

Attribute - Level Performance Dimensions of Airline Service Quality : A Factor Analysis Approach

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Abstract

The airline industry is facing heavy competition in the deregulated aviation market as a consequence of the emergence of low-cost airlines offering their services at prices unmatched with their rivals' legacy models. Henceforth, it is imperial for the service providers to know the relevant facets of airline service quality attributes that are perceived by regular passengers. This paper aimed to explore the underlying dimensions of airline service quality attributes perceived by the regular passengers travelling in full service carriers. The underlying dimensions of airline service quality attributes were explored through factor analysis using principal axis factoring method with direct oblimin rotation using SPSS. Three dimensions evolved from the study, they are: Employee performance specific factors, service network (schedule) performance specific factors, and in-flight service performance (travel comfort) specific factors. There existed an overall statistical validity of the measurement model established by conducting confirmatory factor analysis with structural equation modeling using AMOS. Perceived differences in factor dimensions among passengers of different categories were compared and implications were provided for the airlines.

Keywords: airline service quality, in-flight services, attribute-level performance, factor analysis, airline marketing, structural equation modeling

Paper Submission Date : April 12, 2014 ; Paper sent back for Revision : May 11, 2014 ; Paper Acceptance Date : June 9, 2014

In the airline industry, service quality has become one of the most widely accepted marketing concepts for retaining customers and motivating repeat usages. In spite of different versions and perspectives of airline service quality (ASQ) in the marketing literature, little is known about the dimensions that influence passengers' perceptions and responses with respect to its attribute-level performance. Apart from this, even with extensive research on service quality that has gathered over the years, only very few studies have examined passenger expectations and performance of service quality using industry-based measures (Cunningham, Young, & Lee, 2002).

Delivering high-quality service to passengers is essential for airline survival. Therefore, airline operators need to know what passengers expect from their services (Chang & Yeh, 2002). The service quality conditions influence a firm's competitive advantage by retaining customer patronage and with this comes market share (Morash & Ozment, 1994 ; Park, Robertson, & Wu, 2004). It is argued that quality in airline services is difficult to describe and measure due to its peculiar characteristics like heterogeneity, intangibility, and inseparability, and only regular passengers can truly define service quality in the airline industry (Butler & Keller, 1992).

➔ **ASQ Professed as Attribute-Level Performance** : A precise understanding of the construct of service quality has often continued to be limited, ignoring the full range of conceivable loyalty (re)actions that may follow the

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evaluation of a service (Zeithaml, Berry, & Parasuraman, 1996). Cronin and Taylor (1992) focused solely on repurchase intentions (measuring this construct as a single item), while Boulding et al. (1993) operationalized repurchase intentions and willingness to recommend (as two single items in a study and measured using six items in a follow-up study). According to Zeithaml and Bitner (2000), quality is considered to be a cause of satisfaction and service quality refers to the specific attributes of service. However, it was also revealed from the fact that the perceptions of airline service quality are quite diverse and do not seem to fit any single existing quality model such as service quality (Haynes & Percy, 1994).

As industry-specific peculiar characteristics present in many service industries limit generality, so perspectives should be examined across various industries as suggested by leading services researchers (Lovelock, 1984). It is evident that service characteristics vary according to their multi-dimensional service settings, and hence, this aspect has to be considered while measuring service quality of full service carriers in the airline industry. Studies found in literature clearly mention the importance of attribute specific characteristics in providing conceptual understanding of service quality. Bloemer, Ruyter, and Wetzels (1999) analyzed four different service type industries that yielded an elaborate pattern of quality-loyalty relationships at the level of various quality dimensions. An analysis of cross industry perspective yielded a different picture for each industry. For example, they found that whilst word-of mouth is predominantly determined by responsiveness and tangibles in the entertainment industries, word-of-mouth communication in the fast-food industry is mainly influenced by assurance and empathy. This reveals the importance of both a multidimensional and a cross-industry approach to service quality.

The SERVQUAL scale was extensively used in Korea to measure the quality of services provided by retail stores (Lee & Lee, 1997), telecommunication companies (Oh, 1995), and airline companies (Kim, 1997). Kim (1997) used the scale to measure customer evaluation of airline service quality and found that reliability, empathy, and tangibles had the most significant impact on customer perceptions of service quality. It is widely accepted to incorporate these industry-based measures in determining airline service quality perception of airline passengers. The initial tools of service quality measurement in the airline industry were really economic based, pre-deregulatory instruments that had been developed by the Civil Aeronautics Board (Douglas & Miller III, 1974).

