SPIRIT AIRLINES



Adnan Adnan

OBJECTIVE

Our objective is to conduct a comprehensive analysis of Spirit Airlines' on-time performance for the year 2023 from January to December within the US flight routes in comparison to the domestic airline industry, and our nearest competitor (Alaska Airlines) is chosen based on the criteria that it has a similar number of flights. We will be conducting a punctuality analysis for Spirit Airlines to identify segments of flights that are constantly encountering delays.

Introduction Objective Analysis Structure I - Spirit Airline Overall I - Arrival & Departure I - State Wise Analysis II- Comparison -II - Comparison for II -Comparison-II - Comp II - Comparison-Statistics Analysis for SA Presence in United significant ratios. Destinations Catered Destinations Catered arison- Ai States (State Level) (City Level) rline Pe..

Analysis I: Spirit Airline Anal Monthly flights Flights on each day of week Monthly avg arrival and departure No of cities / month Arrival and Departure delays based of flights cancelled based on Star Majority Business

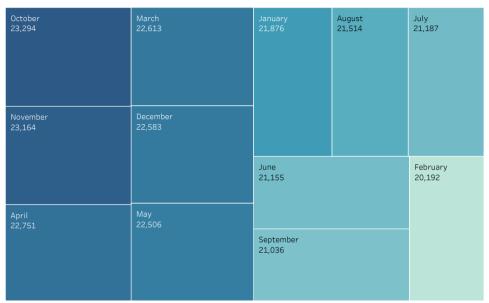
Analysis II: Spirit vs Airline Inc No. of flights Avg distance / flight

No. of cities % of flights Avg dep delays cancellations; distance vs no. of f Diverted vs cancelled

Analysis III: Spirit vs Compet

Monthly flight count Avg. monthly distance Monthly arrival and departure d Total monthly flights and cancellec % cancelleation based on Stat Majority business

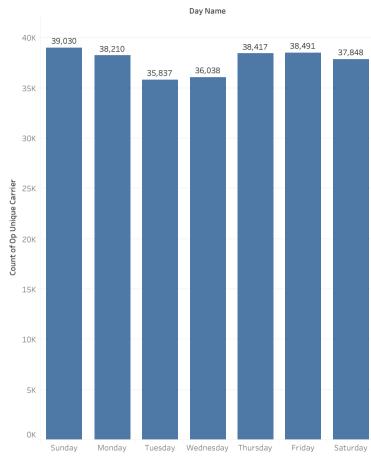
Monthly Flights of Spirit Airlines



Majority of the Spirit flights can be seen in the month of October 2023.

On a weekly basis, maximum number of flights fly on Sunday.

Total Spirit Airlines Flights on Each Day of the Week



Average Arrival Delays of Spirit Airlines for Each State

Oregon Idaho New Hampshire New Hampshire Indiana Pennsylvania Kentucky Virgini Tennessee South Georgia Louisiana Florida © 2024 Mapbox © OpenStreetMap

Average Departure Delays of Spirit Airlines for Each State



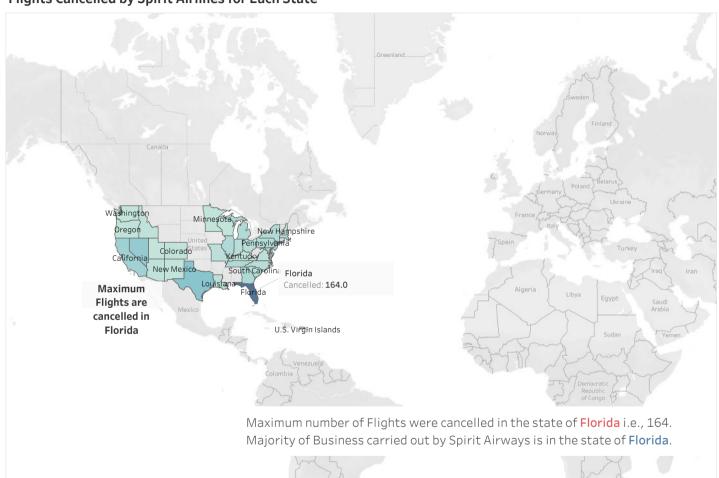
Maximum Arrival Delay: Missouri

Maximum Departure Delay: Massachusetts

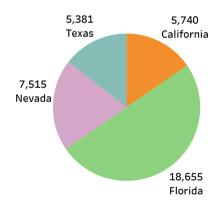
Monthly Trend of Average Arrival and Departure Delay of Spirit Airlines



