

# Is Service Quality a Correlate of Customer Satisfaction? Evidence from Nigerian Airports

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## Abstract

This study assesses the relationship between dimensions of service quality and customer satisfaction from the perspectives of passengers that travel through Nigerian airports. Survey methodology was adopted for the study. Cross-sectional data were collected at four International airports with the aid of structured questionnaire. The questionnaire was administered to 600 passengers across Lagos, Abuja, Kano and Port-Harcourt airports with 71% response rate. Regression analyses reveal that although the relationship between each of the dimensions of service quality and customer satisfaction is significant at 5%, the multiple correlation coefficient ranges from weak to moderate thus suggesting that the dimensions of service quality requires further enhancement for customers satisfaction to be improved upon by the Airport Authority in Nigeria. The study advocate decisive action by the Airport Authority in Nigeria to initiate policies geared at enhancing dimensions of service quality for improved customer satisfaction at various Nigerian Airports.

**Keywords:** service quality, customer satisfaction, SERVQUAL

## 1. Introduction

Airports generally are guided by strict regulations and control measures and are usually characterized by few providers, which in some cases give room for State monopoly. This is the case with the Airports facilities in Nigeria which are provided and controlled by the government. But in many countries today, airports have turned from state monopolies into competing operators, and flight directions are determined by market dynamics (Pabedinskaite & Akstinaite, 2014).

In order to ensure compliance to service quality benchmarks and customer satisfaction, Airport Service Quality (ASQ) Survey is carried out monthly by the Airport Council International (ACI) members in over 200 airports in more than 50 countries (ACI, 2011).

The development of air transport activity worldwide has increased the demand for airport services and the need for more efficient processes of servicing aircraft, passengers or luggage (Pabedinskaite et al., 2014). Services provided by airports in any country are usually aimed at passenger facilitation and safety for a delightful customer experience both before departure from and upon arrival at the airport terminals. Generally, the customers that use airport facilities comprised of the air passengers, the airlines and the concessionaires who provide trade and other economic services to the airport users (Pabedinskaite et al., 2014). However, the focus of this study is to measure the relationship between service quality and customer satisfaction based on the expectation and perception of passengers with regards to the quality of services and points-of-service experiences in Nigerian airports. Lubbe, Douglas & Zambellis (2011) claim that the main measure of assessment of airport operations is the opinion of passengers, hence it is highly important to analyze passengers' expectations and perception in respect of Airport services. It is they who must define and evaluate services.

Studies on the operations and services provided by airports have been carried out from highly diverse perspectives (Baker, 2013). However, not much research is available with regards to the correlation between service quality and customer satisfaction with respect to airport services. An empirical survey of expectations of passenger in respect of services in this area conducted by Fodness and Murray (2007) found that passenger's expectations towards Airport services were multidimensional. The authors identified three key dimensions namely: interaction, function and diversion. In evaluating airport service quality, some other authors (Tseng, Ho,

& Liu, 2008; Perelman & Serebrisky, 2010; Zhang, Wang, Liu, & Zhao, 2012; Jaržemskienė, 2012) limited the scope of their study to only various technical characteristics such as number of runways, number of platforms, airport size, number of employees, number of flights, cargo volumes, number of passengers, etc. Our study provided an expanded scope of the perspectives from which air passengers' expectation and perception of service quality can be measured with regards to the services provided by airports. We measured airport characteristics that are capable of giving both new and frequent airport users room to match their expectations with perception of service quality as a basis to further measure the relationship between service quality and passengers' satisfaction at Nigerian airports. The essence is to fill some of the gaps noticed in previous researches on airport service quality measurement.

The design of airport infrastructure and service encounter facilities is usually under strict international regulations. Standards for Airport operations are the same globally as set out by the International Civil Aviation Organization (ICAO). Compromises of quality of service and service delivery facilities are not encouraged for safety reasons. In line with ICAO standards, Airport operations and regulations are two different functions meant to be performed by two different entities. The regulator is expected to be an independent body approved by the government to domesticate and ensure strict compliance to ICAO standards on civil aviation which covers quality of airport facilities and passenger facilitation services (Piercy, 2001). But the Airport operator (whether government or private company) is expected to invest in infrastructure and facilities to provide services that will enhance passenger facilitation with appropriate charges for sustainable operations.

