

Published In: Bolton, Ruth N. and Randall G. Chapman, "The Structure of Customer Complaint Behavior in the Airline Industry" in Jon M. Hawes (Ed.), Developments in Marketing Science, Vol. XII, Akron, Ohio: Academy of Marketing Science, 1989, pp. 546-51.

THE STRUCTURE OF CUSTOMER COMPLAINT BEHAVIOR IN THE AIRLINE INDUSTRY

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Abstract

Using recent data published by the U.S. Department of Transportation, the structure of customer complaint behavior in the airline industry in the United States is examined. The interrelationships among twelve categories of customer complaints are studied in detail. Factor analysis results indicate the presence of multidimensional aspects of complaining behavior. Three distinct aspects of complaining behavior in the airline industry are detected, corresponding to operational, marketing, and special situation problems.

Introduction

Deregulation of the passenger airline industry in the United States has resulted in widespread publicity concerning key airline performance statistics.

Statistics from monthly reports of the U.S. Department of Transportation (DOT) routinely receive front- or near front-page coverage in newspapers. Flight delay and customer complaint statistics have attracted special attention. For example, the "list of shame" (of flights that are late more than 80% of the time) has received particular media notoriety. From a public welfare perspective, this publicity has desirable benefits, in that it has the potential to reduce customers' costs of information gathering and processing, since presumably unbiased system-wide performance statistics are made available in a convenient and relatively readily-available fashion.

The DOT's Air Travel Consumer Report shows substantial increases in customer complaints during 1986 and 1987. For example, DOT received 144% more complaints during the period January to June 1987 than during the same six month period in 1986. In the press, these complaints have been linked to airline mergers, fare wars, trends toward charging extra for incidental airline services, and congestion at the country's largest airports. In particular, the increases in customer complaints have frequently been attributed to the increases in the number of delayed or cancelled flights. For example, Computerworld (April 11, 1988) reported that only 61.5% of Eastern Airlines' flights arrived on time in January 1988, and that Eastern had received more customer complaints than any other airline except Continental Airlines. It described the efforts of System One Corporation, a Texas Air Corporation subsidiary, to test new computer systems that it hopes will pull up Eastern's customer service record.

When formal scorekeeping measures are invoked, individuals and organizations often demonstrate amazing capabilities to adapt to maximize their performance.

So, it is perhaps not surprising that airlines have reacted to the wide publicity associated with these performance statistics. Examples abound: American and America West routinely tout their "best" on-time performance records (even though confusion exists as to the definition of "best", with American referring to "best cumulatively since September 1987" and with America West referring to "best now"); flight attendants encourage boarding passengers

to move without delay to their seats to ensure on-time departures; and, pilots matter-of-factly announce on-time arrivals to their passengers. Some commentators have noted that airlines are lengthening their official flight schedules to ensure that official flight delays are less frequent. With an extra 15 or 20 minutes built into published flight times, a margin of error is present for unexpected delays. Published flight times may have no real influence on actual flight performance (airport-to-airport travel time), but their influence on customer expectations -- and customer complaints -- may be substantial.

Prior empirical research concerning customer complaint behavior has been limited to retrospective self-reports of behavior obtained with cross-sectional data collection designs. In such studies, reported incidences of complaint behavior are typically low. Although customers are frequently dissatisfied with services (Day and Ash 1979), they do not necessarily complain. For example, Day and Bodur (1978) found that reported cases of extreme dissatisfaction with services for which no action of any kind was taken were 23.2%. This finding may be explained by the wide variety of individual and situational factors which may influence complaining behavior (e.g., Landon 1977; Moyer 1984).

For these reasons, the availability of airline complaint statistics provides a unique opportunity for marketing scientists to conduct in-depth analyses of customer complaint behavior in an important and highly visible service industry. In this paper, the structure of official customer complaints in the airline industry (complaints to the Department of Transportation), and their possible relation to flight delays, is explored.

