Abstract

The long-term survival and competitiveness of the airline business is strongly connected to the quality of service offered by airline operators and their ability to satisfy and build long-term relationships with customers. This study investigates the relationship among service quality, customer satisfaction and loyalty in the Nigerian airline industry. The cross-sectional survey research design was chosen in order to collect the primary data, using a structured questionnaire. Convenience sampling was adopted to draw a sample of 800 respondents. The data collected were analysed using correlation and multiple regression analysis. The findings of this study largely support the hypothesized relationships proposed in the conceptual framework. The results specifically reveal that perceived service quality is positively related to both passengers’ satisfaction and loyalty. The relationship between passenger satisfaction and loyalty towards the airlines was also found to be positive. The mediating effect of customer satisfaction between perceived service quality and customer loyalty is also found to be positive and partially supported. On the basis of the findings of this study, we conclude that perceived service quality does influence passenger satisfaction, and by extension, loyalty to the airlines. Thus, improvement of service quality is an adjuvant factor to sustainable differentiation and competitiveness in the airline industry. We therefore, recommend that airline operators develop and implement market-oriented service strategies to identify customers’ needs and expectations in order to serve them better. Additionally, airline operators should measure service quality regularly to assure that
they are keep meeting passengers’ expectations, and consider customizing their products and services (as needed) to enhance customer satisfaction and loyalty.

**Keywords:** perceived service quality, customer loyalty, passenger satisfaction, flight experience, customer expectation, air transportation

**JEL:** M19, Z13

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**Background to the Study**

The airline industry, often referred to as air transportation, is one of the foremost services industries that significantly contributes to the economies of developed and developing nations. Wensveen [2007], describes the airline industry as a business activity that transports people and goods by air from one location to another. Ashgate [2011] categorizes airline services into intercontinental, continental, regional, or domestic; and the nature of airline operation may be based on scheduled services or charter flights. In general, the aviation business is divided into domestic (64% of air traffic) and international (36%). The industry is projected to generate 713.6 billion USD in the next few years [Datamonitor, 2011] and according to the Air Transport Action Group-ATAG (2014), supports 1.1 million employment opportunities and generates 34.5 billion USD in Africa (the latter being equivalent to 1.7% of Gross Domestic Product (GDP). The Nigerian airline industry, according to Amba and Jonathan [2013], contains four major elements: passengers traffic, freight traffic, mail traffic, and aircraft movements.

Research on airline service quality and its impact on customer satisfaction and loyalty is a topical issue that has caught the attention of researchers and practitioners because of its potential to influence airline profitability and competitiveness [Saha, Theingi, 2009]. Despite the lack of holistic quality measurements, service quality is still measured from the customers’ perspective [Sein, Chey, 2013] because, according to Rhoades and Waguespack [2004], its value is inherently subjective. Parasuraman, Zeithaml and Berry [1988] suggested the SERVQUAL model for measuring quality as perceived by customer. SERVQUAL is founded on five dimensions, often labelled as RATER (reliability, assurance, tangible, empathy, and responsiveness). According to Parasuraman, et al. [1988], consumers evaluate service quality by comparing expectations with perceptions based on the five dimensions mentioned above. Reliability refers to the capability of a business organization to perform the promised service correctly and dependably. Responsiveness is the willingness or readiness to offer prompt service. Assurance relates to the level of employee knowledge and courtesy that inspires customer confidence of their expectations that will be met. Tangible is the physical appearance and representation of the service, equipment and other customers in service facility. And empathy refers to employee caring and individual knowledge/attention to understand customer needs.
Undoubtedly, passenger satisfaction with airline service quality is intricately connected with the way its service quality is being evaluated [Donnett, Ineson, Stone, Colgate, 2000; Rahim, 2015]. Therefore, to build and sustain customer satisfaction, a high level of service quality should be delivered by airline operators [Smith, Swinehart, 2001]. In reviewing service marketing literature, customer satisfaction has been viewed primarily within the expectation-disconfirmation paradigm, which conceptualizes customer satisfaction as the process in which customers assess satisfaction with a product or service [Oliver, 1980]. According to Ahmad [2007], a customer is satisfied (when perceived performance is at least the same or higher than expected) or dissatisfied (when perceived performance is less than expected).

According to Clemes, Gan, and Ka [2008], as service quality increases the probability of customer satisfaction increases and vice-versa. In airline operations, the body of evidence indicates that service quality perceptions, as well as satisfaction obtained through service encounters are essential to enhancing customer loyalty [An, Noh, 2009]. Literally, loyalty denotes customer propensities towards the service company and its product/service. A fundamental motive for pursuing customer loyalty emanates from the universal belief that keeping loyal customers is of more strategic benefit to business organisations than recruiting new ones because: (1) it is cheaper to serve existing customers (2) loyal customers are less price sensitive, and (3) the purchase frequency of loyal customers is high [Dowling, Uncle, 1997].

**Statement of the problem**

Service quality in airline industry is relatively more challenging to measure than in other service industries (i.e. financial sector), in which system and work processes consist of distinct but inter-related tasks [Ghazal, Suchita, 2014]. According to Chang and Keller [2002], airline services are executed concurrently and their delivery involves many entities (such as airport authorities), and a host of other third parties (e.g. caterer, security operatives and aviation services providers, etc.). Accordingly, a unified effort is required to coordinate the multiplicities of processes needed to deliver superior service quality in the airline industry [Chang, Keller, 2002].

