



PREDICTORS OF CUSTOMER SATISFACTION WITH MASS TRANSIT TRANSPORT SCHEME: EVIDENCE FROM AN EMERGING ECONOMY

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ABSTRACT: *Most mass transport businesses collapse due to problems ranging from financial impropriety, inadequate government financial support, and lack of qualified staff, among others. These problems manifest in poor service quality and its consequences, such as customer dissatisfaction and switching behaviour. This study investigates the relationship between mass transit service quality and customer satisfaction south-south States of Nigeria by moderating the effect of personal characteristics. To accomplish this, a cross-sectional survey research design was employed, and data was collected from 400 respondents drawn from commuters intercepted at various Mass Transit Parks in selected South-South states in Nigeria. The hypotheses were tested using multiple linear regression (MRA) through SPSS version 20. The study results show a significant positive relationship between availability, reliability, staff behaviour, service information about routes and customer satisfaction with mass transportation services quality. The result also showed that personal characteristics of mass transit staff moderate staff behaviour, service information about routes and comfort but do not moderate accessibility, availability and reliability. It was, therefore, recommended that mass transit operators should improve service quality by ensuring that mass transit buses are well maintained and clean, ensure that the buses or vehicles have scheduled time and follow those schedules to avoid passengers getting frustrated due to long waits or delayed movement and also provide the service information about routes to enhance customer satisfaction.*

KEYWORDS: Customer Satisfaction, Mass Transit Transport, Emerging Economy, Financial Impropriety, Government Financial Support



INTRODUCTION

The service industry is rapidly expanding in almost all countries, including Nigeria. According to the Organisation for Economic Cooperation and Development (OECD, 2000), as economies mature, the contribution to employment between agriculture, industry, and services changes significantly. Even in emerging economies, the output of the services represents at least half of the Gross Domestic Product (GDP) (Wirtz & Lovelock, 2018). Nigeria's service sector is a significant contributor to the economy, accounting for 44.4% of the GDP in 2021, while industry and agriculture accounted for 31.9% and 23.7%, respectively (CBN, 2021). The services sector is dominant and strategic to the Nigerian economy and has many sub-groupings, including trade, accommodation and food services, information and communication, transportation and storage.

Road transport is particularly important in this research, specifically the mass transportation segment, which involves moving large numbers of people at a time. The Mass Transit Programme was introduced in 1988 to lay the foundation for moderately organised mass transit in Nigeria (Malachy & Nwobi, 2014). However, despite the efforts of the government and private sector to establish and operate mass transit businesses, mass transportation problems increased. These problems have ranged from inadequate planning and management, lack of intermodal coordination, traffic congestion, and shortage of intra-city transport connectivity, shortages and malfunctioning of transport equipment, lack of professional drivers, inadequate capital, and high cost of transport fares to poor maintenance culture. These problems have led to customer dissatisfaction, with many switching among operators, which has inadvertently led to the collapse of mass transport businesses while others are struggling to survive (Adesanya, 2002; Barret, 1993).

Previous studies have examined the performance of mass transit businesses from the perspective of service quality using dimensions such as availability, accessibility, information, time, comfort, safety, and ecological impact (Enimola, Egwu & Nafiu, 2021; Mudenda & Guga, 2017; Chocholac et al. 2020). Some other factors explored include comfort, cleanliness (Le-Klähn, Hall & Gerike 2014); line routing (Stopka, Čejka, Kampf, Bartuška, 2015); information about routes (Budiono, 2009); circulation of vehicles (Kampf, Zeman, Beneš, 2015); the overall condition of the vehicles and stops, security (Budiono, 2009); optimising timetables, the availability of space and seats (Le-Klähn, Hall et al., 2014); network coverage, the competence and behaviour of staff, and time efficiency (Guiver, Lumsdon & Weston, 2008). However, these findings have been mostly mixed and inconclusive, and the personal characteristics of commuters, which affect how commuters evaluate service quality, are rarely documented.

This study investigates the predictors of customer satisfaction with mass transportation services in South-South, Nigeria. Specifically, the study examines the effects of accessibility, vehicular comfort, route availability, service reliability, staff behaviour, and route service information on customer satisfaction. In addition, the study tests the moderating influence of personal characteristics on the relationship between these variables and customer satisfaction. Accordingly, the present study seeks to test the following hypotheses:



The following hypotheses are formulated for the study and are stated in alternate forms only:

- H_{1a}: There is a significant positive relationship between accessibility and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{1b}: Personal characteristics of mass transit staff the relationship between accessibility and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{2a}: There is a significant positive relationship between comfort and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{2b}: Personal characteristics of mass transit customers the relationship between comfort and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{3a}: There is a significant positive relationship between availability and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{3b}: Personal characteristics of mass transit customers the relationship between availability and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{4a}: There is a significant positive relationship between reliability and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{4b}: Personal characteristics of mass transit customers the relationship between reliability and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{5a}: There is a significant positive relationship between staff behaviour and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{5b}: Personal characteristics of mass transit customers the relationship between staff behaviour and customer satisfaction with mass transportation services quality of mass transit companies.
- H_{6a}: There is a significant positive relationship between mass transit route information and customer satisfaction with mass transportation services quality of mass transit companies;
- H_{6b}: Personal characteristics of mass transit customers, the relationship between mass transit route information and customer satisfaction with mass transportation services, and quality of mass transit companies.



