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## Users' Satisfaction with Public Transport Operations in Ibadan, Nigeria

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**Abstract:** Public transport is an important service that people patronize to fulfill their travel needs. One of the most important issues about this service is passengers' satisfaction. The users of service are the most suitable judges to evaluate service quality. The aim of this study was to evaluate passengers' satisfaction with service quality attributes of public bus transport services in Ibadan, Nigeria using private transit operators as the case study. This study obtained information randomly from 120 transit users at dugbe, sango, challenge and gate bus terminals using a self-rated questionnaire. The result of the ranked service quality attributes indicates that users were satisfied with only six attributes of public bus transport services in Ibadan. The principal component analysis found four underlying factors: comfort, service reliability, security and accessibility that influence users' satisfaction with bus services in the city. The four factors explained 57.03 percent of the total variance of principal component analysis. The regression coefficients showed that accessibility ( $\beta=0.620$ ), service reliability ( $\beta=0.341$ ), security ( $\beta=0.106$ ) and comfort ( $\beta=0.061$ ) contribute to users' satisfaction of public transport bus service in the city in that order of importance. This study therefore concludes that the quality of service provided by public bus transport operators influence users satisfaction. Hence, transit operator's needs to improve their service quality especially comfort, reliability, security and accessibility to increase users satisfaction and patronage.

**Keywords:** Public transport; Bus services; Users'/Passenger's satisfaction.

### 1. Introduction

Movement from one place to another through public transport forms part of the day-to-day activities of most individuals in the developed and developing countries. Public transport operations play important role in providing transport for commuting passengers. In Nigeria for instance, public transport operation is the principal approach to movement of people, goods and services due to low vehicle ownership. Public transport refers to the means by which larger proportions of urban dwellers gain physical access to the goods, services, and activities they need for their livelihoods and well being (Fitzgerald, 2012). Public transportation plays a vital role in commuting to activities areas such as work, school, shops, sporting and recreation centres (Kamaruddin *et al.*, 2012). Public transportation includes all transport facilities in which passengers do not use their personal means of transportation to travel (Ojo *et al.*, 2014). This includes taxis, mini buses, buses, and trains. Public transportation performs many functions such as providing easy access, safe, efficient and cost effective transport services to passengers (Ismail *et al.*, 2013; Ojo *et al.*, 2014). Travelling in public transport with high level of facilities, convenience and quality is important for passengers' satisfaction.

Presently, major investments are being made in bus systems to make them more competitive in Nigeria. New services are being developed and old ones are being improved. The federal and state governments have been playing active role in providing bus services which has resulted in the establishment of federal intervention bus services, Abuja mass transit bus services, bus rapid transit in Lagos State, Ajumose bus service in Oyo State, Edo line in Edo State, Omoluabi transport service in Osun State among others. The private operators such as national union of road transport workers (NURTW), road transport employers association of Nigeria (RTEAN), labour unions, cooperative societies, private companies among others have also been providing bus services. According to the federal ministry of transport, there are over fifty transport companies offering bus services in Nigeria. Infact, the federal road safety corps (FRSC) appreciates NURTW and RTEAN as a dominant player constituting just about 75% of bus services and control 60-80% of goods and passenger movements of public transport in Nigeria.

Based on current development in Nigeria, the bus service was chosen as the focus of this study for many reasons. First, it is the largest public transport mean in Nigeria (Ali, 2014). Second, the bus system has a range of passenger capacities and performance characteristics and may operate on fixed routes with fixed schedules (Ali,

2014; Smerk, 1974). Third, bus systems have the potential of extending transport services to greater proportions of urban residents who do not have private cars and cannot afford high taxi fares (Andeleeb *et al.*, 2007). Fourth, they have the potential of being used as strategy to reduce the number of cars on urban roads and thus reduce traffic congestion and air pollution in cities (Ali, 2014; Anable, 2005; Hwe *et al.*, 2006; Noor *et al.*, 2014).

