

Are low-cost carrier passengers less likely to complain about service quality?

Michael D. Wittman^{a,*}

^a*Massachusetts Institute of Technology, International Center for Air Transportation
77 Massachusetts Avenue, Building 35-217, Cambridge, MA 02139*

Abstract

Complaints by airline passengers to the U.S. Department of Transportation (DOT) are often used in academic research and in the media as a proxy for the quality of commercial air service in the United States. In this paper, we test whether passengers of network carriers are more likely to make a complaint to the DOT about service quality failures than passengers of low-cost carriers. Through a fixed-effects regression, we find that passengers of low-cost carriers like Southwest Airlines are less likely to complain about service quality than passengers of network carriers like American Airlines, given the same levels of service quality and controlling for yearly fixed effects. This behavior could be explained by price-based expectations, lack of information about how to complain to the DOT, or qualitative differences in front-line customer service quality between airlines.

Keywords: service quality, consumer complaints, low-cost carriers, Air Travel Consumer Report

1. Introduction

In service industries, customers can choose to register their dissatisfaction with the service they receive by making a complaint to the service provider. Customers can also decide to complain to an overarching regulatory agency in an attempt to bring light to a particularly egregious case of service failure. In the airline industry in the United States, dissatisfied passengers can choose to complain directly to the airline or to the U.S. Department of Transportation (DOT)'s Airline Consumer Protection Division, which solicits complaints on behalf of the federal government. The DOT publishes statistical tabulations of the complaints that they receive in the Air Travel Consumer Report (ATCR), a regularly issued periodical (U.S. Department of Transportation, 2013).

Since airline complaint data is readily available through the ATCR, it is a popular target for analysis in academic literature and the news media. The Airline Quality Report (Bowen and Headley, 2013) is an annual review of airline service quality that has been published using ATCR service quality and complaint data since 1991. Other researchers (Gursoy et al., 2005; Sim et al., 2006; Rhoads and Waguespack, 2008; Sim et al., 2010) have also used ATCR complaint data in analyses of airline service quality. In the popular media, complaint data is often used in news reports on airline customer service (Ahlers, 2012).

Each of these applications of consumer complaint data implicitly assumes that there is a direct correlation between consumer complaints to the U.S. DOT and actual measures of service quality. In other words, past analyses of consumer complaints assume that complaints will rise as service quality worsens. Dresner and Xu (1995) find such a relationship between complaints and service quality, and Steven et al. (2012) have suggested that the relationship is nonlinear.

In addition, Forbes (2008) finds a significant correlation between consumer complaints and actual service quality in an analysis of ATCR data between 1988 and 2000. Forbes also shows that expectations of service quality are a significant predictor of complaint rates, and that passengers are more likely to complain if actual

*Corresponding author. Tel: +1 617 253 1820
Email address: wittman@mit.edu (Michael D. Wittman)

service quality falls below their expectations. Yet Forbes' analysis examines only network carriers, stating that "expectations of service quality may...be quite different for" passengers of low-cost carriers (LCCs). This paper aims to test whether passengers of low-cost carriers do indeed have different propensities to complain about service quality than network carrier passengers.

In this paper, we examine the relationship between consumer complaints and actual service quality through a fixed-effects regression analysis of ATCR data from 2002-2012. We find that consumer complaint rates decrease with improvements in several metrics of airline performance, including on-time performance, mishandled baggage, and involuntary denied boardings, controlling for time and airline-specific fixed effects. More importantly, however, the fixed-effects regressions reveal significant differences in complaint rates between various carriers. Specifically, passengers of several low-cost carriers (LCCs), particularly Southwest Airlines, are less likely to complain about service quality failures than passengers of network legacy carriers, controlling for yearly variations in complaints.

This difference in propensity to complain across passengers of various airlines may be a result of a number of factors, including price-based expectations, significant qualitative differences in service between the airlines, or a lack of information on the part of LCC passengers about the option to complain to the DOT. An analysis of consumer complaints made directly to the airlines would help evaluate which, if any, of these explanations could be causing the variances in the airline fixed effects. However, such an analysis would be challenging to complete due to the proprietary nature of airline-specific complaints.

The remainder of this paper is structured as follows: Section 2 describes the data from the Air Travel Consumer Report (ATCR) used in this report and discusses some general trends in complaints and service quality in the U.S. airline industry from 2002-2012. Section 3 describes the methodology of the fixed-effects regression and presents the results. Section 4 discusses the results of the regression models. A brief conclusion closes the paper and suggests some avenues for future research.

2. Data and General Trends

2.1. Air Travel Consumer Report

The Air Travel Consumer Report (ATCR) is a monthly periodical published by the U.S. Department of Transportation's Aviation Consumer Protection Division. The ATCR contains various statistics and data about airline service quality and consumer complaints for airlines that captured at least 1% of the total domestic passenger-service revenues in the given time period. In February of each year, summary statistics are given for consumer complaints and service quality performance of airlines over the previous year.

