A Sentiment Analysis of Air Passengers of Top Ten U.S. Based Airlines[LLR1]

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Introduction[LLR5]

Airline industry has a big impact on the lives of the US citizens. We have about 7,000 aircrafts in the sky at any given time, managed by 476 towers, 21 air control centers and 14,000 air traffic controllers. In that statistic, 23,911commercial flights carry 2,246,004 passengers every day from 19,299 airports based on Federal Aviation Administration's Air Traffic by the numbers (FAA, 2017).

Political and economic activities of people have also significant impact on the airline industry. In fact, the last recession in 2007 caused a substantial drop in profitability. The industry has recovered since then. In December 2016, the financial performance of the US airline industry looked very promising. The International Air Transport Association (IATA) forecasted that 2017 "will be the third year in a row where the return on invested capital (7.9 per cent) will exceed the cost of capital (6.9 per cent) ... This is the best performance in the industry's history, irrespective of the many uncertainties … (2016, p. 1)" Global net profit is expected to reach $29.8 billion dollars with an estimate of carrying 4 billion passengers. They also expect that majority of this strong financial performance is likely to be delivered by airlines in North America with net post-tax profits at $18.1 billion. The net margin for the North America carriers is anticipated to be the strongest at 8.5 per cent with an average profit of $19.58 per passenger.

If the outlook is so promising for the carriers, why are customers complaining so much about the airline industry's delivery of service at every front? A historical review may put these complains into perspective. Before the 1978 Airline Deregulation Act, airlines differentiated themselves based on services such as meals, legroom, allowable number and size of bags etc., as the government controlled airfares and routes (Glusac, 2017). After the deregulation, capacity management became the key for profitability resulting in fewer flights, bigger planes, and more people abroad with less legroom. Furthermore, airline consolidations removed the market share concerns from the equation altogether (Manjoo 2017).

Low cost carriers entered the market and speeded up competitive pricing resulting in substantial drop in the average airfare from $459 in 1995 to $349 in 2016 (Glusac, 2017). Nevertheless, it has become difficult to compare fares since there are different price zones even in the same flight of an airline carrier.

Then there was the United Flight 3411 incident that become viral on April 10, 2017. In order to transfer four crewmembers of different flights, the airline needed four of the 70 passengers aboard to give up their seats. The gate agent offered $800 in travel credits plus the cost of meals and a hotel stay. When no one came forward, the agent then followed United's procedure for involuntarily bumping passengers. However, it seems that things got out of hand when the passenger chosen refused to comply. As the security officer pulled the passenger from his seat and dragged him down the aisle of the plane, other passengers aboard the flight captured the moment and his injuries on video. The video went viral and created an uproar throughout the whole world (2017a).

A recent survey done after the United Flight 3411 incident revealed a deep mistrust among customers in airline industry (2017b). Nearly 60 percent of respondents stated that they were not loyal to any airline brand. What is troubling about this finding is that before the incident, about 82 percent of passengers were either neutral or positive towards the United brand. After the video of a passenger being forcibly removed from his seat become viral, 57 percent of respondents said their perception of the carrier has changed. Moreover, 54 percent of overall respondents said that they were not willing to purchase a ticket from United Airlines. Bad

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publicity caused the stock prices of United to dive from $71.52 on April 3 to $67.73 – a 5.27 percent drop by April 18 (Yahoo Finance, 2017).

The incident quickly caused a chain reaction (2017c). The Transportation and Infrastructure Committee as well as Aviation Subcommittee were called to investigate the state of consumer protection practices within the industry. Many commnists mentioned that the industry has turned on "the people"- their customers and degradation of the services has reached an unacceptable level. Legally, the airline ticket is a contract that gives the carrier the rights to remove a passenger from flight for many reasons. Usually these decisions are made at the gate and volunteering passengers are compensated for their trouble. Involuntary bumping of passengers is a common practice in the airline industry At least 40 million passengers were bumped between 2008 and 2016 per Business Insider (2017). Even though passengers are used to this practice, why did customers respond extremely negatively this time? There was no research about this question, but The United Flight 3411 case created an unfairness perception among many passengers, especially from multiple countries as implied in social media postings, hence making them less compliant and more vindictive.

Manjoo (2017) mentioned that technology also contributed significantly to the downfall of customer service in airline industry. He claimed that airline carriers saw themselves as transportation providers, not a customer service industry. Available technology help them sell based on price only, customer service is not part of the transaction. However, other travel service providers such as hotels, restaurants, and tour operators are evaluated based on customer reviews and services they provide in conjunction with the prices they charge. Some of the suggestions for airline services include improvements on ratings of flights and carrier brands, and introduction of new subscription services like Netflix.

Interestingly, low-cost carriers managed to convince their customers to perform multitude of tasks as unpaid employees or partial employees. They check themselves in through electronic kiosks, search for their seats and connections, print their own boarding passes, and finally weigh and tag their own bags. Customer engagement in these tasks reduce costs as well as probability of service failures. How are engagement activities reflected in customer sentiments? In case of service failure, how will the attribution work? In other words, do customers blame the airline company, the employees or just themselves for service failure?

The service quality is one of the popular research area in services marketing research for some time. Zeithaml, Parasuraman and Berry (1990) introduced SERVQUAL in the 1990s based on a series of research studies. Since then, multiple researchers have tested the instrument for numerous service industries nationally and internationally since then (Dabholkar, 1990; Parasuraman, 2002; Anitsal and Paige, 2006). Service quality and performance relationship in the airline industry is not very clear-cut, as there are many interacting variables. For example, the airline industry is very sensitive to business cycles and changes in the political environment. Different segments are served in the same service factory (the airplane and airport) in a mature industry. Demand for business travel is rather inelastic, and for recreational travel is highly elastic to price changes (Badra, 2009). However, both segments of customers have been served with the same aircraft, speed, comfort and safety attributes. As the industry gets capital intense due to advancement in technology and plane designs, the fixed costs gets higher and higher making survival difficult. Airlines are forced to closely monitor performance measures as well as customer complaints (Ozturk Birim, Anitsal, and Anitsal, 2016). A significant drop in demand would make their operations inefficient.

