PeakMetrics - Sr. Data Scientist challenge
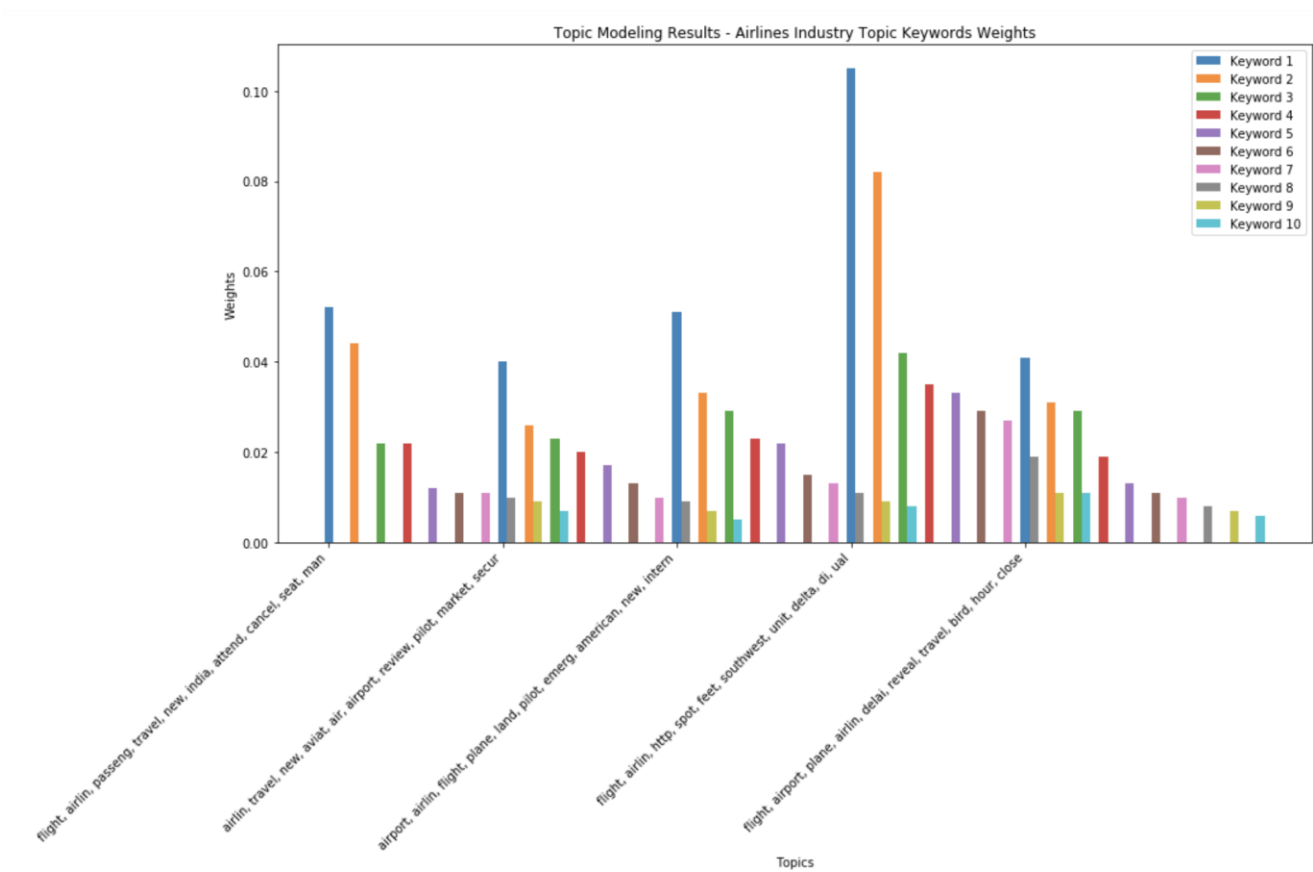
Large US based airline

Based on the count of airline brands in the digital posts, it appears that United Airlines and Southwest Airlines have the most dominant posts. This suggests that these two airlines are mentioned more frequently in the dataset or are more actively discussed compared to other airline brands.