Assessments on service quality from the perspective of airline passengers first came into sight in the doctoral dissertation work by Kearney (1986) (as cited in Cunningham, Young, & Lee, 2004). It examined service quality from the perspective of industry-based economic and marketing measures. It is also important to note that a study conducted in the U.S. by Lee, Young, Cunningham, and Wadsworth (1993) found that the best prediction of airline satisfaction and repatronization occurred when SERVPERF dimensions were combined with industry measures of service quality.

Service quality has also been defined as the result of a comparison between the received service and the expected service (Gronroos, 1984). According to Gronroos, quality, as experienced by a customer, is based on two dimensions - technical and functional - moderated by the company image. Park et al. (2004) investigated the effect of service quality of 22 service items on passengers' behavior in selecting airlines. The study results indicated that passengers' perceived service quality and airline image significantly influenced their selection of an airline.

➡ **ASQ Attributes Perceived by Passengers in their Intention to Re-Buy** : Bhagyalakshmi and Nargundkar (2006) categorized flying experience into three phases. Associated variables identified in the first phase were pre-flight service, including online booking facilities, discounted fare, on time performance of flights, good ground service, travelers informed in case of delay, regular announcements about the delay status quo, providing refreshments whenever there is a delay, providing accommodation if there is a long delay. The second phase experience included in-flight services covering: providing good in-flight food, courteous cabin attendants, and so forth; and thirdly, post-flight service benefits like - waiting time for baggage arrival, retrieval of lost baggage / compensation, and so forth.

Bloemer et al. (1999) linked perceived service quality and service loyalty in a multi-dimensional perspective, and noted that loyalty is often included in service quality models as an output (Boulding et al., 1993 ; Cronin &

Taylor, 1992) and a number of factors limit a profound understanding of customer loyalty in services that prevent the generalization of research findings. The direct relationship between service quality and loyalty is still unclear. Zeithaml et al. (1996) reported such a type of relationship, whereas Cronin and Taylor (1992) could not find such a direct relationship. This may be ascribed to the fact that the dimensions of service quality are flexible in nature from the industry-specific viewpoint. Cronin and Taylor (1992) used structural equation modeling to indicate an indirect relationship between service quality and brand dependability. The major dimensions of service quality extracted in their study were the check-in service, service on board, food quality, and the aircraft's cleanliness and comfort.

Some evidence exists on the relative importance of the five well-established individual SERVQUAL dimensions. Parasuraman, Zeithaml, and Berry (1988) argued that reliability is the most important dimension with regards to customer loyalty, in comparison with the other dimensions of service setting. Cunningham et al. (2002) identified the underlying five dimensions derived from industry measures of service quality as (a) baggage handling, (b) bumping procedures, (c) operations and safety, (d) in-flight comfort, and (e) flight connections.

It is quite evident from the review of literature that there is no standard common measure of service quality dimensions available based on the performance of core service attributes, particularly in the context of airline full service carriers. While considering the core service specific performances of airline-service quality attributes, the relative importance of the attributes and their underlying dimensions were to be explored. It can be presumed that the underlying dimensions that are perceived by frequent flyers for a full service carrier will be different from that of performances perceived for a low-cost carrier. Hence, the underlying dimensions of core service quality based on performance attributes are to be built-up, which comprises the relevance of this study.

Objectives of the Study

This research paper aims at exploring the underlying dimensions of airline service quality and developing a measurement model of the same from a perspective based on attribute-level performance of full service airline services perceived by frequent passengers. This study also aimed to assess the effect of different dimensions on different types of passengers in influencing overall airline service quality performance.

Methodology

Structured questionnaires were used to carry out the survey among frequent passengers travelling through an international airport. Respondents were selected using judgment sampling, and in order to confine the study to frequent passengers, the respondents included were verified to ensure that they were members of at least one frequent flyer program of any full service airline. Respondents were located at the security hold waiting area or at the commercial business lounge of the departure terminal of the airport. The rationale behind choosing only frequent passengers was that only regular passengers can tell more about various facets of the services provided by the airlines, as compared with first time and occasional travelers.

