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Perceptions of Industry Change: Decadal Comparative Analysis of Consumer Satisfaction

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Poster

TITLE

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ABSTRACT

Longitudinal comparisons of perceptions are rarely available over rapid industrial change, and few industries have changed to the degree of airline travel in the post-9/11 decade. This study presents comparative analysis of airline consumer perceptions following September 11th 2001 to findings from a Congressman-initiated survey of 3,500 travelers ending 2011.

PRESS PARAGRAPH

The national Airline Quality Rating (AQR), released annually each April at the National Press Club in Washington, D.C. and viewed each year by more than 75 million people both nationally and internationally, debuted in the national media as an innovative, objective method of comparing airline quality on combined multiple performance criteria in 1991. This decadal study analyzes changes in consumer perceptions as the airline industry underwent fundamental shifts, and in addition assesses the relationship between consumer perceptions as reported by survey respondents over the last decade and the expert-derived AQR formula developed by Bowen and Headley.

Previous research on consumer perceptions, satisfaction, and attitudes regarding the major commercial air carriers in the United States has provided little more than an interesting descriptive “snapshot” of the average air traveler. Building upon 20 years of research with the National Airline Quality Rating (AQR), this study moves beyond basic descriptive information of air travelers to identify attitudinal patterns and relationships in the way consumers at varying levels of travel frequency view the commercial air industry. The comparative analysis allows key industry, government, and research leaders the ability to improve their understanding of the prime drivers and perceptions of passenger behavior in a specialized industry with an extremely limited amount of research literature in this area. The modeling of attitudinal patterns and perceptions plays an important role in determining the need, priority, and potential consequences of such action. In addition, this study identifies the relationship between subjective perceptual measures of the airline industry as reported by the survey respondents and the objective formula-driven, weighted average that constitutes the national Airline Quality Rating, annually featured in the national media and viewed by more than 75 million viewers.

Assessing Airline Quality

Prior to the AQR, there was no consistent method for monitoring the quality of airlines on a timely, objective and comparable basis. The introduction of the AQR resulted in a multi-factor, weighted average approach that had not been previously utilized in evaluations of industry quality and performance (Bowen & Headley, 2010). The outcome of the annual AQR analyses is a rating with interval-scale properties for individual U.S.-based airlines that have at least 1% of domestic passenger volume, comparable across airlines and across time; in addition it also summarizes month-by-month quality ratings.

AQR scores for a calendar year are based on 15 elements in four major areas that focus on airline performance aspects important to air travel consumers. Elements considered for inclusion in the AQR rating scale are screened to meet two basic criteria; 1) an element must be obtainable from published data sources for each airline; and 2) an element must have relevance to consumer concerns regarding airline quality. Data for the elements used in calculating the ratings represent performance aspects of airlines that are important to consumers. This information is calculated monthly from United States Department of Transportation (DOT) statistical reports and reported annually in a resulting research monograph (Bowen & Headley, 2010).

All of the elements reported in the DOT's Air Travel Consumer Report, including those that form the basis of the annual Airline Quality rankings, are based on this data as maintained by the U.S. Department of Transportation. According to Headley and Bowen (1997), these four areas (on-time arrivals, involuntary denied boardings, mishandled baggage, and a consolidation of 12 customer complaint categories) have been identified and proportionally weighted by industry experts as those most important to consumers in evaluating quality among airlines; they were also initially validated with consumer data as well (Airline Quality Rating, 2011), though this has not been repeated since the mid-1990s. To maintain its position as an industry standard, this study was designed to revalidate the AQR and to reveal any discrepancies between consumer-reported perceptions and objective-based AQR evaluations based on industry and societal changes.

Origin of the Decadal Study

Despite several pre 9/11 consumer-based surveys, there has been no scientifically-driven evaluation of consumer perceptions of these key quality elements in the decade since the terrorist

attacks of September 11, 2001, with the exception of the comparative studies herein. In the ten years since these events, the airline industry has undergone fundamental shifts in performance, regulatory requirements, and organizational operating environment. Airlines have been required to make rapid and profound changes in the face of unanticipated shifts in product demand, price and availability of operating equipment; all of these shifts have combined to make the airlines of 2011 part of a vastly different industry than they were in 2001.