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The positive impact of price on performance has been found in multiple studies, however, research results were contradictory for service quality and performance relationship. Hannigan, Hamilton and Mudambi (2015) used the USA airline industry data between 1996 and 2011 to analyze the relationship among price, service quality and performance. They found the expected positive relationship between price and performance (measured as stock price of airline); however, service quality (measured by Airline Quality Index of COMPUSTAT) had a negative impact on performance. Authors interpreted this counterintuitive finding as the limitation of a mature industry with common resources. They concluded that service innovations in such an intensely competitive market might not be sustainable.

Does this mean that regardless of how much passengers complain about service quality deterioration, and how badly they have been treated, they will still buy the cheapest available ticket? Wu and Liao (2014) investigated 38 leading airlines' performances by utilizing a combined methodology of balanced scorecard and data envelopment. According to their results, United, SkyWest, American, and Delta were performing efficiently in 2012. Alaska, Southwest and JetBlue had to increase their performance efficiency, especially the return on investments. All three airlines had to reduce material, labor, and other operating expenses considerably to become efficient. The highest impact to achieve this goal would come from the reduction of labor costs. The researchers suggested that airline managers had to develop strategies to either increase the outputs (operating revenues, ROI, ROA, and net income) without changing the inputs (revenue passenger kilometer, number of passengers, energy cost, capital cost, material cost, labor cost and other operating costs) or decrease the inputs without changing the outputs. Service quality and passenger sentiments were out in scope of this research. It seems that airlines interpret these findings as "fly as many passengers as possible in planes as large as possible with as little as possible employees".

The question becomes whether human touch and investment in training of employees are necessary. Babbar and Koufleros (2008) investigated the impact of personal touch on customer satisfaction for airline industry. Individual attention, helpfulness, courtesy, and promptness were found as the elements of personal touch construct. They tested the relationship with structured equation modeling and found that 54 percent of variance in customer satisfaction was explained by how well or poor airlines performed in personal touch elements. Majority of their data was collected from recreational traveler segment, which was highly price sensitive. This relationship might be even stronger for the business traveler segment. They suggested an extension of this research by including other influential attributes such as baggage handling, ontime performance, connection flights, check-in processes, etc. for both segments.

What do passengers really expect from airlines? Min and Min (2015, p. 741) summarized the passengers' core expectations as "the airline's ability to deliver its promised services (of airline transportation) in a competent, consistent, and timely manner, while appreciating its ability to recover from service failures (e.g., Flight delays, lost baggage, missed connecting flights)." The most important indicators of airline competency were related to what passengers identified as the most important attributes of the service, namely air safety, proper baggage handling, competitive airfare, on time arrival/departures, and alternative flight arrangements for missing a flight as the top five. Interestingly, passengers listed frequent flier programs as one of the least important attributes. Even though the airline industry was the leader of implementing frequent user programs, they did not make it easy to use the accumulated miles as a flight ticket. Instead, they were frequently suggesting members to donate their miles to other uses such as

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charities. Another reason may be mergers and acquisitions making accumulated miles worthless. As a result, an important relationship-building tool has become useless in airline industry.

Min and Min (2015) identified 18 important service attributes for airline industry as listed in Table 1. Some of these attributes have to be co-created by customer and employee. These represent "personal service" that cannot be improved without reference to individual customers and frontline employees (Min and Min, 2015, p.740). Airline managers can design other services at the backstage without direct and immediate customer interference, such as airfares or frequent flier programs. The highest-ranking attributes seem to be the ones that need co-creation. There is a gap in knowledge incorporating co-creation in the airline service quality-performance research stream. In order to put things in perspective, we combined the most important airline attribute rankings and customer co-creation activities related to these attributes in Table 1.

Rank	Attribute	With customer and employee co-creation	Without customer interference
1	Air safety	yes	
2	Proper baggage handling	yes	
3	Competitive airfare		yes
4	On-time arrival/departure	yes	
5	Alternative flight arrangements for a missing flight	yes	
6	Smooth connecting flight	yes	
7	Reasonable follow-up on service failure	yes	
8	Airplane cleanliness	yes	
9	Prior service experience	yes	
10	Availability of non-stop flights		yes
11	Employee courtesy	yes	
12	Amenity		yes
13	Flight schedules		yes
14	Short wait at the ticket counter	yes	
15	Complimentary drinks/snacks		yes
16	Complimentary pillows/blankets		yes
17	Frequent flier program	yes	
18	Code sharing (alliances)		yes

Table 1- Most Important Service Attributes For Airlines [LLR6]

Adapted from Min and Min (2015)

One of the reasons for inconsistent results obtained in service quality and performance relationship may be the "how soon" effect. How long will it take customers to stop flying with an airline after continuous degradation of service quality? It seems that customers prefer to complain first to the service provider hoping for a fast service recovery as well as believing in the ability and willingness of the provider. They tend to write reviews on social media, when they get even more frustrated with the incompetence of airlines. At what point, will they say "never again"?

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Customers nowadays increasingly use social media for reviews and complaints in case of service failures. Popular consumer review sites include Consumer Reports, Amazon reviews and epinion.com for product reviews; Angie's list, Insider pages, Judy's book, Better Business Bureau and Facebook for business reviews; Yelp and Zomato for restaurant reviews; and hotels.com and TripAdvisor for travel reviews. Similar to the nature of the reviews listed previously, Skytrax is one important customer forum for airline reviews.

The purpose of this study is to understand passenger sentiments about top ten airlines based on their voluntary evaluations of airline services on social media.

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Method

This study concentrates on the top ten U.S. based airlines; namely, Delta Airlines, United Airlines, American Airlines, Southwest Airlines, U.S. Airways, JetBlue Airways, Alaska Airlines, Hawaiian Airlines, Spirit Airlines and SkyWest Airlines (US Department of Transportation, 2015). Specifically, the current study collected data of these top ranked airlines for the air traveler sentiments posted on *Skytrax*, which is a comprehensive and independent airline review site providing a customer forum (Skytrax, 2015). We used *Web Scraper Extension* to extract data from *Skytrax* by creating a sitemap that specifies how Web Scraper navigates in extracting data (Web Scraper 2015).

