

# VALIDATION OF AIRLINE SERVICE QUALITY SCALE: EVIDENCE FROM INDIAN AND EUROPEAN PASSENGERS

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## ABSTRACT

*The measurement of Service Quality of Airlines is still debated in the academia as there is no conclusion reached for Airline Industry to adopt scale for measuring Service Quality. Air Service Quality (AIRQUAL) scale was developed in 2001 as Industry specific scale for measuring the Airline Industry service quality. Less evidence is available to cross culturally validate the existing scale available in the literature. This study attempts to validate the AIRQUAL scale with evidence form Indian and European passengers as previous research emphasised to develop industry specific scale for measuring service quality for specific industry. A questionnaire was used to collect the responses from air passengers travelling from two continents through different airline service providers. Exploratory and confirmatory factory analysis was used to validate AIRQUAL scale. Limitation of the study and future scope for further research are discussed in the paper.*

**Keywords:** Airlines, AIRQUAL, Scale Validation, Confirmatory Factor Analysis.

## INTRODUCTION

Air transport connectivity gives business greater access to foreign markets, encouraging exports and at the same time increases competition and choice in the home market from foreign based producers. It also enhances the economic performance by making it easier for firms to invest outside the country along with speed and reliability (IATA, 2007). Air transport carries almost 40% of the global trade value though volume of the trade is very miniscule compared with other modes. The economic impact from air transport fall into two groups: 1. Demand side. 2. Supply-side. The demand side impact comes from Business and Tourism. The globalisation of trade, outsourcing and supply chain trend contributes to demand side impact of air transportation resulting in greater scale of operations involving wider geographical reaches well as supply side covering enhanced safety, security, technology and Government policy affecting institutional changes on private investment and completion. Service quality is one of the most significant factors for the airlines to enhance the customer experience.

Roy (2015) concluded that debate on service quality conceptualisation and measurement are still inconclusive while classifying service quality measurement literatures focused on four services such as Traditional service, Multi-level hierarchical model, Technology enabled services, Critical incident techniques. The generic scale developed for measuring service quality was criticised for specific services settings and industry specific scale was needed to measure the

service quality of airlines (Dabholkar, 1996; Ladhari, 2008; Martinez and Martinez, 2010). Roy (2015) suggests that managers can choose approach according to the industry settings as many dimensions for measuring service quality are available in the literature.

Alotaibi (2015) traced the evolution of an industry specific scale from the unpublished study in which Beri conceptualized industry specific scale AIRQUAL in 2001 based on the guidance of Churchill (1979) and Parasuram & Berry (1985) procedures for validating the scale. The study identified five dimensions of AIRQUAL such as airlines tangibles, terminal tangibles, personnel, empathy and image. Beri study in 2001 is a pioneering effort to develop alternative industry specific scale for measurement of airlines service quality. However, Alotaibi (2015) observed many limitations of AIRQUAL scale developed by Beri to confirm the applicability of five industry specific dimensions of AIRQUAL scale for the Airline Industry. The subsequent validation study of Alotaibi (2015) refined the scale with 5 dimensions as tangibility, reliability, assurance, empathy and responsiveness and confirmed five dimensions of the scale by re-allocating the some items to assurance and responsiveness.

While research studies on AIRQUAL have been conducted with Asian passengers (Malaysia, Pakistan and Saudi Arabia), Europe (North Cyprus) and USA passengers but there is a less evidence available from other Europe countries as to generalise the validity of the scale. Accordingly, the following three research gaps are identified:

1. Alotaibi (2015) study reveals the dimensions of hybrid AIRQUAL scale are not stable;
2. Number of dimensions varies with different cultural population;
3. Need to validate AIRQUAL scale in other geographical locations for generalizability of five factor structure for the scale stability.

The findings of five factor structure of AIRQUAL for measuring airline service quality can be generalized with validation study with homogeneous data collection method and extending to different geographical boundaries. Therefore, the present study aims to validate the Hybrid AIRQUAL scale to measure the service quality of Airlines with evidence from Indian and European passengers.

