Perceptions of Service Quality: An Empirical Assessment of Modified SERVQUAL Model among Domestic Airline Carriers in Nigeria

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Abstract. Literature is replete with a large number of theories related to service quality measurement and dimensions in an airline context. To date, there is no consensus of opinion on the generic model and of the number of dimensions most appropriate to evaluate service quality in airline industry. This study investigates service quality dimensions in the Nigerian airline industry. The cross-sectional survey research design was adopted. Convenience sampling was used to select 800 respondents among departing air travellers in Lagos State. A structured questionnaire containing 28 items was developed to evaluate the perceived service quality of domestic airlines. The data collected were analysed using descriptive statistics, Pearson's correlation analysis, and one-sample t-test. The dimensionality of perceived service quality in Nigeria's airline industry was explored using exploratory factor analysis. From the analysis carried out, it was established that the modified SERVQUAL model provided a satisfactory level of overall reliability in Nigeria's airline context, which implies that all the items were cohesive in forming the SERVQUAL dimensions. According to the findings of this study, all service quality dimensions are positively and significantly interrelated. The perceived service quality of domestic airlines across these dimensions was found to be poor. The most dissatisfied dimensions in order of ranking were: flight pattern, reliability, facilities, assurance, responsiveness, employee, and customization. On the basis of the aforementioned findings, this study concludes that airline operators should redefine their service standards to one that is customer-focused by identifying the dimension of service quality most preferred by the passengers and continuously strive to improve service delivery. The study recommends that airline operators should recognize the changing needs and expectations of air travellers and customize their range of services by identifying unique service requirements of the individual customers.

Keywords: service quality, SERVQUAL, gaps, consumer perceptions, service encounters, airlines

JEL Classifications: M30, L93

1. Introduction

Globally, air transportation business has experienced considerable developments in the recent past and the industry has evolved to provide one of the most common means of travelling. Airline industry is absolutely vital to world economy; for instance, estimates published by International Aviation Transport Association (IATA) revealed that by 2050 the aviation sector will have flown 16 billion passengers and 400 million tons of cargo (IATA, 2014). In line with the aforementioned trend, Nigeria's airline industry has equally witnessed some substantial growths; one such development is the increase in the number of operators and participants in the industry (Ogwude, 1986). Nigeria had a single airline prior to 1983, three airlines between 1983 and 1988, nine from 1989 to 1995, and fifteen from 1995 to 2010. As of October 2015, there are ten functional commercial airline flights for passengers (Arik, Dana, Overland, Aero Contractors, First Nations, Medview, Discovery, Arik, Airpeace, and Azman Air Services Limited) operating in Nigeria. As a result, air passengers have more choices in the selection of airline carriers than previously had some decades ago. Another key component of the changes in the Nigerian airline industry is the trend of airport commercialization and aviation service providers (ANSP) heading towards a complete gradual shift to become market-based commercial organizations (Oluwakoya & Olufemi, 2011).

Across the globe, airline business is cyclical in nature and the demand for its product is related to other activities such as holidays or business. Hence, competition for customers in airline industry is intense. As a result, considerable attention has been devoted both in the academia and business world as to how to acquire and retain air passengers for a profitable business growth. The fundamental issue is that customers will most likely patronize a service provider if they consider its services to be of high quality (Jin-Woo, Rodger, Chen-Lung, 2005; Gilbert & Veloutsou, 2006; Anderson, Jolly, Fairhurst, 2007). Likewise, scholars have reached a consensus that one of the major issues business organizations should confront with all seriousness is how a firm and its products or services are perceived; as a result, a firm's economic prosperity and competitiveness is contingent on its capability to establish a strong perception of high-quality service in the minds of its customers (Brady & Cronin, 2001; Vander-Walt, 2003; Nor & Wan, 2013).

Service quality is linked to customer perceptions and expectations of service. This implies that if the perception is higher than the expectations the service will be viewed as outstanding. In literature, perception is viewed as the degree of customers' beliefs concerning the service received (Parasuraman, Zeithaml, Berry, 1985). Expectations, on the other hand, are conceptualized as consumers' desires or wants regarding the level of the anticipated service. According to Lewis

(2010), one common approach in defining service quality is the degree to which a service meets the customers' needs. Zeithaml and Bitner (2003) observe that service quality comprises attributes or dimensions that are critical to customers' evaluation of service quality. Therefore, a valuable method for measuring and improving service quality is to recognize what was considered vital when customers were appraising service attributes (Chelladurai & Chang, 2000) or the dimensions of service quality (Brady & Cronin, 2001). According to Jun, Yang, and Kim (2004), airline service quality development and measurement should begin with identifying customers' needs and preferences through service quality attributes. Anderson et al. (2007) observe that a firm's thorough understanding of customer needs and wants has been proved to enhance customer satisfaction and, by extension, loyalty formation (Van-Pham & Simpson, 2006).

A model named SERVQUAL was suggested by Parasuraman, Zeithaml, and Berry (1988) to measure service quality. According to these scholars, SERVQUAL model assesses service quality by matching expectations with perceptions on five dimensions, namely: reliability, responsiveness, assurance, tangibles, and empathy to evaluate service quality in diverse businesses. Correspondingly, many scholars have raised concern that SERVQUAL is not a generic instrument to evaluate service quality, and they advocate that it should be modified to enhance its comprehensiveness and application in a varied industry (Gilbert & Wong, 2003). According to Gilbert and Wong (2003), the seven dimensions consisting of reliability, responsiveness, assurance, customization, employee, facilities, and flight pattern are more comprehensive in evaluating service quality.