I have considered United Airlines and Southwest Airlines as two Large US based airlines in our analysis and comparisons and differentiations analysis have been done for the project for above two airline brands.

Common topics happening about the brand and the industry

Below are the topics and keywords distribution across each category

1. Airline Industry

Topic Keyword Distribution - Airlines

As per the above topics and keywords:

Topic 0: Travel Disruptions and Passenger Experience

Keywords: flight, airline, passenger, travel, new, India, attend, cancel, seat, man

Description: This topic focuses on travel disruptions and passenger experiences, including flight cancellations, seating issues, and incidents involving passengers.

Topic 1: Aviation Industry and Reviews

Keywords: airline, travel, new, aviation, air, airport, review, pilot, market, security

Description: This topic revolves around the aviation industry, discussing topics such as airlines, travel, new developments, aviation itself, airports, pilot reviews, market trends, and security measures.

Topic 2: Airport Operations and Emergencies

Keywords: airport, airline, flight, plane, land, pilot, emergency, American, new, international

Description: This topic focuses on airport operations, including flight landings, pilot experiences, emergencies, and references to American Airlines and also mentions international travel and new developments in the aviation industry.

Topic 3: Flight Spotting and Airline Comparisons

Keywords: flight, airline, http, spot, feet, Southwest, unit, Delta, DI, UAL
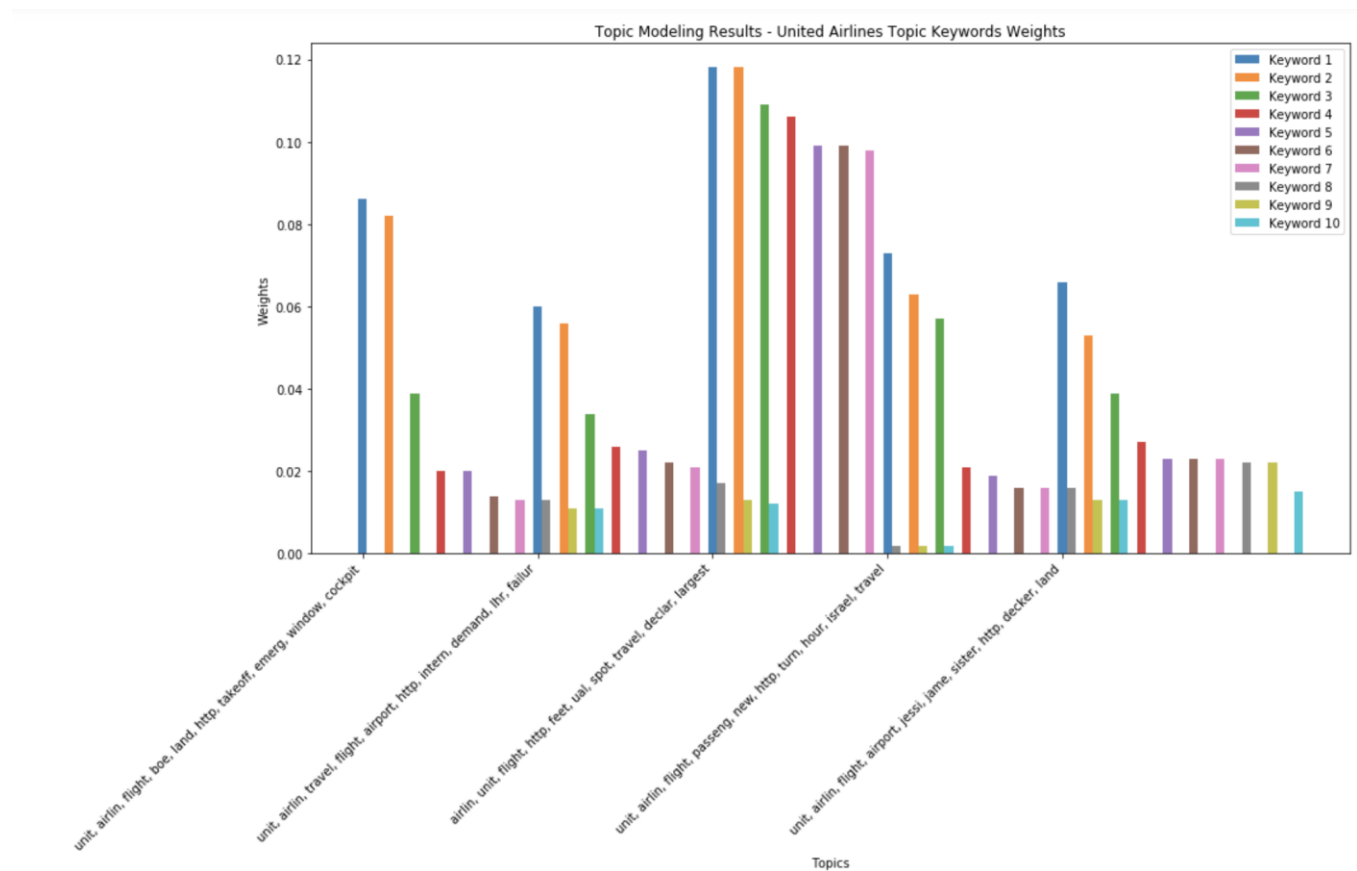
Description: This topic involves flight spotting, comparing airlines, and discussing their performance. It mentions specific terms like "spot," "feet," and references Southwest Airlines, Delta Airlines, and UAL (United Airlines).