For conducting exploratory factor analysis (EFA), data from 220 respondents were used. As the passengers were approached individually by us for the survey, the questions were well explained to the respondents and no questions were left unanswered and, therefore, no missing values were found in the data. Statistical Package for Social Sciences (SPSS) was used to conduct the factor analysis. Orthogonal rotation method was not used for extracting the factor components as pointed out by Conway and Huffcutt (2003). Principal axis factoring method with oblique rotation technique vide direct-oblimin rotation was used for exploring the factor components since correlations among the items were presumed in the study. The time period of the study is from January - March 2014.

To arrive at a range of ASQ attribute level performance indicators, in this study, the opinions of airline experts were gathered, and 16 items were concurrently gathered based on the various attributes acknowledged in the literature. The attribute items which were rated by the respondents on a 5- point Likert scale are given below :

- (1) The airline staff provides services at the promised time,
- (2) The airline's physical facilities are visually appealing,
- (3) I feel safe in transactions with the airline's employees,
- (4) The service provided by the airline flight attendants is good,
- (5) The airline personnel gave exact answers to the posed questions,
- (6) The airline has up-to-date equipment / technology,
- (7) The airline's baggage handling is prompt and efficient,
- (8) The airline's check-in is efficient,
- (9) The plane's seats and in flight comfort are good,
- (10) On-time arrival and departure of the airline is sufficient for the consumers,
- (11) The airline's food and beverage service is good,
- (12) The airline's in-flight entertainment facilities are adequate,
- (13) The airline offers sufficient flight frequency (sufficient number of flights),
- (14) The airline offers sufficient connecting flights (network),
- (15) The airline provides delayed flight status promptly,
- (16) The airline offers excellent service recovery for service failures.

Another set of 334 data were collected from different frequent passengers by using the same questionnaire and with the same survey procedure. Confirmatory factor analysis (CFA) was carried out with the dimensions explored through EFA (Kazi, 2011). Structural equation modeling technique was applied with analysis of moment structures (AMOS) trial version for CFA.

Analysis and Results

➤ **Descriptive Statistics :** Out of the total 334 passengers interviewed, it was observed that 115 respondents (35%) reserved their tickets through their company assistants / firm channel, 190 respondents (57%) had booked their tickets by themselves, and 29 frequent flyers (9%) had booked their tickets through travel agents. All interviewed respondents exercised their own freedom in choosing an airline for their travel, irrespective of the mode of booking facility.

About 25% of the respondents were aged above 50 years, 32% were aged between 40-50 years, 33% were aged between 30 - 40 years, and only 9% of the respondents were below 30 years of age. The very young people not travelling much can be ascribed to their nature of occupation as well as their income levels, which may not be lucrative enough to spend on air travel. As far as respondents' occupations were concerned, approximately 28% of the passengers were occupied in business, 67% of the respondents were employed, and only 5% belonged to other categories such as students and retired persons. Majority of the respondents (79%) had an annual income above ₹ 1 million, 19% of the respondents had an annual income between ₹ 0.5 to 1 million, and only 2% of the respondents had an annual income less than ₹ 0.5 million.

➤ **Test of Sampling Adequacy :** For conducting exploratory factor analysis (EFA), 220 frequent passengers were

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.898
Bartlett's Test of Sphericity	Approx. Chi-Square	1468.852
	Df	120
	Sig.	.000

interviewed. To check the adequacy of the sample size used for factor analysis, Kaiser-Meyer-Okin (KMO) and Bartlett's test was used, results of which indicate significant values. The KMO value 0.898 (see Table 1) is higher than the threshold value of 0.6, and the correlation matrix diagonal values in anti image matrices values are above 0.5, indicating a good measure of sampling adequacy (MSA).

Factor Analysis

➡ **Purpose for Conducting Exploratory Factor Analysis (EFA) :** EFA can be conducted for a variety of research purposes, primarily for simple data reduction and understanding latent constructs. In such cases, the use of EFA is more pragmatic than theoretical, and the research goal is simply to take a fairly large set of variables and reduce them to a smaller, more manageable number while retaining as much of the original variance as possible. In the latter cases, organizational researchers do make interpretations regarding constructs rather than purely reducing data (Conway & Huffcutt, 2003).

➡ **Total Variance Explained and Number of Factors Extracted :** Three principal factors were extracted based on Eigen values above 1, which collectively explained about 57% of the variation. Since the method used for the analysis was principal axis factoring, pattern matrix values were taken for rotated component selection (refer to Table 2 for the details).