Reliability addresses the competence of an airline to perform the promised services in a reliable and accurate manner. Responsiveness relates to the eagerness and punctuality of employees to help customers by providing prompt and timely services. Assurance is the proficiency of employees to build trust and confidence in customers. Customization is driven by the desire of airline operators to redefine its relationship with customers, thus enabling customers to find, choose, and use the services as they wish. In an airline context, employees play a vibrant role in service delivery as they simplify the interface between the organization and the air travellers. Facilities encompass service components that can be physically perceived and assessed. Facilities include appearance of the airline's ground facilities, aircraft, personnel, communications gadgets, etc. Flight pattern includes routes that are served by the airline, the frequency of flights, etc.

1.1. Statement of the problem

In general, the provision of services involves human expectations and perceptions; hence, the definition and measurement of service quality has been perceived as complex and difficult to grasp (Hutton & Richardson, 1995; Brady

& Cronin, 2001; Gilbert & Veloutsou, 2006). Likewise, service recipients have a low tolerance for certain service quality dimensions that are absolutely vital to customer satisfaction; as such, what is not known will be difficult to measure and, by extension, it cannot be improved. Correspondingly, service failure arises when customer perceptions fall short of expectations, which may result in a damaged relationship between the customer and the firm (Ha & Jang, 2009). Although a number of researchers have examined the perception of service quality in Nigerian airline context (Ckiwendu, Ejem, Ezenwa, 2012; Geraldine & Chikwendu, 2013; Olaniyi, Onwuka, Agu, 2014), most of these scholars paid scant attention to the call for the modification of the SERVQUAL five-dimensional structure, which has been established to be insufficient in an airline context (Gilbert & Wong, 2003; Jin-Woo et al., 2005; Pakdil & Aydin, 2007).

The search for competitive advantage through superior service quality offered to air travellers and the quest for airline competitiveness constitute a great concern to all stakeholders in the Nigerian airline industry. In particular, consumers are increasingly demanding service quality standards that may be difficult to offer in view of operational and infrastructural challenges the airline industry in Nigeria is confronting (Olalerin, 2009). Over the years, Nigeria's airline industry has come under serious criticism. In particular, the quality of services offered by domestic airlines has shown significant drop and rapid deterioration (Sulaiman, 2012). Although the intangible nature of airline operations has made it impossible to maintain an error-free service, which manifested itself in flight cancellations, diversions or delays, an increased number of customers complaints, reservation problems and overbooking of flights, delay in baggage claims, or mishandled, lost, or damaged baggage among others (Mostert, De-Meyer & van-Rensburg, 2009).

In contrast to tangible products, a displeased air passenger can neither demand a refund nor change a flight once accomplished; consequently, the only choice an unsatisfied customer has is to switch over to alternative airlines (Nadia, 2013). However, foreign airlines have demonstrated resilience and positive outlook and have dependably attained a long-term customer relationship management through their service quality and system improvement, as evidenced by the volume of their entrance into and hub of international air travel in Nigeria airline industry (Accenture, 2013; National Bureau of Statistics-NBS, 2014). Comparatively, Nigeria's domestic airlines have been described by scholars and practitioners as lacking the capability to operate effectively due to a precarious infrastructure, operational and financial deficiencies resulting in frequent occurrences of service failure along service attributes that are not only important to air passengers but also violate the terms of engagement with the airline (Sulaiman, 2012).

Describing the state of Nigeria's aviation sector as being sick is not debatable, going by the frequent tragic air crashes most of which are preventable. A review of the aviation accident and incident reports by the Federal Ministry

of Aviation from 1936, when commercial aviation commenced in Nigeria, revealed that the country had recorded 47 air crashes, out of which 18 were attributed to commercial airlines (Federal Ministry of Aviation, 2013). These are indeed very alarming, disturbing and call for urgent attention on the part of all the stakeholders in the aviation sector. Thus, this study offers a prospect for solving a social problem: the need to recognize service quality as a critical issue that must be measured and evaluated in Nigeria with a view to correct the inaptness that affects the airline operators in delivering superior service quality that is in line with international best practices. Specific objectives of the study are: (1) to examine how air travellers ranked the dimensions of service quality of domestic airline carriers in Nigeria, (2) to study the interrelationships among the service quality dimensions in Nigerian airline industry, and (3) to investigate how the service quality offered by domestic airline carriers is perceived by air travellers in Nigeria.

1.2. Research Questions

The following research questions were examined:

1. How do air travellers rank the service quality dimensions of domestic airline carriers in Nigeria?

2. What is the relationship between service quality dimensions in the Nigerian airline industry?

3. What is the perception of service quality offered by domestic airline carriers in Nigeria?

2. Theoretical and Literature Review

2.1. The Evolution and Development of the SERVQUAL Model

The construct of "service quality" is very rich in theory. The most popular among these theories was promoted as and named the SERVQUAL model by Parasuraman et al. (1985, 1988). These scholars discovered 97 attributes which were found to have an influence on service quality. These 97 elements serve as benchmarks in evaluating customer expectations and perceptions of the quality of service provided (Kumar, Kee, Manshor, 2009). Subsequently, these attributes were later regrouped into two phases by Parasuraman et al. (1985, 1988). The first phase categorized the attributes into ten dimensions (tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding and knowing customers, and access), while the second refinement phase condensed the ten dimensions into five, which were; reliability,