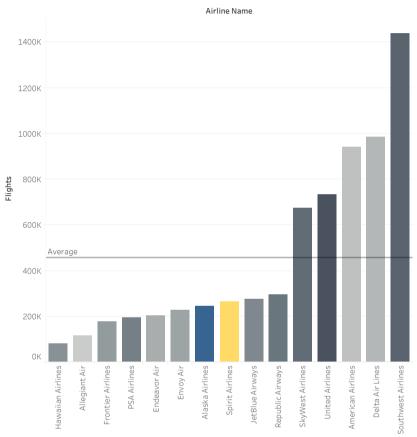
Flights Cancelled by Spirit Airlines for Each State



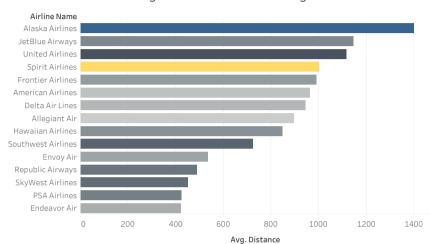
States where Spirit Airlines have Majority of their Business



Total Number of Flights



Average Distance Flown Per Flight



Spirit Airline remains below Average in terms of the total number of flights for year 2023

On average, Spirit Airline covers a decent amount of distance per flight on average

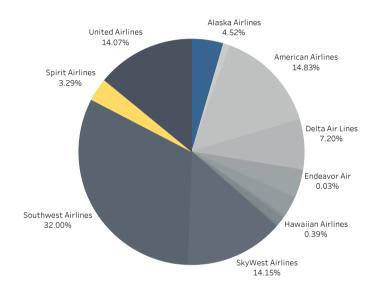
Flights

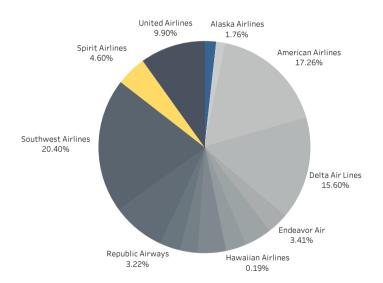
500K

I - Spirit Airline	I - Arrival & Departure	I - State Wise Analysis	II - Comparison-	II- Comparison -	II - Comparison for	II -Comparison-	II - Comparison- Airline	III-Competitor Flights	III-Competitor Arrival	III-Competitor
Overall Statistics	Analysis	for SA	Presence in United States	significant ratios.		Destinations Catered (City Level)	Performance	and Distance covered	vs Departure Delay	Routes Comparison

Top 10 Largest States Catered by Carriers

Top 10 Populous States Catered By Different Airlines





Observations:

Large states do not equal more populous states:

Spirit has a lower proportion in terms of flights to largest states in the United States, looks to instead focus on capturing flights headed to populous states, meaning states with higher concentration of people.

II - Comparison for Destinations Catered I - Arrival & I - State Wise Analysis II - Comparison-II- Comparison -II -Comparison-II - Comparison- Airline III-Competitor Flights III-Competitor Arrival III-Competitor Routes III- Competitor comparison (Total and Cancell.. Departure for SA Presence in United significant ratios. Destinations Catered Performance and Distance covered vs Departure Delay Comparison Analysis States (State Level) (City Level)

II_Cities_served

ii_cities_serveu					_
Airline: SkyWest Airlines Number of Cities Served: 264	Airline: American Airlines Number of Cities Served:132	Airline: Southwest Airlines Number of Cities Served:104	Airline: PSA Airlines Number of Cities Served:98	Airline: Republic Airways Number of Cities Served:97	Distinct count of Dest City Name 21 264
	Airline: Allegiant Air Number of Cities Served:124				At a city level, we see a different level of detail: Skywest Airlines take the lead in terms of the number of cities served 264
Airline: Envoy Air Number of Cities Served:166	Airline: Endeavor Air Number of Cities Served:121	Airline: Alaska Airlines Number of Cities Served		etBlue Airways of Cities Served:70	of the number of cities served 264, where as spirit airlines only serve 64 cities.
Airline: Delta Air Lines Number of Cities Served:149	Airline: United Airlines Number of Cities Served:121	Airline: Frontier Airlines Number of Cities Served	Number	pirit Airlines of Cities Served:64	