➡ **Interpretation of the Extracted Factors :** As is evident from the Table 2, three principal factor dimensions were extracted. It is very clear from the factor loadings that (see bold figures in Table 2) passengers made clear differentiation on attribute items, and Factor 1 can be logically interpreted as those underlying attributes which explain the dimension that is closely related to airline employees' specific service aspects during the course of travel or intent to travel. Whereas, Factor 2 represents those attributes which influenced passengers, specifically by the airline schedule / availability (frequency of service). Moreover, the Factor 3 attributes are straight away

Table 2. Rotated Components with Three Principal Factors

Pattern Matrix	Factor		
Attribute items	I	II	III
I feel safe in transactions with the airline's employees.	.855	.090	-.292
The service provided by the airline flight attendants is good.	.710	-.001	.002
The airline staff provides services at the promised time.	.642	.035	.093
The airline's check-in is efficient.	.589	.055	.082
The airline personnel gave exact answers to the posed questions.	.589	.075	.022
The airline's baggage handling is prompt and efficient.	.565	-.034	.225
The airline's physical facilities are visually appealing.	.548	.007	.151
The airline has up-to-date equipment / technology.	.479	-.036	.311
The airline offers sufficient flight frequency (sufficient number of flights).	.016	.856	-.015
The airline offers sufficient connecting flights (network).	.080	.733	.042
The airline provides delayed flight status promptly.	.229	.311	.229
The airline's food and beverage service is good.	.129	.101	.573
The airline's in-flight entertainment facilities are adequate.	-.141	.283	.547
The plane 's seats and in flight comfort are good.	.214	-.064	.538
The airline offers excellent service recovery for service failures.	.187	.169	.450
On-time arrival and departure of the airline is sufficient for the consumers.	.132	.175	.354

linked with the product-specific services related to in-flight comfort perceived by the passengers.

As noted in the factor analysis output, the items having factor loading less than 0.50 were eliminated from further analysis (Hair, Anderson, Tatham, & Black, 1996). On-time performance may be an important attribute for the frequent passengers, which got a low loading (0.354) and, therefore, was not explored as an indicator (may be due to the fact that this attribute could have been perceived differently by the passengers as all delays are not fully under the control of the airline as no airline wants to delay their arrival and departure, nevertheless, it happens due to reasons beyond their control, however, the delays which are caused by the airline were already endorsed in the employee specific dimension as timely service by employees).

➔ **Selection of Attribute Items as Indicators of Factor Dimension :** As reflected in the Table 2, the factors rotated with direct oblimin method and factor loadings were obtained. Factor items with relatively high loadings (above 0.5) were taken for further confirmatory factor analysis (CFA) using SEM. Altogether, nine items were taken for CFA, in which four underlying items constitute Factor 1, two items indicate Factor 2, and Factor 3 is reflected by three items.

➔ **Confirmatory Factor Analysis :** According to Ahire, Golhar, and Waller (1996), confirmatory factor analysis (CFA) provides enhanced control for assessing unidimensionality than exploratory factor analysis and is more in line with the overall process of construct validation. Unidimensionality measures the extent to which all the items in a scale measure the same construct (Venkatraman, 1989). A separate sample of 334 passengers with the same set of questions was used to collect data for conducting confirmatory factor analysis. CFA conducted using AMOS provides information on confirmation of the measurement model with three dimensions explored by the EFA method. This analysis provided clarity on indicator items, which are reflected in a given set of factor dimensions, and its interrelationships were assessed with the goodness of fit indices. The Figure 1 explains the hypothesized