The next section reviews the literature on complaining behavior. The study methodology, and the available secondary data on complaining behavior in the airline industry, are then described. Empirical results are presented and interpreted. Some concluding remarks complete this paper.

Literature Review

In this section, a brief overview of the customer complaint behavior literature is provided. Implications of this literature for the study of complaint behavior in the airline industry receive particular attention.

The Structure of Complaint Behavior

Complaints to the DOT are only one way of expressing dissatisfaction with airline services. Consumer complaint behavior (CCB) includes a variety of responses which may result from dissatisfaction with the purchase of a good or service. Day and Landon (1977) have suggested a taxonomy for CCB which distinguishes between public actions, private actions, and inaction (i.e., a non-behavioral response). Public actions include seeking redress from the seller, complaining to an agency, or pursuing legal remedies. Private actions include word-of-mouth communication to family or friends, boycotting, and so forth.

Using confirmatory factor analysis, Singh (1988) rejected Day and Landon's taxonomy, and related taxonomies. His empirical research suggested that CCB

has three distinct dimensions: voice, third-party, and private actions. "Voice" CCB includes behaviors directed to formal participants in the dissatisfying exchange (i.e., the seller). Singh also tentatively included "no action" responses in this category. "Third-party" CCB includes behaviors directed to parties not directly involved in the dissatisfying exchange. "Private" CCB includes responses internal to the customer's social net (e.g., word-of-mouth communication to friends and relatives not involved in the dissatisfying exchange). This taxonomy is supported by data from a retrospective survey of complaint intentions and complaint behavior in four industries: grocery, automobile repair, medical care, and banks and financial services.

The Apparent Unidimensionality of Third-Party CCB

Clearly, air passenger complaints to the DOT are one form of third-party CCB. Based on existing taxonomies of complaint behavior, researchers might naturally conclude that the construct "DOT customer complaint behavior" is unidimensional in nature. Presumably, customers complain to a third party, such as the DOT, or they don't. However, such a unidimensionality presumption may simply be due to researchers' difficulty in measuring complaint behavior. Only the presence or absence of complaining, and the "to whom" of the complaint, seem to have been analyzed in depth. Complaining behavior structure -- the specific types of complaints made and the interrelationships (if any) among them -- seems not to have been studied.

It seems likely that third-party CCB can be further decomposed depending on the nature of the complaint, where the nature of complaints arise from customers' underlying assessments of service quality. The work of Parasuraman, Zeithaml, and Berry (1985) indicates that service quality is a multi-dimensional construct. Customers perceive five criteria or dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. Perhaps, the incidence and nature of customer complaints reflects these same underlying dimensions. Alternatively, the incidence and nature of customer complaints may reflect specific aspects of the organization or process of service provision, or mediating factors in the customer complaint process.

These issues are addressed in the empirical portion of this paper. The nature and frequency of complaints to the DOT, to determine whether this type of CCB is unidimensional or multidimensional, is explored. Also, the relevant dimensions of third-party CCB in the airline industry are identified.

Determinants of Complaint Behavior

Research indicates that customer (dis)satisfaction influences customer complaints (Bearden and Teel 1983; LaBarbera and Mazursky 1983; Oliver 1986; Westbrook 1987). Satisfaction, in turn, depends on customer expectations (an adaptation level formed by prior experience) and expectancy disconfirmation (e.g., Oliver 1980). This stream of research has implications for the determinants of customer complaint behavior in the airline industry. For example, if airlines lengthen their flight schedules to produce better on-time performance statistics, they may reduce the likelihood of expectancy disconfirmation. As a result, the incidence of customer complaints concerning flight scheduling problems should decrease. This possibility is addressed in the empirical portion of this paper.

Methodology

This section describes the study data base and the analysis methodology.