Topic 4: Flight Delays and Airport Incidents

Keywords: flight, airport, plane, airline, delay, reveal, travel, bird, hour, closure

Description: This topic revolves around flight delays, incidents at airports, issues with planes, and mentions of travel disruptions. It includes keywords like "delay," "bird," and references to airport closures.

2. United Airlines Overall

Topic Keyword Distribution – United Airlines

As per the above topics and keywords:

Topic 0: Aircraft Operations and Emergencies at United Airlines

Keywords: unit, airline, flight, boe, land, http, takeoff, emergency, window, cockpit

Description: This topic revolves around aircraft operations and emergencies at United Airlines, mentioning the term "unit," the airline name, flights, Boeing aircraft (boe), landings, online presence (http), takeoffs, emergencies, windows, and cockpit operations.

Topic 1: Travel, Flight, and Airport Experiences with United Airlines

Keywords: unit, airline, travel, flight, airport, http, international, demand, LHR, failure

Description: This topic focuses on travel, flight, and airport experiences with United Airlines, mentioning the term "unit," the airline name, travel, flights, airports, online presence (http),

international travel, travel demand, specific reference to London Heathrow Airport (LHR), and failure incidents.

Topic 2: United Airlines Flight Spotting and Declarations

Keywords: airline, unit, flight, http, feet, UAL, spot, travel, declaration, largest

Description: This topic discusses United Airlines flight spotting and declarations, mentioning the airline name, the term "unit," flights, online presence (http), altitude (feet), specific reference to United Airlines (UAL), spotting, travel, declarations, and the claim of being the largest airline.