LITERATURE REVIEW

Service Quality

Services are more difficult to measure because they are intangible. As a result, how the service is provided must be regarded as separate from the tangible product (Gronroos, 2007). Wirtz and Lovelock (2022) describe excellent quality of service as a high degree of performance that meets or surpasses customer demands on a consistent basis. However, it is essential to maintain a high level of service quality as it is a major factor in motivating crucial consumer behaviours, including word-of-mouth advertising, repeat business, and loyalty (Wirtz & Lovelock, 2022).

Customer Satisfaction versus Service Quality

Customers compare service performance with expectations to infer the quality of service received and evaluate their level of satisfaction. However, satisfaction and service quality are completely different concepts. According to Wirtz and Lovelock (2022), satisfaction can be seen as a simple evaluation that is distinct from a single consumption event. They emphasise that it is an immediate and obvious consequence of that experience. On the other hand, service quality is related to a firm's comparatively constant attitudes and ideas. Although satisfaction among consumers and service quality have similar characteristics, satisfaction is often considered as a broader term, whereas service quality focuses particularly on service elements and dimensions (Zeithaml et al. 2018). For example, a passenger may be disappointed with a particular mass transit following an experience but yet believe that the mass transit provides excellent services; hence, satisfaction and quality are interrelated and intertwined. Though perceptions of a firm's overall service quality are enduring, they can shift over time in the same direction as transaction-specific satisfaction ratings (Palmer & O'Neill, 2003).

Oftentimes people refer to transaction quality like seat condition, waiting time, size and bus spaces, and the number of stops in a mass transit company that relates to attribute satisfaction which includes courtesy of the driver and crew members, and complaint handling, among others. Wirtz and Lovelock (2018) say that both are transaction-specific and impact overall consumer satisfaction, influencing service quality beliefs at both the attribute and overall levels. These terms may confuse customers and passengers, but when we distinguish between transaction-specific judgments and the more consistent beliefs, perceptions and attitudes, the difference in meaning becomes clear (Wirtz & Lovelock, 2018). Customers repurchase intentions are determined by their general opinions about the firm's service quality rather than particular, transaction-specific satisfaction judgements established due to consumption. Customers attempt to preempt how pleasant subsequent service encounters will turn out.

Dimensions of Mass Transit Quality

Accessibility

This relates to access to mass transit systems and the link and connectivity between different means of transportation. Accessibility is being expanded and improved regarding access to stops and bus access. This strategy means that all types of passengers, including those with limited mobility, baby carriages, and wheelchairs (for people living with disability), can use mass urban transportation (Chocholac et al., 2020). According to Vallejo (2010), the promptness and consistency of the service have been improved and increased, and passengers are informed of journey times, frequencies, schedules, and departures, as well as waiting times



aboard, at stops, through messages, and through the website. In every way, it is a comfortable system. Accessibility also requires that bus routes run in close proximity to all residential and commercial stop zones. Mass transit service aims not only to transport passengers to their destinations but to do it promptly, conveniently, and without discriminating against anyone with physical disabilities.

Comfort

Service elements have been introduced to make mass/public transportation services more comfortable and enjoyable for passengers. According to Beirao and Cabral (2007), passenger respondents consider a comfortable journey very important. This includes soft, clean seats, a pleasant temperature, air conditioning, and not overcrowded vehicles. Comfort is evaluated differently by various categories of people/passengers. Regular mass transport users perceive buses with air-conditioning and better or lower floors to be very comfortable. However, the number of passengers during peak periods can be problematic. Conversely, car users and occasional mass/public transportation users usually find buses uncomfortable, too crowded, and sometimes smelly and stuffy.

Availability

The quality of transportation services is measured by how well they meet the needs of passengers in terms of location, time, and frequency. This includes features like air conditioning, availability, ease of entering and exiting the vehicle, payment convenience, and staff behaviour (Imam, 2014). It also encompasses the clarity of information related to service attributes such as price, ticket retailers, and seat availability (Budiono, 2009).

Reliability

The reliability of a firm's service is essential for customer satisfaction. It refers to the consistency and dependability of its performance. Does the firm keep its promises, bill its customers accurately, keep accurate records, and perform the service correctly the first time? Nothing frustrates customers more than unreliable service providers. The number of businesses that fail to keep their promises is disturbing. According to numerous studies that have used SERVQUAL, consumers rate reliability as the most important of the five dimensions. Ideally, nothing else matters if the service is unreliable. Customers also value information and a systematic presentation of observations regarding the mass transit system to assist in planning their journeys more conveniently.