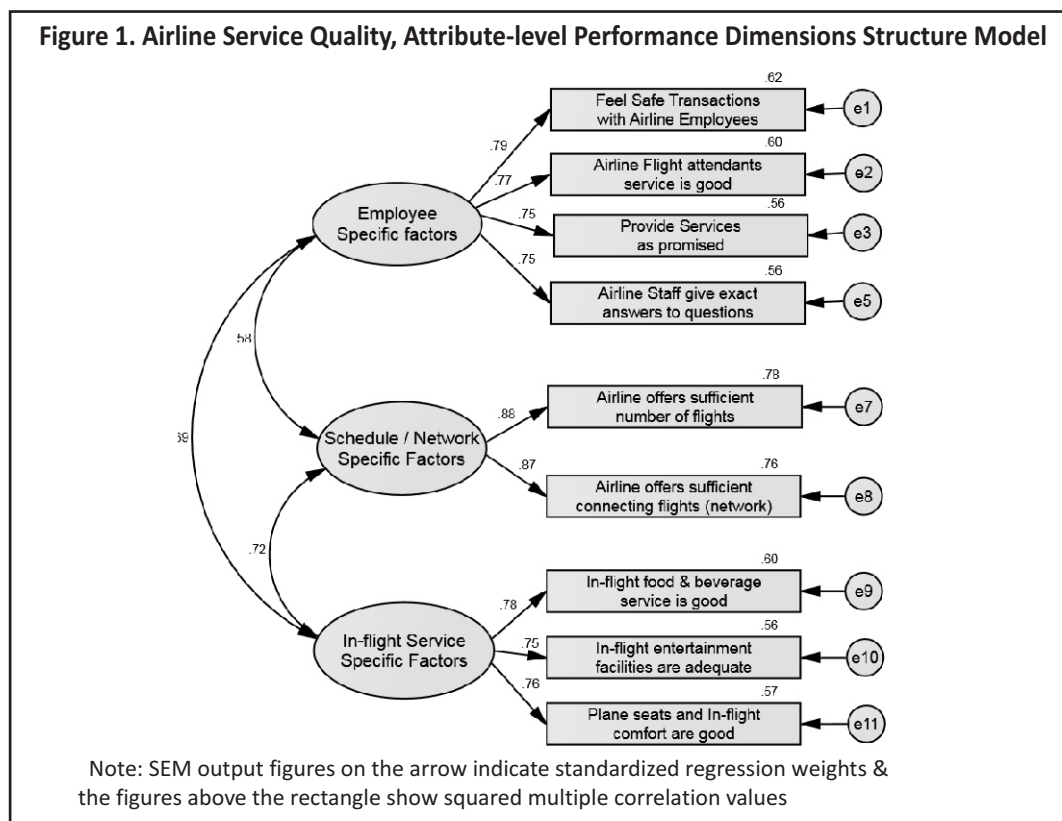


Table 3. Model Fit Indices for the Airline Service Quality - Specific Factors

CMIN					
Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	21	50.384	24	.001	2.099
RMR, GFI					
Model	RMR	GFI	AGFI	PGFI	
Default model	.036	.967	.938	.516	
Baseline Comparisons					
Default Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
model	.967	.950	.982	.973	.982
Parsimony-Adjusted Measures					
Model	PRATIO	PNFI	PCFI		
Default model	.667	.644	.655		
RMSEA					
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	.057	.035	.080	.268	

model followed by summary of model fit indices (Table 3). It was found that the three explored underlying dimensions of airline service quality performance attributes are statistically valid; furthermore, there is no statistical evidence to reject the model.

Statistical Inferences

Since the fit indices of the SEM model validate the factors explored (as shown in the Table 3), there is no statistical evidence to reject the model. CMIN/DF is called as the minimum discrepancy which is obtained as 2.09. Wheaton (1987) suggested that if the minimum discrepancy is less than 5, the model is reasonably fit. Model indices which are less sensitive to sample size like CFI, TLI, RMSEA are also showing good fit results. Therefore, with 95% confidence, it can be inferred that the three factors with reflecting indicators best fit the model, confirming airline service quality attribute-level performance dimensions. Some of the important validity tests generally considered include construct validity and convergent validity. With reference to studies conducted by Bentler and Bonett (1980), Bollen (1989), and Bentler (1980), it was suggested that if the index value is greater than 0.9 and if RMSEA value is less than 0.08, it indicates that the model is fit and is accepted.

➔ **Construct Validity :** In the present study, in order to check for unidimensionality, a measurement model was specified for each construct and CFA was run for the entire construct. If a comparative fit index (CFI) is 0.90 or above for the model, it implies that there is a strong evidence of unidimensionality. CFI values for this construct are specified in the Table 3. This indicates a strong evidence of unidimensionality for the scale.

➔ **Convergent Validity :** Convergent validity is the degree to which multiple methods of measuring a variable provide the same results (O'Leary-Kelly & Vokurka, 1998). Convergent validity can be established using a coefficient called Bentler- Bonett coefficient. This index measures the extent to which different approaches to measuring a construct produces the same results (Hair et al., 1996). According to a rule of thumb, NFI values of 0.90 or greater than that indicates an adequate model fit (Bentler, 1980). The Bentler- Bonett normed fit index (NFI) from CFA is 0.967 (see Table 3) in this research, which is valid.

