Service Quality and Service Performance of Low Cost Airlines

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Abstract— This paper discussed primarily customer attitude towards online service quality of low cost airlines with respect to five dimensions after selected factor analysis namely privacy, functionality & offerings, efficient transactions, technical functionality and merchandise. In addition, overall service performance of low cost airlines is also measured and analyzed with respect to website performance and consumer loyalty. The demographic profile of online users and data reliability & validity of service quality and service performance scales are also discussed.

Keywords— Electronic commerce, Service performance, low cost airline.

I. INTRODUCTION

As a present scenario an internet has strong impact on online services that provide one of the success of avenues for to generate additional sales. Online services such as easy search of products and services, provision of product specifications that reduce communication costs, secure electronic payment system to complete transactions, updated product delivery information and quick response to customer queries are important to win online customers and to make them keep coming back to the site for further purchases [1]. The literature authenticates that among online industries, online travel industry has been booming and gaining significant attention since 1995 particularly for online ticket reservation. Although, online travel represents the single largest sector with estimated spending of $68 billion till 2006, however, estimated percentage increase in travel sector (14.7%) is less than non-travel sector (24.6%) [2]. The online reservation system has now been also extended along with airlines to other traveling sectors such as trains & buses in growing economies like India. The selling of tickets for air travel has been one of the growing success stories of the industry. The different airline companies such as Kingfisher, Jet, Indian, Spice Jet, Go Air, Deccan and other online travel companies such as Ticketmaster, Travelocity, Orbitz, Yatra, Expedia, flights etc. have capitalized on the internet as retail channels. The increasing trend in online airline ticket is mainly because of potential benefits associated with automating the ticketing functions of an organization which include reduced labour costs, increased accuracy of ticket inventory, processing speed and increased customer service [3].

Besides contributing to the success of travel companies, internet has also revolutionized the thinking of customers who have become more awared and tech savvy. The business of online travel services basically depends on awareness of customers on one hand and web service quality on other hand. Awareness of customers and purchasing power of customers along with web service quality are important dimensions contributing to the success of airline sector in web economy. Today, consumers are able not only for purchase air tickets but also browse schedules for available flights, cruise, trains and other methods of travel from the comfort of their personal computer, saving time and hassle of dealing through a traditional agent. Online customers expect fast, friendly, choice, convenience and responsive quality service with a personal touch [4]. Such attributes thus directly influence web service quality.

A. Web Service Quality in Airlines

Proliferation and rapid adoption of the internet within the airline industry along with online ticket purchasing and electronic ticketing are the important key drivers of e-business in the airline sector. The internet and its growing technologies allowed airlines to alter their distribution channels and interact directly with customers, bypassing traditional brick and mortar agents and eliminating hefty commission fee. Such benefits result in lower ticket distribution cost and time cost that ultimately attract customers to purchase online and pave the way for customer loyalty [3]. Web Service Quality is an important prerequisite that contribute to the performance of online organizations offering products and services such as books, toys, hotels, tourism, hospitals and airlines in terms of increased customer satisfaction and consequently market share. To increase online customer satisfaction and loyalty vis-à-vis market share, airline organizations should focus on the proactive website quality. The quality of website as discussed previously is a function of five dimensions namely content, functionality, merchandise privacy and customer service. To assess the content quality of the airline companies' website, items such as accurate information, availability of information on varied topics, value added information and well organized information are considered to be relevant. Functionality dimension relates to processing quality of website. The site processing in terms of its designing, usage, organization information, well design, simple to use, well organized, easy to get anywhere on the site, loading of pages, quick transaction, upto date and detailed information on related items, strengthens the functionality dimension of the online service quality. Merchandise, the third important, dimension, is recognized as the core component of online service quality.

Specifically, information about the electronic ticket with respect to price, discount, options for returning tickets, vacation & festival compensation, cancellation, price comparison etc. determine the merchandise quality of the airline companies. Privacy, another significant and equally important dimension from customer perspective is appreciated when online companies provide complete check, protection and control on information relating to credit card number, web shopping behavior and other personal information. Customer service dimension provides pave way for the online company to offer solution to the queries of the customer. The quality of four dimensions viz. content, functionality, merchandise and privacy are considered to be dependent on customer service. To conclude, the online companies should opt for customized activities in terms of content, functionality, merchandise, privacy and customer service to enhance online service quality vis-à-vis business performance.