Staff Behaviour

Transportation Charters detail the commitment of the operator to the passengers and customers and set out the standards against which the operator is working, how it publishes its performance against those standards, the way and manner it looks after the customers and rewards them if things go wrong and how they can reach or contact the operator (Scott, 2011). A customer charter, if possible, will act as the catalyst for changing staff and management attitudes and facilitating the development of continuous improvement, thereby creating an alignment between customers and the organisation. It will also alter the expectations (constructs) of customers. It has been argued (Malachy & Nwobi, 2014) that public mass transit companies have administrative structures, better-trained staff guided by public service rules, workshops and maintenance facilities, which most private operators do not have.



Service information about routes

Some passengers and respondents, especially occasional public transport and car users, mentioned not having enough information regarding the bus routes and timetables; and thinking that the bus system is difficult to use and information is difficult to access (Beirao & Cabral, 2007). Among bus users, the main problem occurred when the bus company changed timetables or routes and did not provide enough information to users. The lack of explanations from the bus company of why changes were made and bus users not being informed in advance made them very upset and unsatisfied with the bus service.

Customer Satisfaction

Central to the customer satisfaction theory are the expectations or predictions and forecasts made by customers compared to the actually delivered value (Parasuraman, 1988). This implies that measurement is required for customer satisfaction. The SERVQUAL model introduced by Parasuraman (1988) provides one of the most important bases in the theory of customer satisfaction. The model offers the criteria for measuring customer satisfaction with a product or service by assessing and comparing perceptions and expectations across various product and service characteristics. Terblanche (2002) observed that superior service quality leads to customer satisfaction. Therefore, service quality, as measured by the SERVQUAL model, cannot be separated from customer satisfaction analysis. The outcome variable for this research is customer satisfaction. Hence service model in a modified form is paramount. Further development of the customer satisfaction theory was conducted by Oliver (in Machirori & Fatoki, 2011), who introduced the expectancy disconfirmation theory (Nevo, 2005). Satisfaction is a judgment that follows a series of consumer-product interactions. Most customer satisfaction studies are based on the expectancy-disconfirmation model of satisfaction (Wirtz & Lovelock, 2018). In this model, confirmation or disconfirmation of pre-consumption expectations is the essential determinant of satisfaction. Customers assess attributes and risks related to a service offering during the decision-making process. They also develop expectations about their chosen service's performance (i.e., the predicted, desired, and adequate service levels). The tolerance zone can be narrow and firm if the expectations are related to important attributes in the decision-making process. During and after consumption, consumers experience the service performance and compare it to their expectations. Satisfaction judgments are then formed on the basis of this comparison. If performance perceptions are worse than expected, it is called negative disconfirmation. If performance is better than expected, it is called positive disconfirmation; if it is as expected, it is simply called confirmation of expectations. Customers will be reasonably satisfied so long as perceived performance falls within the zone of tolerance, above the adequate service level. If performance perceptions approach or exceed desired levels, customers will be delighted. Satisfied customers are more likely to make repeat purchases, remain loyal, and spread positive word of mouth. However, if the service experience does not meet their expectations, customers may suffer in silence, complain about poor service quality, or switch to a different provider in the future. The consumer aggregates the satisfaction judgments for individual attributes to an overall customer satisfaction evaluation. Multi-attribute models help us understand how customer satisfaction is created (Wirtz & Lovelock, 2018). Specifically, they help managers to identify the attributes that have a strong impact on overall satisfaction. This is especially important if customers are satisfied with some attributes but dissatisfied with others. Understanding this enables managers to cement the strengths of the firm's services and to focus improvement efforts where they matter most.



The disconfirmation theory suggests that customer satisfaction is related to the size of the disconfirmation experience, where disconfirmation is related to the customer's initial expectations as compared to the actual performance delivered (Thijs & Staes, 2008). The *gaps* between the actual delivered value and customer expectations consequently, influence the level of satisfaction or dissatisfaction by the customer. Therefore, where performance equals or exceeds customer expectations, there will be positive disconfirmation and customer satisfaction. However, negative disconfirmation will occur when performance is below customer expectations and customer dissatisfaction (Hoffman & Bateson, 2011). The difference between customer evaluation or perceptions of performance and customer satisfaction provides a solid measure of service quality and determines the level of performance (Thijs & Staes, 2008). Customer satisfaction plays a key role in a successful business operation and strategy formulation by a customer-centric business enterprise Gomez, Mclaughlin, Wittink, (2004). Customer satisfaction is the indirect effect or mediator variable in the relationship between relational benefits, customer loyalty and word-of-mouth publicity (Molina, Consuegra & Esteban 2009). Retail stores operate in a competitive environment facing changes in customer needs, demographics, technology advancements and retail ownership through mergers and acquisitions. In many such environments, the appreciation, understanding and prediction of customer satisfaction are fast becoming a factor in competitive advantage (Theoridis & Chatzipanagiotou, 2008). Efficiently satisfying customer needs is the ultimate test of a business enterprise's success. The focus of business activity should be to serve customer needs and wants more efficiently than other competitors (Machirori & Fatoki, 2011). The long-term survival of a firm or business enterprise depends not only on the turnover or sales volume and the variety of business enterprise's products but also on the former's ability to satisfy customers' needs efficiently. A business enterprise's ability to deliver superior value is thus the starting point for efficient customer need satisfaction (Jain, 2000). A satisfied customer is the only true asset of the business enterprise and represents the sole justification for the existence of any business enterprise (Cant, Strydom, Jooste, & Du Plessis 2006). The notion of service quality is very important in customer satisfaction (Gee & Nicholson (2008), as there is a direct positive effect between service quality and customer intentions, and strong customer service leads to customer satisfaction, which will, in turn, lead to behavioural loyalty. The perceived value of products relative to price, staff friendliness and willingness to assist, as well as the quality and freshness of products, store appearance, and the degree of customer service, are some of the factors affecting customer satisfaction (Gomez et al., 2004). Accordingly, Clottey, Collier, and Stodnick (2008) outline customer satisfaction benefits to a business, including lower acquisition costs of attracting new customers. Increased customer satisfaction may also reduce the overall costs of a business while increasing the base profit of the business. However, the most important benefit of customer satisfaction is customer loyalty which leads to positive word-of-mouth publicity and referrals by satisfied customers.