On-time performance data, which is collected by the Bureau of Transportation Statistics (BTS), is included in the ATCR, as well as information about cancelled, delayed, and chronically delayed flights. Airlines are also required to submit reports to the DOT each month regarding the number of bags that were reported as mishandled in that month, as well as the number of passengers that were voluntary or involuntary denied boarding in the month. A passenger with a ticketed and confirmed reservation can be denied boarding if a flight is oversold; some passengers voluntarily accept compensation in exchange for taking a later flight, while in some instances passengers may be involuntarily denied boarding if no volunteers are found on an oversold flight. Statistics on both of these types of denied boardings are presented in the ATCR.

The ATCR also summarizes consumer complaints that are made directly to the DOT regarding both domestic and international airlines. Passengers can submit complaints to the DOT in person, in writing, by phone, on the DOT website, or by using a DOT mobile application. The DOT sorts incoming complaints by assigning the complaint into one of several categories and by marking which airline is the subject of the complaint. Complaints that are made to the U.S. Department of Homeland Security (DHS) regarding the Transportation Security Administration (TSA) are also provided in the report. A list of categories into which incoming consumer complaints are sorted in the ATCR is shown in Table 1.

The Air Travel Consumer Report has the desirable quality of containing data on both actual and perceived levels of service quality. For instance, using the same data source, we can easily compare the rates at which passengers make flight problem complaints (i.e., passengers' *perceptions* of on-time performance and

Flight Problems	Customer Service
Oversales	Disability
Reservations, Ticketing & Boarding	Advertising
Fares	Discrimination
Refunds	Animals
Baggage	Other

Table 1: Complaint Categories in the Air Travel Consumer Report

delays/cancellations) to the actual levels of airline on-time performance and delays over the same time period. Similarly, we can also compare oversales complaints to voluntary and involuntary denied boardings, and baggage complaints to actual mishandled bag reports. In this way, the relationships between actual and perceived levels of service quality can be examined.

2.2. Discussion of General Trends in Complaints and Service Quality

Figure 1 shows the annual trend in U.S. airline consumer complaints submitted to the Department of Transportation from 1990-2012. The absolute numbers of complaints are plotted in the bars on the left-hand axis, and the complaint rate per 100,000 passengers is shown in the line on the right-hand axis. The total number of complaints in 1996 was not available due to a gap in microfilm publication of ATCR back issues before the reports were published online on the DOT website.

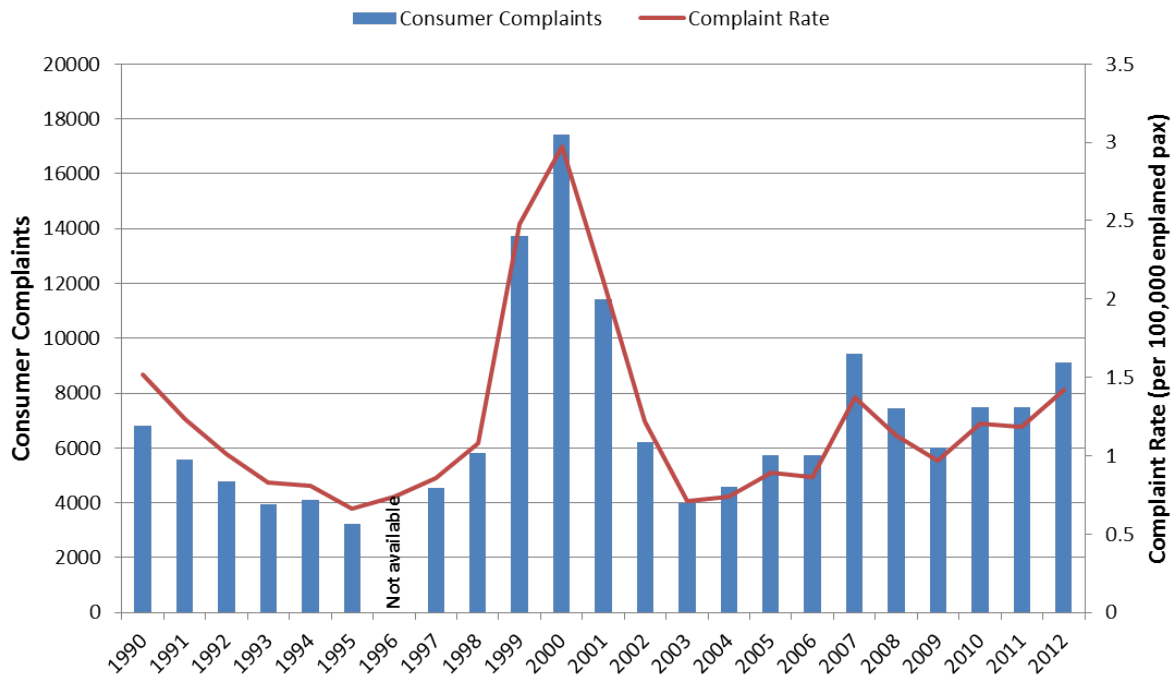


Figure 1: Total Consumer Complaints and Complaint Rates 1990-2012

As Figure 1 shows, the U.S. airline DOT complaint rate varied between roughly 0.8 and 3.0 complaints per 100,000 enplaned passengers. The complaint rate spiked over the period from 1999-2001, fell following the terrorist attacks of September 11, 2001 and, following a brief spike in 2007, remained below 1.5 complaints