II. Review of Literature

The purpose of the study entitled "Internet Ticketing in a not for profit, Service Organization" carried out by Olson and Boyer [5] identified the factors how to build customer loyalty in the e-ticketing process. The study is based on two factors i.e. patron factor (cost, order service, speed, comfort & ease of interaction) and technological factors (accuracy, ease of navigation, transaction difficulties & overall system effectiveness) that influence the patron loyalty for the e-ticketing process for an established not for profit organization.

The objective of the study entitled 'e-service and offline fulfillment: how e-loyalty is created by Semeijn et al. [26] focused on the contribution of online quality and offline fulfillment in creating overall customer satisfaction and loyalty. The authors found that the design of the e-scape have a strong positive impact on both navigation and accuracy. It was also found that e-quality perception with regard to assurance directly influence overall satisfaction and loyalty. The importance of offline fulfillment in effecting customer satisfaction and loyalty levels for different online services need further investigation.

Tin and Ennis [6] conducted a study titled "Cross Industry Analysis of Consumer Assessments of Internet Retailers Service Performance" laid emphasis on the service performance of internet retailers and also to identify their differences in service performances with respect to core services, website feature, recovery service, customer satisfaction and intentions. The results showed significant mean differences in terms of consumer intentions to use more online services and switching online service providers across the retailer's performances in terms of core service, website and recovery service performances. The influence of retailer characteristics and larger sample could provide a more comprehensive coverage in further investigation

Trabold, Heim and field [7] examined the relationship between e-service quality dimensions and perceptions of overall e-service performance across industry sectors namely travel services, book retailing, financial services and health care. The results found evidence of multicollinearity among the dimensions and also found that all e-service quality

dimensions was found to be positive and significant within each sector except price perceptions, ease of returns & refunds and privacy experience.

Hackman et al. [8] in their study entitled "A Service Perspective on Modeling Intentions of Online Purchasing" examined the relationship between behavioral intentions and its antecedent factors including service quality, satisfaction and service value in the online service settings. The results suggest that behavioral intentions are directly influenced by online service quality, online service value and online service satisfaction. The R^2 of the endogenous constructs ranged from 0.19 for online service satisfaction to 0.34 for behavioral intentions, suggested that the model explained significant amount of variance in the dependent variables. Future research should investigate how accurately the behavioral intentions developed in regard to online services translate to actual consumer behavior.

The objective of the paper entitled "Development of online quality system for e-manufacturing" conducted by Jiao et al. [9] is to assist manufacturers in obtaining real time quality data and information and further to make decisions regarding quality control. The study is based on four models namely product design, process planning, quality control and data input. The results showed advantages of the online quality information system (OQIS) for companies to obtain real time quality data and information on which manufacturers can make timely and correct decisions in solving quality problems in an e-manufacturing environment. Further research need to solve issues of explanation of complex quality information and deployment costs in the enterprise.

III. Research Methodology

A. Generalization of Scale Items

To determine online service quality, certain dimensions such as content, functionality, merchandise, privacy and customer service are identified on the basis of review of literature and discussions with the experts. The usefulness of the website is primarily function of information available on the website. The quality of content is in general associated with relevance, level of information detail, accuracy and appropriateness of format. The richness in search quality information increases satisfaction with both the experience and product/services purchased and improves intentions to revisit and repurchase from a website [10]. The dimension 'content' in this context, is concerned with the varied information on websites. The second dimension 'functionality' is related with web functions. Site's search functions, its download speed and overall design are considered as the key elements that affect web usability [11], [12]. The success of the website depends on the design of the pages as they appear on the screen, customer's ease of use accessing and navigating between pages [13]. Merchandise, the third dimension consists of product information which is considered as crucial, as customers cannot see or touch the actual merchandise at the time of purchase [14]. Merchandise related aspects such as product quality, selection, guarantees/offerings and pricing are consistently used by the customer to evaluate the overall

online shopping quality [15], [16]. Privacy, another dimension is very significant for online transactions. Since online customers have serious concerns about the security of online credit card transactions and the interceptions of their personal information [17]. It is essential for all the online companies to provide privacy to customers in terms of protection of personal information, web shopping behavior, credit/digital cash transactions. The privacy dimension is shown to have a strong impact on intention to purchase [18], satisfaction [19] and overall site quality [20]. Customer service, the fifth dimension includes information regarding contact number, handling of complaints, online help, solution to the problems and cancellation of tickets, if not required which are considered important for measuring online service quality. Customer service, such as ease to contact the service provider and easy to return the goods are equally important criteria in online buying decisions [21].