responsiveness, tangibles, assurance, and empathy. The SERVQUAL model is based on gap analysis (depicted in *Figure 1*).
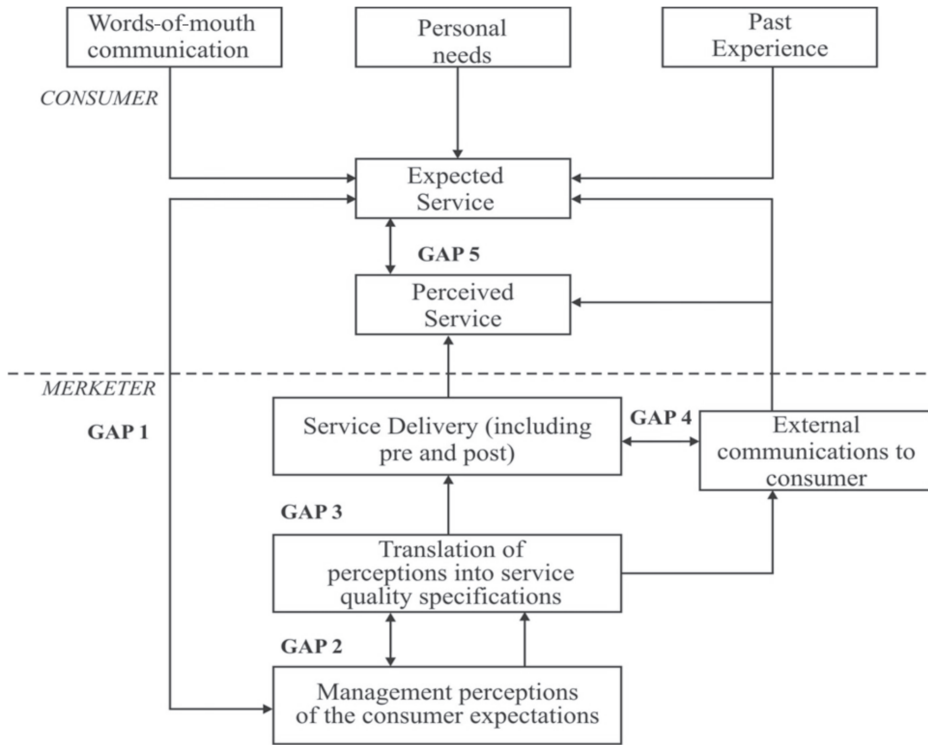
Figure 1. *SERVQUAL - GAP Model*

Gap 1 (Positioning gap): discusses the difference between consumer expectations and management perception of those expectations, i.e.: the customers' expectations are not known (Zeithaml, Parasuraman, and Berry, 1990).

Gap 2 (Specification gap): Appraises the variance between the management perception of customer expectations and service quality specifications, i.e.: wrong service quality strategies and criterions (Zeithaml et al., 1990).

Gap 3 (Delivery gap): Evaluates the dissimilarity between service quality specifications and services delivered to customers, i.e.: service performance gap, which transforms to inability to deliver the right service standards (Zeithaml et al., 1990).

Gap 4 (Communication gap): Highlights the difference between service delivery and the quality of services communicated to consumers, i.e.: when service assurance is at variance with service delivery (Zeithaml et al., 1990).

Gap 5 (Perception gap): Examines the dissimilarity between consumer expectations and perceived service, i.e.: when the customer does not receive the expected service (Zeithaml et al., 1990).

The SERVQUAL model outlined in *Figure 1* above is a unified view of the customer–firm relationship which hinges on the premise that service quality is reliant on the extent and direction of the five gaps that exist in the service delivery process (Chang, 2008). In this regard, service quality evaluations as perceived by customers emanate from a comparison of customers' expectations of service and their perceptions of the performance of the firm offering the service (Aldridge & Rowley, 1998). However, the SERVQUAL model is applied most often to measure the existence and degree of *Gap 5*, which examines the difference between customer expectations and perceptions of the quality of service provided (Sheth & Desmukh, 2004).

Notwithstanding its popularity, admiration, and application, the SERVQUAL model has been subjected to a number of criticisms (Cronin & Taylor, 1992; Abdulahi, 2006; Pakdil & Aydin, 2007; Ladhari, 2008). One of the foremost criticisms of the SERVQUAL model is the dimensionality and use of different scores with respect to the dependence or independence of the service quality dimensions (Carman, 1990). Another drawback of the SERVQUAL model is that it focuses on the service delivery process and does not take cognizance of service delivery outcomes (Grönroos, 1990). A different concern highlighted by Cronin and Taylor (1994) is that the methodological stance of the SERVQUAL model proposed by Parasuraman et al. (1985, 1988) is based on the disconfirmation theory rather than an attitudinal view, which ignores the scientific principle of continuity and deduction, and thereby portends the SERVQUAL model as an inductive framework of service quality. Butttle (1994) argues that the measurement of expectations and perceptions using the SERVQUAL model makes the questionnaire relatively cumbersome and time-consuming.

Iacobucci, Grayson, and Ostrom (1994) criticized the SERVQUAL model on the basis of expectation measures. They claimed that expectation is multidimensional and might not exist or is clearly moulded to serve as a standard benchmark for the appraisal of service experience or it may be formed simultaneously during service consumption. Buttle (1994) further criticizes the SERVQUAL model for its failure to capture the dynamics of customer expectations, which by nature is not static. In view of the aforementioned drawback of the SERVQUAL model, a large number of researchers suggest that a degree of caution should be exercised when using the SERVQUAL model, as each service industry may exhibit different and unique service quality attributes or dimensions (Cronin & Taylor, 1992; Pakdil & Aydin, 2007; Ladhari, 2008). Notwithstanding the criticisms labelled against SERVQUAL, the model provides a suitable and logical reference point for scholars and practitioners seeking to monitor and evaluate service quality. It also offers

a proficient structure which service organizations can rely upon to generate a comprehensive interpretation of service quality. In line with the aforementioned, this study adopted Gilbert and Wong's (2003) modified SERVQUAL seven-dimensional framework to accommodate the contextual nature of service quality in Nigerian airline industry.