The total sample size for air traveler sentiments was 3,912. The period for all these sentiments posted was from 2004 to 2015. Once data was collected for each of the top ranked U.S. based airlines, we used two programs in analyzing the air traveler sentiments. First, the *Excel* based *Sentiment Analysis* tool was utilized to capture positive and negative attitudes. This tool enabled us to collect categorized sentiments on a scale of ten: -5 being negative sentiment and 5 being positive sentiment. Software automatically sort these sentiment scores into three categories that have their own distinctive color. These categories are negative (represented by pink), neutral (represented by yellow), and positive (represented by green) (datapigtechnologies.com, 2015). Second, *Semantria for Excel* was utilized to create popular themes, theme counts, and top categories with negative, neutral and positive counts (semantria.com, 2015).

Results and Discussion

Average sentiment scores include information about the degree of the strength of positivity or negativity based on adjectives used in the statements. For example, even though rude and inefficient are both negative in nature, very rude is reflects more as a negative sentiment than inefficient. Similarly, incredible is more positive than very nice. Average negative, neutral and positive sentiment scores were calculated considering these differences (Semantria 2015). The Semantria software identifies the emotive phrases within the comments and scores them between -1 to +1, then combines them to give an overall sentiment score. (White papers describing the process can be obtained from www.lexalytics.com .)

Overall, large percentage of all sentiments for all top ten airlines fall in the neutral category with an exception of Alaska Airlines that had 45.38 percent of positive sentiments among all other airlines (Table 2). When the percentage of negative sentiments were analyzed, the highest belonged to US Airways followed by Jet Blue. The third in the highest negative comments category was Delta Airlines. Spirit Airlines had the lowest percent of negative sentiments with 6.88 percent. In terms of percentage of positive comments, Alaska Airlines was the leading airline as mentioned above. The second was SkyWest Airlines with 28.57 percent positive sentiments and JetBlue was the third with 26.36 percent.

Sentiment scores are also important to give perspective to how intense are the customer perceptions. Hawaiian, JetBlue and Delta are the top three airlines respectively with the highest average positive sentiments score. Spirit Airlines, Alaska Airlines, and American Airlines are the ones with the lowest average negative sentiments scores.

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Airline Rankings	Sample Size	Negative Sentiments (%)	Neutral Sentiment (%)	Positive Sentiments (%)	Average of Negative Sentiment Scores	Average of Neutral Sentiment Scores	Average of Positive Sentiment Scores
Delta Airlines	546	24.5[illegible]%	54.21%	21.25%	-1.3070	0.4675	2.2955
United Airlines	591	16.41%	66.67%	16.92%	-1.4884	-0.0310	1.7267
American Airlines	568	23.24%	56.34%	20.42%	-1.6268	-0.1105	1.9691
Southwest Airlines	411	18.49%	55.47%	26.03%	-1.4617	0.1313	1.8566
U.S. Airways	459	33.55%	54.03%	12.42%	-1.4190	-0.0995	1.9728
JetBlue Airlines	258	27.91%	45.74%	26.36%	-0.8990	0.8272	2.4026
Alaska Airlines	260	11.15%	43.46%	45.38%	-1.7793	0.1348	1.8842
Hawaiian Airlines	246	18.70%	69.51%	11.79%	-1.3641	0.7946	2.6562
Spirit Airlines	538	6.88%	73.61%	19.52%	-2.0668	-0.4548	0.9651
SkyWest Airlines	35	20.00%	51.43%	28.57%	-0.3129	1.0994	2.1860

Table 2 – Top 10 Us Based Airlines

Sentiment scores analysis revealed commonly occurring themes for each airline. The following pictures are ranked around the number of reviews posted for each airline from 2004 to 2015. Red words represent negative sentiments, and green words represent positive sentiments. Font size represent how frequently the same category was mentioned in the database. As the color gets bolder the negativity of the sentiment increases.

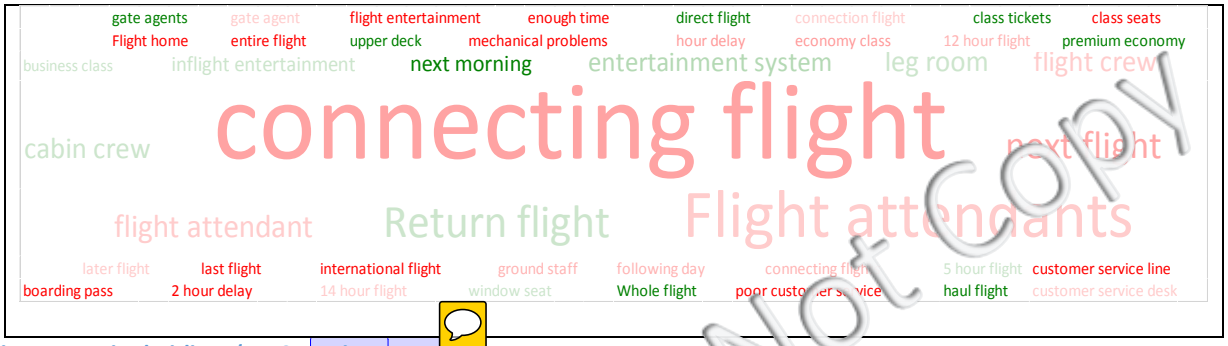

Figure 1- United Airlines (n=591 reviews[LLR7])

The following quote will give a perspective on customer experience and connecting flight for United Airlines (Figure 1):

> 8-16-2015: "I flew a round trip from Detroit to LAX with a connecting flight each way. There was a delay for all of the 4 planes I flew on, and on the way there, there was a 2 hour delay. On the way back, there was a 1 hour delay and we sat in the plane while they fixed the air conditioning, and it was incredibly hot. I understand that they had to fix the plane's air conditioning, but they should have done that before we got on the plane and had to sit in that heat for an hour. Then I missed my connecting flight, and I got on a new flight (after talking to a very rude lady at customer service), and that flight was delayed because they didn't have any flight attendants for that plane, so they had to wait over an hour until they could get a new flight crew to come. I had an absolutely miserable experience with United for all 4 of my flights with them, and I will never fly with United again."