Mudenda and Guga (2017) conducted a study on An Assessment of the Relationship between Service Quality and Customer Satisfaction-A Case of a Public Passenger Road Transportation Company in Zambia. Public passenger service transport in Zambia is a growing sector that urgently needs infrastructure and service quality attention. This is because the economy is growing, and roads are getting congested, especially in urban areas. Further, people now depend on road transport due to the poor services offered by railway transport and the huge costs and access limitations associated with air transport. The current study undertook to determine if there is a relation between quality service and customer satisfaction and if customers accessing public passenger service provided by the case company were satisfied.



Consequently, the study used a descriptive and explanatory study design involving 390 respondents picked randomly over five weeks. The data collected were analysed using descriptive statistics and multiple regression analysis since service quality was found to have five relevant dimensions. The study found that customers of the case service provider were satisfied with the service and that reliability, assurance and tangibility were the most significant variables leading to customer satisfaction.

METHOD

Sample and design

Data were collected from a total of 400 commuters from three states selected from South-South, Nigeria. However, 305 responses were returned valid and used in the final analysis. The respondents' demographic showed that 60.7% were males while 39.2% were females. 54.5% are single, 43.1% are married, and 7(2.4%) are divorced or separated. On income, 57.3% fall within the middle-income bracket of ₦15,000.00 – ₦451,000.00, 31.1% have monthly income below ₦15,000.00 while the remaining 10.6% have monthly income of ₦451,000.00 and above. In terms of the age bracket, 208(71.5%) are in 20 – 35 years, while 87(25.5%) are within the 36 – 55 years. There were no responses from those above 55 years. On occupation, 126(41.4%) are students/apprentice, 17(5.6%) do clerical works, 37(12.2%) are into trading, 106(34.8%) are in technical/administrative jobs, while 19(6.0%) are casual workers. On education 37(12.0%) have basic/non formal education, 75(16.2%) have secondary education, 125(71.7%) have HND/BSc while 68(22.7%) have post graduate degrees. The implication of the above is that most of the respondents are young people, have tertiary education and therefore have reasonable education to understand the import of the study and provide valid responses.

**Table 4.1: Demographic Characteristics of Respondents**

		Frequency	Valid Percent
Gender:	Male	185	60.7
	Female	120	39.3
Marital Status:	Single	166	54.5
	Married	132	43.1
	Separated/Divorced	7	2.4
Income:	Below N50,000.00	95	31.1
	N150,000.00-N200,000.00	175	57.3
	N200,000.00 and above	35	11.6
Age:	20-35 years	208	71.5
	36-55 years	87	28.5
Occupation:	Student/apprentice	126	41.4
	Civil servant	17	5.6
	Teaching	37	12.2
	Technical/administrative	106	34.8
	Self-employed	19	6.0
Education:	Basic/non-formal	37	12.0
	ND/NCE	75	24.4
	HND/BSc	125	40.9
	Postgraduate	68	22.7
Total		305	100.0

Measures

The questionnaire contains multiple-choice questions and 5-point Likert scale questions: very strongly agree, strongly agree, agree, disagree, strongly disagree and very strongly disagree. Eight variables were chosen/adopted for this study comprising six predictor variables with one dependent/outcome variable and one moderator variable. These variables, as garnered from the literature, are accessibility (ACCE), comfort (COMF), availability (AVAI), reliability (RELI), staff behaviour (SB) and service information about routes (SiaR). Customer satisfaction (CS) was the DV, while the personal characteristics of the staff (PCoS) were the moderating variable. The study adopted multiple measurements; hence each of the five IVs and the DV were measured with a number of items. The questionnaire comprises two sections. Section A consists of the respondents' or participants' socio-demographic variables, and section B consists of the core questions used to measure the constructs of the study. The copies of the questionnaire were distributed to respondents in the various motor parks in South-south Nigeria. The questions and questionnaire used in this study were largely adapted from the European Institute of Public Administration (EIPA) modified service quality questionnaire. The researcher visited the respondents in the motor park.