These two functions on civil aviation in Nigeria are currently beclouded by too much government interference which is impacting negatively on the quality of services rendered to the travelling public (FAAN Annual Report, 2014, p. 22). Complaints about high level of infrastructural rot which borders on safety and customer satisfaction have also been a major source of worry to both airport customers and the aviation stakeholders in Nigeria (Sirika, 2016). It is not unlikely that there are other areas of concerns that bother on service quality and customer satisfaction with respect to the services of the Federal Airports Authority of Nigeria (the operator of all the airports in Nigeria).

The above background serves as the basis for this empirical study aimed at measuring service quality and customer satisfaction nexus based on evidences from Nigerian airports. The study relied on existing literature to conceptualize service quality models/dimensions (such as the SERVQUAL scale developed by Parasuraman, Zeithaml and Berry (1988)—Tangibles, Responsiveness, Empathy, Assurance and Reliability) to measure air passengers' perception of service quality in Nigeria airports in relation to their satisfaction. The major contribution of this study is connected to the fact that, irrespective of the degree of differentiation of services and their quality, different forms of ownership and management structures, different combinations of characteristics of services and operations and different environmental factors under which the airport industry operates across the world as identified by Oum, Yu, and Fu (2003), the scope of our conceptual framework provides a common basis for measuring service quality and customer (passenger) satisfaction in airports.

The objective of the study is to ascertain if there is any relationship between service quality and passenger satisfaction in Nigeria airports and the extent of the relationship.

## **2. Literature Review and Hypotheses Development**

### *2.1 Conceptual Framework and Research Hypotheses*

Several conceptual models have been developed by different researchers for measuring service quality (Gronroos, 1984; Parasuraman, Zeithami, & Berry, 1988; Kumar, Kee, & Manshor, 2009; Parasuraman, Zeithami, & Berry, 1985; Haywood-Farmer, 1988; Brogowicz, Delene, & Lyth, 1990; Cronin & Taylor, 1992; Rust & Oliver, 1994; Brady & Cronin, 2001). The essence of conceptual models in service quality is to enable management identify quality problems and thus help in planning for quality improvement program, which can bring improvement in efficiency, profitability and overall performance (Seth & Deshmukh, 2005). The knowledge derived from the several conceptual models reviewed was refined to develop the model below for purposes of measuring airport service quality in relation to customer satisfaction.

The SERVQUAL model of service quality dimension developed by Parasuraman et al. (1988) was used to generate relevant air passengers' expected service in service encounter at the airport. The same dimension was used to measure the perception of air passengers after service encounter at the airport. The difference between the expected service and perceived service is expected to show the relationship between service quality and customer satisfaction at the airports in Nigeria as well as the extent of the relationship. The SERVQUAL scale has been tested and/or adapted in a great number of studies conducted in various service settings—hospital (Babakus & Mangold, 1989); fast food (Cronin et al., 1992); banking (Spreng & Singh, 1993; Sharma & Mehta,

2004); and discount and departmental stores (Finn & Lamb, 1991). The universality of the scale and its dimensions has however been the subject of criticisms (Lapierre, Swartz, Bowen, & Brown 1996) but with the suggestion that they require customization to the specific service sector in which they are applied (Stodnick & Rogers, 2008; Zeithaml, Parasuraman, & Malhotra, 2002; Yoo & Donthu, 2001; Loiacono, Watson, & Goodhue, 2007; Parasuraman, Zeithaml, & Malhotra, 2007). This is the basis of the customized model below for airport services in relation to air passengers' satisfaction. Before a customer decides to approach a service centre, he/she must have articulated the expected service or solution to receive which is usually determined by four factors (Zeithaml, Parasuraman, & Berry, 1990)—word-of-mouth, personal needs, past experience and external communications. Air passengers expected services at the airport are spelt out in each of the boxes under the SERVQUAL dimension of service quality.