Aviation is an industry with a great deal of inherent public interest; not only does a significant portion of the global population depend upon air travel for transportation, but the visibility of the industry's product (literally overhead every day) and the frequent media exposure surrounding it keep it ever-present in consumer minds. Research by Bowen, Bowen and Headley (2011) demonstrates that in the case of such highly visible industries, the need for accurate, interpretable data regarding both objective and subjective performance is a key component for the success and survival of organizations in these fields. The Airline Quality Rating has been recognized by both industry and regulatory leaders as providing performance data with an objective basis (Airline Quality Rating, 2011); however, this approach provides only half the picture. If objective data do not correspond to consumers' perceptions of an organization or industry, consumers will trend toward disregarding objective data in favor of their own beliefs and perceptions (Bowen, Scarpellini-Metz, & Headley, 2005). Ideally, industry and government leaders require information on both objective and subjective evaluations and discrepancies between the two in order to accurately chart performance and plan future action.

Understanding Consumer Perceptions

As an example of this need, with the increasing number of competitive options in the 1990s, a viable market strategy was difficult to maintain (Ott, 1998). The airlines were realigning

themselves to address these preferences in order to maintain customer retention. Consumer loyalty was no guarantee. Customer loyalty to a specific airline was typically based on a higher perceived quality of one airline over its competitors (Fick & Ritchie, 1991). If the airline delivered satisfactory service, the consumer's loyalty was reinforced to the specific provider (Bitner, 1990). When there is little to differentiate the airlines, consumers' perception of quality is a significant issue over that of objective performance (Rhoades & Waguespack, 2000). Quality in a service-based industry (such as aviation) is more than providing reliable service at the basic level, it also must "involve understanding customer expectations and perceptions and then meeting or exceeding them" (p. 62).

In the years leading up to 2001, the commercial airline industry was characterized by an extended period of significant growth and relative fiscal success (Bowen et al., 2005). The number of passengers flying each year was steadily increasing, and continued growth appeared in all immediate industry forecasts (Bowen et al., 2005). In such an operating environment, consumer attitudes placed an emphasis on price and flight schedule that often outweighed other factors when purchasing services (Ott, 1998). The DOT's quarterly Air Traveler Consumer Report relates information regarding on-time percentage, mishandled baggage reports, passengers denied boarding, and consumer complaints by category (Rhoades & Waguespack, 2000). According to Ott (1998), in the decade preceding 9/11 matters of brand identification held little power for many consumers. Leading into 9/11, consumer preference seemed to control the way with an emphasis on low fares and improved access (Cobb & Primo, 2003). Consumers were favoring new lower-cost airlines, such as Southwest Airlines, that offered inexpensive, no-frills flights. Even consumers who reported a preferred airline would readily select another carrier to save money or get an ideal departure time. On short flights, the amount of product

differentiation, whether through advertising, customer service or brand identification was not significant enough to outweigh price and time factors (Ott, 1998).

Baseline Survey of Frequent Flyers

The first survey instrument, simply titled “The Airline Survey”, was constructed in part as a consumer-based revalidation of the Airline Quality Rating (AQR) which was developed in 1991 (Bowen and Headley 2011), and in part as a response to the terrorist attacks of September 11, 2001 and their impact on aviation. The researchers wished to identify the most important issues to frequent business and leisure travelers at that time. The Airline Survey was developed based on multiple stages of assessment and evaluation, using two expert panels in both research and frequent travel to develop instrument items (Bowen et al., 2005). The core of the survey was constructed to correlate with the major categories of the AQR and their components. Due to the volatile nature of the airline industry, particularly in the early days following the terrorist attacks of September 11, 2001, the mass media was pressed to define issues now facing frequent travelers. During this period, news about air travel saturated the media and people were more aware of issues surrounding aviation as an industry than before (Bowen et al., 2005). In addition, passenger volume plummeted in the months after 9/11, and in the face of impending global conflict and the concomitant rise in fuel prices for an industry with already tight margins, commercial air carriers were competing for a narrowing consumer base.

METHOD

Understanding that a complete representation of the commercial aviation industry could not be obtained without gathering consumer perceptions and attitudes in addition to the objective data that is the basis of the AQR, researchers developed the first Airline Survey of frequent travelers (Bowen et al., 2005). The Airline Survey of frequent travelers provided insight into

consumer preference in four distinctive areas of airline travel. This study was intended to offer a better understanding of travelers' behavior through ranking of specific options offered by the airlines as well as their response to air transportation issues.

Frequent Flier Replication Survey

In response to airline consumer disappointment and an increased interest in the relationship between consumer perceptions and objective industry performance measures in recent years, a second survey was integrated into the AQR rankings release beginning in 2008. This survey intended to gauge additional, subjective data regarding airline consumer perceptions of the industry, with a focus on frequent fliers. Resulting data is aimed at providing the flying public a new perspective on airline travel. In addition, these consumer opinions serve as a validation of the AQR annual report and its contribution to industry trend analysis.

