Twitter US Airline Sentiment Analysis

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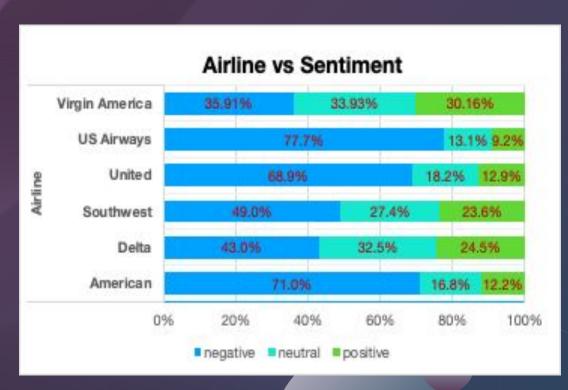# About

Airline Sentiment	Count	Percentage
negative	9178	62.69%
neutral	3099	21.17%
positive	2363	16.14%
Total	14640	100%

Airline Sentiment

- Used the airline sentiment variable to make observations of the overall data based on the categories of a negative, neutral, and positive tweet

- This table shows that majority of the tweets were negative accounting for 62.69% of the data

- Shows that this dataset is focused on customer satisfaction and building strategies for improvement

- Potentially proves complaining behavior where dissatisfied customers are more likely to engage in WOM or post online aka Twitter
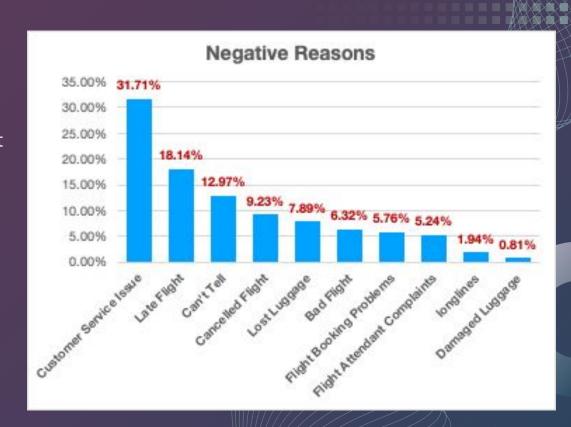
Tweets of Airlines

- Graph shows tweets separated by the airline mentioned; within each airline, the graph calculates percentage of tweets that were negative, neutral or positive

- US Airways (35.91%), United (68.9%), and American Airlines (71%) appear to have the most negative tweets directed towards them

- Virgin America Airline has the best distribution of negative, neutral, and positive tweets; percentages are fairly even
  - Airline offers overall quality service to their customers; prioritize their data of customer satisfaction

Airline vs Sentiment

Airline	negative	neutral	positive
Virgin America	35.91%	33.93%	30.16%
US Airways	77.7%	13.1%	9.2%
United	68.9%	18.2%	12.9%
Southwest	49.0%	27.4%	23.6%
Delta	43.0%	32.5%	24.5%
American	71.0%	16.8%	12.2%

■ negative ■ neutral ■ positive

Negative Tweets

- Barplot focuses on the negative tweets and the negative reason behind the tweet

- "Customer service issue" is a significant factor to customer dissatisfaction as well as "late flight" and "canceled flight"

- Did not include "can't tell" as this variable cannot be clearly defined without context

- Airlines need to prioritize customer service and managing their flights more precisely to decrease complaints from customers

Negative Tweets and Airlines

Airline vs Negative Reasons

- Divided negative reasons based on airlines

- United, US Airways, and American airlines show the most tweets of negative reasons

- Virgin America has the least amount of overall negative tweets, which means they have maintained and prioritized their customers

- Virgin America could pose as a reference for other airlines to compare and reassess their process when it comes to rescheduling, delays, and adapting to economic conditions (weather, Covid, and guidelines for certain countries)

Dates

- Constructed bar graph with dates when tweets were posted and categorized by the type of airline

- The graph shows a fluctuation in the number of tweets between 2/22/15 to 2/24/15, especially with American airlines and United

- According to the internet, there was roughly 2,000 flights canceled across all airlines because of the winter weather with a storm and unsafe conditions to fly in, which could be the reason for the growth in complaints or tweets in general

- Airlines need to utilize forecasting and weather reports to watch the weather and better predict how flight conditions will be during that period of time

Dates

Word Cloud

Negative Sentiment

❖ word cloud for negative airline sentiment has more words related to poor experiences, such as "flight", "time", "customer", ""hold", hour", "delayed", and "plane"

❖ these words could pertain to how airlines serve their customers in times of need

❖ Airlines should avoid putting their customers on hold for a long period of time

❖ Airlines should track and manage planes more carefully to avoid delays or changes

❖ Airlines should look to improve and focus on their flights when it comes to communicating to customers of these changes and providing efficient and convenient accommodations

Word Cloud

Positive Sentiment

- ❖ word cloud for positive airline sentiment has more words related to great experiences, such as "thanks", "love", "great", "best", "good", "service"and "awesome"

- ❖ Airlines can use positive tweets to understand what is working for them while also benefiting their customers and possibly use that to their advantage

- ❖ Airlines can retweet or reply to positive tweets and share them with their followers to help build a positive brand image, increase customer engagement, and create a sense of community among customers

Executive Summary

➜ Airlines need to utilize their data to monitor feedback and customer satisfaction

◆ improving their customer service by providing personalized and timely assistance to passengers by improving response times to customer inquiries and complaints, providing better seating, and ensuring on-time flights

◆ improve communication with customers, especially with delays or cancellations (updates on the status of flights, reasons for delays, and provide clear instructions on what to do next)

➜ Airlines should implement mechanisms for customers to provide feedback and suggestions for improvements. They should also take customer feedback seriously and use it to improve their services and operations.

➜ To maintain or improve positive sentiment on tweets, airlines should focus on building brand loyalty by resolving customer issues quickly and providing a positive experience.

Appendix

Dataset

- Includes tweets from February 2015 regarding customer satisfaction of 6 different airlines: American, Delta, Southwest, United, US Airways, and Virgin America
- Utilized Excel and R to analyze the data

Preparing for Analysis

- Removed rows and columns with null values or information that was not useful or unnecessary to my analysis
- Cleaned the data to best of my abilities
- After cleaning and reorganizing the data, I left the following columns: airline_sentiment, negative_reason, airline, name, text, tweet_created, tweet_location, and user_timezone

Action Steps

- Clean and organize data by removing null values and irrelevant information

- Utilize Excel and R studio to compute graphs and analyze the tweets

- Understand the focus of this dataset and what the tweets are saying about these airlines

- Used bar plots and pie charts to see trends in negative tweets, dates of posts, and negative reasons

- Identify root causes and words of negative sentiments of tweets for certain airlines

- Identify the factors or words that make a positive sentiment for tweets

- Generated a word cloud to observe words that correlate with positive or negative tweets

- Pointed out areas and issues that airlines should improve on to boost customer retention and customer satisfaction