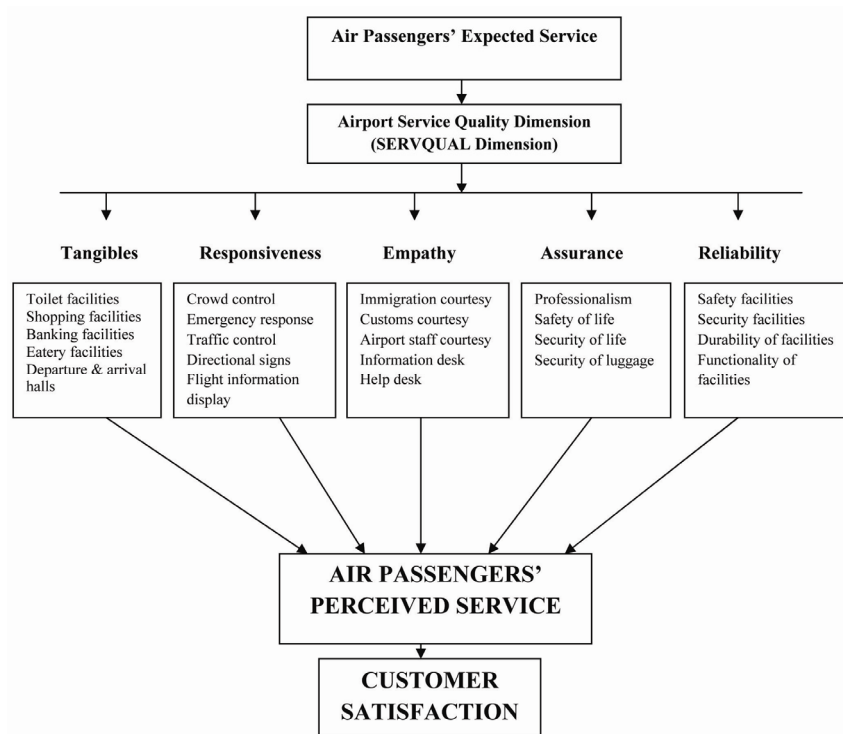


Figure 1. Airport service quality and customer satisfaction model

Source: James A. Adeniran and Binuyo O. Adekunle PhD (2016).

## 2.2 Tangible Dimension

This group of service quality assessment criteria describes the material basis of services: the appearance of the physical facilities, equipment, personnel and other tools and written communication materials (Zeithaml et al., 1990). This study focused on air passengers' perception of service quality of toilet facilities, shopping facilities, banking facilities, eatery facilities, arrival, and departure halls in Nigeria airports in relation to their satisfaction.

**H<sub>1</sub>1: There is relationship between tangibles as measurement scale for service quality and customer satisfaction in Nigeria airports.**

## 2.3 Responsiveness

It is the level of services provided and willingness to help customer promptly (Zeithaml et al., 1990; Yong, 2000). It involves the willingness to provide prompt or favourable services. The study focused on the perception of air passengers on the willingness of management of Nigeria airports to promptly help air passengers to address emergency issues, crowd disorderliness, need for flight information, direction sign to move round different sections of the airport, etc.

**H<sub>1</sub>2: There is relationship between responsiveness as measurement scale for service quality and customer satisfaction in Nigeria airports.**

#### 2.4 Empathy

It is the ability of the organization to provide personal attention and care to customers (Parasuraman et al., 1985; Yong, 2000). The empathy dimension of service quality is defined as showing care and individualized attention to customer. The focus in this study is the perception of air passengers on the ability of immigration, customs, airport staff, information and help desk to provide personalized services in Nigeria airports.

**H<sub>13</sub>: There is relationship between empathy as measurement scale for service quality and customer satisfaction in Nigeria airports.**

#### 2.5 Assurance

Assurance is known as the level of the service delivered to customers that is believable and can be trusted (Parasuraman et al., 1988). The focus here was perception of air passengers with regards to their confidence in the professional competence at Nigeria airports on safety of life, security of life and security of luggage.

**H<sub>14</sub>: There is relationship between assurance as measurement scale for service quality and customer satisfaction in Nigeria airports.**

#### 2.6 Reliability

Reliability dimension is a measure of the level of the dependability and accuracy of service encounter facilities (Zeithaml et al., 1990; Yong, 2000; Garvin, 1987). The focus was on air passengers' perception of the reliability, durability and functionality of facilities on safety and security in Nigeria airports.