A review of literature about service marketing reveals that the direction of causality and relationships among service quality, customer satisfaction and loyalty is an important, unresolved subject matter characterized by inconsistencies and controversies. For instance, Oliver [1993] and Auh and Johnson [2005], have viewed service quality and customer satisfaction as complementary or divergent constructs. Other researchers further established the causal reciprocity of service quality and customer satisfaction, which creates further confusion [Salazar, Paulo, 2004; Wang, Chich-Jen, 2006]. Similarly, the claim that customer satisfaction leads to loyalty appears even less convincing [Egan, 2004; Pritchard, Silvestro, 2005]. Although a number of researchers have examined the relationship among perceived
service quality, customer satisfaction and loyalty in the airline industry internationally [Faheed, 1998; Saha, Theingi, 2009], to the best of the author’s knowledge no study has yet investigated these relationships in the Nigerian airline industry. Similarly, a large number of existing studies have mainly been inspired by the SERVQUAL framework to analyse customer perceptions of service quality, which has been found to be inadequate in the airline context; hence, the growing debate to enhance its robustness [Gilbert, Wong, 2003; Jin-Woo, Rodger, Cheng-Lung, 2005; Pakdil, Aydin, 2007].

Correspondingly, a review of service marketing literature reveals that a sizeable number of previous research on service quality in Nigeria paid a relatively large amount of attention to banks and the telecommunications industry [Olatokun, Nwonne, 2012; Gambo, 2013; Moguluwa, Ode, 2013]. Surprisingly, in the few works concerning the Nigerian airline industry [Ckiwendu, Ejem, Ezenwa, 2012; Geraldine, Chikwendu, 2013; Olaniyi, Onwuka, Agu, 2014], the researchers paid scant attention to the SERVQUAL model. More importantly, most of these studies used firm as against industry level analysis in their studies.

Considering this focus and the expected faster growth rate of air transportation in developing countries [Netjasov, Janic, 2008; Japan Aviation and Development Company-JADC, 2012], it appears that the sector has been given relatively less research attention than it merits.

This study seeks to partially address the gap in the service quality literature by investigating the interrelationships among service quality, customer satisfaction and loyalty in the Nigerian airlines industry. This study focuses on the following specific objectives: (1) investigating the relationship between perceived service quality and passenger satisfaction in the Nigerian airline industry, (2) examining the effect of perceived service quality on customer loyalty in the Nigerian airline industry, (3) studying the influence of passenger satisfaction on customer loyalty in the Nigerian airline industry, and (4) determining if passenger satisfaction could mediate the relationship between perceived service quality and customer loyalty in the Nigerian airline industry.

Research Hypotheses

The following hypotheses are proposed for this study:
1. Perceived service quality, comprised of seven sub-dimensions (reliability, responsiveness, assurance, customization, employees, facilities, and flight pattern), is not significantly related to passenger satisfaction in the Nigerian airline industry.
2. Perceived service quality consisting of the same seven sub-dimensions has no effect on customer loyalty in the Nigerian airline industry.
3. Passenger satisfaction has no effect on customer loyalty in the Nigerian airline industry.
4. Passenger satisfaction will not significantly mediate the relationship between perceived service quality and customer loyalty in the Nigerian airline industry.
Theoretical and Literature review

Service Quality Theory

The prevailing model for measuring service quality is the SERVQUAL model conceived by Parasuraman, Zeithaml, and Berry [1985]. The SERVQUAL model is a multiple-item measure that can be used to identify and deduce customer perceptions and service expectations. It is considered to be reliable and valid for evaluating service quality in a number of industries. To develop the SERVQUAL scale, Parasuraman et al. [1985] gathered empirical data from five different service industries: appliance renovation and maintenance companies, retail banking, long distance telephone, security, brokerage, and credit cards. The SERVQUAL model initially acknowledged ten dimensions of service quality (tangible, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding, knowing customers, and access). Subsequently, these ten dimensions were suppressed into five (reliability, responsiveness, tangible, assurance and empathy).

The SERVQUAL model hinges on gaps in service quality, which addresses differences in service quality expectations and perceptions. Hutton and Richardson [1995] state that the broader the gap, the lesser the perception of quality appears in consumer minds, and vice-versa. According to Sheth and Desmukh [2004], SERVQUAL is most often applied to evaluate the presence and degree of Gap-5, which expresses the difference between customer expectations and perceptions of service quality. Mohammed [2006] notes that of the five service quality Gaps, only Gap 5 can be examined exclusively from the customer’s viewpoint; that is, analyses of other Gaps require information from the service provider.

Notwithstanding its effectiveness and application, several scholars have documented some limitations of the SERVQUAL model and presented alternative models to measure service quality [Espinoza, 1999; Brady, Cronin, 2001; Ladhari, 2008]. These academics criticized SERVQUAL because service quality perception is contingent on numerous unique factors that are industry specific; hence, no single measurement model universally applies across industries. In particular, Cronin and Taylor [1992] claimed that SERVQUAL describes the level of customer satisfaction with a product or service and not service quality. These scholars therefore developed the SERVPERF model in 1992 to evaluate customers’ overall feeling towards service delivery [Cronin, Taylor, 1992]. Other notable service quality models developed to solve the shortcomings of SERVQUAL are: the synthesized service quality model [proposed by Brogowicz, Delene, Lyth, 1990]; the attributes service quality model [developed by Haywood-Farmer, 1988]; and the pivotal, core and peripheral model [promoted by Philip, Hazlett, 1997], among others. Gilbert and Wong [2003] refined the five SERVQUAL dimensions into seven (reliability, responsiveness, assurance, customization, employee, facilities, and flight pattern). Until now, there has been no conclusive method for measuring service quality; however, researchers agreed...
that the SERVQUAL dimensions are multifaceted and were vital elements in any study of service quality [Brady, Cronin, 2001].