## LITERATURE REVIEW

Roy (2015) study analysed the service quality literature during last 35 years and concluded that debate on service quality on conceptualisation and measurement were still inconclusive. The study suggested that future research should focus more on effective component of service quality along with cognitive component of service quality. Service quality has been defined in several perspectives during the last 35 years but there is no consensus on universal definition of service quality. Therefore, Roy (2015) defined

*“Service quality is the overall subjective judgement/evaluation of quality of a service provider firm based on consumption experiences (s), where various types of emotions can be elicited”.*

The survey of airline service quality literature has employed quantitative and qualitative approaches. Quantitative approach measures the service quality on the performance of the

Airline which is periodically collected by regulatory authority of USA and Europe countries. Many research studies used secondary data collected by aviation regulation authorities from the airlines operating performance. The airline quality rating model developed in USA cannot be replicated to measure the service quality of global airlines as most countries do not have central reporting agency for airlines performance data as in the case of USA and Europe. The qualitative approach measures the service quality on the basis of attitude of customer in perceiving the service quality of Airlines. Many data collection techniques like survey, focus group discussions and interviews etc. are available to measure service quality. The measurement of service quality based on qualitative perspective is very difficult as these opinions are difficult to establish on a comparative basis.

Polyaknova (2015) classified the measurement of service quality literature based on six models

- Nordic,
- American,
- SERVPERF,
- Component,
- Multi-level and
- Brady and Cronin's model.

Among the models for measuring service quality of traditional service, SERVQUAL scale is dominantly used model in the Airlines literature for measuring service quality (Sultan, 2000; Gilbert, 2003; Kozak, 2003; Ling, 2005; Prayag, 2007; Pakdil and Aydin, 2007; Abdulla, 2007; Lu, 2008; Aydin and Yildirin, 2012).

American model SERVQUAL developed by Parasuram & Berry (1985) was based on disconfirmation between perception of the service perceived with their expectation (GAP Analysis). Many studies found that five dimensions of SERVQUAL such as reliability, assurance, tangibility, empathy and responsiveness were not conforming to fit all service industry context as dimensions of the scale varies from 1 to 10 (Angur, 1999; Babakus and Mangold, 1992; Nadiri and Hussain, 2005; Karatepe and Avci, 2002; Ekinici, 2003; Caraman, 1990). The scale was criticized for many issues including psychometric properties and inclusion of expectation, which were normally on the higher side as compared to performance. Therefore, disconfirmation of expectation approach for measuring service quality was neither supported theoretically or empirically (Babakus and Mangold, 1992; Cronin and Taylor, 1992). An alternative scale SERVPERF was developed to have same five dimensions of SERVQUAL scale with the performance only measure (Cronin and Taylor, 1992). SERVPERF explains more of the variance in the overall measure of the service quality than SERVQUAL. SERVPERF was based on "Adequacy Importance Model" of Assimilation-Contrast theory in which service quality performances only are measured as expectations of consumers are irrelevant and misleading.

Ladhari (2008) analysed development of alternative industry specific measurement scales from the 30 studies over the past 15 years and concluded that generic scale of SERVQUAL had been used extensively in the literature but also criticised for operationalization of GAP scores, loosely defined expectation for multiple interpretations, poor fit when tested with 5 factor models with confirmatory factor analysis along with inadequate validity and reliability. To overcome the problems being faced by researchers for the measurement of the service quality in Airlines

settings, Beri conceptualized industry specific scale AIRQUAL in 2001 and developed 44 items based on the guidance of Churchill (1979) and Parasuram & Berry (1985) for scale development process. However, Beristudy was not published in the academic press but her study provided the basis for development of industry specific scale for measuring service quality. Exploratory factor analysis results of Beri study found 7 dimensions:

- Airlines Tangibles,
- Terminal Tangibles,
- Personnel,
- Empathy,
- Image,
- Perceived Service Quality and
- Customer Satisfaction.

Several studies adopted the AIRQUAL scale as an industry specific scale for measuring service quality at various geographic locations: North Cyprus (Ekiz, 2006; Nadiri, 2008). Malaysia (Suki, 2014), Pakistan (Filieri, 2015), Saudi Arabia (Alotaibi, 2015) and United States of America (USA) (Alotaibi, 2015).