**H<sub>15</sub>: There is relationship between reliability as measurement scale for service quality and customer satisfaction in Nigeria airports.**

#### 2.7 Service Quality and Customer Satisfaction

Lusch and Vargo (2006) defines service as the application of specialized competences (knowledge and skills), through deeds, processes, and performances for the benefit of another entity or the entity itself. The offer of service and service delivery facilities as point-of-sales attracts customers in need to seek an encounter which will later build up into experience and feeling of satisfaction. Shostack (1985) defines service encounter as "a period of time during which a consumer directly interacts with a service". This definition encompasses all aspects of the service firm with which the consumer may interact, including its personnel, its physical facilities, and the other visible elements. Before then, customers have needs and expectation of the service solutions required. According to Zeithaml et al. (1990), "word-of-mouth, personal need, past experience and external communications help customer to determine expected service toward a service facility. Bitner (2000) suggested that customer expectations are beliefs about a service that serve as standards against which service performance is judged. Parasuraman et al. (1988) suggested that customer expectations are what the customers think a service should offer rather than what might be on offer. Both during and after the encounter the customer forms his impression of the service received which is the basis for perceived service, service quality and customer satisfaction. Bitner and Hubbert (1994) define service quality as the consumer's overall impression of the relative inferiority/superiority of the organization and its service. Parasuraman et al. (1985; 1988) defined service quality as the customers' comparison between the actual perceived services or experience quality and their expected services and called it "gap analysis". According to Lethinen & Lethinen (1991), "service quality is derived from the interaction between customers and service providers and could be classified into process quality and output quality: process quality referred to customers' subjective remark on services, while output quality meant customers' measurement of service achievement".

Customer satisfaction comes in after a service encounter and it is the difference between expected service and the perception of service after an encounter with a service provider (Angelova & Zekiri, 2011). The idea of linking service quality and customer satisfaction has existed for a long time (Negi, 2009). Parasuraman et al., (1985) suggested that when perceived service quality is high, then it will lead to increase in customer satisfaction. This supports the fact that service quality leads to customer satisfaction which is also in line with Saravana and Rao, (2007) and Lee, Lee and Yoo (2000) who acknowledged that customer satisfaction is based upon the level of service quality provided by the service provider. Lo and Huang in their study on catering industry found that causal relationship exists between service quality and customer satisfaction in the positive direction without stating whether it's weak or strong relationship. Zeithaml et al. (1996) also demonstrated that service quality had significant positive effects on customer behavior intention. Customer behavior intention can be stimulated by level of satisfaction derived from a service solution. It has been found that good services would enhance customer satisfaction (Keavney, 1995).

## **H<sub>1</sub>6: Service quality is a correlate of customer satisfaction in Nigeria airports.**

### *2.8 Service Quality and Air Travel Industry*

The air travel industry is part of a steadily growing service sector (Lovelock, Patterson, & Walker, 2004). The growth of the service sector offers both business opportunities as well competitive threats for many service marketers (Ostrowski, O'Brien, & Gordon, 1993) which is also the case for the air travel industry. However, the business opportunities provided by the growth of the service industry have made excellent service quality and high customer satisfaction important issues to focus on (Hung, Huang, & Chen, 2003; Ramseok-Munhurrun & Lukea-Bhiwajee, 2010) both in the public and private sector (Zahari, Yusoff, & Ismail, 2008; Randall & Senior, 1994; Robinson, 2003).

### **3. Data and Method**

In order to achieve the objective of this research study and to test the hypotheses stated above, the survey research design was used with cross-sectional approach for primary data collection. Survey research enables the researcher to collect information from a representative sample of the population to describe existing situations (Jakayinfa, 2005). Descriptive survey also focuses on people, their knowledge, belief, opinion, practices, perceptions, attitudes, and behaviour. Hence the survey research was considered to be the most appropriate for the study. Jick (1983) suggests that survey research may also contribute to greater confidence in the generalizability of the results.

The four busiest airports in Nigeria (i.e., Lagos, Abuja, Kano and Port-Harcourt airports) which accommodate with capacity to facilitate both domestic and international passengers were used as the sample frame for the study. As at 2015, a total of 12, 643,164 passengers were facilitated through these four airports by the airport operator (FAAN, 2015). These passengers' data were taken as the finite population for the study. With the aid of Taro Yamani (1967) formula, the finite population produced a sample size of 400 passengers. The research instrument for primary data collection was a structured and closed-ended questionnaire which comprised of two sections. Section A was designed to capture the demographic data of respondents while section B was designed to capture service quality and customer satisfaction measurement constructs. Response options provided in section B of the questionnaire were based on a six Likert scale ranging from (1) strongly disagree; (2) disagree; (3) partially disagree; (4) partially agree; (5) agree; (6) strongly agree. A total of 600 questionnaires were administered using convenience and purposive sampling techniques. Section B of the questionnaire was further splits into six to organize the measurement constructs based on the predictor variables and the dependent variable. 150 questionnaires were administered per airport. After collection, collation and editing, 95 questionnaires were found not to be completely responded to while 80 were not returned at all. This left us with 425 active questionnaires which were used for data analysis. The data were analyzed using regression analysis and descriptive statistics.