Table 4. Estimates of Regression Weights (Default model)

Indicator Items (attributes)	Factor Dimensions	Estimate	S.E.	C.R.	P Sig. @ 1%
I feel safe in transactions with the airline's employees.	Employee				
	Specific factor	1.000			
The service provided by the airline flight attendants is good.		.942	.067	14.103	***
The airline staff provides services at the promised time.		.907	.067	13.547	***
The airline personnel gave exact answers to the posed questions.		.951	.070	13.539	***
The airline offers sufficient number of flights.	Schedule / Network				
	Specific Factor	1.000			
The airline offers sufficient connecting flights (network).		.966	.060	16.029	***
The airline's food and beverage service is good.		1.000			
In-flight entertainment facilities are adequate	In-flight Service	1.108	.086	12.945	***
Plane seats and In-flight comfort are good	Specific Factor	.959	.073	13.053	***

Table 5. Factor 1 with all Items in Factor 2 (Network) – Coefficients ^a

Model	Collinearity Statistics	
	Tolerance	VIF
The airline offers sufficient number of flights.	.408	2.451
The airline offers sufficient connecting flights (network).	.408	2.451

a. Dependent Variable: Factor I items (Employee specific, mean value)

➔ **Strength of Indicator Items Explaining the Factor Dimensions :** The Table 4 indicates the strength of a relationship between the indicator items and its respective latent factor variables. It was found that all the regression weights are significant (p values < 0.01 indicated by three dotted stars), which means that all the indicative items are expressing its latent constructs with a high degree of regression as given in the Table 4, moreover, the critical ratio (CR value) is well above 12 for all indicative items, reflecting its underlying factor.

➔ **Test Results of Multicollinearity of Factor Dimensions :** Multicollinearity between extracted factor items may affect the uniqueness and discriminant validity of the factor dimensions. Test of multicollinearity was examined with SPSS by applying regression statistic on collinearity, and the coefficients were compared with each other with mean value of Factor I items as dependent variable and with items in Factor II and Factor III separately as independent variables and vice versa. Results of all VIF values obtained are below the threshold of 3.00, indicating that there is no multicollinearity of the factor items. Kutner, Nachtsheim, and Neter (2004) also pointed out that there is no multicollinearity of factor items if the VIF values are below 5.00 (refer to Table 5, Table 6, and Table 7).

➔ **Internal Consistency of the Extracted Items :** Internal consistency of each factor item was checked using SPSS - reliability analysis scale items. Cronbach's alpha values obtained for Factor I, Factor II, and Factor III are 0.847, 0.870, and 0.801 respectively. As all the values are above the acceptable threshold value of 0.7 (Nunnally, 1978), internal consistency (reliability) of scale items are found to be valid. Moreover, the squared multiple correlation values are also shown significant in the SEM model, which indicates scale item consistency (Kazi, 2011).

➔ **Test Re-Test Reliability of the Factor Items :** A fresh sample of 50 respondents was used to establish the test re-test reliability. This test result provided further evidence of validity of the factor constructs explored from the

Table 6. Factor 1 with all Items in Factor 3 (In-flight Service) Coefficients^b

Model	Collinearity Statistics	
	Tolerance	VIF
The airline's food and beverage service is good.	.621	1.611
The airline's in-flight entertainment facilities are adequate.	.538	1.860
The plane's seats and in flight comfort are good.	.560	1.785

b. Dependent Variable: Factor I items (Employee specific, mean value)

Table 7. Factor 3 with all items in Factor 1 (Employee Specific) Coefficients^c

Model	Collinearity Statistics	
	Tolerance	VIF
I feel safe in transactions with the airline's employees.	.561	1.783
The service provided by the airline flight attendants is good.	.493	2.029
The airline staff provides services at the promised time.	.499	2.005
The airline personnel gave exact answers to the posed questions.	.560	1.785

c. Dependent Variable: Factor III items (In-flight service, mean value)

study. The reliability scores obtained for Factor I, Factor II, and Factor III items are 0.879, 0.858, and 0.728 respectively, which are above the acceptable threshold value of 0.7.

➔ **Importance of ASQ Dimensions for Different Types of Passengers :** Mean values are computed for each ASQ dimensions represented as Factor 1, Factor 2, and Factor 3 and means are compared among various passenger types using one way ANOVA.

➔ **ASQ Performance Factors with Types of Passengers Based on Travel Purpose :** There were three different types of passengers in this study, with their travel purpose ranging from 'business/official,' 'leisure/ tourist,' and 'visiting friends & relatives' (VFR). Results indicate that there exist no significant differences among different groups at 0.05 levels. However, attribute level performance variations for employee factor, particularly for leisure type of passengers, draws implications for the airlines. The post hoc test results provide support that variations in performances are perceived differently by that of leisure vs. VFR category of passengers. The Tables 8 and 9 provide the details.