II - Comparison for I - State Wise II - Comparison-II- Comparison -II -Comparison-II - Comparison- Airline III-Competitor Flights III-Competitor Arrival III-Competitor Routes III- Competitor Analysis for SA Presence in United significant ratios. Destinations Catered Destinations Catered Performance and Distance covered vs Departure Delay Comparison comparison (Total (State Level) (City Level) and Cancelled flights) Calling out the FAA allowance of 15 minutes before a flight is considered delayed. Spirit Airlines flights are delayed on Average Departure Delay (Minutes) % of Cancellation average (above the 15 minute mark) and being above average Airline Name in terms of delay time. Spirit Airline also is above average for Airline Name the cancellation rates. 2.76% 24 2.80% 2.60% 22 2.40% 20 Unites States Federal Aviation Administration 2.20% 2.10% 2.11% 2.13% (FAA) delay allowance: 18 2.00% 16 1.80% 15.00 1.70% caucellation 2.40% 8 caucellation 2.40% Avg. Dep Delay Average 1.30% 1.32% 1.22% 1.20% 10 1.00% 1.01% 1.02% 1.06% 1.00% 8 0.81% 0.80% 0.68% 0.60% 0.40% 0.20%

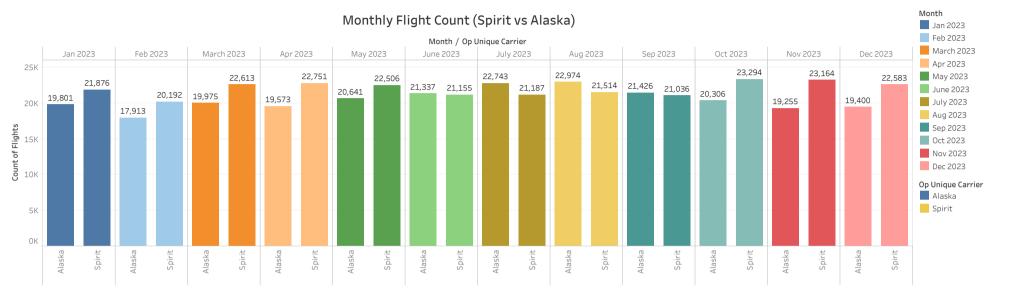
0.00%

III-Delay

Reasoning &

Suggestions for .

II - Comparison-II- Comparison -II - Comparison for II -Comparison-II - Comparison- Airline III-Competitor Flights III-Competitor Arrival III-Competitor Routes III- Competitor III-Delay Reasoning & III- Competitor Presence in significant ratios. Destinations Catered Destinations Catered Performance and Distance covered vs Departure Delay Comparison comparison (Total Suggestions for City to comparison(cancel percentag. United States (State Level) (City Level) and Cancelled flights) Fly Out of