### **4. Results and Discussion**

#### *4.1 Results*

Out of the 150 questionnaires allocated to each of the four airports, Lagos airport returned 140 completely filled by respondents which represent 93.33% of the allocated questionnaires and 32.94% of the 425 total active questionnaires; Abuja airport returned 115 completely filled by respondents which represent 76.67% of the allocated questionnaires and 27.06% of the 425 total active questionnaires; Kano airport returned 80 completely filled which represent 53.33% of the allocated questionnaires and 18.8% of the 425 total active questionnaires; and Port-Harcourt airport returned 90 completely filled questionnaires which represent 60% of the allocated questionnaires and 21.18% of the 425 total active questionnaires. In all, the 425 active questionnaires that were completely filled and returned by the respondents out of the 600 administered at the four airports represent 70.83%.

Reliability test conducted on the internal consistency of the research instrument using Cronbach's Alpha method shows that the reliability of constructs measuring Tangibles dimension of service quality is 0.732; reliability for measuring Responsiveness dimension is 0.784; reliability for measuring Empathy dimension is 0.742; reliability for measuring Assurance dimension is 0.878; and reliability for measuring Reliability dimension is 0.905. The overall reliability result for measuring all the predictor variables and the dependent variable is 0.927. Content validity of the research instrument was based on expert opinions. Sampling adequacy test was conducted using K-M-O method and the result shows 0.897 which is greater than the 0.50 benchmark indicating that the sampling adequacy for this study is great.

## 4.1.1 Tangibles and Customer Satisfaction

Table 1. Regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.513 <sup>a</sup>	.264	.255	2.27535

Table 2. ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	776.287	5	155.257	29.989	.000 <sup>b</sup>
	Residual	2169.252	419	5.177		
	Total	2945.539	424			

The multiple correlation coefficients R in table 1, which in this case is 0.513 indicates a weak level of prediction of customer satisfaction in relation to Tangibles as measurement scales for service quality in Nigerian airports. The coefficient of determination  $R^2$  in table 1 is 0.264. This implies that Tangibles explain only 26.4% of the variability in customer satisfaction in Nigerian airports. However, the regression equation for Tangibles as shown in table 2 was significantly related to customer satisfaction by P-value less than 0.05, which implies that there is a relationship between Tangibles as measurement scale for service quality and customer satisfaction in Nigerian airports.

## 4.1.2 Responsiveness and Customer Satisfaction

Table 3. Regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.557 <sup>a</sup>	.310	.302	2.20169

Table 4. ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	914.458	5	182.892	37.729	.000 <sup>b</sup>
	Residual	2031.081	419	4.847		
	Total	2945.539	424			

The multiple correlation coefficients R in table 3, which in this case is 0.557 indicates a weak level of prediction of customer satisfaction in relation to Responsiveness as measurement scales for service quality in Nigerian airports. The coefficient of determination  $R^2$  in table 3 is 0.310. This implies that Responsiveness explain only 31% of the variability in customer satisfaction in Nigerian airports. However, the regression equation for Responsiveness as shown in table 4 was significantly related to customer satisfaction by P-value less than 0.05, which implies that there is a relationship between Responsiveness as measurement scale for service quality and customer satisfaction in Nigerian airports.

## 4.1.3 Empathy and Customer Satisfaction

Table 5. Regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.521 <sup>a</sup>	.271	.263	2.26326

Table 6. ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	799.284	5	159.857	31.208	.000 <sup>b</sup>
	Residual	2146.255	419	5.122		
	Total	2945.539	424			

The multiple correlation coefficients R in table 5, which in this case is 0.521 indicates a weak level of prediction of customer satisfaction in relation to Empathy as measurement scales for service quality in Nigerian airports. The coefficient of determination  $R^2$  in table 5 is 0.271. This implies that Empathy explains only 27.1% of the variability in customer satisfaction in Nigerian airports. However, the regression equation for Empathy as shown in table 6 was significantly related to customer satisfaction by P-value less than 0.05, which implies that there is a relationship between Empathy as measurement scale for service quality and customer satisfaction in Nigerian airports.