Assumptions of equality of variances among the three groups were tested and are found to be valid. Since the variations are found to be significant at the 10% level, the post hoc test using Tukey with 10% level of significance

Table 8. ANOVA - ASQ Attribute Level Performances Experienced by Different Passenger Groups

Factors		Sum of Squares	Df	Mean Square	F	Sig.
Employee specific factor	Between Groups	3.251	2	1.625	2.784	.063
	Within Groups	193.236	331	.584		
	Total	196.487	333			
Schedule/ Network specific factor	Between Groups	2.641	2	1.321	1.588	.206
	Within Groups	275.332	331	.832		
	Total	277.973	333			
In-flight service specific factor	Between Groups	3.121	2	1.561	1.833	.162
	Within Groups	281.828	331	.851		
	Total	284.949	333			

Table 9. Post Hoc Test - Multiple Comparisons of ASQ by Passenger Groups

Dependent Variable	(I) Purpose of travel	(J) Purpose of travel	Mean Difference (I-J)	Std. Error	Sig.
Employee specific factor	Business category	Leisure / tourist category	-.20827	.12603	.225
		VFR category	.19152	.13293	.321
	Leisure / tourist category	Business category	.20827	.12603	.225
		VFR category	.39979	.17012	.051
	VFR category	Business category	-.19152	.13293	.321
		Leisure / tourist category	-.39979	.17012	.051

Table 10. ANOVA - ASQ Attribute Level Performance Experienced by Different Passenger Groups

Factors		Sum of Squares	df	Mean Square	F	Sig.
Employee specific factor	Between Groups	6.739	2	3.369	5.878	.003
	Within Groups	189.748	331	.573		
	Total	196.487	333			
Schedule/ Network specific factor	Between Groups	.873	2	.437	.522	.594
	Within Groups	277.100	331	.837		
	Total	277.973	333			
In-flight service specific factor	Between Groups	4.320	2	2.160	2.547	.080
	Within Groups	280.629	331	.848		
	Total	284.949	333			

was conducted to find out the passenger category that cause(s) variation. It is evident from the Table 9 that the variations are significant (p - value less than 0.1) with respect to leisure/tourist vs. VFR type passengers. Moreover, the variations in attribute-level performance perceived by business/official purpose travelers did not vary much in comparison with other types of passengers in all dimensions of ASQ attributes. However, variation observed, particularly with respect to leisure /tourist passengers, may be due to the fact that leisure passengers are more prone to pay attention to various services attributes, explicitly services of employees compared to official and VFR passengers, as leisure travelers are not tied up with any travel specific urgencies.

➔ **ASQ Performance Factors by Types of Passengers in Terms of Booking Mode** : There were three different types of passengers in this study with their travel booking mode ranging from 'self booking,' 'company/ organization,' and 'travel agent'. Results indicate that there exist significant differences among the groups at 0.05 levels with respect to the employee factor, particularly for 'self-booking' passengers. The post hoc test results provide support that variations in performances are perceived differently by self-booking and other categories of passengers. The Tables 10 and 11 provide the details. Assumptions of equality of variances among the three groups were tested and are found to be valid. Since the variations are found to be significant at the 5% level, the post hoc test using Tukey was conducted to find out the group(s) that cause(s) variation.

It is obvious from the Table 11 that the variations are observed to be significant (p - value less than 0.05) only with respect to self vs. other categories of passengers in employee service performance factor. The variation observed, particularly with respect to 'self booking' passengers, may be due to the fact that they may be more prone to paying attention to various service attributes, especially services of employees, as compared to other types of passengers as they exercised more discretionary power in choosing an airline brand of their preference, and hence, their expectations were at higher levels as compared to other types of passengers, who would be sometimes compelled to travel with the airlines selected either by the travel agent or by their company.