2.2. Conceptualizing and Measuring Service Quality

Owing to its elusive nature, no agreement subsists on how to best conceptualize service quality in service marketing literature. As a result, researchers have conceptualized service quality from different perspectives. According to Schneider and White (2004), service quality originated from a similar root as product quality though perceived differently. Parasuraman et al. (1988) contend that service quality stems from the assessment of consumers' overall expectations together with their actual perceptions of a firm's performance in terms of service delivery. Hence, service quality is the fit between the current service level and customer expectations. Park, Robertson, and Wu (2004) conceptualize service quality as consumers' general impression of the competence of an organization and its services. Lovelock and Wirtz (2004) note that the level of service quality can be evaluated by the degree to which a service delivered to customers exceeds their expectations. Service quality, according to Zeithaml et al. (1990), is the degree of inconsistency between customers' expectations or desires and their perceptions of the service offered.

Rossiter (2002) and Parasuraman, Zeithaml and Malhotra (2005) suggest that service quality should be viewed as a formative construct rather than a reflective construct because more often than not service quality dimensions influence service quality perceptions. As regards the formative measurement, Dagger, Sweeney, and Johnson (2007) and Diamantopoulos (2008) state that variations in the dimensions cause discrepancy in the service quality construct, and not the other way round. In a simple description, Dagger et al. (2007) observe that service quality dimensions shape or mould service quality perception.

Generally, the measurement of service quality is founded on two divergent schools of thought pioneered by Parasuram et al. (1985, 1988) and Grönroos (1982, 1990). The North American School has advanced the service quality model named SERVQUAL gap model from the outcome of a research conducted by Parasuraman et al. (1985, 1988) on four service industries in the United States of America, including retail banking, credit cards, securities brokerage, and product repair and maintenance. The school initially proposed ten dimensions of service quality (access, communication, competence, courtesy, credibility, reliability, responsiveness, security, tangibles, understanding and knowing clients) in their original research. These dimensions were later collapsed by Parasuraman et al.

(1988) into five dimensions (reliability, responsiveness, assurance, tangibles, and empathy). Grönroos (1982, 1984) is the pioneer contributor to the Nordic School. He conducted a study among Scandinavian nations, in particular with Swedish company managers, and developed a service quality model named the *Technical-Functional Quality Model*. Fundamentally, the Nordic School highlights the interactive nature of service quality, which is founded on two premises: what customers obtain as the outcome of interaction with a service organization and how customers get services (Grönroos, 1984). Grönroos's model is often viewed as a three- or two-dimensional model (Grönroos, 2007) depending on whether image is included or excluded as a dimension.

2.3. Service Quality Attributes and Customer Expectations

The tribute for heralding service quality attributes in airline industry goes to Gourdin in 1998. He categorizes service quality attributes into three elements: price, safety, and timelines. Since then, many other indices have been proposed to evaluate service quality in airline industry. Mersha and Adlakha (1992) recommend readiness to correct errors, task aptitude, courteousness, responsiveness, and tolerance. Ostrowski, O'Brien, and Gordon (1993) deliberate on timeliness, food and beverage quality, and seat comfort. Elliot and Roach (1993) advocate price, safety, timeliness, baggage movement, food quality, seat comfort, check-in process and on-board services as a measure of service quality. Truitt and Haynes (1994) suggest aircraft type to examine service quality. Boetsch, Bieger, and Wittmer (2011) recommend airline brand, price, and sleep comfort as a measure of airline service quality. Tiernan, Rhoades, and Waguespack (2008) accentuate airline service quality consisting of on-time performance, overbooking, mishandled baggage, and customer complaints.

In order to analyse service quality in airline industry, the starting point is to recognize and classify the key attributes, or features that make up service quality in airline operations (Faheed, 1998). According to Phillip and Hazlett (1997), service quality components overlap between attributes, which are classified and defined as pivotal (outputs), core, and peripheral (jointly representing inputs and processes). The core attributes integrate people, processes, and the service framework through which customers interact with to accomplish the pivotal attributes. Third-level attributes focus on the peripheral attributes which represent the structures designed to add value to the service encounter and to enhance customer experience (Nitin, Deshmukh, and Prem, 2004). According to Chase (1978), airline operations exhibit mixed service features (with high contact and low contact at their terminals), pure service features (inflight), and quasi-manufacturing system (moderate contact) features in the area of operations. In the airline industry, Chen and Chang (2005) categorized service

processes into ground (process) and in-flight services (sub-processes). They reiterated further that the process and each sub-process contribute towards the delivery of the service.

Indices that make up ground services in an airline are check-in services for passengers, airline lounges, and moving passengers' baggage to the claim area. According to the Airport Cooperative Research Program (2013), ground experience can be categorized into four distinct segments: (1) getting to the airport, (2) waiting in the terminal before security, (3) passing through security checkpoints, and (4) finding the gate. Flight services, on the other hand, include: in-flight entertainment, food and beverages, seat comfort, etc. On the basis of the aforementioned attributes, customers form expectations which relate to what they anticipate from service experience. Therefore, the extent to which customers identify and are ready to accept variations between expectations and perceived performance is referred to as the zone of tolerance (Zeithaml et al., 1990). Consequently, if the service level drops below adequacy, customers will be frustrated and dissatisfaction will set in. If, on the other hand, service performance exceeds the desired level (i.e. higher than the zone of tolerance), customers will be very pleased and probably delighted (Zeithaml et al., 1990).