#### 4.1.4 Assurance and Customer Satisfaction

Table 7. Regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.605 <sup>a</sup>	.366	.359	2.10946

Table 8. ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1076.607	4	269.152	60.486	.000 <sup>b</sup>
	Residual	1868.932	420	4.450		
	Total	2945.539	424			

The multiple correlation coefficients R in table 7, which in this case is 0.605 indicates a moderate level of prediction of customer satisfaction in relation to Assurance as measurement scales for service quality in Nigerian airports. The coefficient of determination  $R^2$  in table 7 is 0.366. This implies that Assurance explains only 36.6% of the variability in customer satisfaction in Nigerian airports. However, the regression equation for Assurance as shown in table 8 was significantly related to customer satisfaction by P-value less than 0.05, which implies that there is a relationship between Assurance as measurement scale for service quality and customer satisfaction in Nigerian airports.

#### 4.1.5 Reliability and Customer Satisfaction

Table 9. Regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.638 <sup>a</sup>	.407	.401	2.03916

Table 10. ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1199.110	4	299.778	72.094	.000 <sup>b</sup>
	Residual	1746.429	420	4.158		
	Total	2945.539	424			

The multiple correlation coefficients R in table 9, which in this case is 0.638 indicates a moderate level of prediction of customer satisfaction in relation to Reliability as measurement scales for service quality in Nigerian airports. The coefficient of determination  $R^2$  in table 9 is 0.407. This implies that Reliability explains only 40.7% of the variability in customer satisfaction in Nigerian airports. However, the regression equation for Reliability as shown in table 10 was significantly related to customer satisfaction by P-value less than 0.05, which implies that there is a relationship between Reliability as measurement scale for service quality and customer satisfaction in Nigerian airports.

#### 4.1.6 Service Quality Dimensions and Customer Satisfaction

Table 11. Regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.668 <sup>a</sup>	.446	.440	1.97323

<sup>a</sup>. Predictors: (Constant), Reliability, Tangibles, Empathy, Responsiveness, Assurance.

Table 12. ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1314.102	5	262.820	67.500	.000 <sup>b</sup>
	Residual	1631.437	419	3.894		
	Total	2945.539	424			

<sup>a</sup>. Dependent Variable: Customer\_Satisfaction.

<sup>b</sup>. Predictors: (Constant), Reliability, Tangibles, Empathy, Responsiveness, Assurance.

The multiple correlation coefficients R in table 11, which in this case is 0.668 indicates a moderate level of prediction of customer satisfaction in relation to service quality in Nigerian airports using the SERVQUAL dimensions. The coefficient of determination  $R^2$  in table 11 is 0.446. This implies that service quality explains only 44.6% of the variability in customer satisfaction in Nigerian airports. However, the regression equation for service quality as shown in table 12 was significantly related to customer satisfaction by P-value less than 0.05, which implies that there is a relationship between service quality and customer satisfaction in Nigerian airports.

#### 4.2 Discussions

The results of analyses in tables 1 and 2 show that there is a relationship between Tangibles as measurement scale of service quality and customer satisfaction in Nigeria airports as a final decision on hypothesis 1. However, the multiple correlation coefficient R and coefficient of determination  $R^2$  further show the extent of the relationship and effect of the independent variables (toilet facilities, banking facilities, shopping facilities, eatery facilities and passenger facilitation halls) on the dependent variable (customer satisfaction). The multiple correlation coefficient R, which is 0.513 shows that the degree of relationship that exist between Tangibles and customer satisfaction in Nigerian airports is weak and positive, while the coefficient of determination  $R^2$  which is 0.264 shows that Tangibles explain only 26.4% of the variability that takes place on customer satisfaction in Nigerian airports. A descriptive statistics conducted on the responses received regarding measures of passengers' perception of Tangibles as measurement scale of service quality in Nigerian airports shows a cumulative mean figure of 4.092 out of the scale of 1.0 to 6.0. From the 6-point Likert scale used to code responses in the research instrument, 4.0 signify "partially agree". This further implies that even though a relationship exists between Tangibles and customer satisfaction in Nigerian airports, the cumulative "partially agree" response is another prove of the weakness in the relationship.

