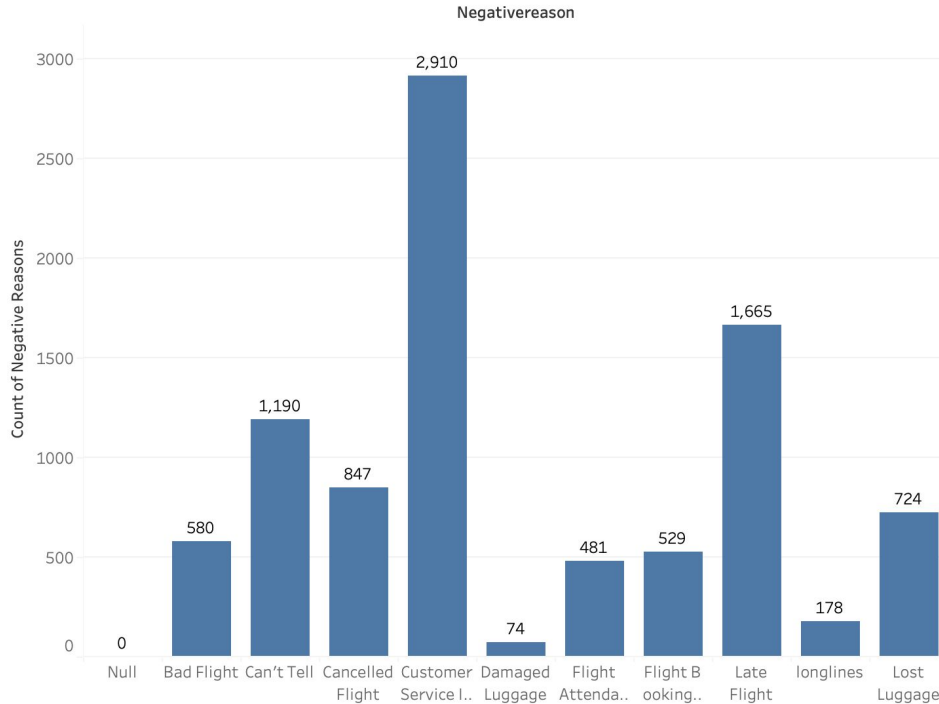
In comparison, smaller airlines such as Virgin America could not be subject to the same degree of public scrutiny because of lower numbers of tweets.

# Sentiments on each Airline

Airline						
Airline	Ame..	Delta	Southw..	United	US Airways	Virgin America
Sentiment	✈					
negative	1,852	862	1,092	2,458	2,140	163
neutral	382	600	549	564	313	143
positive	296	472	505	421	231	135

According to the data, Virgin America has the least amount of sentiment data among all airlines, suggesting it is less frequently discussed. Furthermore, the analysis reveals that Southwest Airlines has the highest occurrence of positive sentiments, while Delta Airlines tends to attract neutral sentiments, and United Airlines predominantly receives negative sentiments. These insights provide a foundation for an in-depth analysis and comparative review of the various airlines. Additionally, it is noteworthy that all these airlines are predominantly associated with negative sentiments, underscoring the importance of considering this factor when evaluating the collective opinions.

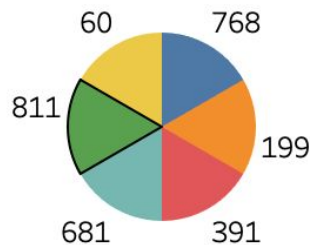
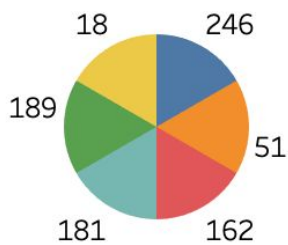
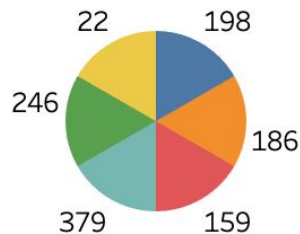
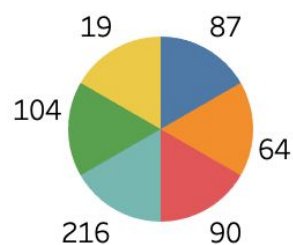
# Observations on why Negative Reasons were given



Can't Tell, Late Flights, and Customer Service Issue were the 3 main causes of negative sentiments.

The data reveals a noticeable rise in negative sentiment as it becomes more personalized. One approach to mitigate this trend could involve revamping the hiring process for flight attendants, with a focus on enhancing soft skills and adherence to high standards of customer service. Additionally, there were minimal reports of damaged luggage and extensive queues, which indicates compliance with safety regulations and precautionary measures in these situations.