Alotaibi (2015) study observed many limitations of AIRQUAL scale developed in 2001 to confirm the applicability of AIRQUAL scale for the Airline Industry, research study with mixed method approach involving the qualitative and quantitative methods was employed in defining the 5 dimensions and scales for measuring airline service quality. A qualitative study with 4 focus group interview procedure was adopted to understand the 44 items to be included for the scale validation. The qualitative study found that “Terminal Tangibles” and “Image” were not to be included in the scale as Terminal Tangibles were not under the control of Airline Management on service delivery process. The second dimension “Image” proposed in the Beri study is not considered to be a service quality delivery process. The third dimension “Personnel” were found to be measuring all five dimensions of SERVQUAL based on the definition of Parasuram (1988). Therefore, Alotaibi (2015) deleted three dimensions from AIRQUAL scale of Beri (2001) after qualitative analysis and added empathy, assurance and responsiveness instead of terminal tangibles, image and personnel. Alotaibi (2014) further refined the scale from 44 items to 30 items by creating a new hybrid scale comprising adding 18 items from SERVQUAL, 9 items from AIRQUAL and 3 new items were added pertaining to airlines context. The refined scale consist of five factors

- Reliability
- Empathy
- Assurance
- Tangibility
- Responsiveness represents the AIRQUAL scale was applied in measuring service quality of airlines using Saudi Arabia samples and retested with the samples from USA.

The result of Alotaibi (2014) study using Saudi Arabia samples retained all the five factors or dimensions but did not confirm the validity of the Hybrid scale. The subsequent re-test of Alotaibi (2014) study using USA samples confirmed three major factors (reliability, tangibility and empathy) against the five factors of AIRQUAL. The Tangibility factor was further divided into two factors and labelled as “Tangibility(Soft)” and “Tangibility(Hard).The

exploratory factor analysis reveals that respondents perceive the dimensions differently due to cultural difference as well as different data collection techniques used for both country samples. The study further concluded that five dimensions of AIRQUAL can be replicated with re-allocation of few items to other dimensions. Therefore, from the findings of Alotaibi (2015) study, it is observed that five dimensions of the new hybrid AIRQUAL is not stable with the different populations.

Kalemba (2015) analysed the concept of service quality in the air transportation and identified major 12 concepts (quoted 3 or more times) in the airlines settings during the period from 1997 to 2014:

- Airline employees;
- Baggage Handling;
- Punctuality;
- Convenient flight schedule;
- Seat comfort;
- In-flight service;
- Food quality service;
- In-flight entertainment service;
- Airline safety;
- Reliability of Service;
- Handling of customer complaints in abnormal conditions;
- Frequent flier programme.

The analysis confirms that five most dominant factors are airline employees, baggage handling, punctuality, convenient flight schedule, seat comfort. Therefore, the review of the extant literature concluded that number of dimensions used for measurement of Airlines service quality is still inconclusive and not standardised in the Airlines industry context.

The study proposes to standardise the dimensions based on the work of Alotaibi (2015) on validation of the scale. Therefore, further research is needed to standardise the dimensions of AIRQUAL as similar to original dimensions of SERVQUAL or SERVPERF for measurement of service quality in airlines. This standardised dimensions labelling will help Airlines Managers to use this scale as a diagnostic tool to measure the service quality in a standardised manner instead of labelling it with new names after every subsequent study, which are creating more confusion in the minds of the Airlines Managers.

## **METHODOLOGY**

Survey based research was applied to validate the AIRQUAL scale based on structured self-administered questionnaire. Passengers who were waiting at the gate in the departure area before boarding of the Aircraft were chosen for the survey. The Study adopted non-probability judgemental sampling technique to collect the data. At the time of administering the questionnaire to 1100 passengers, the researcher explained that the survey was being carried out to measure the service quality and data is being used only for academic purpose and participation in this survey was voluntary. 82% of the passengers agreed to participate in the survey. The target population for the study are:

- 1) The passengers travelled once between India and select European Sector namely London, Birmingham, Frankfurt, Munich and Paris or vice-a-versa.
- 2) Passengers travelled once on any of the followings Airlines;
  - Air India,
  - Jet Airways,
  - British Airways,
  - Virgin Atlantic,
  - Lufthansa,
  - Air France.