In addition, the impact of web service quality on service performance is also identified using two dimensions such as website performance and customer loyalty.

B. Pre-testing and Finalization of Questionnaire

The pre-testing was done on total thirty four customers who booked online tickets in airlines in Jammu region on the basis of convenience sampling to finalize the questionnaire. The exercise of pilot study led to the refinement of the questionnaire with addition and deletion of items. One general statement is added in general section on airline information. The application of factor analysis helped in deleting one statement from content, three statements from functionality, five statements from merchandise, and three from customer service. The final questionnaire on online service quality and its impact on service performance comprise two sections. First section is related with demographic profile which includes information on gender, age, occupation, qualification, martial status and income. Under this section, general perception of customers about airline sector such as name of the airline used, type of ticket, frequency, class of seat, website, purchasing period, booking and mode of payment are also considered. The second section focuses on dimensions useful for measuring online service quality and these include content, functionality, merchandise, privacy and customer service. All the five online service quality dimensions, based on five point likert scale, ranging from 5 to 1, comprises 5 statements (content), 11 statements (functionality), 15 statements (merchandise), 6 statements (privacy) and 7 statements (customer service) respectively. Lastly, 9 statements reflecting impact of online service quality on organization performance are also used. The application of factor analysis indicated the presence of functionality, merchandise, privacy and customer service. The two factors out of five remained same as such two dimensions merchandise and functionality are segregated. The content dimension is completed deleted and as such is not considered for further analysis. To add the other factors emerged from the factor analysis indicate about the core content dimension.

C. Sample Design and Population

Since the population on online customers are not well defined, so an effort was made initially to identify channel of sources such as known business and service employees, e-mail Id's, university teachers & students and tourists to identify online customers. Personal contact (275) and distribution (125) approaches are used to contact and collect data from the respondents. The known businessmen, service employees, university teachers and university students were personally contacted for information on web service quality. The tourists availing hospitality services from about twenty hotels near the Katra Bus stand were contacted during October 2008. The visit to Katra was made once in a week and that too on holidays. The judgmental sampling is used for final data collection. There efforts resulted in selection of 119 business class respondents, 138 service class respondents and 65 others which include faculty members and students of Jammu University. Out of 400 respondents the effective sample size is 321. The response rate in personal contact 100% and in distribution the response rate is 36.8% and non-response rate is 63.2%.

IV. STATISTICAL TOOLS

The data reduction technique of exploratory factor analysis is used to reduce total number of items into few manageable and meaningful items that affects the components of web service quality and web service performance. The study used principal component analysis with varimax rotation specifically to minimize the number of items with high loading on one factor, thereby enhancing the interpretability of the factors [22]. KMO values equal to and greater than 0.50 are used to find out relevancy of data reduction and grouping for factor analysis. Bartlett test of Sphericity is used to identify the significant correlation coefficient among the items. Further, degree of correlation coefficient equal to or greater than 0.30 is used as criterion for selection of items to check convergent validity (among items), discriminant validity (among factors) and nomological validity (between web service quality and overall service performance) [23]. Cronbach alpha and split half alpha is used to find out the reliability of the factors used. In addition Z-test is also used to check the mean difference between two samples. Lastly, simple regression analysi t-test is used to test the various hypotheses relating to web service quality and web service performance.

V. LOW COST AIRLINES

A low cost airlines or non frills airlines is one that proffers air travel at normally very low rates by cutting down on expensive customary in-flight passenger services.
Spice Jet- is a low cost airline based in New Delhi, India. It began its operations in May 2005, delivering the lowest fares with the highest consumer value, to price sensitive consumers.
Go Air- is a low cost budget airline based in Mumbai, India. The airline theme line is "Experience the Difference" and its objective is to offer passengers a quality consistent, quality assured and time efficient product through affordable fares.

Indigo- is the latent entrant to the domestic civil aviation space in India. The low cost carrier took off its inaugural flight from Delhi to Imphal on August 4, 2006.

The sample comprised of online customers of Spicejet (90.5%), Indigo (6.3%) and Go Air (3.2%) (Table I).

TABLE I. Demographic profile of respondents in low cost airlines.