**Conceptual Framework**

The conceptual framework guiding this study is presented in Figure 1.

**FIGURE 1. A Conceptual Framework Showing the Relationship Among Service Quality, Passenger Satisfaction and Loyalty**


The conceptual framework proposes the following interrelationships: perceived service quality is used as an independent variable with seven sub-dimensions: reliability, assurance, responsiveness, employees, facilities, customization and flight patterns; customer loyalty is the dependent variable, while passenger satisfaction mediates the relationship between the independent (perceived service quality) and dependent variable (customer loyalty).

**Defining Service Quality**

Service quality is a construct that has stimulated significant interest and debate in the service marketing literature due to the complications in both defining and measuring it, with no general consensus emerging from them. As a result, many scholars have labelled service quality as an ‘elusive’ and ‘indistinct’ concept that is problematic to operationalize and measure [Parasuraman et al., 1988; Bolton, Drew, 1991; Cronin, Taylor, 1992]. Service
quality is the appraisal that customers make between their expectations and perceptions of the service received [Parasuraman et al., 1985]. According to Lewis and Booms [1983], service quality is a company’s ability to deliver a service in a way that meets and exceeds customer expectations. Roberta, Pascale, and Amal [2006] state that consumers use intrinsic and extrinsic signals when forming opinions about product or service quality. That evaluation is often based on extrinsic attributes (such as packaging, advertising etc.) and intrinsic features (such as colour, size, flavour or aroma etc.). Athiyaman [1997] claims that perceived service quality is the overall evaluation of the goodness or badness of a product or service offered to customers.

**An overview of Customer Satisfaction**

Business performance in terms of product/services quality leads to customer satisfaction [Huang, Feng, 2009]. There are two basic conceptualizations of customer satisfaction: transaction specific and cumulative [Boulding, Kalra, Stealin, Zeithaml, 1993]. Transaction specific satisfaction relates to a particular product or service encounter, while cumulative satisfaction is the general evaluation of the entire service encounter process. In simple terms, customer satisfaction is a way of cultivating and meeting customer preference and expectations in order to enhance value creation. Bearden and Teel [1983] view customer satisfaction as a distinct form of consumer attitude that relates to the extent consumers like or dislike the service after using or experiencing it. According to Dewulf, Odekerken-Scroder, and Iacobucci [2001], customer satisfaction is the state of the consumers’ mind with the product/service of a company and their appraisal of their working relationship with the enterprise. Parker and Mathews [2001] view customer satisfaction as a process and an outcome of the consumption experience. From this viewpoint, customer satisfaction as a process is a comparative appraisal between the service delivered and prior expectations. The outcome approach, on the other hand, is the end-state satisfaction emanating from the consumption experience.

**Customer Loyalty and its Dimensions**

Customer loyalty is the customer’s mind-set regarding the company, its products and service, which generate a favourable attitude toward a business organisation, a commitment to repurchase the company’s product (or services) and a tendency to recommend the product (or services) to others [Pearson, 1996]. According to Ahmad [2007], service marketing academics support the assessment of customer loyalty from three perspectives: behavioural loyalty, attitudinal loyalty, and a composite approach of the two. From a behavioural perspective, loyalty is usually defined in terms of a purchase measure over a specific time period [Ahmad, 2007]. While empirical evidence for behavioural loyalty is strong and extensive, it is somewhat ambiguous for attitudinal loyalty [Uncles, Dowling, Hammond, 1998]. Attitudinal loyalty has been viewed as the tendency to continue a relationship with an organization demonstrated through repurchase intentions [Czepiel,
Gilmore, 1987]. According to Ahmad [2007], attitudinal loyalty, is the consumer’s psychological attachment to a particular organization and or its product/service. Notwithstanding the popularity and advantages associated with the attitudinal components of loyalty, Jacoby and Chestnut [1978, p. 57] argued that “when loyalty is restricted to either behaviour or attitude alone, it seems incomplete”. Moreover, a focus of attention on either (behavioural or attitudinal) may fail to address the causal interrelationship between a consumer’s brand attitude and behaviour [Oliver, 1997].

Drawing their conclusion from the above-stated claims, Dick and Basu [1994] argued that while there are merits in both conceptualizations of loyalty (either behavioural or attitudinal), a complete understanding is only achieved when consumers’ attitudes and behaviour are both examined through a composite approach. Composite loyalty, according to Dick and Basu [1994] is the integration of attitudinal and behavioural measures to address some of the shortcomings associated with adopting behavioural or attitudinal measures alone. The major shortcoming of the composite loyalty approach is that the quantified scores utilized in measuring behavioural and attitudinal components may have different measurements [Chi, 2005]. Therefore, views on loyalty have largely oscillated between uni-dimensional and two-dimensional perspectives [Bennett, Liliana, 2002]. However, consensus on whether it has two or three dimensions is lacking, and the measurement of these dimensions has been inconsistent [Jones, Shirly, 2007].

Are Customer Satisfaction and Service Quality Complimentary or Divergent Constructs?

One of the foremost debates in service marketing literature is the controversy over whether customer satisfaction and service quality are complimentary or divergent concepts [Bolton, Drew, 1991]. Conventionally, customer satisfaction and service quality have been regarded as synonymous constructs [Saha, Theingi, 2009]. However, in contrast to the perception of the traditional paradigm, which equates the two concepts, the notion that service quality and customer satisfaction are distinctive has achieved wider acceptance among researchers. Kandampully [1998] states that service quality has become the most prominent differentiator of service organisation. According to Kasper, Helsdingen and Gabbott [2006], service quality is a multifaceted, ephemeral construct that refers to some attribute of what is delivered, whereas satisfaction or dissatisfaction denotes customer reactions to that offer. Although, both customer satisfaction and service quality are concepts emerging from the comparison of expectation and performance [Parasuraman et al., 1988], and are indeed strongly interwoven, the two constructs are not fundamentally the same [Bolton, Drew, 1991].