Topic 3: Passenger Experiences and Travel Turnarounds with United Airlines

Keywords: unit, airline, flight, passenger, new, http, turn, hour, Israel, travel
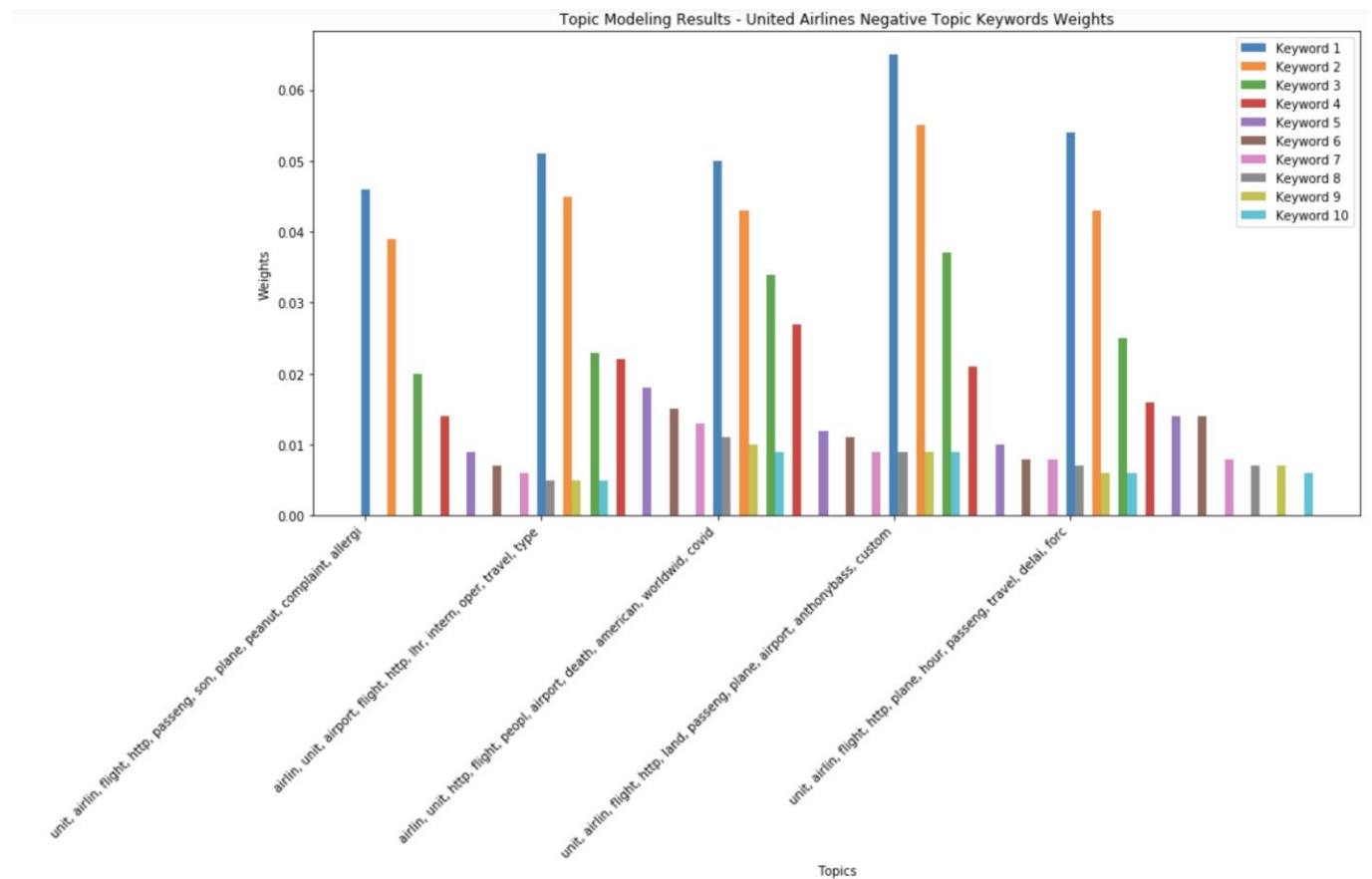
Description: This topic focuses on passenger experiences and travel turnarounds with United Airlines, mentioning the term "unit," the airline name, flights, passengers, new experiences, online presence (http), turnarounds, hours, specific reference to Israel, and travel experiences.

Topic 4: Airport Landings and Jessi, Jame, and Decker Sisters at United Airlines

Keywords: unit, airline, flight, airport, Jessi, Jame, sister, http, Decker, land

Description: This topic discusses airport landings and mentions the names Jessi, Jame, and Decker Sisters in relation to United Airlines, using the term "unit," the airline name, flights, airports, specific names (Jessi, Jame, Decker), online presence (http), landings, and the mention of sisters.