per 100,000 enplaned passengers until 2012. The spikes in complaint rates coincide with years in which the U.S. air transportation network was experiencing congestion and high delays. For instance, the spike in complaints in 2007 can be associated with a heavily congested year in the U.S. air transportation system in which many flights were delayed or cancelled. Following 2007, complaint rates fell as U.S. airlines removed capacity from the system as a result of the global economic downturn and higher and more volatile fuel prices (Wittman and Swelbar, 2013).

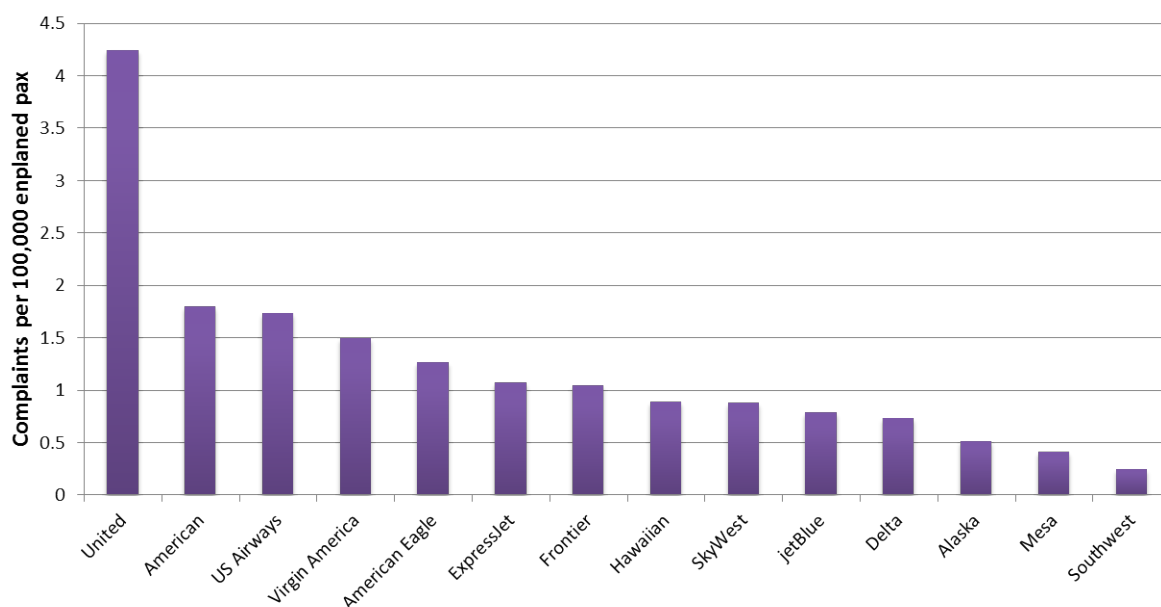


Figure 2: Consumer Complaint Rates by Airline (2012)

Airline-specific complaint rates for the year 2012 are shown in Figure 2. 2012 was not a typical year for the airline industry; the merger of United Airlines and Continental Airlines was completed in this year, and problems with integrating the two airlines’ reservations systems created some periods of widespread delays or cancellations for United flights. As such, United’s high complaint rate in 2012 should be seen as an outlier.

Note, however, that network legacy carriers United Airlines, US Airways, and American Airlines, had the highest complaint rates in 2012. This is a typical pattern that can be seen in most years of complaint data—network carriers, with the exception of Delta Air Lines, tend to have higher levels of complaint rates than low-cost carriers or regional carriers. Delta Air Lines tends to have complaint rates lower than the category average.

Differences in complaint rates between network carriers and low-cost carriers exist even if the two types of airlines had similar patterns of actual service quality. For instance, Figure 3 shows the number of complaints about mishandled baggage that the DOT received regarding United Airlines, a network carrier, and Southwest Airlines, a low-cost carrier, from 2000-2012. Note that United received more complaints per enplaned passenger about mishandled baggage in each year, and in some years United’s complaint rate was up to ten times higher than Southwest’s.