The predominant view is that service quality is the logical antecedent for customer satisfaction, but some studies have reported contrary findings [Oliver, 1997; Egan, 2004]. For instance, Parasuraman, Zeithaml, and Berry [1991] claimed that customer satisfaction is a post-purchase decision while service quality is not. On the other hand, satisfaction
in the service marketing literature relates to expectations for goods that connote “would”, while service quality expectations represents “should”. Parasuraman et al. [1985] claimed that customer satisfaction is a situation- or encounter-specific, while quality is more holistic, and established over a longer period of time. According to Oliver [1993], service quality may be described as having more cognitive content, and customer satisfaction may be more deeply loaded with affect. According to Nor and Wan [2013], service quality is a cognitive concept while satisfaction is a cognitive and affective construct. Therefore, the main point of departure between the two concepts is that service quality is a form of attitude that appraises performance in the long run, whilst customer satisfaction relates to transaction-specific measure [Cronin, Taylor, 1994].

Relationship among Service Quality, Customer Satisfaction and Loyalty

A rich body of literature over several decades has documented relationships among service quality, customer satisfaction and loyalty [Cronin, Brady, Hult, 2000; Tian-Cole, Crompton, Wilson, 2002; Lee, Graefe, Burns, 2004]. Nevertheless, evidence of the relationships among the three constructs has been ambiguous, leaving the extent/direction of their relationships largely unsettled [Nor, Wan, 2013]. In other words, individual study findings varied extensively in terms of statistical significance, direction, and magnitude of service quality effects on customer satisfaction and loyalty. An in-depth review of the service marketing literature reveals that service quality, customer satisfaction and loyalty are connected to each other. According to Kuo, Wu, and Deng [2009], service quality has a direct effect on how customers’ appraise a company and their willingness to patronize that service provider in subsequent transactions. Similarly, many studies in diverse industries have documented a positive relationship between service quality and customer satisfaction, as well as the tendency of repeated patronage [Baker, Crompton, 2000; Bou-Llusar, Caminson-Zornoza, Escrig-Tena, 2001; Lai, 2004].

Correspondingly, Danher and Mattsson [1998] posit that high customer satisfaction and service quality will most likely lead to improved customer loyalty and willingness to recommend the service provider. Oliver [1980] claims that customer loyalty (e.g. repurchase intentions, willingness to engage in positive word-of-mouth communication) is a function of customer satisfaction, which also relates to a cognitive comparison of expectations prior to consumption and actual purchase experience. Furthermore, customer satisfaction, according to Mpingajira [2008] and Lo, Osman, Ramayah, and Mosahab, [2010] mediates the relationship between service quality and customer loyalty. According to Cronin and Taylor [1992], service quality and customer satisfaction are prerequisites of customer loyalty. Correspondingly, Bitner [1990] submits that positive word-of-mouth becomes more widespread as customer satisfaction levels with service quality rises.
Research Methodology

Research Design

This study used cross-sectional survey research design, using a quantitative research approach. Essentially, the cross-sectional survey involves data collection from a sample that accurately represents the population to which generalization is made [Cooper, Schindler 2011]. The choice of this approach is based on the fact that it facilitates prediction of behaviour from a population that is too large to observe in a direct manner [Bordens, Abbot, 2002], and provides a basis for ascertaining the nature and degree of relationship between study variables [Kerlinger, 1986]. The epistemological perspective guiding this study is an objective way of looking at social reality; hence, this study is positivist in nature.

Population and Sampling Procedure

The target population of this study consists of all domestic air passengers departing from Murtala Muhammed Terminal One and Murtala Muhammed Airport Two flying with any functional domestic airline to any destination in Nigeria. The airlines are: Arik Air, Aero Contractors, First Nations Airways, Overlands Airways, Dana Air, Medview Airline, Discovery Air, and Azman Air Services Limited. A multi-stage sampling technique was used in this study. The first stage was to categorize flight schedules into three groups (i.e. morning, afternoon and evening flights). Thereafter, traffic frequency was used to assign a proportional quota to the three flights schedules; that is, morning flights (40%), afternoon flights (35%), and evening flights (25%) – in order to distribute the survey instrument to the respondents. Preliminary investigation by the researcher revealed that flight traffic is highest in the morning, which justifies use of quota sampling. In the second stage, a judgmental (also referred to as purposive) sampling was used to select respondents that can provide accurate information relevant to the study. In this study, infants, air travellers that cannot read nor write, and passengers with obvious health challenges were excluded. Lastly, convenience sampling was used to distribute the questionnaire to those that are accessible. The multi-stage approach was adopted to enhance the representativeness of the sample.