Table 11. Post Hoc Test - Multiple Comparisons of ASQ by Passenger Groups

Dependent Variable	(i) Booking Mode	(j) Booking Mode	Mean Difference (i-j)	Std. Error	Sig.
Employee specific factor	Self	Company	.21104*	.08945	.049
		Agent	.44560*	.15095	.009
	Company	Self	-.21104*	.08945	.049
		Agent	.23456	.15733	.297
	Agent	Self	-.44560*	.15095	.009
		Company	-.23456	.15733	.297

Discussion

Efforts in providing attractive services to regular passengers may sometimes go in vain if the major performance attributes perceived by passengers are not properly dealt with by airlines while competing with others, especially with low-cost carriers (Dolnicar, Grabler, Grun, & Kulnig, 2011). It was explored in this study that the employee service specific dimension explained more variations as compared to other factor dimensions, as the Eigen value of employee service specific attribute items showed high values (6.564) as compared to others and explained about 40% of the latent construct namely 'ASQ attributes performance'. This supports the findings obtained by Park et al. (2004), who, in their study, laid more emphasis on 'employee reliability' and 'customer care'. This could be ascribed to the fact that employee service specific aspects may be intrinsic in nature and show an ensuing characteristic in the attribute level performance of all service components. Another aspect contributing to the strength of employee service specific factor could be the influence of human factors like empathy, responsiveness, reliability in the service quality domain specified by Parasuraman et al. (1988). According to experts in the field, the employee factor can be seen in every facet of airline service quality, especially in the framework of internal marketing.

A significantly huge portion of the airline service attributes is not normally perceived by these passengers while travelling in low- cost airlines due to limitations on account of the 'no frill' philosophy adopted by low-cost carriers. There are apparent needs and true needs for the regular passengers, especially for the business passengers as indicated by Shaw (1950). So, it is worth to investigate regular passengers' specific needs in terms of the underlying dimensions. Even in the case of low-cost carriers, service-related aspects are given more prominence as suggested by Yang, Hsieh, Li, and Yang (2012) in their study that customers care not only about low prices, but also about other service quality concerns. It is important to segregate the attributes that have a meaningless influence, which can give positive values when they are frequently paired with a positive outcome (Osselaer, Alba, & Manchanda, 2004), therefore, airlines should differentiate the relevant attributes that really influence frequent travelers.

Managerial Implications

The findings of this research paper aimed to understand the frequent passengers' level of inclination towards a range of attribute driven airline service quality performance dimensions. Therefore, the decision making process of frequent passengers in choosing an airline will be mainly based on the competency of the airline on its performance in the dimension covering employee service specific attributes. Airlines should also look into those dimensions covering service network, schedule frequency, particularly ease of availability of flights and connectivity apart from providing in-flight travel comfort, especially for the leisure passengers.

While looking from the perspective of mode of booking, those passengers who booked a ticket by themselves were more concerned about the service attributes, especially with the service provided by the airline employees. So, airlines operating full service carriers should focus on the employee -customer relationship management (CRM) since CRM results in a number of benefits to an organization like increased margins, improved customer

satisfaction ratings, and decreased administrative costs (Sudhakar, 2009). 'Attribute-level performance' of airline service quality was explained with three factor dimensions. Among these three dimensions, 'employee specific' service dimension fetched more significance from the results of this study. It is evident from previous research studies that retaining an existing customer is more vital than acquiring a new one, which is especially true with regards to frequent flyers of airlines. So, in the process of retaining loyal customers, airlines may focus on providing appropriate training to their front office executives, particularly those handling in-flight services on the subjects not only in airline regulations, but also from a relationship management perspective.

Conclusion

The ASQ attribute-level performance dimensions explored in this study can be effective in understanding airline regular passengers and thereby retaining them. The important attributes of employee service specific dimension are facilitating safe transactions with passengers, providing good in-flight care, providing prompt delivery of services, and being keen on answering the queries of passengers.

Frequency of operations and enabling airline connectivity are the attributes considered very important in the schedule specific dimension. In all, the passengers want to feel very safe in their transactions with airline employees, and expect excellent in-flight services, which can be effected by improving employee service specific and in-flight service specific attributes of airline services targeting the emergent market segment - self booking and leisure category passengers.

Limitations of the Study and Scope for Further Research

The study was conducted with a cross sectional design and the findings are based on a snapshot of passengers' perception about attribute- level performance; a longitudinal research design would perhaps give more clarity and consistency on the explored factors. It was not possible to approach the same set of passengers again due to airline security reasons and constraints in obtaining responses for a second time.

Future research on attribute-level performance of service quality can rely upon the underlying dimensions of attribute-level performance of service quality explored and validated in this research. The consequential effects of service quality performance dimensions can be determined by using 'service satisfaction' as endogenous variables in a service quality model. Moreover, the mediating effect of satisfaction that may affect behavioral intention of consumers to re-patronize the services can also be ascertained.

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