The passengers other than Indian, British at Delhi International Airport, Terminal-3 and Mumbai International Airport were selected for, German and French nationality travelled between India and Europe are excluded from the study. As a result, the passengers departing to European cities namely London, Birmingham, Frankfurt, Munich and Paris were samples representing the target population as per the objective of the study. The departure gate close to the boarding area after Security and Customs/Immigration check r the data collection. The average response time was 10 minutes. The total 902 responses comprising Indian and European passengers travelled with native country airline and foreign country airlines. Out of 902 responses, 449 are Indian passengers and 453 are European passengers.

## DATA ANALYSIS

The preliminary analysis was done using Statistical Package for Social Science (SPSS)-20 and confirmatory factor analysis was performed using AMOS-20. The internal consistency of the scale was measured using Cronbach alpha ( $\alpha$ ) for each dimensions of AIRQUAL. Further exploratory factor analysis (Principal Axis Factoring) with Promax rotation was used to identify the dimensions. Finally, the scale validation was done using five factor structures in the confirmatory factor analysis. The following indices were used to assess the model fit: Chi-square value, Goodness of fit index (GFI), adjusted goodness of fit index (AGFI); Normed fit Index (NFI), Comparative fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) (Hair 2016). Discriminant validity was done using pair wise correlation method.

## RESULTS

<b>Table 1</b>								
<b>DESCRIPTIVE STATISTICS, RELIABILITY AND CORRELATIONS</b>								
<b>Variables</b>	<b>Mean</b>	<b>S.D.</b>	<b><math>\alpha</math></b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Tangibility	3.88	0.71	0.71	1				
Reliability	3.88	0.77	0.84	0.56**	1			
Responsiveness	3.98	0.79	0.90	0.53**	0.66**	1		
Assurance	4.15	0.72	0.89	0.55**	0.66**	0.80**	1	
Empathy	3.72	0.76	0.91	0.57**	0.72**	0.74**	0.73**	1

Note: \*\* Correlation is significant at the 0.01 level (2-tailed). A: Cronbach Alpha, S.D.: Standard Deviation

During the exploratory factor analysis, 8 items whose factor value less than 0.40 or high cross loading are deleted from the 30 items scale and remaining 22 items are subjected to confirmatory factor analysis. The analysis resulted in 3 items belonging to AIRQUAL as developed in 2001 by Beri, 2 from SERVQUAL (Parasuram, 2018) and all 3 new items added in the refined AIRQAUL scale (Alotibi, 2015) were deleted as there are not confirming to the factor score of above 0.4 or having cross loading with other dimensions.

<b>Description</b>	<b>Mean</b>	<b>S.D.</b>	<b>Skewness</b>	<b>Kurtosis</b>
TAN1	4.04	0.83	-0.79	0.84
TAN2	3.76	0.93	-0.51	-0.01
TAN3	3.86	0.9	-0.65	0.23
REL2	3.87	1.02	-0.82	0.28
REL3	3.83	0.94	-0.62	0.16
REL4	3.93	0.87	-0.67	0.36
REL5	3.92	0.89	-0.76	0.7
RES1	3.87	0.93	-0.59	0.01
RES2	3.98	0.89	0.79	0.59
RES3	4.11	0.91	-0.94	0.6
RES4	3.91	0.95	-0.74	0.28
RES5	3.94	0.88	-0.6	0.09
ASS1	4.16	0.82	-0.84	0.57
ASS2	4.09	0.89	-0.95	0.78
ASS3	4.22	0.81	-0.88	0.39
ASS4	4.13	0.84	-0.89	0.71
EMP1	3.68	0.87	-0.45	0.57
EMP2	3.7	0.89	-0.43	0.13
EMP3	3.71	0.94	-0.48	0.06
EMP4	3.77	0.95	-0.54	-0.06
EMP5	3.79	0.93	-0.55	0.08
EMP6	3.71	0.95	-0.4	-0.21

The mean perception score of 3.91 out of 5 shows that passengers are more satisfied with the service performance of the Airlines operating between India and Europe. The maximum mean score of 4.22 of Assurance item indicates that passengers feel safe in the transaction with the airline. The lowest score of 3.68 of Empathy indicates that passengers are compensated sufficiently by the airline for any complaints arising from service disruption in the shortest time possible.