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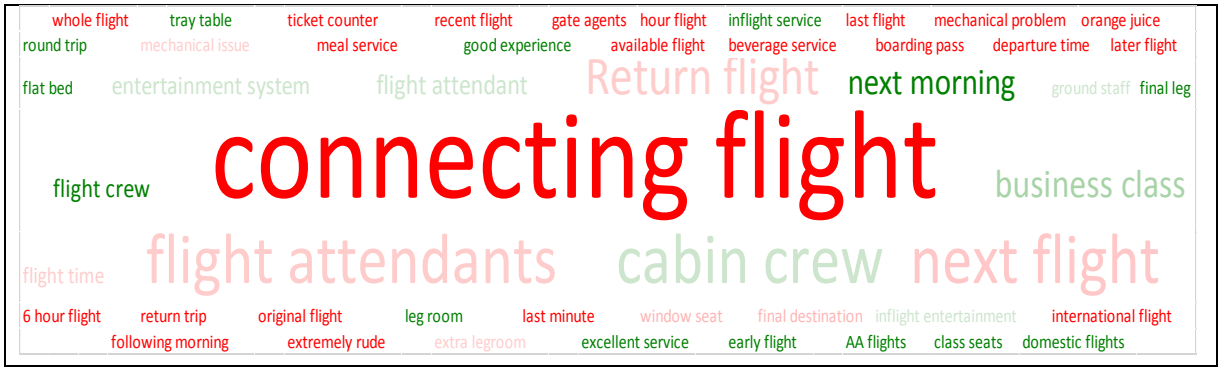

Figure 2 - American Airlines (n=568 reviews)

Connecting flights are again a major issue for American Airline passengers; however this is the most negative sentiment among all airlines as can be seen from its bold color (Figure 2). Here is an example:

> 4-17- 2014: "American Airlines gave away our 3 first class seats on Flight 53 from MIA to DFW on Sunday April 13 despite the fact that we were at the gate 17 minutes before flight time. The agent had already left with the standby passengers. This caused us to

miss our connecting flight to AMA and to have to overnight at DFW. In addition, one of our party had to fly coach even though we purchased a first-class seat. I used to worry that with the merger AA 's customer service would sink to U.S. Airs level. Now I'm afraid the "new American Airlines" will sink to an even lower level. They sent our luggage on to our final destination. I have lifetime Platinum status on AA for having flown over 2.2 million miles with them."

Cabin crew received the highest number of positive sentiments:

1-3-2014: "LHR-DFW-SJO return via JFK. I set out with middling expectations of AA in economy and was pleasantly surprised. New 777 is great seats a little narrow but what can you expect? Flights to and from SJO on old 757s but crew made both flights quite enjoyable. If only JKF immigration would work a little better. Everyone's experiences are always different but on this occasion, AA looked after us nicely."

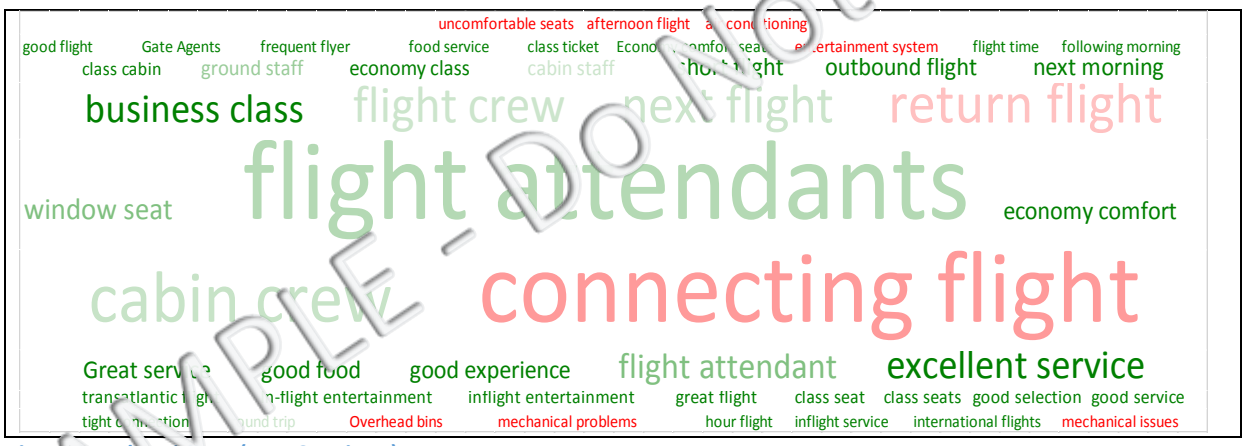

Figure 3 Delta Airlines (n=546 reviews)

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As can be seen in Figure3, connecting flight issues arose with Delta Airlines similar to the previous airlines mentioned:

9-28-2015: "We spent $3,000 on these Delta Air Lines tickets and every flight has been very delayed. One of the delayed flights coming home made us miss our connecting flight and the service person told us it was not their fault (air traffic fault), and told us there was nothing they could do. We finally get booked for another flight 24 hours later after not having our luggage and having to buy a hotel, food, clothes, miss work to now find out they have a broken plane. We have been trying to get home now for almost 3 days. We travel all the time and have never experienced such a terrible travel experience and will never give this airline a penny every again."

8-18-2015: "Flight was delayed, the seats are very uncomfortable to sleep in as the headrest does not stay in place. Staff acted irritated when I asked them about this. The extra legroom seats feel very narrow, and I'm 160 lbs and 5'11. The plane was freezing the entire flight, and the entertainment system was not working for the first 2 hours of the flight. An awful experience for $850."

Excellent service of flight attendants and business class created the most positive sentiments for Delta Airlines:

> 8018-2015: "Flew DL2039, ATL to SEA in economy class on August 4 and DL2327, SEA to ATL in Comfort Plus on August 11. Flight attendant crew on both flights were engaging with the passengers and provided great service. Was able to purchase meals both ways, which were very good. Flights departed and arrived on time. Especially nice was the video on demand with a wide selection of programs to watch. Added cost of Comfort Plus was worth it, with priority boarding, upgraded free snack and free alcoholic beverages if desired."

Figure 4- Spirit Airlines (n=538 reviews)

Missing connections, unacceptable delays, and hidden fees were causes for significant negative sentiments for Spirit Airlines (Figure 4):

> 6-20-2015: "We were delayed leaving Mexico and missed our connector to NY. I am very aware that sometime this stuff happens but they said they couldn't get us out of Florida for 3 days. I booked them through a travel site because of timing and when we tried to get our tickets they charged us an additional $450 for checked luggage and carry-ons. Also charged me to sit next to my children because they don't guarantee seating."