The flying public has, in recent years, sought Congressional intervention to aid in the turmoil that the airline industry continues to experience. "The public is turning to Congress for action, and that's why we have a member of Congress encouraging us to conduct further research" (Airline Quality Plummetts, 2009) stated AQR co-creator Dr. Brent Bowen. Nebraska Congressman Lee Terry, a member of the Committee on Energy and Commerce, as well as a sponsor of Airline Passenger Bill of Rights legislation, responded by raising questions. Terry is seeking readily available data with a widespread base, stating "I'm sure many of my colleagues in Congress will be interested in this information." AQR co-creator Dr. Dean Headley adds, "It's no surprise that frequent fliers are disgruntled. All elements of the air travel experience are getting worse, and the price is going up" (Airline Quality Plummetts, 2009).

The Airline Passenger Survey (APS) was designed as both a follow-up to the 2002 survey conducted by Bowen, Scarpellini-Metz, and Headley (2005) to capture current consumer

attitudes, and also as an opportunity to move beyond the basic objective, descriptive information of air travelers provided by the annual Airline Quality Rating to identify attitudinal patterns and relationships in the way consumers at varying levels of travel frequency view the commercial air industry (Bowen, et al., 2011). Survey items gathered from the APS include information from the flying public on airline preferences, perceived passenger friendliness, proposed Congressional intervention, satisfaction with the flight experience, and other issues of critical relevance to passengers and industry leaders as it regards the U.S.-based airlines ranked in the AQR.

Airline Passenger Survey respondents were primarily U.S. residents who voluntarily participated in the survey hosted by AQRaero, Inc (developed by Bowen and Headley to coordinate AQR information release due to millions of online web hits per year). APS items were a combination of demographic variables, categorical data, and Likert-type scale responses asking participants to respond to evaluative statements regarding their perceptions of the current state of the airline industry. The selection of survey items was based on a review of extant literature on the subject of air passenger satisfaction, current events in the aviation industry that are likely to affect the traveling public, and impending wide-reaching regulatory changes to the aviation industry (Bowen et al., 2011).

RESULTS

Survey Responses

The 2002 survey was sent to a random sample of 2000 frequent fliers from all commercial carriers for whom the U.S. DOT gathers regular reporting statistics. 766 completed paper-based surveys were returned, for a 38.3% response rate. The 2009 – 2011 survey was conducted using the web-based research engine Qualtrics. During the period 2009 through 2011, over 3,500 unique responses from airline consumers were collected.

Decadal Comparisons

The key findings represent data from 3,454 unique respondents. To prevent individuals from responding to the survey multiple times (and potentially skewing results), a formatting protocol was utilized to eliminate duplicate internet protocol (IP) addresses for the web-based survey tool. For the scope of the present study, reported results are limited to the key data points that are common across instruments, time, and pertinent to the Airline Quality Rating measurement. Resulting is a data set for this study that focuses on four primary categories of on-time performance, baggage handling, customer service, and denied boardings. These findings are focused on attributional data points related by the participants.

Results for 2009-2011 show that for pleasant flying experiences, consumers attribute pleasantness most commonly to on-time arrival (47.5%), followed closely by customer service (44.2%); for unpleasant flying experiences, the attributions show greater distribution, and most commonly attribute unpleasantness to customer service (36.5%) and then on-time arrival (32.3%). Interestingly, 91.7% of pleasant experiences are attributed to the combination of on-time arrivals and positive customer service, while only 68.8% of the unpleasant experiences are attributed to those two variables. For unpleasant flight experiences, baggage handling is assigned a proportionally larger weight of attributions. In both cases denied boarding is the lowest attributed variable.

In 2002, consumers reported that the most important thing to them when flying is on-time performance (47.9%), followed by customer service (24.2%) where a 72.1% cumulative for these two categories is much more similar to the unpleasant attribution data in 2009 than pleasant. In 2002, baggage handling was at 23.1% importance. This finding is interesting in that unpleasant attributions of airline experiences focus on interpersonal interaction (the customer service

experience) with the industry, while pleasant interactions focus on a relatively objective, detached construct that is a function of many unalterable variables (e.g., weather, mechanical malfunction, air traffic, etc).

Comparative analysis of these two data sets indicate a strong degree of consistency in consumer attitudes in what they value in flying, which may be somewhat surprising to industry and government leaders who perceive substantive shifts in consumer desires in the post-9/11 decade. It is interesting to note that the pattern of selection for the most important factor when flying is also the one to which consumers are most likely to attribute pleasant flying experiences – on-time performance. This may suggest that, despite the significant changes to the industry in the last ten years, consumers still evaluate the importance of these factors from an approach-oriented frame, focusing on those aspects that maximize the pleasantness of a flight rather than simply reverse-scoring those that maximize the unpleasantness of an experience.