The highest standard deviation of 1.02 of Reliability indicates that Passengers are facing the problems in On Time performance of the Airlines and least standard deviation of 0.808 shows that passengers are generally feel safe on the transaction with the Airlines.

<b>Items</b>	<b>Factor</b>				
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
TAN1				0.685	

TAN2				0.643	
TAN3				0.600	
REL2			0.779		
REL3			0.465		
REL4			0.607		
REL5			0.804		
RES1	0.486				
RES2	0.802				
RES3	0.809				
RES4	0.862				
RES5	0.733				
ASS1					0.495
ASS2					0.622
ASS3					0.700
ASS4					0.481
EMP1		0.559			
EMP2		0.712			
EMP3		0.884			
EMP4		0.876			
EMP5		0.753			
EMP6		0.662			

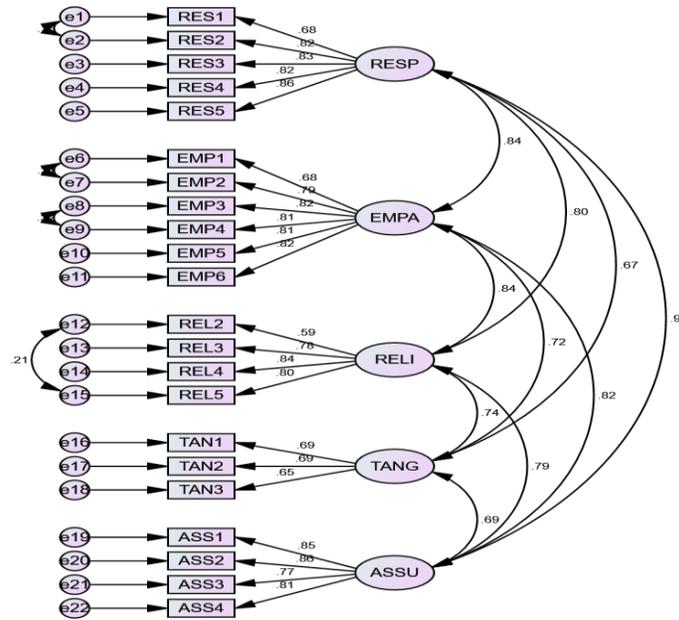
Extraction Method: Principal Axis Factoring

#### Rotation Method: Promax with Kaiser Normalization

The total Variance explained analysis of the study results indicates that 51.84% is explained by Responsiveness, 3.89% is explained by Empathy, 3.024 is explained by Reliability, 2.25% explained by Tangibility and 1.531 explained by Assurance.

The factor matrix indicates that all items with factor more than 0.4 are retained in the confirmatory factor analysis. The exploratory factor analysis results indicates that 16 out of 18 of SERVQUAL scale and 6 out of 9 items are retained in the Industry specific scale "AIRQUAL". The deletion of all 3 items confirms that existing scale of SERVQUAL and AIRQUAL are sufficient to measure the service quality of the airlines. The final 22 items confirms to the study of SERVQUAL/SERVPERF with 6 items replacing with Airlines service settings.

Factor	Original Questionnaire	Alotaibi validated items	Results of the study	Deletion of items
Tangibility	7	10	3	4
Reliability	6	7	5	1
Responsiveness	5	7	4	1
Assurance	5	5	4	1
Empathy	7	1	6	1
Total	30	30	22	8



**FIGURE 1  
MEASUREMENT MODEL**

Model fit indices	Values
$\chi^2$	506.17
df	195
$\chi^2/df$	2.59
GFI	0.95
AGFI	0.93
NFI	0.96
CFI	0.97
RMSEA	0.04

All the fit indices confirm that data is fitting the overall measurement model.