Here are why carry-on fees also receive positive comments for Spirit Airlines:

> 9-21-2015: "Price was unbelievable, Spirit Airlines crew fun and professional and I love that carry-ons cost more than checked baggage. I cannot remember the last time I was on a plane that boarded and deplaned so quickly because there were much fewer carry-ons. It was heavenly. Our one flight was delayed but we got free tickets and food vouchers. We signed up for the credit card with points toward tickets without blackout dates."

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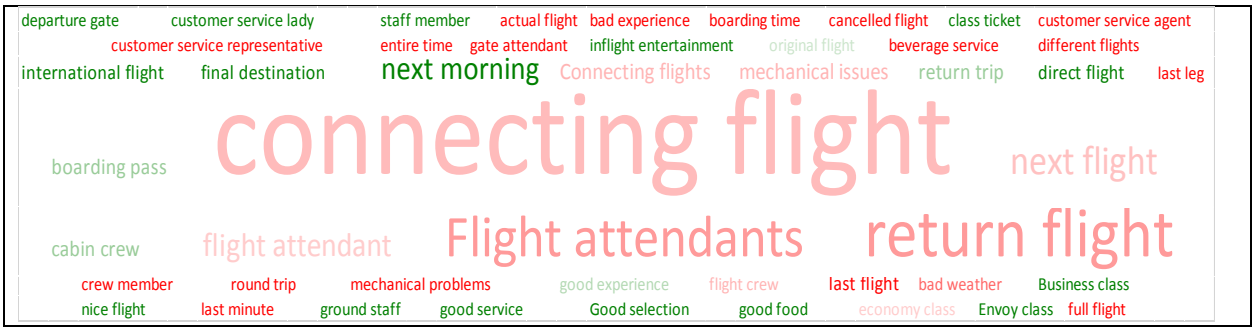

Figure 5- U.S. Airways (n=459 reviews)

However, The U.S. Airways did have similar negative comments about connecting flights and flight attendants. Positive comments did not standout much (Figure 5).

> 1-21-2014: "Took my twin 6 year olds and 2 year old to Disney from Boston with a stop in Charlotte NC. We were delayed by a late plane that then had to be de iced. An hour and 1/2 after our scheduled departure I asked a crew member for some milk for my baby's bottle. The elder of the 2 grouchy crew members said we don't have milk! The 2 year old screamed for most of the flight. We had a connecting flight in Charlotte due to leave 5 mins before our new arrival time. No information was given to anyone. We finally get to our new gate (B8 Charlotte about 7pm on 1/18/14). We were treated like misbehaved school children. They put us in 4 seats that were spread across the plane. I was met with a glare and an attitude. On board was not much better. Service and attitude poor across the board with this airline."

> 5-28-2013: "I had a miserable experience and customer service has been worthless. Our flight was delayed for over 4 hours due to auxiliary power failure. After 4 hours they took off even though nothing was fixed. Dealing with customer service is pointless - they don't know anything and just give you canned response. I will never fly them again."

> 10-5-2013: "US Airways has an unfair baggage policy. In the interest of efficiency & courtesy I checked by bag only to hear an announcement at the gate that the flight was full and bags would be checked for free! US Airways knew the flight was full at the time I checked my bag and should have told me instead they charged me $50 (round trip)."

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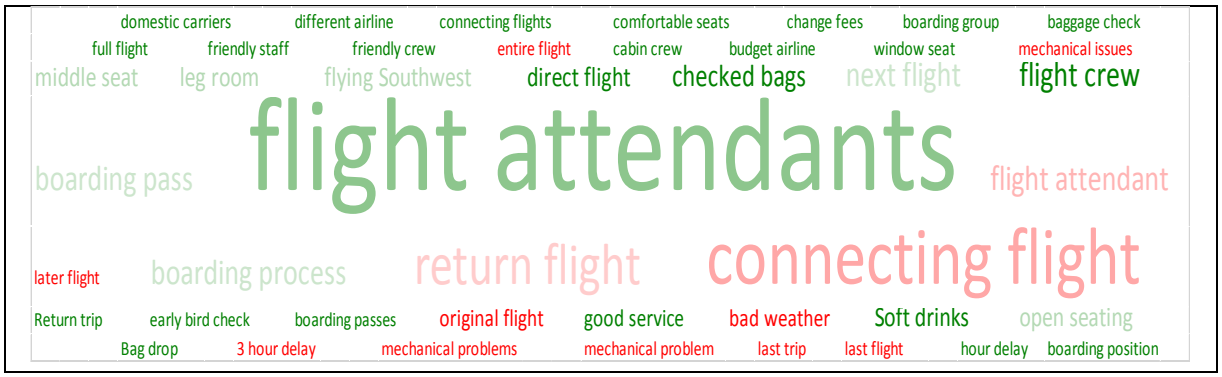

Figure 6- Southwest Airlines (n=411 reviews)

Connecting flights were also an issue for Southwest (Figure 6).

9-2-2013: "Horrible experience coming home from Disneyworld in Orlando on Saturday August 31. The Southwest flight from Orlando to Chicago missed the connecting flight to Philadelphia by about 10 minutes. We were put on standby for the next flight to Philadelphia 4 hours later but they did not have 4 tickets for my family for that flight (but they sent our checked-in luggage back to Philadelphia on that flight). We were then told at the MDW Southwest desk that there was no flight to Philadelphia for another 3 days but that Southwest was not offering us any overnight lodging or meal vouchers. We were incredulous. At least a dozen other Philadelphians were stranded. We finally took city transit to Union Station and grabbed an Amtrak to NYC then were back home in Philadelphia Sunday night."

Positive comments stood out the most for Southwest Airlines compared to other leading airlines. More specifically about flight attendants and crew.

5-16-2014: "I have flown Southwest several times. This is my first time to write a review. We flew from Little Rock to Las Vegas. On the way back we were late to board and missed the flight. They put our luggage on another plane and couldn't guarantee when they would get to Little Rock. They put us on a flight to Chicago a little later every seat was full so we were lucky to get on. From Chicago we got a plane to Little Rock again the seats were full so we were lucky again. We were about five hours or so later than if we hadn't missed our original flight. All I can say the Southwest people were very nice about trying to help make the connections and when we got to Little Rock our luggage came in about forty-five minutes later. All I can say about Southwest is good. The flight attendants were very nice too all of them. When we came into Las Vegas the plane went over the Hoover Dam with a very good view I made a comment about the view when I got off and told the pilot I was hoping for a circle around the dam he told me they frowned on that since it would take about another thousand bucks. A little humor thrown in. When I fly it will be with Southwest I have never had any trouble."