Relationship of Findings to the AQR

The intent of this decadal comparison was to examine the survey results for application of continuing reliability of the AQR importance weightings from the formula based model.

- AQR weights in order of strongest to weakest emphasis: on-time arrival, no denied boarding, baggage arriving, customer complaints
- 2002 strongest to weakest emphasis: on-time arrival, customer service, baggage, no denied boarding
- 2009-11 strongest to weakest emphasis in pleasant flight experience: on-time arrival, customer service, baggage, no denied boarding

Comparisons across the decadal analysis of consumer perceptions and the objective, expert-derived AQR formula do identify that the key measure of performance quality to both

industry experts and consumers is on-time arrival. This is an important validation of a portion of the AQR formula, as the quality rankings of the airlines using this formula receive major national media and industry attention, including use by the airlines in promotional advertisements (Headley, personal communication).

The findings of both surveys, however, indicate that Denied Boardings have diminished in importance to consumers since the AQR formula was created, and in the decade since 9/11 the issue of customer service has grown significantly for consumers. Perhaps as security and regulatory tensions rise, consumers look to commercial air carriers to reassure them with a positive service experience. These findings strongly suggest that the AQR formula should be revised through convening a new expert panel to revisit the weightings. The data collected allowed the researchers to assess relationships between subjective and objective performance measures in a highly visible consumer industry. While key similarities in the two methods were identified, the shift in focus from denied boardings to customer service represents a substantial change that will require a reorientation of the AQR formula if it is to continue to be relevant for the flying public and remain as the industry-leading measure of airline quality (Bowen & Headley, 2010).

Conclusions

Airline Quality Rating as a quantitative model established a benchmark standard for the assessment of operational performance for more than 20 years. Through the comparative parallel research examining the attitudinal patterns and relationships of air travel consumers, a broad picture of customer preference is emerging. Significant consumer market segmentation emerged from the data and is being evaluated for follow-on publication with trend analysis on the various demographic segmentations. Overall, the survey results provided an indication of consumer

behavior and response to the changing air transportation environment within the demographic of frequent business and leisure travelers. In result, a model that evaluates the relationships between consumer perceptions and their impact on industry performance provides long term impact for longitudinal study in future decades.

References

- Airline quality plummets in summer; Frequent travelers disappointed; U. S. Congressman discusses Airline Quality Rating; New study launched (2009, May 22). *Ascribe Newswire*. Retrieved from <http://www.ascribe.org>.
- Airline Quality Rating (2011). Retrieved from <http://www.airlinequalityrating.com>.
- Bitner, M. J. (1990, April). Evaluating service encounters: The effects of physical surroundings and employee responses. *Journal of Marketing*, 54, 69-82.
- Bowen, B. D., Bowen, E. E., & Headley, D. E. (2010, April). *Airline passenger satisfaction report 2010*. Wichita, KS: Wichita State University.
- Bowen, E. E., Bowen, B. D., and Headley, D. E. (2011). Development of a model of airline consumer satisfaction. *Proceedings of the 16th International Symposium on Aviation Psychology, Dayton, OH*.
- Bowen, B. D., & Headley, D. E. (2010). *Airline Quality Rating 2010*. Research Monograph, W. Frank Barton School of Business. Wichita, KS: Wichita State University.
- Bowen, B. D., & Headley, D. E. (2008, May 18). *Airline Quality Rating: Media advisory*. Retrieved from <http://www.aqr.aero/pressreleases/aqrprerelease051908.htm>.
- Bowen, B. D., Scarpellini-Metz, N., & Headley, D. E. (2005). Understanding consumer preference: Findings from the Airline Survey. *International Journal of Applied Aviation Studies*, 5 (2), 268-285.
- Cobb, R.W. & Primo, D.M. (2003). *The plane truth: Airline crashes, the media, and transportation policy*. Washington, DC: Brookings Institution Press.
- Fick, G. R. & Ritchie, B. (1991, Fall). Measuring service quality in the travel and tourism industry. *Journal of Travel Research*, 30, 2-9.
- Headley, D. & Bowen, B. (1997). International airline quality measurement. *Journal of Air Transportation World Wide* (2) 1, pp. 55-63.

Ott, J. (1998, November 9). Technology pressures build for new slant on aviation agreements. *Aviation Week & Space Technology*, 65.

Rhoades, D.L. & Waguespack, Jr., B. (2000). Service quality in the U.S. airline industry: Variations in performance within airlines and between airlines and the industry, *Journal of Air Transportation World Wide* (5), 60-77.