A targeted sample of 800 air passengers at the departure lounge of the selected airline was surveyed (representing 100 respondents per airline). One hundred passengers per airline (despite varying customer traffic) was chosen to obtain a balanced sample selection, insofar as a sample based on customer traffic could bias or shift the estimate from the real value. More importantly, the study is interested in the aggregate view (industry level) as against firm level analysis.
Research Instrument and Response Rate

The data collection instrument used for this study is a self-administered structured questionnaire. In general, the questionnaire ensures a higher level of anonymity and uniformity of response [Cooper, Schindler, 2011]. The questionnaire items for were adapted from previous related/validated studies, and ask questions that respondents can easily understand and answer. The questionnaire items essentially capture pre-flight, in-flight and other airline related services. As previously noted, the questionnaire was distributed before flight departure. However, possible inflight issues were incorporated in the responsiveness and employee dimensions of the modified SERVQUAL model adapted in this study. Moreover, it has been shown that air passengers do not differentiate between in-flight or ground services, but view the air travel experience as a whole [Ekaterina, 2012]. Constructs have been operationalised using 7-point Likert scales, ranging from strongly disagree (1) to strongly agree (7).

The desired sample size for this study was 800. However, 639 questionnaire were distributed, and 620 returned. In total 98 returned questionnaires were rejected (28 copies had multiple responses, 46 were incomplete, and 24 respondents had insufficient flight experience – i.e., less than three flights trip within the September, 2013 to September, 2014 period). Five hundred three questionnaires were usable for statistical analysis, yielding a 78.72% overall response rate.

Reliability and Validity Assessment

To ensure rigour and generalisation of the research findings, both validity and reliability were assessed. Cronbach’s alpha was computed to assess reliability, while content validity was examined for validity. To obtain content validity, the researcher adapted the approaches suggested by Cooper and Schindler [2011]; that is, identifying existing scales from the relevant literature and seeking opinions from a panel of experts, including senior academics from the marketing and non-marketing departments within the University of Lagos. Additionally, the researcher contacted two aviation experts at the Murtala Muhammed Terminal 2 Airport, Lagos State to evaluate the questionnaire’s suitability in the airline context. Based on their feedback, several items were eliminated or modified to improve the comprehensibility and clarity of the research instrument.

A pilot study was also conducted to assess the reliability of the survey instrument (questionnaire), involving 30 respondents (air passengers) with similar attributes and knowledge about the phenomena being investigated. While different views have been put forward about the level of acceptance of the reliability measure, Hair, Black, Babin, and Anderson [2010] argued that an alpha value of 0.60 and higher are acceptable. The alpha values for all the variables and constructs are above the cut-off point of (α=0.60).

Thus, all measurement scales are deemed reliable.
Perceived Service Quality and Customer Loyalty: The Mediating Effect...

Statistical Tools/Analytical procedures

Data obtained from the questionnaire were compiled in an Excel format and analysed using the Statistical Package for Social Science SPSS (21) software program, at a 5% level of significance pursuant to Pearson correlation analysis and multiple linear regression analysis. A preliminary analysis was initially run to ensure that all multivariate assumptions (normality, homoscedasticity, linearity, test for independence of the error terms, and multi-collinearity) were met.

Results of Data Analysis

Testing of Hypothesis One

Perception of service quality comprising our seven sub-dimensions (reliability, responsiveness, assurance, customization, employees, facilities, and flight pattern) has no influence on passenger satisfaction in Nigerian airline industry.

TABLE 1. Correlation Matrix – Relationship Among Service Quality, Passenger Satisfaction, and Customer Loyalty

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service quality</td>
<td>3.23</td>
<td>0.342</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger satisfaction</td>
<td>3.22</td>
<td>0.365</td>
<td>0.843**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>3.17</td>
<td>0.302</td>
<td>0.674**</td>
<td>0.729**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed), N=503

Before testing hypothesis one, a correlation analysis was conducted among service quality, passengers’ satisfaction and customer loyalty to determine the nature and direction of relationships among them. As shown in Table 1, the means of the three variables ranged from 3.17 to 3.23, while standard deviations ranged from 0.302 to 0.365. Table 1 shows that zero-order correlations among the three variables are positive and statistically significant. The inter-correlation between service quality and passenger satisfaction was \( r = 0.843 \ p < 0.01 \); between service quality and customer loyalty \( r = 0.674 \ p < 0.01 \) and between passenger satisfaction and loyalty \( r = 0.729 \ p < 0.01 \). The strong positive relationship documented in this study indicates that passenger satisfaction and customer loyalty will increase if service quality is high and vice-versa. These findings are in line with the results reported by Smith and Swinehart [2001], Boshoff and Gray [2004] and Hanum [2013]. As noted by Sureshchandar, Rajendran and Anantharaman [2002], notwithstanding the strong correlation between service quality and customer satisfaction, the two variables are...
different from the customer’s point of view and, as such, cannot be interpreted to mean an absolute causal relationship [Howel, 2007]. Hence, a regression analysis was used to predict the direction and extent of relationships among the three variables (perceived service quality, customer satisfaction and customer loyalty) in the subsequent analyses.

**TABLE 2. Regression Analysis of Service Quality with Passenger Satisfaction**

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Beta (β)</th>
<th>t-value</th>
<th>p-value</th>
<th>R</th>
<th>R²</th>
<th>F-value</th>
<th>F-sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>3.690</td>
<td>0.000</td>
<td>0.843</td>
<td>0.711</td>
<td>1232.781</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Service Quality</td>
<td>0.843</td>
<td>35.111</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model 2</th>
<th>Beta (β)</th>
<th>t-value</th>
<th>p-value</th>
<th>R</th>
<th>R²</th>
<th>F-value</th>
<th>F-sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>7.257</td>
<td>0.000</td>
<td>0.948</td>
<td>0.899</td>
<td>631.215</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>0.643</td>
<td>14.774</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness</td>
<td>0.498</td>
<td>14.441</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assurance</td>
<td>0.778</td>
<td>8.485</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customization</td>
<td>0.035</td>
<td>0.538</td>
<td>0.591</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>0.075</td>
<td>1.158</td>
<td>0.248</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td>0.970</td>
<td>8.369</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flight patterns</td>
<td>0.885</td>
<td>15.070</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 1: Predictors: (Constant), Service quality.
Model 2: Predictors: (Constant), Reliability, Responsiveness, Assurance, Customization, Employees, Facilities, and Flight Patterns.
Dependent Variable in Model 1 and 2: Passenger Satisfaction.
Note: Significant at the 0.05 level.