According to Mostert et al. (2009), the errors arising from the service delivery process or the inability to perform credibly on some important service attributes result in customer dissatisfaction and complaining behaviour. Customer complaint, according to Phau and Baird (2008), can be expressed through four typical outcomes: negative word-of-mouth communication, expressing complaint, discontinuing business, and third-party complaint (such as consumer advocacy group or consumer protection agency). Bamford and Xystouri (2005) posit that susceptibility to service failure in airlines operations is due to the intangible nature of airline operations and human involvement in the service delivery process. In order to enhance service delivery process (ground and in-flight services) and ensure that air travellers get value for their money, civil aviation authorities – in both developed and developing countries – introduced the "Passengers' Bill of Rights". It is worth mentioning that after a prolonged public outcry, the Nigeria National Assembly passed into law the "Passengers' Bill of Rights" in July 2013 to compensate passengers for delayed flights, cancellations, and other related anomalies. Details of the violations and recommended sanctions proposed by the bills are outlined in *Table 1*.

Table 1. *Violations and sanctions proposed by the Nigeria Civil Aviation Authority*

S/No	Violations	Recommended sanctions for violations
1	Failure to provide assistance in case of denied boarding.	Minimum to moderate penalty plus payment of the value of compensation prescribed in the regulation.
2	Failure to submit boarding priority rules to authority.	Minimum penalty.
3	Failure to comply with boarding priority rules when denied boarding.	Minimum to moderate penalty plus compensation prescribed in the regulation.
4	Failure to render assistance in case of flight cancellation.	Minimum to moderate penalty.
5	Failure to give priority to persons with reduced mobility during boarding.	Minimum to moderate penalty.
6	Failure to provide care for persons with reduced mobility, persons accompanying them, or unaccompanied minors in case of denied boarding, flight cancellations, and delays.	Moderate to maximum penalty plus monetary value of the prescribed care to be given to complainant.
7	Failure to display at check-in counter passenger right statement.	Minimum penalty.
8	Failure to provide to passenger on request passenger rights leaflet.	Minimum to moderate penalty.
9	Misleading advertising.	Moderate to maximum penalty plus seizure of all inappropriate/excess gains/profit from the advert or promotional scheme. Possible criminal referrals.
10	Obstruction of investigation/failure to provide information.	Moderate to maximum penalty plus possible criminal referral.
11	Other violations of these regulations not specifically listed above.	Minimum to maximum penalty.

Source: Williams and Praise, 2013

3. Methodology

3.1. Research Design

A cross-sectional survey research design was adopted in this study. This research approach requires the collection of quantitative or measurable data on many cases simultaneously and at a particular point in time for the purpose of making inferences and detecting forms of association between two or more variables of interest (Bryman & Bell, 2011). This study is deductive in nature because the researchers deduce (a problem) on the basis of what is known about a particular phenomenon or theory, underpinning it and subjecting the data to empirical analysis. The survey was carried out between September and October 2014 at the two domestic airports (Murtala Muhammed Airport One and Murtala Muhammed Terminal One) in Lagos State.

3.2. Subjects and Sampling Procedure

The target population of this study is the domestic air travellers at the departure lounge of eight domestic airline carriers (Arik, Dana, Aero Contractors, Medview, Overland, First Nations, Discovery, and Azman Air Services Limited), waiting to board flights to any destination in Nigeria. The selected airlines are considered the functional airline operators in the Nigerian airline industry. The sample size consisted of 800 respondents. The respondents were selected based on convenience sampling technique. Therefore, the unit of analysis for this study was an individual about to embark on a journey using one of the selected airlines to any destination in Nigeria.

3.3. Data Collection Instrument

Primary data was collected through self-administered questionnaire. The researcher conducted the survey with the aid of questionnaires because the population was relatively literate and a reasonable length of time is required for collecting the data. Sarantakos (2005) maintains that questionnaire is the leading method of data collection in survey research. A self-administered questionnaire was distributed by trained research assistants to air travellers. This study adopted questionnaire items from previous related validated studies and the questionnaire items were consolidated into a three-page questionnaire divided into three sections. The questionnaire was based on service quality perceptions, travel behaviour, and demographic characteristics of air passengers.

There were 28 items in all for measuring service quality perceptions: four items each for all the service quality dimensions. The second part of the questionnaire

seeks to measure travel behaviour, while the third and last part the gathered data on demographic variables. All the questionnaire items are multiple-choice and close-ended questions, with few open-ended, questions which are typically easier for respondents to handle and relatively less complicated to analyse. The options are based on a 7-point Likert scale, anchored as: 1-strongly disagree, 2-disagree, 3-slightly disagree, 4-neutral, 5-slightly agree, 6-agree, and 7-strongly agree. A total of 639 copies of questionnaires were distributed to respondents, 620 were retrieved, out of which 503 usable questionnaires were returned as valid for analysis, representing a response rate of 78.72%.

3.4. Test of Validity and Reliability of the Data

The validity of the questionnaire was first obtained by presenting it to airline practitioners and marketing experts, including the researcher's supervisor. According to Amin (2005), content and construct validity is best determined by expert judgment. Their comments led to modifications of the questionnaire items. Cronbach's Alpha was used to evaluate internal consistency of items for service quality dimensions and its value ranged from 0.646 to 0.875. The pilot test results of the instrument provided Cronbach's Alpha values within the acceptable level of reliable statistics (Zikmund, 2003). Based on the results, the survey instrument is considered satisfactory for the intended purposes of this study.

To conduct a validity test, an exploratory factor analysis was conducted on 28 items of service quality dimensions consisting of positively and a few negatively worded questions. Preliminary data screening reveals that the data set was suitable for common factor analysis and meets all the basic assumptions. Consequently, to assess the dimensionality of the SERVQUAL scale, factor analysis was performed using the principal component analysis with Varimax rotation. *Table 2* shows the results of the factor analysis test for SERVQUAL's dimensions. The overall value of KMO, which is a measure of sampling adequacy (MSA), is .886, suggesting that the factor analysis proceeded appropriately and that the sample was sufficient. The individual MSA values of each dimension were all above 0.6, slightly higher than the benchmark value of 0.5.