Low Cost Airlines		
Airlines	**No. of respondents**	**%**
Spice jet	86	90.5
Indigo	6	6.3
Go Air	3	3.2
Total	95	100

VI. LIMITATIONS AND FUTURE RESEARCH OF THE STUDY

The research is conducted amidst certain limitations.

a) Being consumer based study, the elements of subjectivity cannot be avoided as the responses of customers were based on their perception regarding web service quality items. But at the same time, an endeavor was made using validity & reliability analysis to check the objectivity and rationality of the responses.

b) Online service quality is conceptualized in terms of customer service, functionality, privacy, merchandise & offerings. Perceived risk which include social risk, time risk & technological risk etc. and affects web service quality is not assessed in the present study and can be undertaken in the future research. Further, the study results need to be further examined for specific sector for the national as well as international airline services.

c) Country, state and region wise perception of online customers can also be examined in the future research.

d) The scope of the study is limited to online customers found in Jammu region only and agents and airline employees are excluded from the purview. As such, for future research can also be included to analyze the online service quality in airlines from more holistical perspective.

e) Offboard and onboard services which are excluded from the study could also be used to assess the overall service quality i.e. both online and offline service quality.

f) Scope of the study is limited to airline sector. The generalization of the study results needs to be established in other service sectors such as railways, banks, hotels, education sector etc.

VII. SERVICE QUALITY AND ITS IMPACT ON SERVICE PERFORMANCE OF LOW COST AIRLINES

This paper discusses primarily customer attitude towards online service quality of low cost airlines with respect to five dimensions after selected factor analysis namely privacy, functionality & offerings, efficient transactions, technical functionality and merchandise. In addition, overall service performance of low cost airlines is also measured and analyzed with respect to website performance and consumer loyalty. The demographic profile of online users and data reliability & validity of service quality and service performance scales are also discussed. The detailed analysis is discussed as under:-

A. Demographic Profile

The demographic profile of low cost airline respondents is identified according to gender, age, occupation, monthly income and qualification criteria (Table II). The sample of respondents (95) using online services consist of 64% males (61 respondents) & 36% females (34 respondents). 59% & 41% respondents are found to be married and unmarried respectively. Further, 14% respondents fall in income groups – I (IG-I) with monthly income below Rs 10,000; 37% respondents belong to IG-II with monthly income between Rs 10,000- Rs 20,000, 29% respondents fall in category (IG-III) with monthly income between Rs 20,000- Rs 30,000 and 20% respondents in the last group (IG-IV) with monthly income above Rs 30,000. The respondents falling in four educational groups include 8% respondents in group I (10+2), 26% respondents in group II (graduate), 40% in group III (post graduate) and 25% respondents in group IV (others). The respondents are also categorized according to their occupation viz. business class (39%), service class (36%) and dependent (25%). Further, 33% respondents (31), 35% respondents (33), 22% respondents(21) and 10% respondents(10) are found to be falling under AG-I (21-30 years), AG-II (31-40), AG-III (41-50 years) & AG-IV (above 50 years) respectively. Lastly, as per length of online service experience, percentage of respondents using online services include 12% with less than1 year ,40% with online purchase experience between 1-2 years, 31% with online purchase experience between 2-3 years and 17% with online purchase experience above 3 years.

TABLE II. Demographic profile of low cost airline users.

Demographic characteristics	Groups	Number	Percentage
Gender	Male	61	64
	Female	34	36
Martial Status	Married	56	59
	Single	39	41
Monthly Income	Below Rs 10,000 (IG-I)	13	14
	Rs 10,000-Rs 20,000 (IG-II)	35	37
	Rs 20,000-Rs 30,000 (IG-III)	28	29
	Above Rs 30,000 (IG-IV)	19	20
Qualification	10+2 (group I)	8	8
	Graduate (group II)	25	26
	Post Graduate (group III)	38	40
	Others (group IV)	24	25
Occupation	Business men	37	39
	Service class	34	36
	Dependent	24	25
Age	21-30 years (AG-I)	31	33
	31-40 years (AG-II)	33	35
	41-50 years (AG-III)	21	22
	Above 50 years (AG-IV)	10	10
Purchase Experience	0-1 year	11	12
	1-2 years	38	40
	2-3 years	30	31
	Above 3 years	16	17
Total		95	100%

B. Reliability and Validity

a) *Web service quality*: The overall cronbach alpha value for the quality scale for low cost airline sample is found to be