RESULTS

Demographic Profile of Respondents

Reliability Analysis

Reliability refers to consistency, the extent to which a variable or set of variables is consistent in what it is intended to measure. The researcher used Cronbach's alpha to test our data's internal consistency reliability, which is shown in Table 4.11.

Table 4.11: Reliability Analysis

Constructs	Number of Items	Cronbach's Alpha
All	45	.95
Accessibility	4	.77
Comfort	5	.70
Availability	6	.78
Reliability	6	.65
Service Inform. about routes	5	.90
Personal Characteristics	4	.79
Customer satisfaction	11	.89

Table 4.11 shows that all the constructs have Cronbach's alpha above the 0.7 thresholds, indicating that all the construct items have internal consistency and merit further analysis, as no item needs to be eliminated. Thus, all constructs and their items were utilised in further analysis and hypothesis validation. Detailed results of the reliability analysis are in Appendix 4. We now look at the validity of the summated scale items.

Validity Analysis

Validity is the extent to which a measure or set of measures correctly represents the concept of the study, the degree to which it is free from any systematic or nonrandom error. Validity is concerned with how well the concept is defined by the measure(s), whereas reliability relates to the consistency of the measure(s) (Hair et al., 2014). There are many types of validity, but in this study, apart from the face and content validity discussed in chapter three, in this section, we are concerned with discriminant validity.

Correlations								
	ACC	COM	AVAI	REL	SB	SIaR	PCoS	CS
COM	.620**	1						
AVAI	.491**	.807**	1					
REL	.305**	.399**	.571**	1				
SB	.412**	.535**	.603**	.723**	1			
SIaR	.465**	.578**	.593**	.491**	.579**	1		
PCoS	.199**	.292**	.401**	.717**	.522**	.341**	1	
CS	.342**	.413**	.530**	.714**	.634**	.673**	.680**	1

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



Discriminant validity is the degree to which two conceptually similar concepts differ and could be seen as distinct (Hair et al., 2014). The empirical test is the correlation among measures, but this time the summated scale is correlated with a similar but conceptually distinct measure. Hair et al. (2014) emphasise that the correlation should be low so as to demonstrate that the summated scale is sufficiently different from the other similar concept. We used Pearson product-moment correlation to test for the discriminant validity since our data was measured with a Likert scale. The results, as shown in the correlation matrix above, show that our data has discriminant validity and merits further analysis. The Pearson correlation was also used to check for collinearity among the variables, and the output shows that about demonstrates a collinearity problem, but we left that and still included it in the model of our final analysis.

Hypotheses Testing

In multiple regression analysis, the rule is to first analyse the global statistics before looking at the coefficients. These global statistics include the ANOVA, mostly represented by the F-Statistics, the correlation, and the coefficient of multiple determination, among others. Here we rely on the coefficient of multiple determination R-square. As shown in Figure 4.1, the coefficient of multiple determination is 0.67, which implies that 67 per cent of the variations in customer satisfaction with mass transit operators are accounted for by the six independent variables, while other unexplained variables account for the remaining 33 per cent. Also, the average block variance inflation factor (AVIF) is 2.371, while the average full collinearity variance inflation (AFVIF) is 2.872. All these are well below the 5.0 threshold showing that the model is a good fit for the data. We now add the moderating variable to see whether there will be enhanced variation.

Having validated the global statistics from the multiple linear regression analysis, we now proceed to use the coefficients to analyse and validate the hypotheses earlier formulated for the study, as stated in the first chapter of this study. The coefficients we use are from the model with the moderator variable since our hypotheses involve direct and interaction hypotheses.

Table 4: Assessment of the structural model

Paths	Coefficient s	Effect sizes	SE	t-values	p-values	Decision
ACC -> CS	0.059	0.023	0.057	1.036	0.151	Not Supported
COM -> CS	0.150	0.065	0.056	2.689	0.004	Supported
AVAI -> CS	0.096	0.057	0.056	1.700	0.045	Supported
REL -> CS	0.375	0.273	0.054	6.950	<0.001	Supported
SB -> CS	0.157	0.150	0.056	2.806	0.003	Supported
SIaR -> CS	0.341	0.239	0.054	6.273	<0.001	Supported
PCoS*ACC -> CS	0.069	0.032	0.057	1.209	0.114	Not Supported
PCoS*COM -> CS	0.099	0.048	0.056	1.755	0.040	Supported
PCoS*AVAI -> CS	0.063	0.026	0.057	1.112	0.133	Not Supported
PCoS*REL -> CS	0.081	0.018	0.057	1.441	0.075	Not Supported
PCoS*SB -> CS	0.042	0.010	0.057	0.740	0.230	Not Supported
PCoS*SIaR -> CS	0.196	0.086	0.056	3.526	<0.001	Supported