As displayed in Table 2, Model 1 demonstrates a robust fitness of R = 0.843, R² of 0.711 and F-value of 1232.781. The model shows that the value of t-statistics is significant at 0.000 (t = 35.111, p < 0.05) with about 71% of the variation in passenger satisfaction explained by service quality. Furthermore, the inclusion of service quality dimensions individually in Model 2 (Table 2) further improved the R² to 0.899.

All service quality dimensions have a positive and significant relationship with passenger satisfaction (p < 0.05), with the exception of customization (β = 0.035, t = 0.538, p = 0.591) and employees (β = 0.075, t = 1.158, p = 0.248) that is not significant since (p > 0.05).

This means that if these dimensions with significant beta coefficients (reliability, assurance, responsiveness, facilities and flight pattern) are emphasized more strongly; air passengers will experience a higher level of satisfaction. Overall, this indicates that service quality is a good predictor and explains some of the variation in passenger satisfaction. Hence, the results fail to support hypothesis one, which hypothesized that perception of service quality has no influence on passenger satisfaction in the Nigerian airline industry.
Therefore, hypothesis one is rejected and the study concludes that service quality has an influence on passenger satisfaction in the Nigerian airline industry.

**Testing of Hypothesis Two**

The perception of service quality consisting of our same seven sub-dimensions has no effect on customer loyalty in the Nigerian airline industry.

**TABLE 3. Regression Analysis of Service Quality with Customer Loyalty**

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Beta (β)</th>
<th>t-value</th>
<th>p-value</th>
<th>R</th>
<th>R²</th>
<th>F-value</th>
<th>F-sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>13.190</td>
<td>0.000</td>
<td>0.674</td>
<td>0.454</td>
<td>417.173</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Service Quality</td>
<td>0.674</td>
<td>20.425</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model 2</th>
<th>Beta (β)</th>
<th>t-value</th>
<th>p-value</th>
<th>R</th>
<th>R²</th>
<th>F-value</th>
<th>F-sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>18.543</td>
<td>0.000</td>
<td>0.819</td>
<td>0.671</td>
<td>144.070</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>0.263</td>
<td>6.281</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness</td>
<td>0.322</td>
<td>7.053</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assurance</td>
<td>0.586</td>
<td>3.535</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customization</td>
<td>0.268</td>
<td>2.248</td>
<td>0.025</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>0.040</td>
<td>0.340</td>
<td>0.734</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td>0.208</td>
<td>5.765</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flight patterns</td>
<td>0.253</td>
<td>2.386</td>
<td>0.017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 1: Predictor: (Constant), Service Quality.
Model 2: Predictors: (Constant), Reliability, Responsiveness, Assurance, Customization, Employees, Facilities, and Flight Patterns.

Dependent Variable in Model 1 and 2: Customer Loyalty.

Note: Significant at the 0.05 level.


Table 3 shows the relationship between service quality and customer loyalty. Model 1 in Table 3 demonstrates a significant fitness at R value of 0.674, R² of 0.454 and F-value of 417.173. The model shows that (t = 20.425, p < 0.05), which is significant at 0.000, with about 45% of the variation in customer loyalty explained by service quality. Furthermore, the inclusion of service quality dimensions individually in Model 2 (Table 3) improved the R² to 0.671. All service quality dimensions have a positive and significant relationship with customer loyalty (p<0.05), with the exception of employees (β = 0.040, t = 0.340, p = 0.734) that is not significant (p>0.05). This implies that if these dimensions with significant beta coefficients (reliability, assurance, responsiveness, customization, facilities and flight pattern) are given more attention, air passengers will display more loyalty towards airlines.

In general, the regression results confirm that service quality is a good predictor and explains some of the variation in customer loyalty. Hence, the finding of this study fails
to support hypothesis two, which was that the perception of service quality has no effect on customer loyalty in the Nigerian airline industry. Therefore, hypothesis two is rejected and the study concludes that perception of service quality has an effect on customer loyalty in the Nigerian airline industry.

**Testing of Hypothesis Three**

Passenger satisfaction has no effect on customer loyalty in the Nigerian Airline Industry.

**TABLE 4. Regression Analysis of Passenger Satisfaction with Customer Loyalty**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Beta (β)</th>
<th>t-value</th>
<th>p-value</th>
<th>R</th>
<th>R²</th>
<th>F-value</th>
<th>F-sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>15.058</td>
<td>0.000</td>
<td>0.729</td>
<td>0.532</td>
<td>568.508</td>
<td>0.000</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>0.729</td>
<td>23.843</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictor: (Constant), Passenger Satisfaction.  
Dependent Variable: Customer Loyalty.  
Note: Significant at the 0.05 level.  

Table 4 shows the relationship between passenger satisfaction and customer loyalty. The regression Model demonstrates a robust fitness at R value of 0.729, R² of 0.532 and F-value of 568.508. The model shows that the value of t-statistics is significant at 0.000 (t = 23.843, p < 0.05), with about 53% of the variation in customer loyalty explained by passenger satisfaction. This implies that passenger satisfaction is a good predictor and explains some of the variation in customer loyalty in the Nigerian airline industry. Thus, the result fails to support hypothesis three, which states that passenger satisfaction has no effect on customer loyalty in the Nigerian airline industry. Therefore, hypothesis three is rejected and the study concludes that passenger satisfaction has an effect on customer loyalty in the Nigerian airline industry.