The results of analyses in tables 3 and 4 show that there is a relationship between Responsiveness as measurement scale of service quality and customer satisfaction in Nigeria airports as a final decision on hypothesis 2. However, the multiple correlation coefficient R and coefficient of determination  $R^2$  further show the extent of the relationship and effect of the independent variables (flight movement information, service time, traffic control and parking, direction signs, health and safety emergency) on the dependent variable (customer satisfaction). The multiple correlation coefficient R, which is 0.557 shows that the degree of relationship that exist between responsiveness and customer satisfaction in Nigerian airports is weak and positive, while the coefficient of determination  $R^2$  which is 0.310 shows that Responsiveness explain only 31.0% of the variability that takes place on customer satisfaction in Nigerian airports. A descriptive statistics conducted on the responses received regarding measures of passengers' perception of Responsiveness as measurement scale of service quality in Nigerian airports shows a cumulative mean figure of 4.136 out of the scale of 1.0 to 6.0. From the 6-point Likert scale used to code responses in the research instrument, 4.0 signify "partially agree". This further implies that even though a relationship exists between Responsiveness and customer satisfaction in Nigerian airports, the cumulative mean response is shows that the relationship is weak.

The results of analyses in tables 5 and 6 show that there is a relationship between Empathy as measurement scale of service quality and customer satisfaction in Nigeria airports as a final decision on hypothesis 3. However, the multiple correlation coefficient R and coefficient of determination  $R^2$  further show the extent of the relationship



and effect of the independent variables (help desk, courtesy from customs service, courtesy from immigration service, airport staff and information desk) on the dependent variable (customer satisfaction). The multiple correlation coefficient  $R$ , which is 0.521 shows that the degree of relationship that exist between Empathy and customer satisfaction in Nigerian airports is weak and positive, while the coefficient of determination  $R^2$  which is 0.271 shows that Empathy explain only 27.1% of the variability that takes place on customer satisfaction in Nigerian airports. A descriptive statistics conducted on the responses received regarding measures of passengers' perception of Empathy as measurement scale of service quality in Nigerian airports shows a cumulative mean figure of 4.354 out of the scale of 1.0 to 6.0. From the 6-point Likert scale used to code responses in the research instrument, 4.0 signify "partially agree". This further implies that even though a relationship exists between Empathy and customer satisfaction in Nigerian airports, the cumulative mean response is shows that the relationship is weak.

The results of analyses in tables 7 and 8 show that there is a relationship between Assurance as measurement scale of service quality and customer satisfaction in Nigeria airports as a final decision on hypothesis 4. However, the multiple correlation coefficient  $R$  and coefficient of determination  $R^2$  further show the extent of the relationship and effect of the independent variables (professional skills, security of life, security of luggage, safety of life) on the dependent variable (customer satisfaction). The multiple correlation coefficient  $R$ , which is 0.605 shows that the degree of relationship that exist between Assurance and customer satisfaction in Nigerian airports is moderate and positive, while the coefficient of determination  $R^2$  which is 0.366 shows that Assurance explain only 36.6% of the variability that takes place on customer satisfaction in Nigerian airports. A descriptive statistics conducted on the responses received regarding measures of passengers' perception of Assurance as measurement scale of service quality in Nigerian airports shows a cumulative mean figure of 4.21 out of the scale of 1.0 to 6.0. From the 6-point Likert scale used to code responses in the research instrument, 4.0 signify "partially agree". This further implies that even though a relationship exists between Assurance and customer satisfaction in Nigerian airports, the cumulative mean response shows that the relationship is ranges from weak to moderate.

The results of analyses in tables 9 and 10 show that there is a relationship between Reliability as measurement scale of service quality and customer satisfaction in Nigeria airports as a final decision on hypothesis 5. However, the multiple correlation coefficient  $R$  and coefficient of determination  $R^2$  further show the extent of the relationship and effect of the independent variables (functionality of facilities, quality of facilities, reliability of safety facilities and reliability of security facilities) on the dependent variable (customer satisfaction). The multiple correlation coefficient  $R$ , which is 0.638 shows that the degree of relationship that exist between Reliability and customer satisfaction in Nigerian airports is moderate and positive, while the coefficient of determination  $R^2$  which is 0.407 shows that Reliability explain only 40.7% of the variability that takes place on customer satisfaction in Nigerian airports. A descriptive statistics conducted on the responses received regarding measures of passengers' perception of Reliability as measurement scale of service quality in Nigerian airports shows a cumulative mean figure of 4.08 out of the scale of 1.0 to 6.0. From the 6-point Likert scale used to code responses in the research instrument, 4.0 signify "partially agree". This further implies that even though a relationship exists between Reliability and customer satisfaction in Nigerian airports, the cumulative mean response shows that the relationship ranges from weak to moderate.