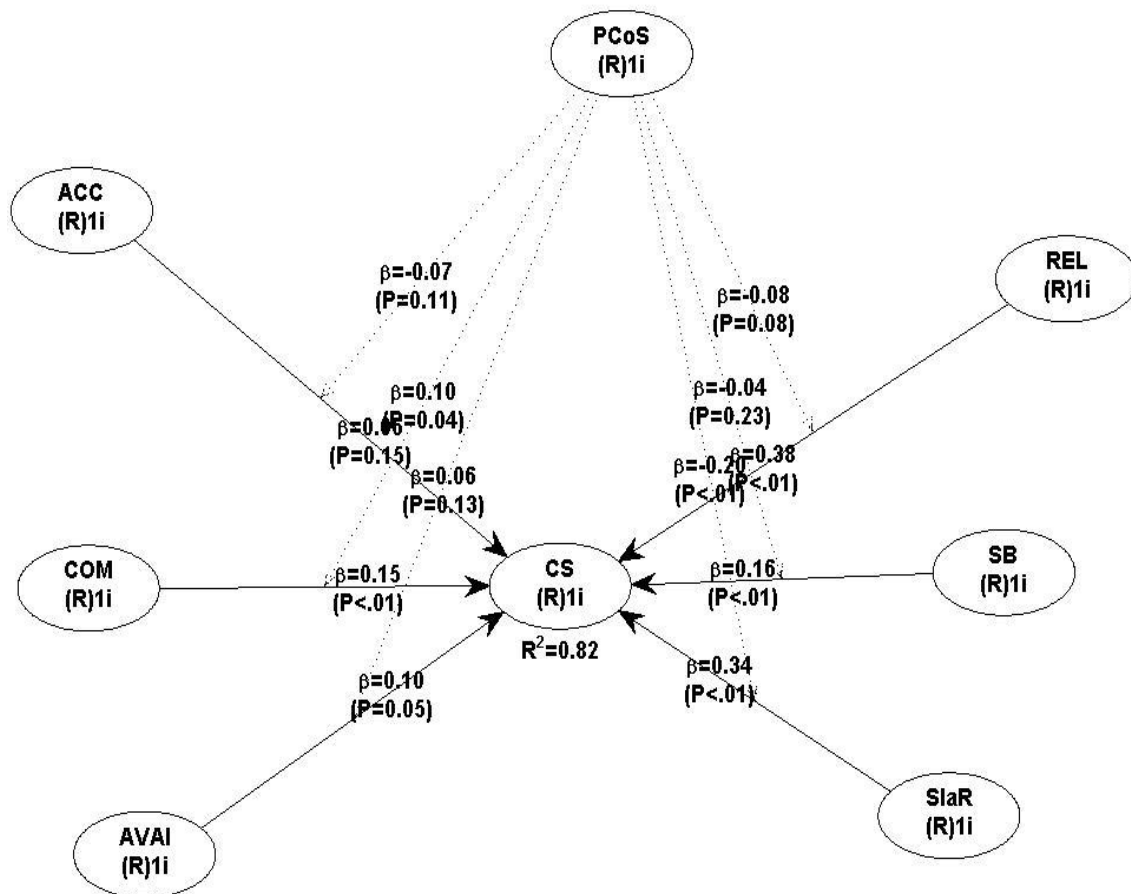
The first hypothesis predicted a positive relationship between accessibility and customer satisfaction. The result showed that accessibility ($\beta = .06$, $t = 1.04$, $p = .15$) has no significant effect on customer satisfaction with mass transportation services. In the second hypothesis, a positive relationship between comfort ($\beta = .15$, $t = 2.68$, $p < .005$) and customer satisfaction was predicted. It was found that comfort predicted customer satisfaction with mass transportation services. Hypothesis 3 predicted a positive effect of availability on customer satisfaction with mass transit companies. The result showed that availability ($\beta = .10$, $t = 1.70$, $p < .05$) has a positive and significant effect on customer satisfaction with mass transit companies.

Furthermore, hypothesis four predicted a positive relationship between reliability and customer satisfaction. The result showed a significant positive relationship between reliability ($\beta = .38$, $t = 6.70$, $p < .001$) and customer satisfaction. Hypotheses 5 positive relationships between staff behaviour and customer satisfaction staff behaviour and customer satisfaction. The result showed a significant positive relationship between staff behaviour ($\beta = .16$, $t = 2.81$, $p < .001$) and customer satisfaction, supporting H5. Finally, in hypothesis six, it was expected that mass transit route information would predict customer satisfaction. The result confirms H6 and shows a positive and significant relationship between transit route information ($\beta = .34$, $t = 6.27$, $p < .001$) predicts customer satisfaction.