**Testing of Hypothesis Four**

Passenger satisfaction will not significantly mediate the relationship between perception of service quality and customer loyalty in the Nigerian Airline Industry.

To investigate the mediating effect of passenger satisfaction between perceived quality and customer loyalty, a correlation matrix was first used to explore the relationship between the two variables while controlling customer satisfaction. The output generated from this procedure is shown in Table 5.

As shown in Table 5, the top half of the table is the normal Pearson correlation matrix between perceived service quality and customer loyalty, without controlling for customer satisfaction (as indicated by “none” in the left-hand column). In this case, the correlation is (0.674, p < 0.000). The bottom half of table 5 indicates the output of the correlation...
analysis when customer satisfaction is controlled. In this case, the new partial correlation is (0.161, p<0.000). Comparing the two sets of correlation coefficients indicates that controlling customer satisfaction has a significant influence on the relationship between perceived service quality and customer loyalty. After examining the pattern of correlation, a regression analysis was further run to determine the extent and direction in which passenger satisfaction mediates the relationship between the variables, as explained by change in R² value.

**TABLE 5. Correlation Matrix (Controlling Mediating Variable)**

<table>
<thead>
<tr>
<th>Control Variable</th>
<th>Service Quality (SQ)</th>
<th>Customer Loyalty (CUL)</th>
<th>Customer Satisfaction (CUS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation</td>
<td>1.000</td>
<td>0.674</td>
<td>0.843</td>
</tr>
<tr>
<td>SQ</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Df</td>
<td>0</td>
<td>501</td>
<td>501</td>
</tr>
<tr>
<td>Correlation</td>
<td>0.674</td>
<td>1.000</td>
<td>0.729</td>
</tr>
<tr>
<td><em>none</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUL Significance (2-tailed)</td>
<td>0.000</td>
<td>-0</td>
<td>0.000</td>
</tr>
<tr>
<td>Df</td>
<td>501</td>
<td>0.729</td>
<td>501</td>
</tr>
<tr>
<td>Correlation</td>
<td>0.843</td>
<td></td>
<td>1.000</td>
</tr>
<tr>
<td>CUS Significance (2-tailed)</td>
<td>0.000</td>
<td>0.000</td>
<td>-</td>
</tr>
<tr>
<td>Df</td>
<td>501</td>
<td>501</td>
<td>0</td>
</tr>
<tr>
<td>Correlation</td>
<td>1.000</td>
<td>0.161</td>
<td></td>
</tr>
<tr>
<td>SQ Significance (2-tailed)</td>
<td>-</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Df</td>
<td>0</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>CUS Correlation</td>
<td>0.161</td>
<td></td>
<td>1.000</td>
</tr>
<tr>
<td>CUL Significance (2-tailed)</td>
<td>0.000</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Df</td>
<td>500</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Cells contain zero-order (Pearson) correlations.


Table 6 shows the relationship between service quality and customer loyalty, when customer satisfaction is considered as a mediating variable. The model 1 in Table 6 suggests that customer satisfaction significantly mediates the relationship between perceived service quality and customer loyalty (\( \beta = 0.205, t = 3.650, p = 0.000 \)). In addition, model 1 in Table 6 demonstrates the regression model result which indicates that the t-value statistics is significant at 0.000 (p < 0.05) with a robust fitness at R value of 0.737, R² of 0.544 and F-value of 297.907. The change in R² value (ΔR²) in the regression model 1 (Table 3) and model 1 in (Table 6) is 9% {i.e. 54% – 45%, = 9%}, and the beta value decreased from 0.674 to 0.205 (in model 1 {Table 3} and model 1 {Table 6}, which shows that the
strength of perceived service quality-customer loyalty relationship becomes weaker when customer satisfaction is considered in model 1 (Table 6).

**TABLE 6. Mediating the Effect of Customer Satisfaction on the Relationship between Service Quality Perceptions and Customer Loyalty**

<table>
<thead>
<tr>
<th>Model</th>
<th>Beta (β)</th>
<th>t-value</th>
<th>p-value</th>
<th>R</th>
<th>R²</th>
<th>F-value</th>
<th>F-sig</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>12.609</td>
<td>0.000</td>
<td>0.737</td>
<td>0.544</td>
<td>297.907</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Service Quality</td>
<td>0.205</td>
<td>3.650</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>0.556</td>
<td>9.896</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>16.291</td>
<td>0.000</td>
<td>0.837</td>
<td>0.701</td>
<td>144.564</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>0.367</td>
<td>1.594</td>
<td>0.002</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness</td>
<td>0.506</td>
<td>2.372</td>
<td>0.018</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assurance</td>
<td>0.162</td>
<td>0.956</td>
<td>0.003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customisation</td>
<td>0.248</td>
<td>2.184</td>
<td>0.029</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>0.081</td>
<td>0.721</td>
<td>0.471</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td>0.679</td>
<td>3.179</td>
<td>0.002</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flight patterns</td>
<td>0.735</td>
<td>6.012</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>0.545</td>
<td>7.029</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 1: Predictors: (Constant), Service Quality, Customer Satisfaction.  
Model 2: Predictors: (Constant), Reliability, Responsiveness, Assurance, Customisation, Employees, Facilities, and Flight Patterns. 
Dependent Variable in Model 1 and 2: Customer Loyalty. 
Note: Significant at the 0.05 level. 