However, when we examine the rates at which these airlines were mishandling bags, we can see that Southwest Airlines and United Airlines had relatively similar levels of service quality. In some years, Southwest actually mishandled more bags per passenger than United, but received many fewer complaints. The same pattern holds if oversales complaints are compared to involuntary denied boardings, and if flight problem complaints are compared to on-time percentages or cancellation rates. In each case, United Airlines’ complaint rates were higher than Southwest’s, even though the two airlines’ levels of actual service quality

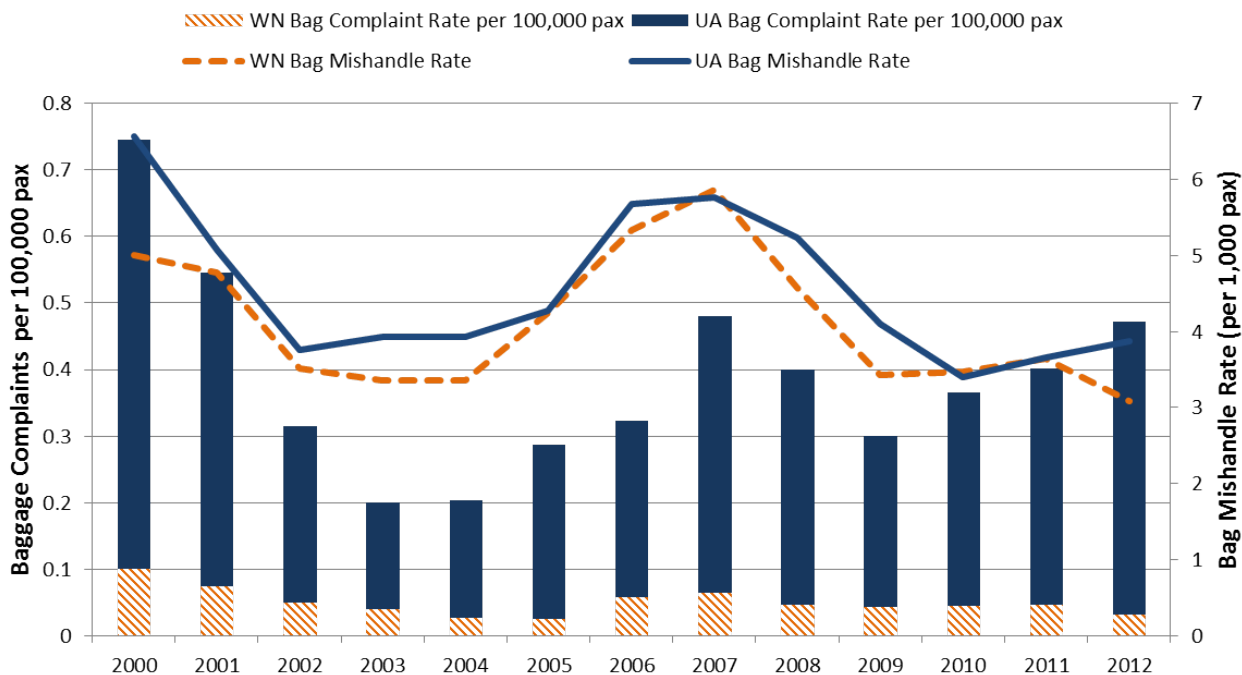


Figure 3: Mishandled Bag Rate and Baggage Complaints: Southwest Airlines (WN) and United Airlines (UA)

were similar. We will examine this pattern of higher network carrier complaint rates in detail in the next section.

3. Methodology

3.1. Panel Data

Using 11 years of yearly ATCR data from 2002 to 2012, a set of panel data was constructed for 13 U.S. airlines. The airlines in the data set are shown in Table 2. Since some airlines merged, entered the market, or went through bankruptcy during the study period, data for all airlines were not available in each year. In all, 124 observations of yearly complaint rates and service quality rates were included in the panel.

AirTran Airways	Hawaiian Airlines
Alaska Airlines	JetBlue Airways
American Airlines	Northwest Airlines
America West Airlines	Southwest Airlines
Continental Airlines	United Airlines
Delta Air Lines	US Airways
Frontier Airlines	

Table 2: Airlines included in panel data

Table 3 summarizes the average complaint rates and relevant service quality metrics for each of the airlines across the 11 years of the sample. To match the data formatting in the ATCR, complaint rates

are given per 100,000 enplaned passengers, involuntary denied boarding (DB) rates are given per 10,000 enplaned passengers, and mishandled baggage rates are given per 1,000 enplaned passengers.

Note that the airline with the worst average on-time performance from 2002-2012 was JetBlue Airways, a low-cost carrier. JetBlue’s average on-time rate was 75.9% over that period, while Hawaiian Airlines, which had the highest on-time performance rate, operated 93.0% of its flights on time. Geographic differences certainly contribute to this gap in on-time performance—JetBlue is hubbed at John F. Kennedy International Airport (JFK) in the busy and weather-prone northeastern United States, whereas Hawaiian enjoys better weather and less congestion for its inter-island flights in the state of Hawaii.

It is also remarkable from the summary statistics how few complaints are made to the DOT regarding Southwest Airlines. In each of the complaint categories shown in Table 3, Southwest receives significantly fewer complaints than its peers. Specifically, complaints about flight problems—the most common subject of consumer complaints—were remarkably low at Southwest; the airline received just 4 complaints per 10 million passengers each year on average from 2002-2012. United Airlines’ flight problem complaint rate was twelve times higher on average over the same period.