Moderating Effect of Personal Characteristics

The moderating variable produces the moderator effect, which is the effect resulting from a situation in which a third independent variable (the moderator variable) causes the relationship between a dependent/independent variable pair to change, depending on the value of the moderator variable (Hair et al. 2014). It is also known as an interactive effect or simply the interaction effect. The main aim here is to ascertain whether the combined effects of the moderator variable and the independent variable improve the variance explained or not. Figure 4.2 shows that the coefficient of multiple determination R-square increased from 0.67 in the first model to 0.82 in this second model with the moderator included. This implies that the model with a moderator increased the variance extracted from 67 per cent to 82 per cent. This also implies that the moderator is significant. Also, the average block variance inflation (AVIF) has a value of 3.050 while the average full collinearity variance inflation factor (AFVIF) is 4.228, all of which are still below the acceptable threshold of 5.0, meaning that the models are still very acceptable and good.

For the moderating effects, the result showed that personal characteristics only moderate the effects of comfort ($\beta = .10$, $t = 1.76$, $p < .05$) and information on route ($\beta = .20$, $t = 3.52$, $p < .001$) on customer satisfaction. Whereas the moderating effect of personal characteristics on the relationship between availability ($\beta = .06$, $t = 1.11$, $p = .13$), reliability ($\beta = .08$, $t = 1.44$, $p = .08$), staff behaviour ($\beta = .04$, $t = 0.74$, $p = .23$), and accessibility ($\beta = .34$, $t = 6.27$, $p < .001$) is not significant. Thus, the result suggests that except for comfort and route information, the relationship between the predictors of customer satisfaction is the same irrespective of individual differences.



DISCUSSION OF FINDINGS

This study concerns customer satisfaction with transportation service quality dimensions of mass transit companies in south-south Nigeria. Service quality is a phenomenon in service marketing and management. Since Parasuraman propounded the five core dimensions of service quality, a lot of modifications have been made to it by academics and practitioners alike. Zeithaml and co-researchers developed a survey instrument called SERVQUAL (Zeithaml et al. 2018). It is based on the premise that customers appreciate a firm's service quality in comparison with their perceptions of its service with their customer's own expectations. SERVQUAL is seen as a generic measurement tool that could be applied generally to a broad spectrum of service industries. In its basic form, respondents answer twenty-one questions that measure their expectations from companies in a particular industry on a wide array of specific service characteristics. The European Institute of Public Administration (EIPA) (2018) modified the original five service quality dimensions to suit applications in the mass transportation business within the EU. Also, the European Commission on Public Administration 2008 developed the mass transportation service quality, which was adopted by this study. The dimensions of service quality as developed by the European Commission on Public Transportation and which was adopted by the study are reliability, availability, accessibility, comfort, service information about routes, personal characteristics of staff, and staff behaviour. The personal characteristics of staff served as the moderating variable for our study. The study was based on a sample of 400, out of which 305



responded and returned valid usable questionnaires. The data we collected were analysed using the multiple linear regression analysis, and a number of findings emanated from the study analysis.

This study found that accessibility has no significant positive relationship with customer satisfaction with the transportation service quality of mass transit companies in South-south Nigeria. The study also found that the personal characteristics of mass transit staff do not moderate the relationship between accessibility and customer satisfaction. These findings disagree with (Chocholac et al. 2020) and Vallejo (2010) that the punctuality and regularity of the service would need to be improved and also the travellers are informed onboard, at the stops, by messages and by the website of the journey times, frequencies, schedules and departures as well as waiting times. The study found that there is a significant positive relationship between comfort and customer satisfaction with mass transportation services quality of mass transit companies. We also found out that the personal characteristics of mass transit staff moderate the relationship between comfort and customer satisfaction with mass transportation services quality of mass transit companies. This agrees with (Le-Klähn, Hall & Gerike 2014), authors who examined selected variables that are considered important in describing the service quality and orienting users' preferences in public transport, like comfort and cleanliness. It also agrees with Budiono's (2009) study on the travellers' perception and customer satisfaction with public bus transport in Indonesia. Our study found that there is no significant positive relationship between availability and customer satisfaction with mass transportation services quality of mass transit companies. It also found that personal characteristics of mass transit staff moderate the relationship between availability and customer satisfaction with mass transportation services quality of mass transit companies. This finding disagrees with Imam (2014) and Budiono (2009) that the simplicity of information and contents of service attributes related to information, price and availability of ticket retailers as well as seat availability, enhance customer satisfaction. The study found that there is a significant positive relationship between reliability and customer satisfaction with mass transportation services quality of mass transit companies. It also found that the personal characteristics of mass transit staff do not moderate the relationship between reliability and customer satisfaction with mass transportation services quality of mass transit companies. They found that there is a significant positive relationship between staff behaviour and customer satisfaction with mass transportation services quality of mass transit companies. It also found that the personal characteristics of mass transit staff do not moderate the relationship between staff behaviour and customer satisfaction with mass transportation services quality of mass transit companies. Staff behaviour in service delivery is very paramount. Transportation Charters detail the commitment of the operator to the passengers and customers and set out the standards against which the operator is working, how it publishes its performance against those standards, the way and manner it looks after the customers and rewards them if things go wrong and how they can reach or contact the operator (Scott, 2011). A customer charter, if possible, will act as the catalyst for changing staff and management attitudes and facilitating the development of continuous improvement, thereby creating an alignment between customers and the organisation. This finding agrees with the argument by Malachy and Nwobi (2014) that public mass transit companies have administrative structures, better-trained staff guided by public service rules, workshops and maintenance facilities which most private operators do not have. These rules, as ascertained, enhance staff behaviour in delivering services to customers. The study found that there is a significant positive relationship between service information about routes and customer satisfaction with mass transportation services quality of mass transit



companies. It also established that the personal characteristics of mass transit staff moderate the relationship between service information about routes and customer satisfaction with mass transportation services quality of mass transit companies.