Bad Flights      Can't Tell      Cancelled Flight      Customer Service Issue      Damaged Luggage



Flight Attendant  
Complaints

Flight Booking  
Problems

Late Flight

Longlines

Lost Luggage

Airline

American

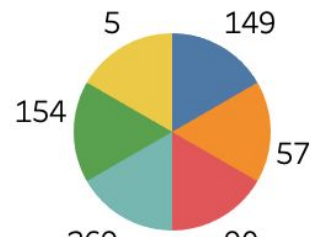
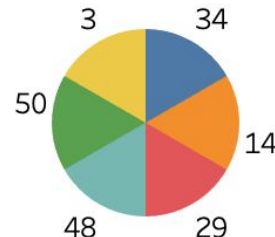
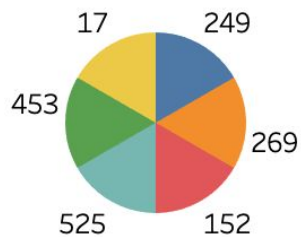
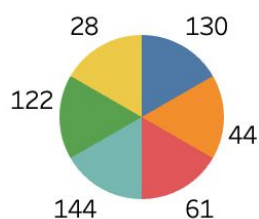
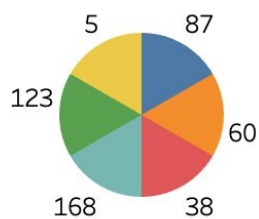
Delta

Southwest

United

US Airways

Virgin America

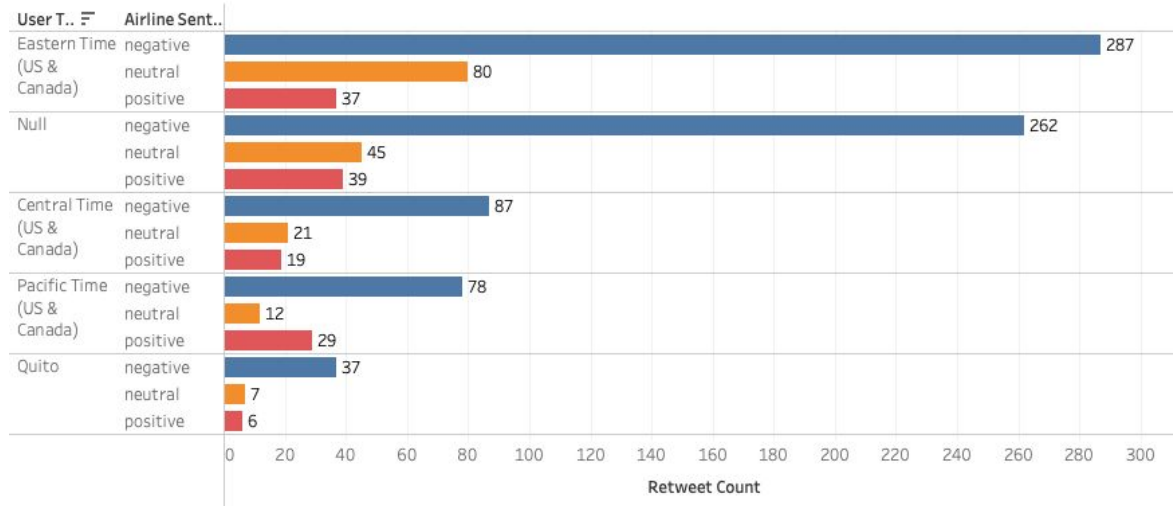


With the exception of "Cancelled Flights" and "Long Lines," United Airlines has the highest count in all categories pertaining to negative reasons.



# Observations on Tweets and Sentiments

Retweets based on Timezone and Sentiments



A unexpected pattern is shown by combining the knowledge from each of the time zone analyses. More specifically, people who live in the Eastern time zone are more likely to retweet content that expresses negative opinions about airlines. This finding highlights a significant and locally unique correlation between time zones and the public's interaction with unfavorable airline-related content.

# Suggestions for future research involving airline data:

Because United Airlines frequently has flight cancellations, a high percentage of negative sentiment, and lengthy wait times, as data analysts, we highly advise against flying with them. Our suggestion stems from an examination of customer feedback and flight-related information.

Out of all the airlines, United Airlines sticks out as needing significant improvement, especially when it comes to handling customer service concerns to reduce flight delays. The overarching goal of increasing customer happiness is contingent upon this strategic improvement. By putting these upgrades into place, US Airways would lose its competitive edge and become more similar to United, reducing the "can't tell" factor. Beyond this dataset, more investigation into Southwest's customer care procedures may yield insightful information and expansion prospects for the airline sector.

There is a general bad perception of certain airlines, particularly United. The main cause of this unfavorable attitude is the vital role that air travel plays in people's lives and the substantial negative effects it has on their wellbeing. Flight delays, poor customer service, and poor communication all add to this discontent. The majority of unfavorable comments in the examined tweets highlight the intensity of public unrest, a psychological phenomena that has been extensively studied and shows that people with strong opinions frequently voice them through evaluations or, in this example, tweets. Increasing the number of airline comments to these critical tweets would entirely alter the viewpoint of the data and present an opportunity for these airlines to expand. This is another strategy to counteract this.

# Final Thoughts

- The dataset presented difficulties because the data were repetitive and poorly normalized. Examining Twitter timestamps for periods of high activity may provide insightful information, but this is complicated by the year-round nature of air travel. Better data normalization and the integration of external sources—such as weather data or flight schedules—could improve analysis and offer a more comprehensive perspective. Researching for value in the dataset requires tackling normalization and including contextual elements.
- Examining emotions in reactions to positive tweets, particularly those sent by airlines, can improve the efficacy of their customer service with relating to possible negative sentiments. analyzing the resolution of issues and the response from customers provides valuable insights into the performance of customer service.