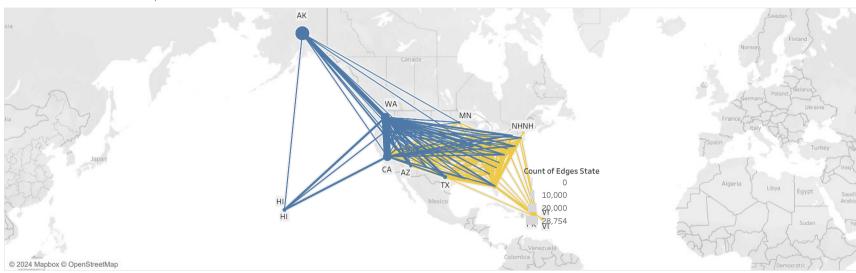


Average Monthly Distance Covered





Routes For Alaska and Spirit



Major Cross City Routes For Alaska and Spirit



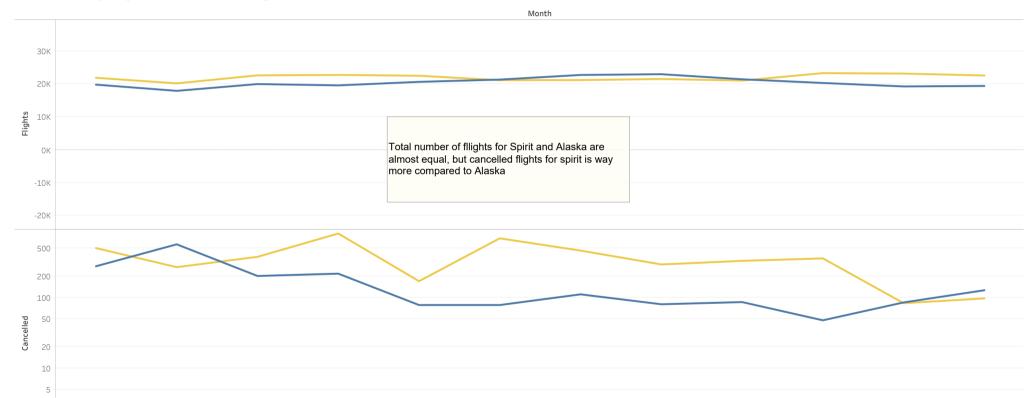
Airline name Alaska Airlines Spirit Airlines

Spirit Airlines seem to cater more to diverse flights on the lower east side of the United States; Alaska Airlines in the exact opposite.

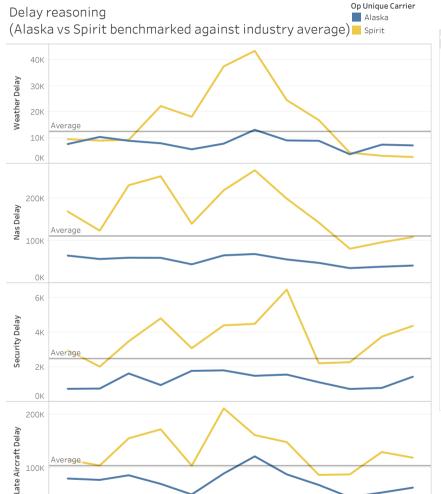
The majority routes pointed out on the map to the left depict the most frequent travelled states for the

Total Monthly Flights and Cancelled Flights

Total Monthly Flights and Cancelled Flights



II - Compa II -Comparison-II - Comparison- Airline III-Competitor Flights III-Competitor Arrival III-Competitor Routes III- Competitor III-Delay Reasoning & III- Competitor III- Competitor rison for Destinations Catered Performance and Distance covered vs Departure Delay comparison (Total Suggestions for City to comparison(cancel comparison(top 5 Comparison Destina.. (City Level) and Cancelled flights) Fly Out of percentage) states)



Suggestion for City to Fly From for Alaska versus Spirit Airline



Spirit Airlines experiences above average delay times, and being consistently higher in comparison to Alaska airline across various reasons

II - Compa II - Comparisonrison for Destinations Catered Destina.. (City Level)

Performance

II - Comparison- Airline III-Competitor Flights and Distance covered

III-Competitor Arrival vs Departure Delay

III-Competitor Routes Comparison

III- Competitor comparison (Total and Cancelled flights) III-Delay Reasoning & Suggestions for City to Fly Out of

III- Competitor comparison(cancel percentage)

III- Competitor comparison(top 5 states)

Flight Cancellation % for Each State

Spirit airlines

Tennessee Cancelled% :1.2749% Total Flights: 1,255 Canceled: 16.0	New Jersey Cancelled% :1.0811% Total Flights: 3,515 Canceled: 38.0	Maryland Cancelled%:0.9753% Total Flights: 1,538	New York Cancelled% :0.8264% Total Flights: 1,815	Ohio Cancelled% :0.7502% Total Flights: 1,333	Georgia Cancelled% :0.5668% Total Flights:	Michigan Cancelled% :0.5459% Total
Massachusetts	South Carolina	Texas Cancelled% :0.9478% Total Flights: 5,381	Illinois Cancelled% :0.7977% Total Flights: 2,131	Cancelled % .O.7 17470		
Cancelled%:1.0981% Total Flights: 1,366 Canceled: 15.0	Cancelled% :1.0204% Total Flights: 1,176 Canceled: 12.0	Florida Cancelled% :0.8791%	Puerto Rico Cancelled% :0.7602%	Louisiana Cancelled% :0.6103%	Nevada Cancelled%	