3. United Airlines Negative

Topic Modeling Results - United Airlines Negative Topic Keywords Weights

Topic Keyword Distribution – United Airlines Negative Sentiment Posts

As per the above topics and keywords:

Topic 0: Passengers and Complaints

Keywords: unit, airline, flight, http, passenger, son, plane, peanut, complaint, allergy

Description: This topic focuses on passengers and their complaints, discussing keywords such as unit operations, airlines, flights, online presence (http), passenger experiences, mentions of a son, planes, peanuts, complaints, and allergies.

Topic 1: Airport Operations and International Travel

Keywords: airline, unit, airport, flight, http, LHR, international, operations, travel, type

Description: This topic revolves around airport operations and international travel, emphasizing keywords like airlines, unit operations, airports, flights, online presence (http), specific mention

of London Heathrow Airport (LHR), international travel, operations, travel experiences, and aircraft types.

Topic 2: COVID-19 and Global Impact

Keywords: airline, unit, http, flight, people, airport, death, American, worldwide, COVID

Description: This topic centers around COVID-19 and its global impact, discussing keywords like airlines, unit operations, online presence (http), flights, people, airports, references to death, American Airlines, worldwide impact, and the COVID-19 pandemic.

Topic 3: Flight Operations and Customer Feedback

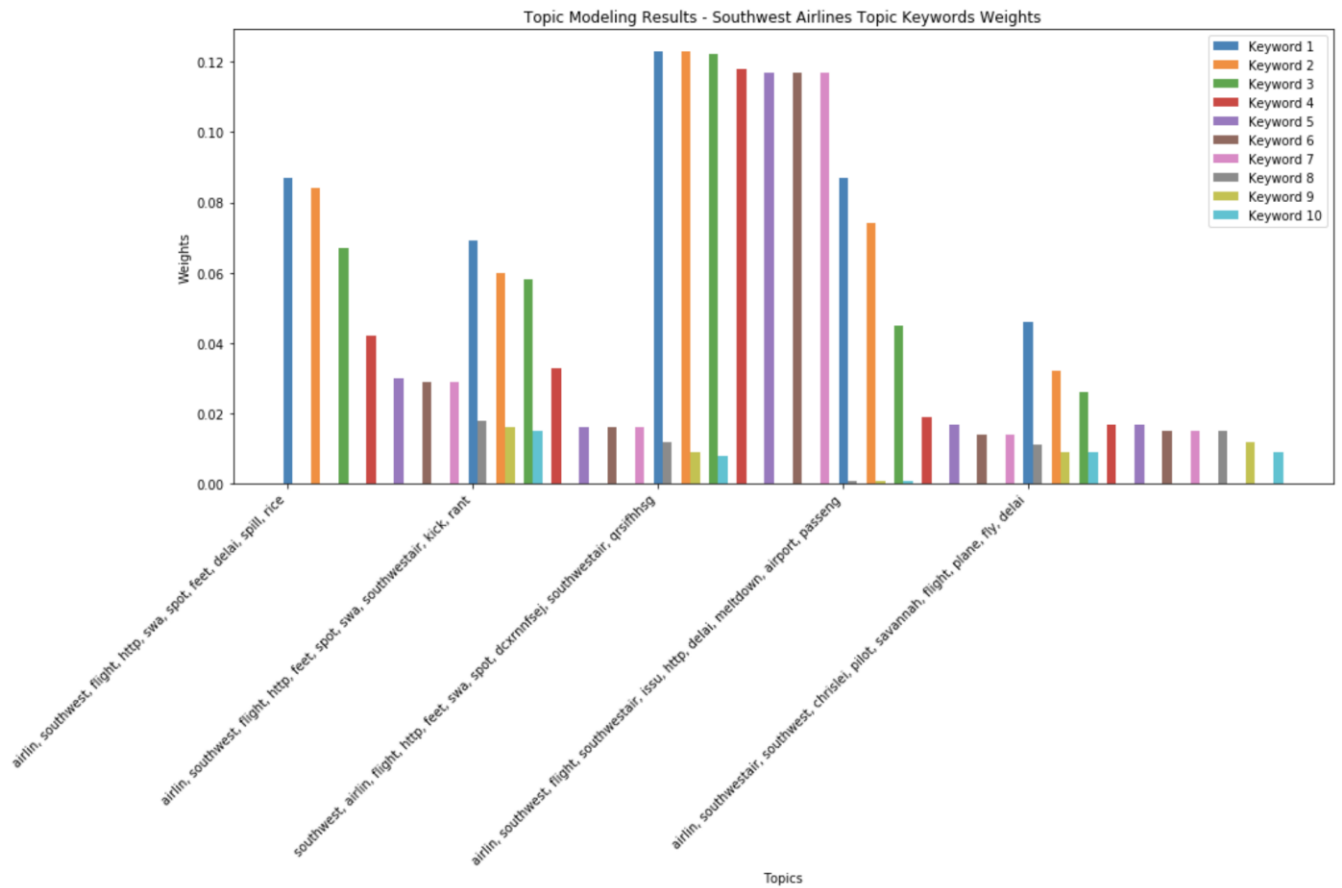Keywords: unit, airline, flight, http, land, passenger, plane, airport, AnthonyBass, custom