The results of the Bartlett's Test of Sphericity were also significant, indicating its suitability for testing multidimensionality. All the items loaded more than .50, which meets the requirement of a factor loading of 0.30 (Hair, Black, Babin, and Anderson, 2010). The scree plot showed a clear break after the seven components; hence, it was decided to retain seven components given the fact that the items were designed to index seven factors in line with Gilbert and Wong's (2003) SERVQUAL dimensions. A name representing the character of the twenty-eight items was then assigned to each of the service quality dimensions. The factors were labelled as Reliability (Factor 1), Responsiveness (Factor 2), Assurance

(Factor 3), Customization (Factor 4), Employees (Factor 5), Facilities (Factor 6), and Flight pattern (Factor 7). All the constructs have Eigen values exceeding 1, explaining 53.04%, 60.53%, 58.42%, 61.11%, 58.51%, 53.10%, and 49.65% respectively. The results of this analysis support the modified SERVQUAL seven-dimensional framework as suggested by Gilbert and Wong (2003).

Table 2. *Validation of the seven-dimensional SERVQUAL model*

Item description	Factor loadings							Communality
	1	**2**	**3**	**4**	**5**	**6**	**7**	
REL 1	0.782							0.611
REL 2	0.768							0.554
REL 3	0.744							0.589
REL 4	0.606							0.367
RES 1		0.896						0.779
RES 2		0.882						0.355
RES 3		0.697						0.802
RES 4		0.596						0.486
ASS 1			0.907					0.803
ASS 2			0.896					0.280
ASS 3			0.671					0.823
ASS 4			0.510					0.450
CUM 1				0.846				0.681
CUM 2				0.839				0.344
CUM 3				0.825				0.716
CUM 4				0.587				0.704
EMP 1					0.829			0.636
EMP 2					0.813			0.357
EMP 3					0.797			0.661
EMP 4					0.598			0.687
FAC 1						0.779		0.588
FAC 2						0.767		0.523
FAC 3						0.723		0.606
FAC 4						0.638		0.407
FLP 1							0.789	0.461
FLP 2							0.695	0.483
FLP 3							0.679	0.623
FLP 4							0.647	0.418
Eigen value	2.122	2.421	2.377	2.444	2.340	2.124	1.986	-
Variance explained	53.04%	60.53%	58.42%	61.11%	58.51%	53.10%	49.65%	-

Notes:
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 25 iterations.

Source: Field Survey, 2014

Coding of SERVQUAL Dimensions/Items

Below is the coding of the dimensions and items used for factor analysis:

Reliability (REL)

REL 1: This airline performs its services right at the first time.
REL 2: The service of this airline is very consistent.
REL 3: The check-in process of this airline is efficient.
REL 4: The reservation and ticketing of this airline are prompt.

Responsiveness (RES)

RES 1: This airline has capacity to respond to emergency situations (i.e. cancelled or delayed flights).
RES 2: This airline provides information about when services will be performed.
RES 3: This airline responds promptly to customer complaints.
RES 4: Employees of the airline display a thorough understanding of the specific needs of passengers.

Assurance (ASS)

ASS 1: Safety performance of the airline is very impressive.
ASS 2: Employees' attitude to passenger complaints instil confidence.
ASS 3: Employees are sympathetic and re-assuring when there is a problem.
ASS 4: I feel safe in my interactions with the airline.

Customization (CUM)

CUM 1: Employees of this airline display concern for my needs.
CUM 2: Employees of this airline have the passengers' best interests at heart.
CUM 3: The flight schedule of the airline is very convenient for me.
CUM 4: The attitude of the employees of this airline demonstrates their willingness to help when needed.

Employees (EMP)

EMP 1: Employees of the airline can speak in local and foreign languages.
EMP 2: Employees of the airline are well-dressed and appear neat.
EMP 3: Employees of the airline are courteous.
EMP 4: Employees of the airline have professional knowledge to meet my needs.

Facilities (FAC)

FAC 1: The services of this airline are based on superior technology (air conditioners, lighting, music, etc.).
FAC 2: The airline has visually appealing facilities.
FAC 3: This airline offers a variety of in-flight entertainment facilities (i.e. refreshments, books, magazines, newspapers, etc.).
FAC 4: The airline has comfortable facilities (e.g. seating comfort, spacious bulkhead for luggage, leg room, etc.).

Flight Pattern (FLP)

FLP 1: The airline operates many flight schedules (e.g. morning, afternoon, and evening).

FLP 2: The airline operates non-stop flights.
FLP 3: The airline covers many routes to the delight of passengers.
FLP 4: The airline often adjusts flight frequency during peak periods to accommodate increased patronage.

3.5. Data Analysis Techniques

The statistical analyses used were descriptive statistics (mean, standard deviation, coefficient of variation, and ranking). In particular, demographic information was reported by using frequencies and percentages. Similarly, one-sample t-test and Pearson's correlation analysis through cross-tabulating service quality and its dimensions were used to determine the direction and nature of relationship between them. Statistical Package for Social Sciences – SPSS Version 21 – was used to analyse the data and for the purpose of this study a p-value of ≤0.05 will be regarded as indicative of statistical significance.

4. Results and Discussion

4.1. Demographic Characteristics of Respondents (n = 503)

Table. 3.