0.907.To further support the results, split half method of reliability (item-wise) is carried out, which, is turn, is found to be 0.853 for first half and 0.838 for second half respectively (Table- III). In addition, split half method of reliability (respondent-wise) scored 0.792 & 0.836 (table IV). The scale under item statistics is found to be suitable as item mean (Mean=3.35 & Variance=0.16), item variance (Mean=1.66 & Variance=0.16) and inter item co-relations (Mean=0.30 & Variance=0.24) are found to be in acceptable range [24]. High factor loading values arrived against varied statements for all the five variables (Table V) and good variance explained 65.99% confirmed the construct validity of the online service quality scale.The convergent validity of the sample was assessed by examining the nature of association using correlation for inter items falling under five factors namely privacy, functionality and offerings, efficient transactions, technical functionality and merchandise. All correlation coefficient values are found to be significant and varying between 0.24 to 0.67 under privacy, 0.39 to 0.72 under functionality & offerings, 0.24 to 57 under efficient transactions, 0.56 to 0.70 under technical functionality and 0.32 to 0.65 under merchandise (table VII). All this indicated convergent validity of the scale. The discriminant validity of all the variables is found varying between 0.20 to 0.61 (Table IX) indicating that all the five factors identified discriminant characteristics. All values of discriminant validity are found to be within threshold range i.e. between low to average (Table IX) [24].

TABLE III. Item statistics, scale statistics and cronbach alpha value for web service quality scale for low cost airlines.

Stages			
Item Statistics	Item mean	Mean	3.35
		Variance	0.16
	Item variance	Mean	1.66
		Variance	0.16
	Inter-item co-relations	Mean	0.30
		Variance	0.02
Scale statistics		Mean	80.34
		Variance	303.84
		Standard Deviation	17.43
Reliability Statistics	Cronbach alpha		0.907
	Split half alpha		
	Item-wise		Respondent-wise
	0.853	0.838	0.889	0.836

b) Web Service performance: The reliability is checked by examining the co-efficient alpha and split half alpha value for the performance scale comprising two variables viz. website performance and consumer loyalty. The overall cronbach alpha value for the scale is found to be 0.807(table IV), which indicated the internal consistency of the scale. Further, 0.678 & 0.777 (item-wise) and 0.792 & 0.836 (respondent wise), the split half values, further, supported the internal reliability of the scale [23]. The convergent validity of the scale is assessed by examining the nature of inter-item association falling under two factors namely website performance and consumer loyalty, which are found to be between 0.24 to 0.64 respectively indicating good degree of convergent validity

(Table VIII). The discriminant validity of service performance is also found to be significant at 99% level (table X). The study findings support nomological validity (table XI).

TABLE IV. Item statistics, scale statistics and cronbach alpha value for web service performance scale for low cost airlines.

Stages			
Item Statistics	Item mean	Mean	3.59
		Variance	0.34
	Item variance	Mean	1.25
		Variance	0.01
	Inter-item co-relations	Mean	0.34
		Variance	0.02
Scale statistics		Mean	28.72
		Variance	33.89
		Standard Deviation	5.82
Reliability Statistics	Cronbach alpha		0.807
	Split half alpha		
	Item-wise		Respondent-wise
	0.678	0.777	0.792	0.836

C. Data Analysis

a) Web service quality: The application of varimax and principal components method at 7 iterations, helped in identifying five factors, which explained 65.99 (table V) percent variance. The KMO value is accorded at 0.757 and BTS measure at 1424.08 with df= 276 and p=0.000 which reflected the significance of correlation and data for pursuing factor analysis. The factor analysis generated five factors namely privacy, functionality & offering, efficient transactions, technical functionality and merchandise converged in 7 iterations rotation. The brief portray of various factors is explained as under:-

Factor-1 Privacy

The factor '1' has recognized seven items out of twenty four items which include 'feel safe' (FL= 0.80), 'credit card transactions' (FL= 0.77), 'solution to the problem' (FL= 0.69), 'detailed information' (FL= 0.67), 'well established site' (FL= 0.66), 'simple to use' (FL= 0.57) and 'information on privacy policy' (FL= 0.55). The mean of the seven items arrive at 4.18, 3.68, 3.54, 3.58, 3.51, 3.24 & 3.62 respectively. The overall mean score is calculated as 3.63 indicating more than average satisfaction of online customer towards service quality of low cost airline for privacy factor. The communality values are found to be 0.68, 0.72, 0.71, 0.67, 0.76, 0.52 & 0.51 respectively for the items reflecting the relative importance of privacy items. The factor explained 15.96 percent (table V) of variance out of 65.99 percent of variance. The values of measure of sampling adequacy for the items are accorded at 0.80, 0.71, 0.84, 0.78, 0.74, 0.81 & 0.70 for 'feel safe', 'credit card transactions', 'information on privacy policy', 'disclosure of information', 'solution to the problem', 'well established site' and 'simplicity' items respectively.