Description: This topic focuses on flight operations and customer feedback, including discussions on unit operations, airlines, flights, online presence (http), landing procedures, passenger experiences, planes, airports, specific reference to AnthonyBass, and customs.

Topic 4: Flight Delays and Travel Experiences

Keywords: unit, airline, flight, http, plane, hour, passenger, travel, delay, force

Description: This topic revolves around flight delays and travel experiences, mentioning unit operations, airlines, flights, online presence (http), planes, hours spent, passenger experiences, travel experiences, delays, and forces impacting the schedule.

4. Southwest Airlines Overall

Topic Modeling Results - Southwest Airlines Topic Keywords Weights

Topic Keyword Distribution – Southwest Airlines General Posts

As per the above topics and keywords:

Topic 0: Keywords: airline, http, flight, southwest, SWA (Southwest Airlines) This topic seems to be focused on general aspects related to Southwest Airlines, mentioning keywords such as airline, flight, and specific references to Southwest Airlines (SWA).
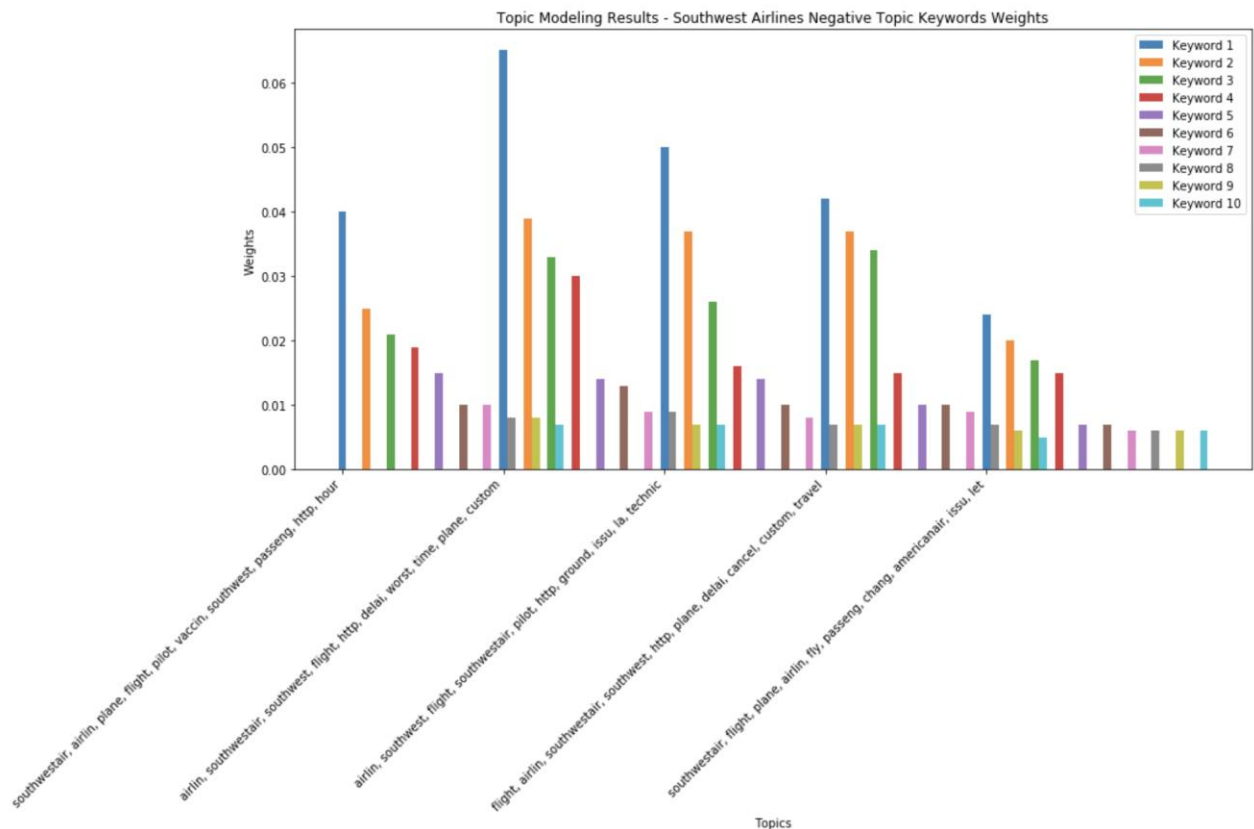
Topic 1: Keywords: airline, southwestair, southwest, flight, http This topic appears to be specifically related to Southwest Airlines (SWA), mentioning keywords like airline, flight, and references to SouthwestAir.

Topic 2: Keywords: southwestair, airline, flight, plane, delay This topic seems to be focused on discussing flight-related aspects of Southwest Airlines, mentioning keywords like airline, flight, plane, and references to delays.

Topic 3: Keywords: airline, southwest, flight, http, feet This topic appears to cover various aspects related to Southwest Airlines, including flights, mentions of Southwest, and references to feet.