Airline	% On-time Flights	Flight Problem Complaint Rate	Mishandled Bag Rate	Baggage Complaint Rate	Involuntary DB Rate	Oversales Complaint Rate
AirTran	78.53	0.26	2.73	0.16	0.07	0.48
Alaska	79.58	0.16	3.93	0.11	0.02	1.10
American	76.79	0.43	4.84	0.30	0.04	0.67
America West	80.45	0.35	3.79	0.16	0.08	0.59
Continental	78.03	0.30	3.67	0.21	0.06	1.51
Delta	79.02	0.35	4.84	0.30	0.06	1.18
Frontier	79.16	0.27	3.62	0.12	0.06	1.18
Hawaiian	92.99	0.11	2.77	0.11	0.01	0.11
JetBlue	75.90	0.25	3.22	0.10	0.01	0.01
Northwest	77.40	0.29	4.10	0.20	0.06	0.75
Southwest	81.58	0.04	3.99	0.04	0.01	0.99
United	78.56	0.48	4.33	0.33	0.08	0.92
US Airways	79.44	0.45	4.82	0.31	0.08	0.93

Note: Complaint rates per 100,000 pax, mishandled bag rates per 1,000 pax, involuntary DB rate per 10,000 pax

Table 3: Summary Statistics: Average of Performance Indicators 2002-2012

3.2. Fixed-effects regressions

We wish to examine more closely whether consumer complaints are reflective of actual changes in service quality. Regression analysis provides one straightforward way to examine these correlations. However, as the previous sections described, there appears to be a significant difference between complaint rates at various carriers. That is, passengers of some carriers may be more likely to complain than passengers of other carriers due to unobservable fixed-effects of the airline or of the airline’s passengers themselves. Therefore, it is important to control for these differences between carriers and their passengers by introducing fixed-effect dummy variables in the regressions.

Consumer complaints to the DOT do not follow a cyclical pattern and are often related to one-time large scale events of service quality. For instance, the reservations problems that resulted from the merging of United Airlines and Continental Airlines’ reservation systems following the merger of those two airlines caused a spike in consumer complaints, as did the abrupt shutdown of Direct Air, a small regional carrier, that left passengers stranded with tickets that could not be refunded or exchanged. Due to the variances between complaints issued in individual years, any regression model should control for time-specific fixed effects. The coefficients of these fixed-effect variables will also help us analyze whether customers are more or less likely to complain about a service quality failure over time.

The equation used for the regression analyses in the following sections is shown in Equation 1.

$$Y_{it} = \alpha + \beta X_{it} + \gamma \theta_i + \delta T_t + \epsilon_{it} \quad (1)$$

In Equation 1, the dependent variable Y_{it} is the relevant complaint rate per 100,000 enplaned passengers for airline i in year t . We will perform regression analyses using three different complaint rates: flight problems, oversales, and mishandled baggage. X_{it} is the associated measure of *actual* service quality for airline i in year t . For instance, if the dependent variable Y_{it} was the flight problem complaint rate, the independent service quality variable X_{it} would be the percentage of on-time flights. θ_i and T_t are vectors of dummy variables for airlines and years, respectively. ϵ_{it} is the error term.

Coefficients were estimated using ordinary least-squares (OLS) regression techniques. Adjusted- R^2 measures of fit were strong, ranging between 0.529 and 0.749 in the four models. Coefficients in the regressions are presented in the next section with standard errors in parentheses.

4. Results

4.1. Flight problem complaints and on-time performance

Table 4 presents the results of regressing flight problem complaint rates on on-time performance, controlling for time and airline fixed effects. Note that dummy variables for American Airlines and for the year 2012 were omitted from the regression to avoid multicollinearity in the regressions; hence, the “base” case of the regression should be taken to be an American Airlines passenger flying in the year 2012.

Variable	Coefficient	Std. Error	Significance
% of On-time Flights	-0.028	(0.004)	***
Year 2011	-0.039	(0.056)	
Year 2010	-0.013	(0.055)	
Year 2009	-0.199	(0.056)	***
Year 2008	-0.174	(0.060)	**
Year 2007	-0.128	(0.064)	*
Year 2006	-0.323	(0.059)	***
Year 2005	-0.322	(0.060)	***
Year 2004	-0.318	(0.057)	***
Year 2003	-0.235	(0.056)	***
Year 2002	-0.117	(0.060)	
AirTran	-0.120	(0.056)	*
Alaska	-0.195	(0.055)	***
America West	0.097	(0.076)	
Continental	-0.080	(0.056)	
Delta	-0.025	(0.055)	
Frontier	-0.139	(0.063)	*
Hawaiian	0.131	(0.089)	
JetBlue	-0.205	(0.055)	***
Northwest	-0.069	(0.059)	
Southwest	-0.258	(0.057)	***
United	0.101	(0.054)	
US Airways	0.096	(0.055)	

N = 124, **Adjusted R^2** = 0.6649

Note: American Airlines and Year 2012 omitted

Coefficients are presented with standard errors in parentheses.