The results of analyses in tables 11 and 12 show that there is a relationship between service quality (using SERVQUAL dimensions) and customer satisfaction in Nigeria airports as a final decision on hypothesis 6. However, the multiple correlation coefficient  $R$  and coefficient of determination  $R^2$  further show the extent of the relationship and effect of the independent variables (tangibles, responsiveness, empathy, assurance and reliability) on the dependent variable (customer satisfaction). The multiple correlation coefficient  $R$ , which is 0.668 shows that the degree of relationship that exist between service quality and customer satisfaction in Nigerian airports is moderate and positive, while the coefficient of determination  $R^2$  is 0.446. This shows that about 45.0% of the variability that takes place on customer satisfaction of passengers using Nigerian airports is explained by the five dimensions of service quality based on SERVQUAL model adopted for this study.

The above findings which show service quality as a correlate of customer satisfaction aligns with findings of some previous authors such as Lo and Huang (2014) which shows that there is a causal relationship between service quality and customer satisfaction in the catering industry; Zeithaml et al. (1996) which demonstrated that service quality had significant positive effects on customer behaviour intention; Keavney (1995), which found that good services would enhance customer satisfaction, foster a relationship between enterprises and customers, and make customers willing to continue transactions with enterprises. This study which relies on the perspectives of passengers at Nigerian airports and the findings further lend weight to the claim by Lubbe, Douglas &

Zambellis (2011) which states that the main measure of assessment of airport operations is the opinion of passengers.

Specifically our study made the following contributions to literature; first, our study shows that the SERVQUAL model is relevant and applicable for measuring passengers' service quality in airports. This is in addition to other previous studies conducted in various service settings—hospital (Babakus & Mangold, 1989); fast food (Cronin et al., 1992); banking (Spreng & Singh, 1993; Sharma & Mehta, 2004); and discount and departmental stores (Finn & Lamb, 1991). Second, the results which confirm that service quality is a correlate of customer satisfaction made empirical contributions.

## 5. Conclusion

Both literature and empirical findings have established that service quality is a correlate of customer satisfaction. In addition, the relationship between the two variables has been found to be positive and ranges from weak to moderate based on evidences from Nigerian airports. This notwithstanding, in terms of the variability each of the dimensions causes to customer satisfaction, Reliability ranks higher with 40.7%, followed by Assurance 36.6%, Responsiveness 31.0%, Empathy 27.1% and Tangibles 26.4%.

### 5.1 Managerial Implications

Findings from this study suggest a few implications for the operator (FAAN) and managers of the Nigerian airports. It is not enough to know that a relationship exists between service quality and customer satisfaction. The direction of the relationship, which in this case ranges from weak to moderate call for serious attention by the airport operator. There is the need to develop and implement service quality improvement programs for the airports. The ranking provided under conclusion above should be a good guide to know where to begin from with regards to the improvement programs. This will also help in the allocation of resource to improve service quality to boost customer satisfaction at the airports. There is need for the operators and managers of the Nigerian airports to pay more attention under its service quality improvement programs to the items that constitute tangibles in this study (i.e., toilet facilities, banking facilities, shopping facilities, eatery facilities and passenger facilitation halls). These facilities relate both directly to airport services and indirectly as value added services. They are required to provide some forms of comfort and convenience to passengers before departure or upon arrival at the airport terminals. Managers of the airports therefore have to pay more attention to services that will bring improvement to passengers' convenience and comfort. Generally, based on the overall findings from the results in tables 11 and 12, the entire aspects of the airport service offering as they relate to passengers in Nigerian airports require improvement programs in order to improve on passenger satisfaction. The operator of the airports may choose to follow the order of the ranking under the conclusion above. However, the improvement programs need to cut across infrastructure and human factors. If passengers are satisfied with the quality of services at the airports, they will remain loyal, they will encourage family members and friends to use the airports and finally they will not look forward to any alternative airport operators and service providers. In all, this will translate to customer retention and improved revenue for the airports.

### 5.2 Limitations and Future Research Direction

The scope of the study was limited to passenger survey to ascertain if service quality is a correlate of customer satisfaction. Even though the survey was conducted across four International airports, it is restricted to Nigeria as a country. Future research therefore needs to focus on airports in other countries on this same subject. The perception of other categories of airport customers such as airlines, ground service providers, etc on service quality at Nigerian airports and the impact on their satisfaction can be another focus for future research.

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