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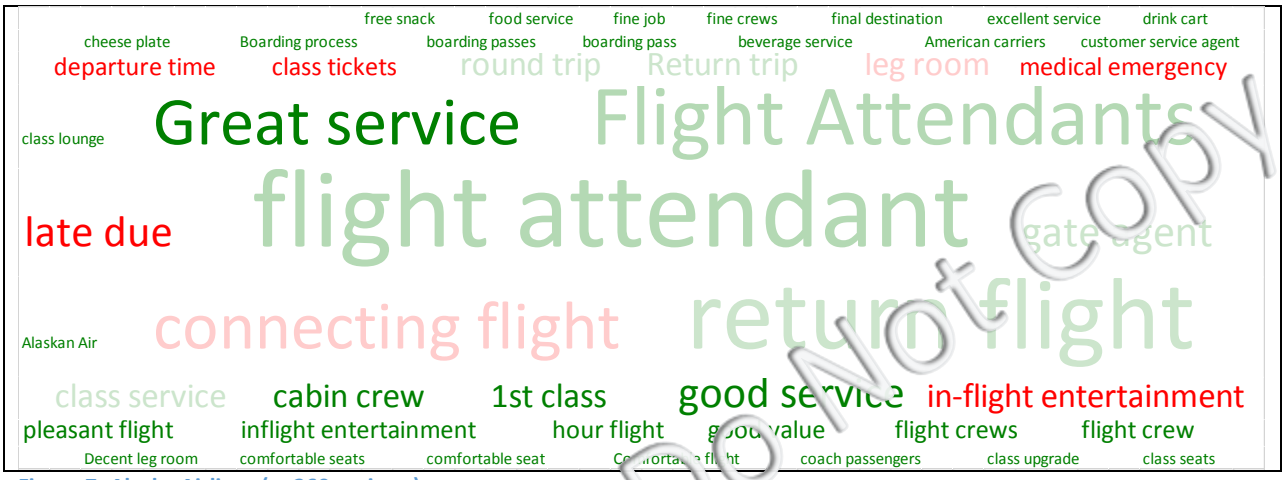

Figure 7- Alaska Airlines (n=260 reviews)

Connecting flights and in-flight entertainment reflected the majority of negative sentiments for Alaska Airlines (Figure 7).

> 9-16- 2015: "This Alaska Airlines trip has been the worst travel experience by far. I was stuck at the airport for 9 hours because they kept pushing the flight back every hour until they finally cancelled it and reconnected me through a Delta Air Lines flight that was 3 hours later. Had to spend the night in San Diego and the next day I was optimistic that I would get to my final destination without a problem but of course the second I got there they flight was delayed due to mechanical issues. Very annoying and took up a lot of my vacation time."

However, flight attendance and great service were the most frequently mentioned positives. As the theme picture shows positives outweigh negatives for this airline.

> 10-6-2015: "This was my first time on Alaska Airlines and I have to say it was the most amazing experience on an airplane. The amenities, the food, the airline stewards, the pilots - all of it was perfect! We were comfortable, attended to, acknowledged, and treated extremely kindly."

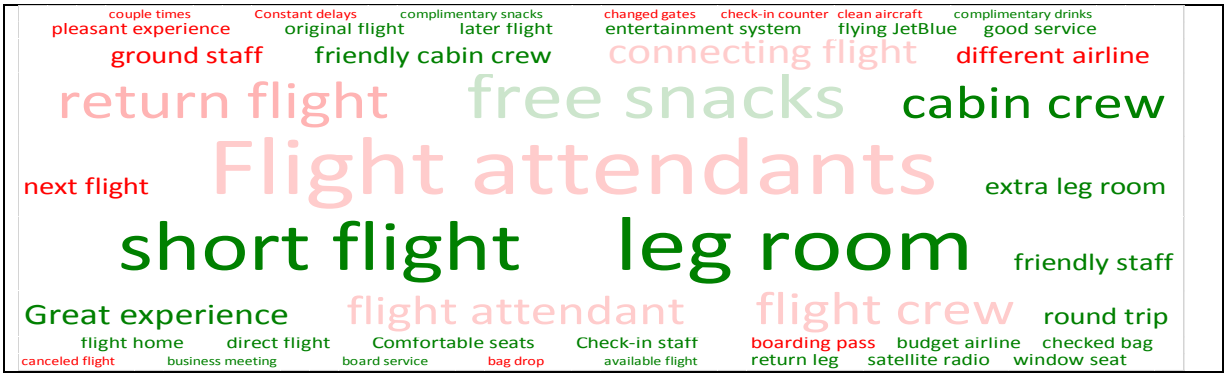

Figure 8- JetBlue Airlines (n=258 reviews)

JetBlue Airlines received mostly negative comments about flight attendants and return flight difficulties. Legroom is a big positive for this airline (Figure 8).

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7-2-2010: “CLT-JFK. Getting through CLT check in/security was easy the one free bag was a nice touch as well. Boarding on time from CLT's new D terminal which offers good food and plentiful seating. Boarding on time and welcomed by a somewhat friendly female flight attendant who just continued to say Hi Hi Hi. No welcome aboard. Plenty of legroom and IFE was already turned on. Smooth flight chips and a drink were for 1.5 hour flight. The same female flight attendant was rude in asking an unaccompanied minor to "Turn down your headphones. We can hear them in the front." T5 at JFK is amazing. Overall great flight much better value than US and DL who fly this route.”

7-3-2012: “I was traveling with my family on a what was supposed to be a short flight (from San Francisco to Long beach). After everyone boarded the flight captain announced that navigation system was broken. He said it will take 15 to 20 min to fix it. After 2.5 hours problem is not fixed. We were still on the flight they didn't even let us wait at the gate. After 5 hours they provided the option to get on other flight after 5 hours. But we had to go to the ticketing counter to collect the luggage. So we missed new flight plus the old flight (which got fixed). After 6.30 hours we are still in airport. At that point I had to call it quits and buy tickets from another airline. Terrible customer service plus we don't get any compensation for the delay (refunded ticket is only compensation.”