Variables	Frequency	Percentage (%)
Gender		
Male	308	61.2
Female	195	38.8
Age-group		
18 – 25 years	28	5.6
26 – 25 years	58	11.5
36 – 45 years	187	37.2
46 – 55 years	138	27.4
56 – 65 years	74	14.7
66 years and above	18	3.6
Marital status		
Single	149	29.6
Married	309	61.4
Divorced/Separated	33	6.6
Widowed	12	2.4
Educational qualification		
Secondary school or below	16	3.2
Diploma or equivalent	112	22.3

Variables	Frequency	Percentage (%)
Bachelor Degree or equivalent	235	46.7
M.Sc./MBA or equivalent	134	26.6
Doctorate Degree	6	1.2
Occupation		
College student	19	3.8
Self-employed	121	24.1
Government employee	47	9.3
Employee of a private company	142	28.2
Professional/Related	124	24.7
Retired	42	8.3
Other	8	1.6
Monthly Income		
Less than N 500,000	199	39.6
N 501,000 – N 1,000,000	143	28.4
N 1,001,000 – N 2,000,000	129	25.6
N 2,001,000 and above	32	6.4

Source: Field Survey, 2014

Frequency analysis was conducted to examine the demographic characteristics of the respondents. Results of the demographic characteristics of the respondents are presented in *Table 3*. The sample of 503 air passengers comprised 308 male respondents (61.2%) and 195 females (38.8%). Respondents aged between 18 to 25 years accounted for 5.6% of the sample, 58 (11.5%) were between the ages of 26 and 35 years, 187 (37.2%) were between the ages of 36 and 45 years, 138 (27.4%) were between 46 and 55 years, 74 (14.7%) were between 56 and 65 years, and 18 (3.6%) were 66 years and above. In terms of marital status, married respondents were the largest group (61.4%), followed by single respondents (29.6%), divorced or separated (6.6%), and widowed (2.4%). In terms of level of education, *Table 3* above shows that 16 (3.2%) have secondary education (SSCE/NECO) or below, 112 (22.3%) are diploma holders or equivalent, 235 (46.7%) are holders of bachelor degree or equivalent, 134 (26.6%) are MSc/MBA holders or equivalent, while 6 (1.2%) of the respondents have doctoral degree.

As for occupation, employees of a private company were the highest group (28.2%), followed by those that were in professional/related and self-employed, representing 24.7% and 24.1% respectively, those working in the public sector were 9.3%, college students were 3.8%, and retirees were 8.3%. The content analysis of those that indicate "other" (1.6%) reveals that those respondents were working as a missionary. As regards the level of income, most respondents' average monthly income is below N500,000 (39.6%), followed by those that earn between N501,000 and N1,000,000 monthly (28.4%), 129(25.6%) earn between

N1,001,000 and N2,000,000, while a few of the respondents (6.4%) earn N2,001,000 and above. The above accounts in respect to demographic characteristics clearly demonstrated diversity across respondents. Of the data gathered, it can be said, therefore, to be balanced and useful for the purpose of this study.

4.2. Research Question One

How do air travellers rank service quality dimensions of domestic airline carriers in Nigeria?

Table 4. *Descriptive statistics of service quality/dimensions*

Variables	Mean (M)	Standard Deviation (SD)	Ranking
Reliability	3.18	.380	6th
Responsiveness	3.21	.391	3rd
Assurance	3.20	.379	4th
Customization	3.35	.423	1st
Employees	3.32	.413	2nd
Facilities	3.19	.387	5th
Flight Pattern	3.16	.347	7th
Overall Service Quality	**3.23**	**.342**	

Source: Field Survey, 2014 (Note: a 7-point scale was used)

As indicated in *Table 4*, the mean scores for all service quality dimensions ranged from 3.16 to 3.35 and standard deviations ranged from .347 to .423. The mean and standard deviation of overall service quality is 3.23 and .342 respectively. As displayed in *Table 4*, the dimensions of service quality are: reliability, responsiveness, assurance, customization, employee, facilities, and flight pattern. According to the subsequent analysis on the order of ranking of the service quality dimensions: customization was ranked 1st, employee 2nd, responsiveness 3rd, assurance 4th, facilities 5th, reliability 6th, and flight pattern 7th. This finding confirms the seven-dimensional structure of service quality promoted by Gilbert and Wong (2003), and subsequently validated in Nigerian airline context by Rahim (2015). It is evident from *Table 4* that the mean value of service quality and its dimensions is low.

4.3. Research Question Two

What is the relationship between service quality dimensions in the Nigerian airline industry?

Table 5. *Correlations analysis of service quality and its dimensions*

Dimensions	1	2	3	4	5	6	7	8
Reliability	1							
Responsiveness	.792**	1						
Assurance	.736**	.982**	1					
Customization	.625**	.579**	.536**	1				
Employee	.653**	.580**	.534**	.968**	1			
Facilities	.988**	.821**	.764**	.665**	.678**	1		
Flight pattern	.957**	.775**	.741**	.627**	.627**	.956**	1	
Service quality	.926**	.892**	.853**	.820**	.827**	.946**	.914**	1

*p<0.05 Correlation is significant at 0.01 levels (2-tailed) and N = 503

Source: Field Survey, 2014

Pearson correlation analysis in *Table 5* was conducted to study the relationship between service quality and its dimensions. As shown in *Table 5*, inter-correlations among the service quality dimensions reveal high positive and statistically significant correlations (the correlation ranged from .534 to .982 and p< 0.01). Similarly, there exists a statistically high positive significant correlation between service quality and all of its dimensions: reliability and service quality (r=.926, p<0.01), responsiveness and service quality (r=.892, p<0.01), assurance and service quality (r=.853, p<0.01), customization and service quality (r=.820, p<0.01), employee and service quality (r=.827, p<0.01), facilities and service quality (r=.946, p<0.01), and flight pattern and service quality (r=.914, p<0.01). The patterns of the correlations between service quality and its dimensions further reveal that the seven-dimensional structure of the service quality construct proposed by Gilbert and Wong (2003) is reliable and valid.

4.4. Research Question Three

What is the perception of service quality offered by domestic airline carriers in Nigeria?