Factor-2 Functionality & offerings

'Pages do not freeze' (FL=0.71 & MS=3.38), 'seasonal discounts' (FL= 0.69 & MS= 3.13), 'discount during offerings' (FL= 0.64 & MS= 3.31), 'site does not crash' (FL= 0.57, & MS= 2.75), 'truthful about offerings' (FL= 0.56 & MS= 3.03), and 'discount during festivals' (FL=0.56 & MS= 2.98) with positive factor loading (Table V) are recognized in

factor 2. 'Site does not crash' and 'discount during offerings' have shown mean values below 3, indicating the need to improve the functionality and offering services. The overall mean scored at 3.10 highlight that customers feel positively about overall functionality & offerings. The values of communalities and MSA are more than 0.50 and the factor also demonstrated 14.64 percent of variance from a cumulative 65.99 percent of variance.

TABLE V. Factor- wise mean, factor loading, KMO, MSA, % of variance and communalities for web service quality for low cost airlines.

Factors	Mean	Factor Loading	MSA	% of Variance	Communalities
F1-Privacy				**15.96**	
Safe transactions	4.18	0.80	0.80		0.68
Credit card transaction	3.68	0.77	0.71		0.71
Inf. on privacy policy	3.62	0.55	0.84		0.51
Disclosure of information	3.58	0.67	0.78		0.67
Solution to the problem	3.54	0.69	0.74		0.71
Well established site	3.51	0.66	0.81		0.76
Simplicity	3.24	0.57	0.70		0.52
Mean	**3.63**				
F2- Functionality & Offerings				**14.64**	
Pages do not freeze	3.38	0.71	0.80		0.60
Discount during offerings	3.31	0.64	0.76		0.67
Seasonal discounts	3.13	0.69	0.86		0.72
Truthful about offerings	3.03	0.56	0.85		0.59
Discounts during festivals	2.98	0.56	0.77		0.52
Site does not crash	2.75	0.57	0.82		0.66
Mean	**3.10**				
F3- Efficient Transactions				**13.35**	
Price information	3.97	0.63	0.71		0.52
Time saving	3.94	0.87	0.69		0.82
Online help/toll free no.	3.67	0.72	0.79		0.61
Online booking	3.61	0.55	0.61		0.59
Ticket display	3.59	0.63	0.79		0.61
Mean	**3.76**				
F4- Technical Functionality				**11.95**	
Quick transaction	3.07	0.83	0.82		0.79
Loading of pages	3.05	0.74	0.69		0.67
Instant responses to queries	2.99	0.81	0.83		0.76
Mean	**3.04**				
F5- Merchandise				**10.09**	
Compensation for loss	2.85	0.72	0.63		0.69
Product return facility	2.82	0.77	0.55		0.70
Guarantee on online product	2.80	0.81	0.63		0.75
Mean	**2.82**				
Grand Mean	**3.27**				
Iterations	**7**				
% of total cumulative explained				**65.99**	
KMO	**0.757**				

TABLE VI. Factor- wise mean, factor loading, KMO, MSA, % of variance and communalities for web service quality for low cost airlines.

Factors	Mean	Factor Loading	MSA	% of Variance	communalities
Service Performance					
F1-Website Performance				**33.32**	
Overall value	3.63	0.76	0.80		0.67
Higher behavioral intentions	3.59	0.62	0.79		0.43
Choice for future transaction	3.52	0.83	0.81		0.69
Overall satisfaction with website	3.46	0.64	0.75		0.46
Low switching intention	3.24	0.68	0.78		0.50
Mean	**3.49**				
F2-Consumer Loyalty				**24.94**	
Website for online purchase	3.84	0.55	0.78		0.39
Positive attitude	3.74	0.86	0.66		0.77
recommendation	3.70	0.96	0.67		0.76
Mean	**3.76**				
Grand Mean	**3.63**				
% of total cumulative explained				**58.26**	
Iterations	**3**				
KMO	**0.750**				

Factor-3- Efficient transactions

Five items found in third factor include 'time saving', 'online help/toll free number', 'ticket display', 'price information' and 'online booking' showing factor loading values of 0.87, 0.72, 0.63, 0.63 & 0.55 respectively. These statements showed communalities values of 0.82, 0.61, 0.61, 0.52 & 0.59 in this factor. The above average grand mean value for four items (3.76) also showed that online customer's services are averagely satisfied with the efficient transactions of low cost airlines. This factor demonstrated 13.35 percent as variance (table V).