We have discussed the direct effects of the independent constructs on the dependent variable, but our study made use of interaction. It has been established in the literature that moderation and mediation serve important roles in testing research hypotheses in social and management sciences. In this study, we were concerned with moderation effects only. Field (2020) a different effect across different groups or conditions is known as moderation, stressing that you get one effect under certain circumstances and a different effect under other circumstances. In addition to understanding the mechanisms that tie an independent variable X to an outcome Y, researchers are also often interested in understanding the conditions under which a relationship between X and Y is present vs absent, positive vs negative, or strong vs weak. To this end, researchers can specify conditional (or moderation) models. Conditional models propose that the strength (and perhaps direction) of a relation between two variables depends on the state of at least one “conditional” variable or moderator W. Such models are therefore concerned with addressing questions regarding when, for whom, or where X causes Y (Howard, Dunlop, & Zyphur, 2019). In terms of moderation, the personal characteristics of staff were taken as the moderating variable for our study. That is to say that the construct was employed to moderate all the other six independent variables. The study shows that personal characteristics moderate comfort and service information about the route but does not moderate: accessibility, availability, reliability and staff behaviour. Overall, on the global statistics level, the impact of the moderator is significant, and the total variance explained, represented by the coefficient of determination, increased from 67 per cent to 82 per cent. Thus, the addition of moderating variables to our research model is well justified.

CONCLUSION

Public bus transport should become the solution for sustainable transport in the future, which is the reason to increase customer satisfaction. High-quality public bus transport not only keeps customer to continue using public bus transport to fulfil their travel demand but also attract a potential customer. Service quality factors have a strong influence on customer satisfaction and need a higher attention to improving customer satisfaction. Accessibility, availability, reliability, staff behaviour, the comfort of the passengers and commuters of mass transit buses and service information about routes are the crucial factors responsible for a higher level of satisfaction. Listening to the customer is a common and effective way to identify the customer's needs and an important way to satisfy them. The way to satisfy them. The effort in research is geared toward developing an attractive and marketable mass transit system for the commuting public. Availability, reliability and accessibility are important due to a limited number of supplies or available buses could not fulfil a high number of travel demands. Staff behaviour is pointed paramount as the number of capacity fulfilment in public bus transport bringing longer travel time. Information about routes and comfort is noted because customers who do not experience better value than they pay for public bus transport will bring about the dissatisfaction of the customer. These related service qualities have to be improved to keep existing customers and attract more customers.



Implications

In order to improve customer satisfaction with mass transport, operators and providers of mass transit services need to improve service quality in public bus transport. The service attributes could be improved as single attributes or as factors. The availability, accessibility, comfort and reliability of vehicles are factors that have a strong influence on customer satisfaction. Reliability could be enhanced by ensuring that mass transit buses are well-maintained and clean. Availability could be enhanced by ensuring that the buses or vehicles have scheduled time and follow those schedules to avoid passengers getting frustrated due to long waits or delayed movement. Public bus transport decision makers and providers should start to pay attention to increasing public bus transport supply due to the high travel demand, especially in peak during festive seasons and peak periods.

When service quality is analysed at an attribute level, it is revealed staff behaviour is important. Hence, mass transit operators should ensure that their staff are given basic orientation on customer management. Also, service information about routes is very important as it could enhance customer satisfaction. Accessibility is important as it implies that bus services operate in close proximity to all areas of need and that the vehicle internally offers the passengers reasonably wide space, convenience, and comfort. The mass transportation service should aim at not only transporting the passengers to their destinations but also doing it in a fast and convenient way, and definitely without discriminating against anybody with physical problems or residents of areas with narrow streets. It is also important that vehicle seats are further apart so as to give an unimpressive experience on a journey.

Limitations of the Study and Further Research

This study utilised commuters at the time of the study, that is, those seen at the parks and various loading spots of the mass transit operators, as data were collected cross-sectionally. Further studies could be done longitudinally to track possible changes in commuters' perception of mass transit buses. Service quality is a phenomenon in services marketing and management, evolved from the works of Parasuraman and has continued to evolve to the extent that there is now service quality in various dimensions. This study was limited majority to the variant of service quality used by the European Commission on Public Transit as well as the European Institute of Public Administration. Further studies are needed on service quality from the different emerging dimensions. The socio-demographic variables used in the study relate to a particular time, and socio-demographics are dynamic; hence further studies are needed to explore commuters' perception of transportation service quality given the dynamism in socio-demographics.



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