Moreover, customer satisfaction significantly mediates the relationship between all service quality dimensions and customer loyalty (p < 0.05), with the exception of the employee dimension (β = 0.081, t = 0.721, p = 0.471) that is not significant (p > 0.05) for customer loyalty. This indicates that, if these dimensions with significant beta co-efficient (reliability, assurance, responsiveness, customization, facilities, and flight pattern) are emphasized more strongly, customer satisfaction will exhibit more tendency to mediate the relationship between service quality and customer loyalty. Although the ΔR² value is small, the finding of this study does not support hypothesis three. Hence, the study concludes that customer satisfaction mediates the relationship between perceived service quality and customer loyalty towards the airlines.
Discussion of Findings

The focus of hypothesis one was to determine the effect of perceived service quality on customer satisfaction. With an $R^2$ value of 71%, the study established that service quality shows a strong effect on customer satisfaction. The finding of this study is similar to that reported by Archana and Subha [2012], who examined the relationship between service quality and passenger satisfaction for Indian Airlines. The result also corroborates that of Jin-Woo et al. [2005], who investigated the effects of airline service quality on airline image and passengers’ future behavioural intentions among Australian international air passengers.

Hypothesis number two examined the influence of perceived service quality on customer loyalty towards the airlines. The $R^2$ value of 45% in the regression model in Table 3 demonstrates that service quality positively and significantly influences customer loyalty. This means that as service quality improves (through fulfilling each sub-dimension criterion of service quality), it will increasingly influence customer loyalty. This finding corroborates the views expressed by Hamza [2013], who reported that service quality positively affects the behavioural intentions of air travellers of Jordan's airline services. Similarly, this study supports the view expressed by Nor, Yunus, and Wan [2013] regarding air traveller perceptions of service quality and customer loyalty in Malaysia. Likewise, a study conducted by De Meyer and Mostert [2010] among Australian air passengers provides evidence that the majority of dissatisfied air travellers have not formed a long-term relationship with the domestic airline, while satisfied customers are more inclined to form a long-term relationship.

The empirical findings in the regression model (Table 4) depict the relationship between customer satisfaction and loyalty towards the airlines. With an $R^2$ value of 53%, it can be inferred that customer satisfaction has a significant positive relationship with customer loyalty. The finding of this study is similar to the view expressed by Mesay [2012] that passenger satisfaction plays an important role in enhancing passenger loyalty among passengers of Ethiopian airlines. This finding also supports the study conducted by Halil, Kashif, Erdogan, and Samil [2008] who confirmed that service quality is one of the major factors influencing the loyalty of North Cyprus national airline passengers. However, our finding contradicts Faheed’s [1988] result, which reported that the relationship between passenger satisfaction and loyalty towards airline is not clear among Royal Jordanian airline customers.

Regression model 1 and 2 (Table 3) reported the mediating effect of customer satisfaction on the relationship between perceived service quality and customer loyalty towards the airlines. The $R^2$ of 54% and 70% shows that customer satisfaction mediates the relationship between the two constructs. However, comparison of $R^2$ value in regression model 1 in (Table 6) indicates that the percentage change in $R^2$ value is 9% (i.e. 54%
– 45%). Therefore, based on this analysis, it can be concluded that customer satisfaction partially mediates the relationship between service quality perception and customer loyalty. Hence, hypothesis four is partially supported. This finding is consistent with the study carried out by Kalthom, Noor, and Kamariah [2007], who reported that passenger satisfaction with service quality among airline operators in Malaysia significantly increased future patronage and the probability of recommending the airline to others. Likewise, the empirical evidence from this study lends credence to Saha and Theingi [2009], who reported a significant relationship among service quality, satisfaction, and behavioural intentions among passengers of low-cost airline carriers in Thailand. Similarly, Nadiri, Kashif, Erdogan, and Samil [2008] documented that airline service quality and customer satisfaction are major factors influencing passenger loyalty in North Cyprus’s national airline. Correspondingly, a study carried out by Faheed [1998] among Jordanian air travellers indicates that overall service quality is highly related to both passenger satisfaction and loyalty, which corroborates the finding of this study.

Conclusion

This study investigated the relationships among service quality, passenger satisfaction and customer loyalty in the Nigerian airline industry. From the evidence obtained from domestic air passengers in Nigeria, we find that perceived service quality positively influences both passenger satisfaction and loyalty towards the airlines. The study also suggests that passengers satisfaction significantly influences loyalty formation in the Nigerian airline industry and partially mediates the relationship between service quality and customer loyalty. In general, the global airline business operates under exceptionally tough environments (such as: rising operating costs, declining demand arising economic depression, intense competition among others). Hence, business managers should recognize that improving service quality is crucial for gaining and sustaining business growth and competitiveness. Evidence from this study indicates that service quality stimulates passenger satisfaction, which encourages their return to the same service provider in a subsequent transaction.

Therefore, the capability of an airline to offer superior service quality by understanding customer expectations facilitates business growth and survival in airline industry. In particular, improving service quality to understand and match customer expectations influences capability to deliver relatively error-free service that pleases customers, therefore having the tendency to retain customers’ patronage, enlarge market share and, by extension, constitute a means to enhance business profitability. Simply stated, to need to build and enhance customer satisfaction, airline operators must offer quality service that meets and exceeds passenger expectation, so as to enhance customer loyalty.
Notes

1 Author’s email address: Abdulrahimajao@yahoo.com

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Ekaterina, T. (2012), Measuring customer expectations of service quality: Case of airline industry. Logistics Master’s Thesis Department of Information and Service Economy, Aalto University, School of Economics Swedish Finland.