The Data Base

The Air Travel Consumer Report published by the Office of Consumer Affairs of the DOT provides information on flight delays, mishandled baggage, oversales, and consumer complaints for all major airlines operating in the U.S. This study focuses on consumer complaints to the DOT conveyed in writing, by telephone, or in person between October 1987 and August 1988. These data describe twelve different categories of complaints: (1) flight (scheduling) problems; (2) oversales ("bumping"); (3) reservation, ticketing, and boarding; (4) fares; (5) refunds; (6) baggage; (7) customer service; (8) smoking; (9) advertising; (10) credit; (11) tours; and, (12) other problems. DOT definitions of these complaint categories are displayed in Table 1. These data do not include safety complaints, which are handled by the Federal Aviation Administration.

The total volume of complaints is seasonal, reflecting weather conditions and holidays. Generally, complaints are low in the summer (May, June and July) and peak in the winter months (December and January). A total of 3,396 complaints about domestic airlines were received by the DOT in January 1988, compared to 1,535 complaints in June 1988.

This study examines DOT reports for the 17 largest domestic airlines: Alaska, Aloha, America West, American, Braniff, Continental, Delta, Eastern, Hawaiian, Midway, Northwest, Pan Am, Piedmont, Southwest, TWA, United, and US Air. The Air Travel Consumer Reports for the October 1987 - August 1988 time period yielded 174 observations for these airlines. (The 174 observations are obtained as follows: 17 airlines multiplied by 11 months less 13 instances where DOT did not report data for an airline.)

Table 2 shows the frequency of complaints (per 100,000 passengers) in each of the aforementioned twelve categories for six major airlines. It also shows the average total number of complaints (of all types) per month. This number varies substantially across airlines. Continental and Eastern are notoriously high, averaging 499 and 410 complaints per month. In contrast, the DOT received, on average, only 86 complaints per month from Delta flyers. American, Northwest, and United fall between these extremes.

The frequency of complaints also varies substantially across categories. The most frequent complaints concern flight problems, with the 17 airlines studied in this paper averaging 2.57 complaints about flight problems per 100,000 flyers. The remaining complaint categories can be listed in descending order of frequency as follows: baggage (1.18), customer service (0.53), refunds (0.40), oversales (0.37), reservations, ticketing, and boarding (0.37), other (0.21), smoking (0.14), fares (0.12), advertising (0.05), credit (0.01), and tours (0.01).

Analysis

The structure of complaint behavior in the passenger airline industry was studied in the following way. The raw frequency of complaints in each of the twelve categories for each major airline each month was converted to a frequency per 100,000 passengers. The structure of the airline complaint data was explored utilizing principal components analysis with a varimax rotation. Then, a split halves analysis was conducted to investigate the stability of the complaint structure. Lastly, the relationship between the complaint structure (factor scores) and airline on-time performance was investigated.

TABLE 1
DEFINITIONS OF COMPLAINT CATEGORIES

<u>Complaint Category</u>	<u>Department of Transportation (DOT) Definition</u>
Flight Problems	Cancellations, delays, or any other deviations from schedule, whether planned or unplanned.
Oversales	All bumping problems, whether or not the airline complied with DOT oversale regulations.
Reservations Ticketing, and Boarding	Airline or travel agent mistakes in reservations and ticketing; problems in making reservations and obtaining tickets due to busy telephone lines or waiting in line, or delays in mailing tickets. Problems boarding the aircraft (except oversales).
Fares	Incorrect or incomplete information about fares, discount fare conditions and availability, overcharges, fare increases and level of fares in general.
Refunds	Problems in obtaining refunds for unused or lost tickets or fare adjustments.
Baggage	Claims for lost, damaged or delayed baggage, charges for excess baggage, carry-on problems and difficulties with airline claim procedure.
Customer Service	Rude or unhelpful employees, inadequate meals or cabin service, treatment of delayed passengers.
Smoking	Inadequate segregation of smokers from non-smokers; failure of airline to enforce no-smoking rules; objections to the rule, would prefer change such as: (1) relaxation or elimination of regulations or (2) banning of smoking on all flights.
Advertising	Advertising that is unfair, misleading, or offensive to consumers.
Credit	Denial of credit, interest or late payment charges, incorrect billing, or incorrect credit reports on airline-issued credit.
Tours	Problems with scheduled or charter tour packages.
Other	Cargo problems, security, airport facilities, claims for bodily injury, and other problems not classified above.