Topic 4: Keywords: southwest, airline, Boeing (boe), airport, BWI (Baltimore-Washington International Airport) This topic seems to be focused on specific aspects related to Southwest Airlines, mentioning keywords such as Southwest, airline, Boeing, and references to airports like BWI (Baltimore-Washington International Airport).

5. Southwest Airlines Negative

Topic Keyword Distribution – Soutwest Airlines Negative Sentiment Posts

As per the above topics and keywords:

Topic 0: Southwest Airlines Flight Delays and Issues

Keywords: airline, southwest, flight, http, SWA, spot, feet, delay, spill, rice

Description: This topic focuses on Southwest Airlines flight delays and issues, mentioning the airline name, Southwest, flights, online presence (http), SWA (Southwest Airlines), spotting, altitude (feet), delays, spills, and rice.

Topic 1: Complaints and Rants about Southwest Airlines

Keywords: airline, southwest, flight, http, feet, spot, SWA, SouthwestAir, kick, rant

Description: This topic revolves around complaints and rants about Southwest Airlines, mentioning the airline name, Southwest, flights, online presence (http), altitude (feet), spotting, specific reference to SWA (Southwest Airlines), SouthwestAir, kicking, and rants.

Topic 2: General Discussion about Southwest Airlines

Keywords: southwest, airline, flight, http, feet, SWA, spot, dcxrnnfsej, SouthwestAir, qrsifhhsg

Description: This topic involves general discussions about Southwest Airlines, mentioning Southwest, the airline name, flights, online presence (http), altitude (feet), specific reference to SWA (Southwest Airlines), spotting, and some unique keywords.