* = 5% significance, ** = 1% significance, *** = 0.1% significance

Table 4: Regression Results: Flight Problem Complaint Rates on On-time Percentage

As expected, the coefficient for on-time flight percentage was negative and significant at the 0.1% level. This suggests that a one-percent increase in on-time performance is associated with a reduction in the flight

problem complaint rate of 0.028 complaints per 100,000 passengers, controlling for time and airline fixed-effects. Given the logistical challenges in improving on-time performance by even one percentage point, the improvement in flight problem complaint rates associated with such a decline may be unlikely to justify alone the cost of improving on-time performance.

Note also that the signs of the fixed-effect coefficients for JetBlue Airways and Southwest Airlines, both of which are typically classified as low-cost carriers, are both negative and significant at the 0.1% level. The coefficients of AirTran Airlines and Frontier Airlines, two other low cost carriers, are negative and significant at the 5% level. This suggests that passengers of these carriers are significantly less likely to file a flight problem complaint with the U.S. DOT than are passengers of other, network carriers like American Airlines, United Airlines, and US Airways. Alaska Airlines customers are also significantly less likely to file flight problem complaints to the DOT than network carrier passengers, controlling for service quality and time.

4.2. Baggage complaints and mishandled bag rates

Variable	Coefficient	Std. Error	Significance
Mishandled Bag Rate	0.064	(0.008)	***
Year 2011	-0.027	(0.028)	
Year 2010	-0.013	(0.028)	
Year 2009	-0.040	(0.027)	
Year 2008	-0.097	(0.031)	**
Year 2007	-0.135	(0.036)	***
Year 2006	-0.178	(0.036)	***
Year 2005	-0.121	(0.034)	***
Year 2004	-0.117	(0.029)	***
Year 2003	-0.121	(0.029)	***
Year 2002	-0.085	(0.030)	**
AirTran	-0.011	(0.033)	
Alaska	-0.132	(0.028)	***
America West	-0.046	(0.038)	
Continental	-0.013	(0.029)	
Delta	0.005	(0.027)	
Frontier	-0.125	(0.032)	***
Hawaiian	-0.065	(0.034)	
JetBlue	-0.099	(0.031)	**
Northwest	-0.030	(0.031)	
Southwest	-0.206	(0.028)	***
United	0.059	(0.027)	*
US Airways	0.004	(0.027)	

N = 124, **Adjusted R^2** = 0.7497

Note: American Airlines and Year 2012 omitted

Coefficients are presented with standard errors in parentheses.

* = 5% significance, ** = 1% significance, *** = 0.1% significance

Table 5: Regression Results: Baggage Complaint Rates on Mishandled Bag Rate

Table 5 shows that the regression of baggage complaint rates on mishandled bag rates exhibits similar patterns to the previous regression of flight problem complaints on on-time rates. The coefficient for actual mishandled baggage is positive and significant at the 0.1% level, as expected. This means that an additional lost bag per 1,000 passengers is associated with a 0.064 point increase in baggage complaints per 100,000 passengers, controlling for year and airline fixed-effects.

The pattern of low-cost carrier passengers complaining less often than network carrier passengers persists with mishandled baggage. The fixed-effect coefficients for Southwest Airlines, JetBlue Airways, Frontier Airlines, and Alaska Airlines are all negative and significant at at least the 1% level. Passengers of these airlines are significantly less likely to make a complaint about mishandled baggage to the DOT, controlling for year and service quality. Additionally, United Airlines passengers are actually more likely (at the 5% level) to make a baggage complaint than passengers of American Airlines or other network carriers.

4.3. Oversales complaints and denied boardings

In this section, we test whether oversales complaints trend with both voluntary and involuntary denied boardings (DBs). We would not expect voluntary denied boardings to be significantly correlated with oversales complaints to the DOT, since it makes little sense for a passenger who willingly accepts compensation for taking a later flight to complain about their flight being oversold. Indeed, in Table 6, we see that there is not a significant relationship between oversales complaints and voluntary denied boarding rates per 10,000 enplaned passengers. Instead, individual airlines' denied boardings policies at the gate are much more likely to influence the probability of an oversales complaint.

Variable	Coefficient	Std. Error	Significance
Voluntary DB Rate	0.001	(0.001)	
Year 2011	0.004	(0.011)	
Year 2010	0.004	(0.011)	
Year 2009	-0.003	(0.011)	
Year 2008	0.002	(0.011)	
Year 2007	0.005	(0.011)	
Year 2006	-0.015	(0.011)	
Year 2005	-0.012	(0.011)	
Year 2004	-0.025	(0.012)	
Year 2003	-0.018	(0.012)	
Year 2002	-0.000	(0.014)	
AirTran	0.024	(0.013)	
Alaska	-0.016	(0.011)	
America West	0.043	(0.018)	*
Continental	0.024	(0.011)	*
Delta	0.022	(0.011)	
Frontier	0.016	(0.013)	
Hawaiian	-0.024	(0.013)	
JetBlue	-0.021	(0.014)	
Northwest	0.020	(0.013)	
Southwest	-0.031	(0.011)	**
United	0.034	(0.012)	**
US Airways	0.039	(0.012)	**

N = 124, **Adjusted R^2** = 0.5290

Note: American Airlines and Year 2012 omitted

Coefficients are presented with standard errors in parentheses.