TABLE 2
OVERALL NUMBERS OF COMPLAINTS RECEIVED FOR SELECTED AIRLINES

	<u>Average Monthly Complaints Per 100,000 Passengers</u>					
	<u>AA</u>	<u>CO</u>	<u>DL</u>	<u>EA</u>	<u>NW</u>	<u>UA</u>
Flight Problems	1.02	6.32	0.67	6.46	6.33	1.46
Oversales	0.13	0.81	0.07	0.57	0.48	0.17
Reservations, Ticketing, and Boarding	0.22	0.98	0.16	0.55	0.46	0.34
Fares	0.09	0.24	0.08	0.19	0.09	0.10
Refunds	0.15	1.45	0.18	0.95	0.57	0.25
Baggage	0.56	2.40	0.31	1.90	1.32	0.77
Customer Service	0.29	1.35	0.16	1.11	0.86	0.38
Smoking	0.13	0.25	0.07	0.16	0.26	0.14
Advertising	0.02	0.14	0.01	0.06	0.02	0.01
Credit	0.00	0.02	0.01	0.03	0.01	0.02
Tours	0.01	0.01	0.00	0.01	0.00	0.01
Other	0.13	0.57	0.12	0.38	0.45	0.19
 Average Total Complaints Per Month	 133.81	 498.55	 85.82	 409.82	 305.64	 171.91
 On-Time Arrivals	 83%	 76%	 77%	 75%	 74%	 77%

- Notes:
- (1) Airline abbreviations: AA=American, CO=Continental, DL=Delta, EA=Eastern, NW=Northwest, and UA=United.
 - (2) Complaints are measured as number of complaints per 100,000 passengers.
 - (3) On-time arrivals measured by the percentage of flights arriving within 15 minutes of scheduled gate time.
 - (4) There are 11 observations for each airline, one each for the months October 1987 to August 1988.

Results

Complaint Structure

The results of the varimax rotations for the complete data set are displayed in Table 3. Three factors account for 69% of the variance in the original twelve customer complaint measures. These three factors all have eigenvalues greater than 1.0 in value. (For reference purposes, it may be noted that the fourth and fifth factors had eigenvalues of 0.81 and 0.72, respectively.) Clearly, there is considerable redundancy in these twelve aspects of complaining behavior in the airline industry, since three underlying linear composites account for more than two-thirds of the original variance in the twelve raw complaint variables.

To examine the stability of these three factors, the 174 available observations were split (chronologically) into two subsets, and separate analyses were conducted on each data subset. The factor structures (patterns of loadings) were similar in the two data subsets. Since they are similar to the structure obtained from utilizing all the data (displayed in Table 2), they are not shown here.

As may be noted in Table 3, the communalities associated with this three-factor solution range from 0.558 to 0.765. Only two of the twelve communalities are less than 0.600 in magnitude. This three-factor solution accounts for substantially more than the majority of the variation in each of the original twelve complaint variables.

Appropriate labels for these three complaint behavior factors would seem to be OPERATIONAL PROBLEMS, MARKETING PROBLEMS, and SPECIAL SITUATION PROBLEMS. The first factor has heavy factor loadings on flight problems (0.797), oversales (0.825), reservations, ticketing, and boarding (0.743), baggage (0.851), and customer service (0.850). These are all aspects of operations in the airline industry. The second factor has heavy loadings on fares (0.803) and advertising (0.709). These are aspects of airlines' marketing programs. The third factor has heavy loadings on credit (0.720) and tours (-0.676), which are non-routine (special situation) aspects of the airline business.

These three complaint behavior factors seem to reflect three different ways in which the customer interacts with airline service providers (or three different aspects of airline service provision). MARKETING PROBLEMS concern facilitating services related to the communication of flight and fare information prior to a flight. OPERATIONAL PROBLEMS involve core services such as ticketing, transportation, baggage handling, and ticketing during the standard service contact (flight). SPECIAL SITUATIONS concern facilitating services in non-standard service contacts.