Factor 4- Technical Functionality

The factor loading and mean score values for 'quick transaction', (FL=0.83 & MS=3.07), 'instant responses to queries' (FL=0.81 & MS=2.99) and 'loading of pages'(FL=0.74 & MS=3.05) with communalities values of 0.79, 0.76 & 0.67 reflect high factor loading values. The results reflect that customers are less satisfied with 'instant responses to queries'. The factor demonstrated 11.95 percent of variance out of cumulative 65.99 percent of variance. The MSA values are valued at 0.79, 0.76 & 0.67 respectively, which supported the importance of items (table V).

TABLE VII. Item-wise degree of correlation coefficient for web service quality for low cost airlines (Convergent validity).

	F1- Privacy								**F3- Efficient transactions**				
	P3	**P4**	**P5**	**P6**	**F3**	**F4**	**F11**		**M1**	**M3**	**M10**	**M11**	**CS4**
P3	1							**M1**	1				
P4	0.54	1						**M3**	0.24*	1			
P5	0.41	0.44	1					**M10**	0.47	0.56	1		
P6	0.37	0.53	0.63	1				**M11**	0.38	0.28*	0.57	1	
F3	0.46	0.46	0.24*	0.43	1			**CS4**	0.33	0.43	0.57	0.52	1
F4	0.56	0.43	0.43	0.48	0.67	1			**F4- Technical functionality**				
F11	0.38	0.38	0.52	0.57	0.33	0.66	1	**M2**	**M2**	**F6**	**F8**		
	F2- Functionality & Offerings							**F6**	0.56	1			
	M6	**M7**	**M8**	**F7**	**F9**	**F10**		**F8**	0.70	0.57	1		
M6	1								**F5- Merchandise**				
M7	0.72	1							**M12**	**M13**	**M14**		
M8	0.56	0.74	1					**M12**	1				
F7	0.45	0.54	0.41	1				**M13**	0.65	1			
F9	0.52	0.51	0.40	0.45	1			**M14**	0.32	0.60	1		
F10	0.45	0.45	0.39	0.48	0.52	1							

All the values of Correlation are significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

TABLE VIII. Item-wise degree of correlation coefficient for web service performance for low cost airlines (Convergent validity).

	F1- Website Performance						**F2- Consumer Loyalty**		
	OSQ5	**OSQ6**	**OSQ7**	**OSQ8**	**OSQ9**		**OSQ2**	**OSQ3**	**OSQ4**
OSQ5	1					**OSQ2**	1		
OSQ6	0.58	1				**OSQ3**	0.64	1	
OSQ7	0.39	0.53	1			**OSQ4**	0.37	0.32	1
OSQ8	0.25*	0.44	0.47	1					
OSQ9	0.24*	0.40	0.49	0.46	1				

All the values of Correlation are significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

TABLE IX. Variable-wise degree of correlation coefficient of web service quality for low cost airlines (Discriminant validity).

	Privacy	**Functionality & Offerings**	**Efficient Transactions**	**Technical Functionality**	**Merchandise**
Privacy	1				
Functionality & Offerings	0.52	1			
Efficient Transactions	0.48	0.36	1		
Technical Functionality	0.38	0.61	0.34	1	
Merchandise	0.33	0.40	0.25*	0.27	1

** All the values of correlation are significant at 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

TABLE X. Variable-wise degree of correlation coefficient of service performance for low cost airlines (Discriminant validity).

	Website Performance	**Consumer Loyalty**
Website Performance	1	
Consumer Loyalty	0.46	1

** All the values of correlation are significant at 0.01 level (2-tailed)

TABLE XI. Degree of correlation between overall web service quality and web service performance of low cost airlines (Nomological validity).

	Web Service Quality	**Web Service Performance**
Web service quality	1	
Web Service performance	0.502	1

Correlation is significant at 0.01 level (2-tailed).