Items	Estimate	S.E.	t-values	AVE	CR
Responsiveness				0.666	0.908
RES1	0.697	0.034	25.537		
RES2	0.832	0.046	25.537		
RES3	0.844	0.05	23.767		
RES4	0.83	0.052	23.401		
RES5	0.868	0.049	24.395		
Empathy				0.648	0.917
EMP1	0.699	0.033	25.66		
EMP2	0.809	0.047	25.66		

EMP3	0.828	0.056	23.305		
EMP4	0.82	0.056	23.086		
EMP5	0.83	0.055	23.403		
EMP6	0.837	0.056	23.588		
<b>Reliability</b>				0.605	0.858
REL2	0.615	0.044	18.885		
REL3	0.798	0.064	18.885		
REL4	0.853	0.062	19.699		
REL5	0.819	0.056	21.164		
<b>Tangibility</b>				0.481	0.735
TAN1	0.71	0.051	17.734		
TAN2	0.703	0.062	17.734		
TAN3	0.662	0.06	16.897		
<b>Assurance</b>				0.698	0.902
ASS1	0.86	0.027	34.256		
ASS2	0.866	0.032	34.256		
ASS3	0.789	0.031	29.212		
ASS4	0.825	0.031	31.46		

The reliability and validity of the confirmatory factor analysis was assessed. The model fit, reliability and validity shows that the five factor measurement model of service quality fit considerably. The composite reliability varies from 0.735 to 0.917 for the five dimensions of service quality which is higher than the conventional minimum value required for confirming the model fit. The average variance extracted (AVE) is higher than 0.5 which indicates that measurement model have high construct validity.

<b>Table 7</b>	
<b>DISCRIMINANT VALIDITY: PAIR WISE CORRELATION METHOD</b>	
<b>Original Model (<math>\chi^2_{585}=506.176</math>)</b>	<b>Constrained correlation</b>
<i>Responsiveness and</i>	
Empathy	757.41
Reliability	740.19
Tangibility	822.93
Assurance	697.35
<i>Empathy and</i>	
Reliability	753.62
Tangibility	836.65
Assurance	753.23
<i>Reliability and</i>	
Tangibility	791.18
Assurance	731.69
<i>Tangibility and</i>	
Assurance	805.76

Discriminant validity was carried out by constraining each of these correlation parameters (one at a time) to unite in the measurement model (leaving other parameters free) and repeated the CFA (Joreskog, 1971; Parasuram, 1994). In every case, the constant CFA produced an

increased in the Chi-square statistics that was significant at  $P < 0.01$ . The result shows that distinctiveness of each scale's component dimensions.

## DISCUSSION

The study validated the Hybrid scale AIRQUAL with the sample of India and Europe country passengers as they belong to different culture and are the perfect samples for cross cultural validation of the AIRQUAL scale. Moreover, India and European countries have disparity in income per GDP and belong to Developing and Developed countries. A close examination reveals that passengers perceived service quality of Airlines are better than average. Passengers are more satisfied with feeling safe with the transaction of the airlines. However, the empathy demonstrated by Airline employees are not perceived well by the passengers as they are not compensated sufficiently by the airline for any complaints arising from service disruption in the shortest possible time. Moreover, Low mean scores for Empathy indicated that passengers are not satisfied with employees providing individual attention, understanding the specific needs of the passengers and having best interest at heart for passengers.

Responsive dimension explain higher percentage of variance with Airlines Service Quality as it confirm that Passengers are more satisfied with responsiveness of the Airlines employees. However, the lowest percentage of variance Empathy indicates that Airlines employees show not adequate empathy with the passengers. The previous studies (Nadiri, 2008; Suki, 2014) on AIRQUAL Scale supported that Empathy impacts highly on customer satisfaction. Therefore, Airline management should concentrate on Empathy dimensions to improve the customer satisfaction of the Indian and European Passengers. Another concern of reliability for passengers is promises made to depart and arrive by certain time.