7-21-2010: “A fantastic flight Tampa to Boston. Our trip home was also smooth and fun for the kids and parents. Flight attendants professional and nice and the pilots informative.”

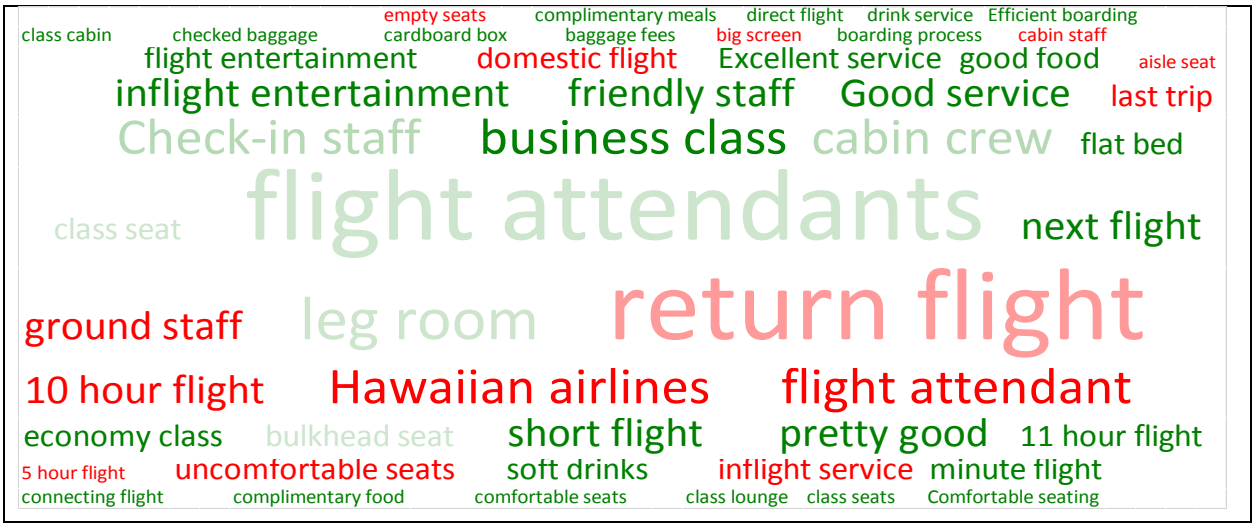

Figure 9 - Hawaiian Airlines (n=246 reviews)

In terms of Hawaiian Airlines, flight attendants, friendly check-in staff and leg room had the most theme counts for neutral comments (Figure 9).

5-19-2011: “Honolulu-Manila Business Class. Very disappointed to note that Hawaiian Airlines new upgraded inflight service is a real downgrade. They've ditched the tapas style menu for a slow food service. In addition they are no longer catered by Chef Gannon and for the first time in years I was served bad food on Hawaiian Airlines. The

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flight attendants were wonderful but clearly embarrassed by the downgrade. In addition the new printed menus are tacky. Also time to retire the 767. Just not up to standard for a 10 hour plus flight!"

8-27-2011: "Sydney to Honolulu return. I have really only one complaint because Australia and Perth in particular is so far away the time spent sitting in one spot for over 12-15 hrs is hard enough without the seating and general facilities being less than user friendly. Return flight from Honolulu to Sydney was very cramped (leg room) and there was a lot less overhead baggage space than the flight to Honolulu. This made the experience more uncomfortable than it could have been."

Figure 10- SkyWest Airlines (n=35 reviews)

Data is limited for SkyWest, but mostly favorable comments were regarding the crew (Figure10).

1-9-2004: "The Flight Attendants were very professional efficient warm always smiling and extremely attentive. I felt like a guest rather than just one of their customers. I highly recommend flying with them."

1-5- 2015: "LAX to SMF on 12-10-14. Small regional jet economy but in an exit row with more than adequate legroom. Uneventful flight decent airline would fly Skywest again."

8-15-2014: "SkyWest does not honor American Express/Delta free baggage deals. They are the only carrier in and out of some destinations like West Yellowstone. As a result even if you get your free checked bag from your original departure location/Delta flight you won't get it on the way home. The SkyWest ticket counter employee at West Yellowstone actually thought it was funny. She laughed at me when I complained. This was a "Delta" flight operated by SkyWest."

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Conclusion

Sentiment analysis helped to reveal passenger experiences with the top 10 airlines obtained from Skytrax reviews. One observation is that passengers have increased the number of reviews they posted in the last two years of database. In addition, the level of elaboration was very high as can be seen from the quotes. These people are open to communication and use of social media word of mouth. Unfortunately, we do not have any data describing their demographics such as age, ethnic origin, education, and occupation unless they mentioned it in the quote. Another observation is that passengers mention multiple attributes at the same time. They gave positive feedback for some of them, neutral or negative for others in their next sentences. This characteristic of data made qualitative analysis rich in interpretation.

The *Semantria* software helped identify emerging themes out of 3,912 respondents' reviews. One limitation of the software is its difficulty to identify sarcasm. Researchers reviewed quotes for such sentiments. Results indicated that key issues were related to connecting flights, flight attendants, checked bags, mechanical problems, and in-flight entertainment in long distance flights, ground staff, and customer service. All these are in the top categories of 18-most important attributes. In addition, customer and airline employee has co-create all of these attributes. Interestingly, competitive airfare was not appeared to be a significant negative. Passengers complained about airfare when they thought that the value they got is inferior to the ticket price they paid. Even though airlines declared that business, economy and first classes were different segments, and they charged different prices, the value they provided for them were not very different that creates dissatisfaction and resentment.

The most positive sentiments were directed towards flight attendants/cabin crew and how they treated passengers, especially for Delta, Southwest, Alaska, and SkyWest airlines. What the passenger comments were about was actually the successes or failures of core services. Very little comments were about complementary services such as snacks or pillow. Customer-employee collaboration in co-creation of the airline transportation service is at the heart of the success of airline companies. Reducing labor cost by reducing training and number of employees may be detrimental to the core service in the long run. As long as the customers are clear about processes, procedures, and limits of the service, they seem to be willing to contribute to the creation of the service. Airlines should carefully analyze their offerings versus customer expectations; and should not be afraid of empowering their cabin and ground crews.