Alaska airlines

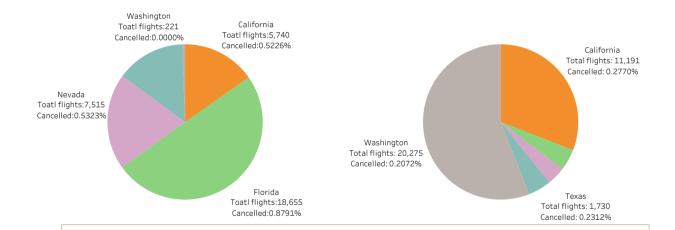
Spirit Airlines experiences higher cancellation rates in states like Tennessee and New Jersey, suggesting potential operational challenges in those areas, while Alaska Airlines generally maintains low cancellation rates across its key markets except for Alaska, where it could improve reliability.

Alaska Cancelled% :2.023% Total Flights: 6,724 Canceled: 136.0	Florida Cancelled% :0.618% Total Flights: 1,618 Canceled: 10.0	Cancelled% :0.277% C Total Flights: : 11,191 T Canceled: 31.0 1	exas Cancelled% 0.231% Total Flights: .,730 Canceled: 4.0	
		Washington Cancelled%:0.207%	Hawaii	
	Oregon Cancelled% :0.414% Total Flights: 4,345	Total Flights: 20,275 Canceled: 42.0		
	Canceled: 18.0	Nevada Cancelled% :0.144% Total Flights: 1,392		

II - Compa II - Comparison-II - Comparison- Airline III-Competitor Flights III-Competitor Arrival III-Competitor Routes III- Competitor III-Delay Reasoning & III- Competitor III- Competitor rison for Destinations Catered Performance and Distance covered vs Departure Delay comparison (Total Suggestions for City to comparison(cancel comparison(top 5 Comparison Destina.. (City Level) and Cancelled flights) percentage) states)

Top 5 States with Majority Business

Spirit airlines Alaska airlines



Spirit Airlines has a strong presence in Florida with a high number of flights and low cancellation rates, suggesting a focus on this market. Alaska Airlines, on the other hand, has a more evenly distributed presence across several states with similarly low cancellation rates, indicating a more diversified market strategy and operational reliability across multiple regions.

II - Compa II - Comparisonrison for

Destinations Catered

Performance

II - Comparison- Airline III-Competitor Flights and Distance covered

III-Competitor Arrival vs Departure Delay

III-Competitor Routes Comparison

III- Competitor comparison (Total and Cancelled flights) III-Delay Reasoning & Suggestions for City to comparison(cancel

III- Competitor percentage)

III- Competitor comparison(top 5 Conclusion

Spirit Airlines- Conclusion

Key Findings across the three parts of analysis.

- Spirit Airlines is currently maintaining a slightly higher market share in populous states versus larger states. Given that majority business is concentrated in fewer states, there is room to tap into other states strategically.
- Spirit Airline consistently has had higher delay averages per flight above industry average and across all reasons in comparison to Alaska airline, specifically higher numbers related to late aircraft delays and NAS delays...

In terms of expansion:

1. Scalability while preserving USP is the key to growth, considering spirit's efforts in making travel affordable, there should be additional services line-up focusing on quality.

In terms of delays, Spirit Airlines needs to approach their operations in a proactive manner:

- 1. Implementing advanced weather monitoring systems and developing backup plans to reroute flights or adjust schedules to keep their flights on track.
- 2. Appointing loaner aircrafts for emergencies specifically for the months experiencing extreme delays/cancellations.
- 3. Reviewing current crew scheduling and availability to ensure that airplanes are proactively maintained to hopefully pick up a possible issue before it happens.