Topic 3: Issues and Meltdowns with Southwest Airlines

Keywords: airline, southwest, flight, SouthwestAir, issue, http, delay, meltdown, airport, passenger

Description: This topic discusses issues and meltdowns experienced with Southwest Airlines, mentioning the airline name, Southwest, flights, specific reference to SouthwestAir, issues, online presence (http), delays, meltdowns, airports, and passenger experiences.

Topic 4: Pilots and Flight Experiences with Southwest Airlines

Keywords: airline, SouthwestAir, southwest, ChrisLei, pilot, Savannah, flight, plane, fly, delay

Description: This topic focuses on pilots and flight experiences with Southwest Airlines, mentioning the airline name, specific reference to SouthwestAir, Southwest, pilot name (ChrisLei), specific location (Savannah), flights, planes, flying, delays, and experiences.

Common Topics between Airline Industry and United Airlines

Flight Experience: Both sets of topics have a common topic related to flight experiences. Keywords such as "flight," "airline," "passenger," "travel," and "airport" appear in both sets, indicating a shared focus on discussing the overall flight experience.

Customer Service: Another common topic revolves around customer service and satisfaction. Keywords like "service," "worst," "cancel," "custom," and "peopl" appear in both sets, suggesting discussions about customer service experiences and feedback.

Aircraft and Aviation: Both sets include topics related to aircraft and aviation. Keywords like "plane," "Boeing (boe)," "aviat," and "takeoff" appear in both sets, indicating discussions about aircraft types, aviation industry, and takeoff procedures.

Common Topics between Airline Industry and Southwest Airlines

Flight Experience: common keywords as airline, flight, http, fly, service, ticket, cancel, worst, people, time

Airline Operations and Passenger Experience: common keywords as airline, flight, http, airport, plane, travel, passenger, aviation, delay, pilot

Southwest Airlines specific discussions: common keywords as airline, southwestair, flight, http, southwest, plane, fly, delay, tell, today

The common topics suggest that there are recurring themes and discussions in both the airline industry as a whole and specifically related to Southwest Airlines. These topics revolve around flight experiences, services, airline operations, passenger experiences, and discussions specific to Southwest Airlines. Customers and industry stakeholders are likely to engage in conversations regarding these common topics, indicating their importance and relevance in the industry.

Differentiating topics between United Airlines and Southwest Airlines:

1. United Airlines Topic 0 vs. Southwest Airlines Topic 0:

- United Airlines: Focuses on general aspects of airlines, including travel, delay, and United Airlines.
- Southwest Airlines: Emphasizes flight-related information, mentioning Southwest Airlines, flight, and delay.

2. United Airlines Topic 1 vs. Southwest Airlines Topic 1:

- United Airlines: Centers around the operational aspects of United Airlines, including airport, land, takeoff, and pilot.
- Southwest Airlines: Discusses Southwest Airlines, airport, and flight operations.

3. United Airlines Topic 2 vs. Southwest Airlines Topic 2:

- United Airlines: Covers various topics related to United Airlines, such as travel, aviation, COVID-19, and death.
- Southwest Airlines: Focuses on issues like delays, worst experiences, and customer service.

4. United Airlines Topic 3 vs. Southwest Airlines Topic 3:

- United Airlines: Discusses flight-related aspects like land, passenger, airport, and custom.
- Southwest Airlines: Highlights flight-related information, including flight delays, cancellations, and customer experiences.

5. United Airlines Topic 4 vs. Southwest Airlines Topic 4:

- United Airlines: Focuses on flight-related aspects like delays, travel, and customer experiences.
- Southwest Airlines: Discusses topics such as flight changes, issues, and passenger experiences.

NOTE:

I have documented the plots and descriptions in the PDF format for the project convenience.

The above plots and descriptions can be better represented as dashboards.