* = 5% significance, ** = 1% significance, *** = 0.1% significance

Table 6: Regression Results: Oversales Complaint Rate on Voluntary DB Rate

On the other hand, involuntary denied boardings are significantly correlated with complaint rates. As shown in Table 7, a one-point increase in the involuntary DB rate per 10,000 passengers is correlated with a 0.028 point increase in oversales complaints per 100,000 passengers. As with flight problem and baggage

complaints, we again see that passengers of low-cost carrier Southwest Airlines are less likely to complain about a denied boarding than passengers of network carriers.¹

Variable	Coefficient	Std. Error	Significance
Involuntary DB Rate	0.028	(0.006)	***
Year 2011	0.007	(0.010)	
Year 2010	0.016	(0.010)	
Year 2009	-0.008	(0.010)	
Year 2008	0.002	(0.010)	
Year 2007	0.004	(0.010)	
Year 2006	-0.014	(0.009)	
Year 2005	-0.012	(0.010)	
Year 2004	-0.008	(0.010)	
Year 2003	-0.012	(0.010)	
Year 2002	0.012	(0.010)	
AirTran	0.035	(0.010)	***
Alaska	-0.027	(0.010)	**
America West	0.051	(0.014)	***
Continental	0.002	(0.011)	
Delta	0.011	(0.010)	
Frontier	0.001	(0.012)	
Hawaiian	-0.012	(0.011)	
JetBlue	-0.008	(0.011)	
Northwest	0.022	(0.011)	*
Southwest	-0.040	(0.010)	***
United	0.031	(0.010)	**
US Airways	0.036	(0.010)	***

N = 124, **Adjusted R²** = 0.6078

Note: American Airlines and Year 2012 omitted

Coefficients are presented with standard errors in parentheses.

* = 5% significance, ** = 1% significance, *** = 0.1% significance

Table 7: Regression Results: Oversales Complaint Rate on Involuntary DB Rate

5. Discussion

When examining the results of the regressions in the previous section, it is important to note that the data set used in this analysis only captures complaints made to the U.S. Department of Transportation’s Airline Consumer Protection Division. That is, complaints that are made directly to the airlines are not recorded here. This is an important distinction to make—our results do not imply that passengers of low-cost carriers are less likely to complain *in general* about service quality failures; all we can say for sure is that these passengers are less likely to complain *to the DOT*.

Gursoy et al. (2007) suggest that consumers’ “propensities to complain” are a function of individual traits and characteristics. What characteristics of low-cost carrier passengers, then, make them less likely to complain to the DOT? There are several possible explanations for this behavior. The first is that low-cost carrier passengers may be less informed about the option to complain to the DOT, and instead complain

¹Some carriers such as JetBlue Airways and Hawaiian Airlines do not overbook their flights, leading to very low levels of both oversales complaints and denied boardings

directly to the airline if there is a service quality failure. Airlines do not publicize the DOT’s contact information for complaints on their websites, and it is plausible that infrequent flyers of low-cost carriers may not be aware that the government would accept a complaint about their airline. Furthermore, such passengers may suppose that submitting a response to the government may not be the best way to receive a resolution to their complaint; indeed, the DOT does not directly intervene in resolving individual complaints; the government often focuses instead on correcting broader patterns of complaints.

Low-cost carriers often place downward pressure on airfares (Morrison (2001) and others have shown the famous “Southwest Effect”). It is also plausible, then, that low-cost carrier passengers have lower expectations for the quality of the service they receive because they have paid less for their tickets. Bhadra (2009) has shown that airline passengers expect higher levels of service as they pay more for airfare; network carrier passengers who pay more for their tickets may have higher standards for service. Hence, these passengers may have a higher propensity to complain than low-cost carrier passengers due to these differences in expectations.

It could also be argued that low-cost carriers and network carriers provide fundamentally different products. Network carriers often have premium cabins and offer more connecting options to points across the globe; business passengers may be more likely to complain than leisure passengers, particularly if they paid more for their tickets or are expecting a higher quality of service. However, complaints from business and leisure passengers are not separated in the ATCR data, further adding to the differences between low-cost carrier and network carrier passengers.

Finally, it is possible that the differences between complaint rates at network carriers and low-cost carriers are not due to characteristics of their passengers, but are instead due to differences between the airlines themselves. In other words, there may be a qualitative difference in service between low-cost carriers and network carriers that cannot be captured in published statistics. Southwest Airlines, for instance, is famous for implementing a corporate culture that emphasizes service and employee teamwork (Laszlo, 1999; Gittell, 2003; Bamber et al., 2009). A friendly smile or a sympathetic reaction at the point of service failure may go a long way towards moderating complaint rates at low-cost carriers. However, more research is necessary to assess the qualitative differences, if any, in customer service between low-cost carriers and network carriers.