Factor 5-Merchandise

'Guarantee on online product' (FL=0.81 & MS= 2.80), 'product return facility' (FL=0.77& MS=2.82) and 'compensation for loss' (FL=0.72 & MS=2.85) are recognized in factor 5. The statements signified that customers are dissatisfied with the merchandise services. The values of communalities and MSA for the items reflect the relative importance of the items that are reached at (0.75& 0.63) for 'guarantee on online product', (0.70 &0.55) for 'product return facility and (0.69 & 0.63) for 'compensation for loss'. The value of grand mean for this factor is found to be 2.82 indicating below average online services of low cost airlines which has to be improved to contribute online service quality. The variance explained by factor is found to be 10.09 percent (table V).

b) Web Service Performance: The KMO value (0.750) and Bartlett's test of sphericity (chi-square=241.612, df= 28 and p=0.000) indicate the relevance of factor analysis (Table VI).The application of varimax rotation and principal component method at 3 iterations, helped in identifying two factors namely website performance and consumer loyalty. The items explained 58.26 percent variance. The factor analysis clubbed eight items into two factors i.e. F1= 'website performance' and f2= 'consumer loyalty'. These are discussed as under:-

Factor 1- Website Performance

The first factor consists of statements viz; 'choice for future transaction', 'overall value', 'low switching intentions', 'overall satisfaction' and 'higher behavioral intentions' with positive and high factor loading values of 0.83, 0.76, 0.68, 0.64 & 0.62 and mean satisfaction scores of 3.52, 3.63, 3.24, 3.64 & 3.59 (Table VI) respectively. The grand mean (3.49) indicate little bit above average perception of online customers with respect to website performance of low cot airlines. The first explained 33.32% of variance out of 58.26% of cumulative variance. The statements showed communalities values of 0.69, 0.67, 0.50, 0.46 &0.43 respectively and MSA values of 0.81 ,0.80 ,0.78 ,0.75 & 0.79 in factor 'website performance'.

Factor 2- Consumer Loyalty

The factor 'consumer loyalty' has evolved three items that include 'positive attitude' (FL=0.86) 'recommendation' (FL=0.86) and 'website for online purchase' (FL==0.55) with mean score values of 3.74, 3.70 & 3.84 (Table VI) respectively. The overall value is calculated as 3.76 indicating that low cot airline users show average consumer loyalty. Further, this factor demonstrated 24.94 percent of variance 58.26 percent of cumulative percent of variance and the communality value are reached at 0.77, 0.76 & 0.39 for the three statements namely 'positive attitude', 'recommendation' and 'website for online purchase', reflecting their relative contribution to the consumer loyalty factor. The statements also show high MSA values of 0.66, 0.67 and 0.78.

TABLE XII. Multiple regression values of web service quality dimensions for full service airlines.

Web service quality dimensions	Unstandardized coefficient		standardized coefficient			Collinearity Statistics	
	B	Std. Error	Beta	t-values	Significant	Tolerance	VIF
Privacy	0.264	0.079	0.335	3.359	0.001	0.626	1.597
Functionality & offerings	0.412	0.082	0.557	4.997	0.000	0.502	1.992
Effective Transaction	-0.054	0.076	-0.006	-0.716	0.476	0.734	1.363
Technical Functionaliy	-0.158	0.061	-0.263	-2.595	0.011	0.608	1.645
Merchandise	0.042	0.055	0.068	0.773	0.442	0.812	1.231
Dependent variable: Web Service Performance							
Independent variable: Web Service Quality Dimensions							
R=0.667, R^2=0.444, Adjusted R^2= 0.413							

VIII. CONCLUSIONS

The impact of independent factors namely privacy, functionality & offerings, efficient transactions, technical functionality and merchandise on online service quality are found to be 44 percent (R^2= 0.44) (Table XII). The independent factors are also checked for the multicollinearity. Variance inflation factor and tolerance values for the independent variables indicate absence of multicollinearity (Table XII). The beta values found to be 0.26 (p=0.001) for privacy, 0.41 (p=0.000) for functionality & offerings, 0.04 (p=0.442) for merchandise, indicating positive impact on online service quality. Similarly, the impact of efficient transactions and technical functionality on online service quality with beta values calculated as -0.05 (p= 0.476) and -0.16 (p=0.011) depicting negative impact on online service quality. The results revealed that functionality & offerings has positive and significant impact on online service quality followed by privacy and merchandise and as such the hypotheses pertaining to privacy, functionality & offerings and merchandise are accepted.

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