The study further reveals that Tangibility dimensions are not significantly explains the model and therefore, Tangibility of Service quality are not influencing the perception of the passengers which is contradictory to the finding of Ali (2015). As such, Tangibility becomes the least influencing factor of Service quality and supported by finding of Suki (2014) which confirms that Tangibility did not significantly affect customer satisfaction. The study tested the AIRQUAL model with 5 dimensions: Tangibility, Reliability, Assurance, Empathy and Responsiveness and validated the AIRQUAL Scale with adequate reliability and validity with evidence from Indian and European passengers. The 22 item scale can be used as diagnostic tool for measuring service quality of Airlines. Hybrid scale AIRQUAL can be best alternative for measuring the service quality for Airlines context. The scale reliability and validity of the scale was found to be very good to confirm the model. The validated scale with evidence from Indian and Europe passengers can be used as standardized diagnostic tool for periodic study to identify the trends in their service delivery process also an adequate marketing tools can be employed to improve the customer satisfaction and loyalty to the Airlines.

## THEORETICAL CONTRIBUTION

The present study contributed to confirmation of validated AIRQUAL scale of industry specific for measuring service quality of Airlines. It replaces several industry specific labelling of dimensions with generic dimensions of the scale as same as SERVQUAL and SERVPERF

along with parsimonious identification of 22 items as similar to the original scale developed for measurement of service quality. Theoretically, the present study extends the application of Adequacy Importance model of Assimilation/Contrast Theory for industry specific Airlines context using Hybrid scale AIRQUAL instead of SERVPERF for the measurement of performance only service quality.

### **MANAGERIAL IMPLICATIONS**

The findings of the study will help to identify the weakness and strength of Airlines on five dimensions of the scale as an input for formulation marketing strategies including product up gradation and brand promotion, etc. so as to improve their service quality for better customer satisfaction. First, Empathy and Reliability are the key dimensions of the service quality which needs improvement and Airlines Managers should give more importance and train employees to show more empathy towards the passengers. Secondly, the study shows that Tangibility is not significant as airlines are offering modern and well maintained aircraft, Cabin interior cleanliness and better In-flight catering services. The five factor model of AIRQUAL scale will provide valuable input for the training managers of Airlines industry to identify the employee's performance while providing service delivery to the passengers and suitable training can be imparted in future to enhance the "empathy" dimensions of service quality of the airlines. Since the service quality leads to business performance, the airlines management can develop strategies and tactics to improve upon the marketing programme as well as change the service culture of the organisation for the effectiveness and improve performance of the service employees.

### **LIMITATIONS AND SCOPE FOR FUTURE RESEARCH**

In the present study while performing the confirmatory factor analysis the first order factor model has produced the best fit to the data compared with second order factor model fit. Since service quality has been conceptualised as a second order factor model further studies are needed to validate the proposed measures to obtain the good fit for the second order model. In tangibility dimension the AVE value is less than 0.5 and factor loadings are significant. As far as the AVE value for this dimension is concerned the value is not meeting the cut off value of 0.5 proposed in Hairs (2016). In future studies the researcher can further validate these measures to produce adequate AVE value for this dimension. A replication study with other geographic continent such as Australia and Africa will further assess the stability of the factor structure and enrich the generalizability of the findings.

### **CONCLUSION**

The present study was aimed to validate the industry specific scale with evidence from Indian and Europe passengers. The previous literature on AIRQUAL scale have limitation on establishing the validity as five dimension structure was not stable with empirical evidence. The study validated the AIRQUAL scale with five generic dimensions as used in SERVQUAL and SERVPERF along with parsimonious identification of 22 items scale as compared with 44 items scale as mentioned in original study of Beri.

The study will help Indian based Airlines Air India and Jet Airways as well as Europe based Airlines British Airways, Virgin Atlantic, Lufthansa and Air France to understand the perceived performance of Indian and European passengers on the existing operations between India and Europe. The study concludes that Industry specific scale AIRQUAL for Airlines industry with 5 dimensions-Reliability, Assurance, Tangibility, Empathy and Responsiveness and 22 items scale can be used for measuring service quality of Airlines across the globe.

With reference to practical application, there is lack of bench marking of service quality in the airline business and a meaningful diagnostic tool is developed at the industry level for improvement and benchmarking with other competing Airlines for performance measurement. The AIRQUAL scale will acts as standardised tool, to understand the trend in passengers perception of performance of airlines and as an input to develop effective marketing program to increase customer satisfaction and better customer experience.

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