Sometimes passengers might have no alternative carriers in some parts of their flight itinerary, so they have to fly with an airline that they did not like. This does not mean that they are loyal to that airline, as indicated by the recent survey (2017b). They were waiting for another carrier to open up a leg in that destination to switch their brand causing the former airline suddenly operating a very unprofitable flight.

This research revealed multiple future research avenues. First, affective bases for expectations in airline-customer relationships can be investigated in detail. There are gaps in the literature of airline services in this area. Customer value perceptions of passengers and expectations is another research topic. Co-creation of value in airline services topic bring in the question of how attribution and quality perceptions change over time. How level of customer engagement influence quality perceptions and customer attribution in the case of service failures and recoveries. Over another research avenue may be related to the anticipation concept and passenger perceptions of flight experiences. Can airlines engage their customers in innovative co-created service designs so that passengers anticipate a great flight experience?

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References:

Business Line (2016), "In 2017, Global Airline Industry Sees Safe Soft Landing in Profitable Territory,", December 9, Retrieved from www.lexisnexis.com/hottopics/lnacademic, Accessed on June 20, 2017.

Chicago Daily Herald (2017a), "United Dragging Report: 'Our Review Shows That Many Things Went Wrong That Day,", April 28, www.lexisnexis.com/hottopics/lnacademic, Accessed on June 20, 2017.

afp - relaxnews (2017b), "Deep Mistrust in Airline Industry Following United Incident: Survey," (English International Version), May 19, www.lexisnexis.com/hottopics/lnacademic, Accessed on June 20, 2017.

St. Louis Post-Dispatch (Missouri) (2017c), "Letters to the Editor", April 15, www.lexisnexis.com/hottopics/lnacademic, Accessed on June 20, 2017.

Anitsal, I. and Paige, R.C. (2006), An Exploratory Study on Consumer Perceptions of Service Quality in Technology-Based Self-Service, *Services Marketing Quarterly*, 27(4), p.53-67.

Babbar, S. and Koufteros, X. (2008), The Human Element in Airline Service Quality: Contact Personnel and the Customer, *International Journal of Operations & Production Management*, 28, (9), p.804-830.

Badra, D. (2009), Race to the Bottom or Swimming Upstream: Performance Analysis of US Airlines, *Journal of Air Transport Management*,15, (5), p.227-235.

Dabholkar, P. A. (1990), How To Improve Perceived Service Quality By Increasing Customer Participation, *Developments In Marketing Science*, B. J. Dunlap (Ed.), XIII, *Academy of Marketing Science*, p.483-487.

datapigtechnologies.com (2015), http://datapigtechnologies.com/blog/index.php/quantifying-subjective-text-with-sentiment-analysis/, Accessed on November 1, 2015.

FAA (2017), "Federal Aviation Administration's Air Traffic by the Numbers," http://www.transtats.bts.gov/airports.asp, Accessed on June 20, 2017.

Glusac, E. (2017), In the Air, That Uneasy Feeling of Us vs. Them, *The New York Times*, April 12, https;//www.nytimes.com/2017/04/12/travel/in-the-air-that-uneasy-feeling-of-us-vs-them.html, Accessed on June 20, 2017.

Gould, S. and Muoio, D. (2017), United is Under Fire for Denying Passengers – But Its Competitors Are Even Worse, *Business Insider*, April 14, https://flipboard.com, Accessed on June 23, 2017.

SAMPLE - DO NOT COPY

Hannigan, T.J., Hamilton III, R.D. and Mudambi, R. (2015), Competition and Competitiveness in the US Airline Industry, *Competitiveness Review*, 25, (2), p.134-155.

Kinard, B. (2015), Sentiment Data Analysis, Atlantic Marketing Association Workshop Video, published on September 25, 2015, https://www.youtube.com/watch?v=xjoh2feGn0s, Accessed on October 20, 2015.

Manjoo, F. (April 13, 2017), "Tech Helps Airlines, but Fails Passengers. *The New York Times*, www.lexisnexis.com/hottopics/lnacademic, Accessed on June 20, 2017.

Min, H. and Min, H. (2015) Benchmarking the Service Quality of Airlines in the United States: An Exploratory Analysis, *Benchmarking: An International Journal*, 22, (5), p.734-751.

Ozturk Birim, S.; Anitsal, I and Anıtsal, M.M. (2016), A Model of Business Performance in the Us Airline Industry: How Customer Complaints Predict the Performance?, *Business Studies Journal*, 8, (2), ISSN 1944-6578, p.96-111.

Parasuraman, A. (2002), Service Quality and Productivity: A Synergistic Perspective, *Managing Service Quality*, 12 (1), 6-9.

Semantria (2015), https://semantria.com/excel, Accessed on November 1, 2015.

Sentiment Extraction: Measuring the Emotional Tone of Content (2017) Whitepaper, Lexalytics, Boston, MA. www.lexalytics.com

Skytrax (2015), http://www.airlinequality.com/, Accessed on November 2, 2015.

US Department of Transportation (2015), http://www.rita.dot.gov/bts/press_releases/bts030_15, Bureau of Transportation Statistics, Form 41: Schedule P1.2, Accessed on 10-22-2015.

Yahoo Finance (2017), https://finance.yahoo.com/, Accessed on June 24, 2017.

Web Scraper (2015), http://webscraper.io/, Accessed on November 1, 2015.

Wu, W.Y. and Liao, Y.K. (2014) A Balanced Scorecard Envelopment Approach to Assess Airlines' Performance, *Industrial management and Data Systems*, 114, (1), p.123-143.

Zeithaml, V.A., Parasuraman A., and Berry L. L. (1990), *Delivering Quality Service: Balancing Customer Perceptions and Expectations*, The Free Press, New York.

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Keywords: *Airline industry, sentiment analysis, US based airline passenger perceptions*

Relevance to Marketing Educators, Researchers and Practitioners:

This paper investigated the current state of airline passengers' perceptions of US based airline performances. Sentiment analysis method and the results of this research may help practitioners to construct strategies to ensure customer satisfaction and participation. They also help researchers to investigate antecedents and consequences of these perceptions.

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TRACK: Consumer Behavior / Marketing Research

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