Table 6. *Coefficient of variation of service quality and its dimensions*

Variables	Coefficient of Variation (CV)
Reliability	11.95%
Responsiveness	12.18%
Assurance	11.84%
Customization	12.63%
Employees	12.44%
Facilities	12.13%
Flight Pattern	10.98%
Overall Service Quality	**10.59%**

Source: Field Survey, 2014 (Note: a 7-point scale was used)

As shown in *Table 4* in the preceding section, all service quality dimensions recorded average mean scores, which indicates poor performance as revealed by the findings of this study. However, due to the descriptive nature of the analysis (mean and standard deviation), which may not be sufficient to support the hypothesis testing (Lucey, 2000), the coefficient of variation (which is the standardized measure of variability and stability of the data set) was computed. As revealed in *Table 6*, the coefficient of variation ranged from 10.59% to 12.63% for the overall perceived service quality and its dimension, which implies that the data is normal since the coefficient of variation is less than 30% (Mojekwu, 2012). Notwithstanding the normality of the distribution of the data set, mean and standard deviation, as earlier noted, may not satisfactorily support the acceptance or rejection of a research statement (either in the form of a hypothesis or research question). Hence, to avoid Type 1 or Type II error, one-sample t-test was used to answer research question three.

Table 7. *One-sample test service quality*

	T	Df	Sig. (2-tailed)	Mean difference	95% Confidence Interval of the Difference	
					Lower	Upper
Service Quality	18.536	.502	.000	0.283	0.25	0.31

Source: Field Survey, 2014

As indicated in *Table 7*, t= 18.536, p< 0.05 and the 95% confidence interval estimate for the difference between the lower and upper limits is 0.25 to 0.31. The above analysis further confirms that the perceived service quality offered by domestic airlines in Nigeria is poor. From the above analysis, we conclude that domestic airline carriers in Nigeria performed below average across all the seven dimensions of service quality as perceived by air passengers (note that a 7-point Likert scale was used). The finding of this study is similar to the one conducted by Ckikwendu et al. (2012), who discovered an overall negative mean dimension of service quality of euro contractors' airline. Likewise, the finding corroborates the sentiments expressed by aviation practitioners, such as Okechukwu (2012), Bayo (2012), and Nkem (2013) over the deteriorating standards of service quality offered by domestic airlines in Nigeria.

5. Conclusion and Implications

This study was conducted to investigate the dimensions of service quality in the context of Nigerian airline industry. From the analysis carried out, it was found that the modified SERVQUAL model, consisting of reliability, assurance, responsiveness, customization, employee, facilities, and flight pattern proposed by Gilbert and Wong (2003) and adapted in this study, provided a satisfactory level of overall reliability, which implies that all the items were cohesive in forming the SERVQUAL dimensions. As revealed by the factor analysis results, all the items fall under seven different dimensions and the factors were labelled in line with the adapted model. From the above findings, it is clear that the modified SERVQUAL model is a good instrument to evaluate perceived service quality of air travellers in the Nigerian airline industry. The results of the analyses also show that the perceived service quality offered by domestic airline operators recorded relatively low mean scores, which implies that airlines' performance along these dimensions fall below passenger expectations. This also portends that their service experiences did not match their needs.

Accordingly, air passengers' dissatisfaction with airline service quality will most likely weaken or break the existing relationship, along with a tendency that such customers would fly less frequently or patronize alternative airlines in the future (Mostert et al., 2009). Therefore, contemporary service organizations, such as airline operators, are compelled by the nature of their operations to offer exceptional services in order to thrive in a progressively competitive marketplace. In general, airline passengers' needs and wants are dynamic; hence, poor customer perception of the service quality offered by domestic airlines will result in declining interest in air travel and high defection if not proactively addressed. In such situation, airline operators need to be aware of the shift and trend in airline market to be able to curtail the effect of perceived poor service quality. Consequently, it is important for airline operators to measure service quality regularly because it enables a deeper understanding of customers' view of the performance of the service provider, assists in identifying hiccups in the service process, and, by extension, supports firms' capabilities in developing and implementing service standards in line with service promises. In particular, the nature of human interaction and servicescape, as noted by Folkes and Patrick (2003), presents tendencies for both negative and positive service experiences. Therefore, a firm's capability of understanding and meeting customers' expectations in a distinct and proactive approach is absolutely vital to airline success and competitiveness. Hence, it is imperative that airline operators measure and monitor regularly how their service quality is being perceived with a view to influence passenger satisfaction, behavioural intentions, and their reputation among other benefits associated with perceived high service quality.

6. Recommendations

From the evidence of this study, airline operators should develop strategies to improve service quality across all the service quality dimensions in a way and manner that suit the preferences of those market segments they choose to serve. Another essential corollary to the above recommendation is the need to recognize the changing needs and expectations of air travellers; hence, passenger surveys should be periodically conducted to generate three types of service performance reports: monthly update, quarterly performance review, and an annual performance report – the information obtained can be used to continuously evaluate passengers' needs. Owing to the heterogeneous nature of service quality, poor perception of service quality could lead to a sense of uncertainty and insecurity on the part of air passengers. Therefore, airline operators should customize their services offered by identifying unique service requirements of individual customers.

No doubt, developing the required level of understanding customers' needs will enable better investment decisions and commitment of resources to areas most significant to customers. In meeting the expectations of passengers, who have a tendency to be more demanding and less loyal, airline managers should deliver services as promised and occasionally, when the services delivered fall short of expectations, effort should be made to immediately restore any service failure and sincere apologies should be offered to the customer with a genuine commitment to prevent the reoccurrence of such service hiccups. This implies that service attributes must be well-defined by the airline operators in terms of their features in order to comprehend how service quality is perceived by consumers.

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