However, another interpretation of these results is that these three complaint behavior factors reflect three of the five dimensions of service quality identified by Parasuraman, Zeithaml, and Berry (1985). OPERATIONAL PROBLEMS seems rather similar to their "reliability" dimension, which can be succinctly defined as the "ability to perform the promised service dependably and accurately." The MARKETING PROBLEMS dimension seems rather similar to their "assurance" dimension, which can be defined as the "knowledge and courtesy of employees and their ability to convey trust and confidence." (The assurance

TABLE 3
RESULTS OF FACTOR ANALYSIS

	<u>Communalities</u>	<u>Factor Loadings</u>		
		<u>1</u>	<u>2</u>	<u>3</u>
Flight Problems	.717	.797		
Oversales	.705	.825		
Reservations, Ticketing, and Boarding	.688	.743	.366	
Fares	.677		.803	
Refunds	.759	.696	.514	
Baggage	.759	.851		
Customer Service	.757	.850		
Smoking	.558	.740		
Advertising	.579		.709	
Credit	.685	.404		.720
Tours	.627	.395		-.676
Other	.765	.844		
Eigenvalues		6.02	1.23	1.03
Percentage of Variance Explained		50.2	10.2	8.6

dimension measures customers' perceptions and expectations about the communication effectiveness and credibility of a service -- and both are presumably affected by advertising and fare information). The SPECIAL SITUATION PROBLEMS dimension is most closely related to their "responsiveness" dimension, which can be defined as "willingness to help customers and provide prompt service."

Determinants of Complaint Behavior

As discussed earlier, increases in customer complaints have frequently been attributed to increases in the number of delayed or cancelled flights. The relationship between customer complaint behavior and flight delays was investigated by calculating correlations between the factor scores and the corresponding on-time statistics. The correlations between on-time performance on the three factor scores were -0.405, -0.224, and -0.032, respectively. The first two correlations are statistically significant at the 0.01 level. Since the first factor reflects operational performance, a high negative correlation between it and on-time performance is expected (as on-time performance improves, operational performance complaints decrease). However, the correlation of -0.224 between the second complaining factor and on-time performance is surprising. It suggests that customers' flight delays generate expectancy disconfirmation and, consequently, dissatisfaction and complaint behavior about non-operational matters, as well as operational matters. The notion that expectancy disconfirmation concerning one aspect of service may lead to complaint behavior concerning multiple aspects of service (possibly due to some sort of threshold effect) is an intriguing possibility, and one that merits further investigation in other contexts.

Concluding Remarks

The major finding of this study is that third-party customer complaint behavior is a multidimensional construct, at least in the airline industry. This structure seems to reflect customers' assessments of service components or service quality dimensions. However, it is also possible that the structure of customer complaint behavior reflects the organization or process of service provision or mediating factors in the customer complaint process. Further research is needed, in other contexts, to identify the dimensions of third-party complaining behavior.

The results of this study indicate that the incidence and nature of third-party customer complaint behavior may be related to objective measures of service performance. Hence, it may be possible to directly link engineering or operational changes in service provision to behavioral (and non-behavioral) customer complaint behavior. From a managerial standpoint, the identification of such linkages would be an important breakthrough.

The Air Travel Consumer Report is a fascinating and rich source of secondary data that might be exploited by marketing scientists. With additional data (that will be reported through time), more detailed analyses will become possible. For example, it should be possible to further examine the stability of complaint behavior structure through time, or across service providers. In addition, it may be possible to further explore the relationship between objective measures of service performance and customer complaint behavior.

A differentiating feature of this research is its examination of the incidence and nature of customer complaints, rather than retrospective self-reports of behavior. Data concerning the incidence and nature of complaints may be available from firms in other service industries, as well as from retailers and manufacturers. Hence, there may be other opportunities for researchers to examine actual complaint behavior, and relate it to changes in service provision.

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