One of the major problems of public transport is the inability to attract new riders especially private car users. The reasons for this can be ascribed to lateness, dirty and unattractive stations, lack of safety and security, long waiting time, poor travel information, poor personnel behaviour and inadequate facilities for disabled persons (Ali, 2010; Banister, 2007; Bunting, 2004). The bus services provided by transit operators in Nigerian towns and cities are mostly unsatisfactory to meet needs of riders, and the services provided suffer from low output (Ali and Onokala, 2009). Consequently, the users have a negative public perception of public transport services. The understanding of perception of passengers that patronises bus services is important to improve public transport system in the country. By identifying the key parameters and factors that influence passenger satisfaction, the operations can be well planned and service quality becomes better. Customer satisfaction is considered to be the most important factor whether it is meant for a product or a service (Khurshid *et al.*, 2012). This means that there is a direct link between the actual service and the customer's perception of it. To increase public transport use, the service should be designed and performed in a way that accommodates the levels of service required by customers (Beirao and Sarsfield-Cabral, 2007). Therefore, increases in passenger satisfaction are translated into increased use of the system, new customers, and more positive public image. To keep and attract more bus passengers therefore, public bus transport must have high service quality to satisfy and fulfil a wider range of different passenger needs. To accomplish this, bus services providers need reliable and efficient methods for identifying the determinants of users' satisfaction.

Studies on users' satisfaction with public transport operations narrate the experience from advanced countries and few developing ones (Eboli and Mazzulla, 2011; Murambi and Bwisa, 2014; Noor *et al.*, 2014; Ojo *et al.*, 2014). Findings in Nigeria context are not conspicuous in the literature. Available studies on public transport services in Nigeria focused on passengers' satisfaction, service quality, impacts and constraints of the performance of public transport companies (Ali, 2010;2014; Aworemi *et al.*, 2009; Gbadamosi, 2009). Studies on passengers' satisfaction with individually owned mini bus services are scanty in the country. More than 70 percent of transit operators in the country are owned and operated by private (individual) owners. In Nigeria, mini bus services are preferred due to its accessibility, cheaper cost and wider coverage than other modes of public transport. Thus, this study sets out to evaluate passenger's satisfaction with the mini bus services in Ibadan, Nigeria. The study identifies factors influencing passenger satisfaction and their relative importance for improvements in service quality to enhance users' satisfaction.

## 2. Literature Review

The choice of public transportation as a preferred mode of travel by passengers in cities is mainly influenced by quality of bus operation services (Rohani *et al.*, 2013). Present day transit users demand fast, comfortable, cheaper, reliable, safe and secure services. Public transportation must have high service quality to satisfy and fulfil customer's needs (Anable, 2005). Satisfaction of users is the best way to measure service quality in public transport. The quality of services provided can be evaluated by the expectations and perceptions or experience of customers (Eboli and Mazzulla, 2007; Ojo *et al.*, 2014). The users are in the best position to judge the quality of service provided by the transit agency. Parasuraman *et al.* (1998) developed the SERVQUAL scale also known as gap model to measure service quality and determine the relative importance of different dimensions influencing customer's overall quality perceptions on a five-seven point Likert scale. They developed five service quality dimensions which include reliability, responsiveness, competence, security, access and communication. This model was adapted in the work of Ojo *et al.* (2014), Ismail *et al.* (2013) and Eboli and Mazzulla (2007) to evaluate passengers' satisfaction with public transport in different cities across the world.

Satisfaction or dissatisfaction with a program or facilities is influenced by prior expectations regarding the level of quality (Sigala, 2004). Satisfaction is the fulfilment experienced by customer (Oliver, 1997). It is a judgment that a product or service feature provides a pleasurable level of consumption related fulfilment either under or over fulfilment (Budiono, 2009). Satisfaction depends on numerous factors and there are quite a number of literatures on this subject. Studies on passengers' satisfaction with public transport and factors influencing their perception or experienced are discussed in the remaining part of this section.

In the United Kingdom (UK), high frequency of service, service reliability and fares that offer value for money are important factors determining users satisfaction of public transport (Department for Transport, 2003). However, these attributes have changed over time as the bus customer satisfaction survey of 2014/15 indicates that personal safety and security, staff behaviour and service reliability and state of repair of bus are the most important factors (Transport for London, 2015). According to Mishra and Nandagopal (1993) public transport services in India is characterised by low service quality that is reflected in crowding (standing passengers) in bus, lateness, irregular services and poor facilities.

Edvarson (1998) reiterate that customer satisfaction depends on how transit operators use information on needs and expectations of users and drivers interaction with the customers. The study of Disney (1998) corroborate this by maintaining that friendly behaviour of bus drivers can lead to better customer satisfaction through effective communication and understanding of customers needs. Andreassen (1995) categorize passengers into expert and

non-expert users. Expert users are frequent public transport riders who consider ticket price, price level and layout of platform or station very important while non-experts users think otherwise possibly due to the fact that they ride in bus on few occasions. He further found that there is low customer satisfaction in public transportation due to gap between customer needs and service provided especially in the area of service reliability and convenience. Bieden and Demoulin (2007) established that waiting time plays an important role in customers' satisfaction. The study maintained that as long as the determinants of waiting time, that is, perceived waiting time, delays and waiting environment functions well customers would be satisfied.