6. Conclusion

Airline passengers can submit complaints about the service they receive to the airline they have flown or to the U.S. Department of Transportation’s Airline Consumer Protection Division. Common complaints regard flight problems (cancellations, delays, and other problems), mishandled baggage, and denied boardings (overbooking)). However, passengers of different airlines appear to complain to the Department of Transportation at different rates, even if the airlines have the same level of service quality.

Through a fixed-effects regression analysis of airline consumer complaint and service quality data from the U.S. Department of Transportation, we find that there is a significant gap between perceived levels of service quality and actual levels of service quality for different types of airline passengers. Passengers of low-cost carriers like Southwest Airlines and JetBlue Airways are significantly less likely to complain about service quality failures than passenger of network carriers like American Airlines or United Airlines, controlling for similar levels of actual service quality and yearly fixed-effects.

These differences may be a result of low-cost carrier passengers having lower expectations or less information about how to complain to the DOT, or because the low-cost carriers themselves provide qualitatively better service that is not captured in government data. More research is necessary to determine which of these factors, if any, explain the differences in complaint rates that we observe. It would also be interesting to compare the rates at which passengers complain to the DOT and the rates at which they complain to the airlines themselves to see if the same patterns shown in this paper continue to hold. However, such an analysis is unlikely; airlines are hesitant to share their proprietary information about internal complaints.

Airlines spend both time and money towards improving customer service and reducing the number of complaints they receive (partially to avoid being ranked “the worst airline in America” from media reports or academic research that conduct only a cursory review of complaint data). However, a critical question

for airlines is whether complaint rates or service quality failures affect a passenger's choice to fly that airline the next time they have to travel, or if passengers continue to gravitate to the flight with the lowest fare, best schedule, or preferred airline regardless of service quality.

Dresner and Xu (1995) and Steven et al. (2012) have both suggested that complaints are negatively related to airline profitability (that is, an increase in complaints will cause profitability to fall in the next period), but more work in this intriguing area is necessary to examine the relationship between service quality and airline financial performance. However, confounding variables, identification issues, and endogeneity will continue to be problems for researchers examining these links.

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References

- Ahlers, M.M. 2012. Airlines improve performance, but complaints persist. CNN. 9 Aug 2012.
- Bamber, G.J., J.H. Gittell, T.A. Kochan, A. von Nordenflycht. 2009. *Up in the Air: How Airlines Can Improve Performance by Engaging Their Employees*. ILR Press, Cornell University Press.
- Bhadra, D. 2009. You (expect to) get what you pay for: A system approach to delay, fare, and complaints. *Transportation Research Part A: Policy and Practice* 43(9-10). 829-843.
- Bowen, B.D. and D.E. Headley. 2013. Airline Quality Rating 2013. *Airline Quality Rating Report*. Paper 23. <http://dx.doi.org/10.5703/1288284315056>
- Dresner, M. and K. Xu. 1995. Customer Service, Customer Satisfaction, and Corporate Performance in the Service Sector. *Journal of Business Logistics* 16(1). 23-40.
- Forbes, S.J. 2008. The effect of service quality and expectations on customer complaints. *Journal of Industrial Economics* 56(1). 190-213.
- Gittell, J.H. 2003. *The Southwest Airlines Way: Using the Power of Relationships to Achieve High Performance*. McGraw-Hill, New York.
- Gursoy, D., M-H. Chen, and H. J. Kim. 2005. The US airlines relative positioning based on attributes of service quality. *Tourism Management* 26(1). 57-67.
- Gursoy, D., K.W. McCleary, and L.R. Lepsito. 2007. Propensity to Complain: Effects of Personality and Behavioral Factors. *Journal of Hospitality & Tourism Research* 31(3). 358-386.
- Laszlo, G.P. 1999. Southwest Airlines – living total quality in a service organization. *Managing Service Quality* 9(2). 90-95
- Morrison, S.A. 2001. Actual, Adjacent, and Potential Competition: Examining the Full Effect of Southwest Airlines. *Journal of Transport Economics and Policy* 35(2). 239-256.
- Rhoads, D.L. and B. Waguespack. 2008. Twenty years of service quality performance in the US airline industry. *Managing Service Quality* 18(1). 20-33.
- Sim, K.L. H.C. Koh, and S. Shetty. 2006. Some potential issues of service quality reporting for airlines. *Journal of Air Transport Management* 12(6). 293-299.
- Sim, K.L, C.J. Sang and L.N. Killough. 2010. Service quality, service recovery, and financial performance: An analysis of the US airline industry. *Advances in Management Accounting* 18. 27-53.
- Steven, A.B., Y. Dong and M. Dresner. 2012. Linkages between customer service, customer satisfaction and performance in the airline industry: Investigation of non-linearities and moderating effects. *Transportation Research Part E: Logistics and Transportation* 48(4). 743-754.
- U.S. Department of Transportation Aviation Consumer Protection Division. 2013. *Air Travel Consumer Report*. <http://www.dot.gov/airconsumer>.
- Wittman, M.D. and W.S. Swelbar. 2013. Trends and Market Forces Shaping Small Community Air Service in the United States. MIT International Center for Air Transportation Report No. ICAT-2013-02.