Tyrinopoulos and Antoniou (2008) studied level of satisfaction from public transport in Greece. The results demonstrated that a well-coordinated and well structured transportation environment should be the primary aim of the policy makers in Athens, followed by other quality attributes such as service frequency, waiting time, accessibility, and vehicle cleanliness. Shaabana and Khalilb (2013) found that public bus users do not regard the existing public bus transportation services in Qatar satisfactory. The passengers noted that the bus service was not reliable; nonetheless, affordable and clean.

The study of Kamaruddin *et al.* (2012) found that customer's expectation of public transport services is influenced or determined by safety, accessibility, reliability, fare, communication and trip experience respectively in Kang valley, Malaysia. In the work of Noor *et al.* (2014), minibus service is noteworthy in terms of the level of comfort and convenience that it affords its users. Although their findings found no problem about the frequency of access, they however, discovered that the horrendous state of the bus is causing discomfort to users. They therefore concluded that bus size and bus design are integral in influencing consumer's convenience and comfort. For the transit bus, accessibility and reliability are key problems that needed to be addressed. Furthermore, Ponrahono *et al.* (2016) found that spatial disparity exist in the level of satisfaction of urban and rural public transport users in Malaysia. The disparity in level of users' satisfaction is influenced by socio-demographic and trip characteristics of the passengers. For instance, passengers that were dissatisfied with bus services in rural areas are higher than urban centres. The study concludes that attributes of service quality like travel time, waiting time, regularity of service, service reliability, comfort, cleanliness and crew behaviour is influenced by location of passengers.

The study of Murambi and Bwisa (2014) discovered that travel time, punctuality, availability of information at booking office, information signage, good staff behaviour, frequency of route change and security determine customers' satisfaction of shuttle bus services in Kitale terminal, Kenya. The majority of the passengers were not satisfied with the service rendered due to long journey time. They advocate for reduction in stopping along the routes and increase in frequency of departure through introduction of new buses.

Ojo *et al.* (2014) investigate customers satisfaction with inter city bus services on Cape Coast – Accra route in Ghana using SERVQUAL model. The study found that passengers perceived service quality to be poor as they were not satisfied with 15 out of 26 attributes rated. The study reiterates need for bus companies to improve their services so as to enjoy more passengers' satisfaction.

In Nigeria, Ali (2014) assesses passenger satisfaction of public bus transport services in Abuja. The study found that passengers were not satisfied with the quality of bus services rendered as only two attributes safety of passengers on board and drivers and conductors behaviour fulfil passengers expectation. Principal component analysis result reveals that four underlying factors comfort, accessibility, bus stop facilities and bus capacity adequacy influence users satisfaction with public transport service. Obasanjo and Martina (2015) assess perception of passengers to service quality of bus services in Kaduna metropolis, Nigeria. The study found that passengers are not satisfied with services rendered in terms of comfort, safety, crowding, behaviour of drivers and conductors and fare charged by the transit operators.

The review of literature above indicated that most of the studies are conducted outside Nigeria and yielded mixed results. Hence, it is imperative to conduct this study so as to ascertain the factors influencing users' satisfaction with public transport operations in the Nigeria. Based on the findings of the reviewed studies, factors and attributes of public bus transport services that influence bus passengers' satisfaction were constructed and used to evaluate users' satisfaction with public transport operations in Ibadan one of the major urban centres in Nigeria.

### 3. Data and Method

The study area is Ibadan, capital of Oyo State, Nigeria. In regional setting, it is 142km from Lagos and 659km from Abuja the federal capital territory. The city has a total land area of 463.33 kilometre square. Ibadan metropolis has a total population of 1,343,147 (National Population Commission, 2007) making her the third most populous city in the country after Lagos and Kano. Ibadan is an important political, social, educational, commercial, transportation, health and administrative centre. Majority of the residents depend on public transport to fulfil their transport needs. However, the choice is limited to road transport due to non-operation of rail transport service even though its routes traverse the city. Public transport system is characterised by private and public transit operators in Ibadan. Private transit operator's uses individually owned mini bus and taxi to provide more than 90% of the city's transport needs. On the other hand, the public transit operator (Ajumose bus) owned by the State government only provides services on few selected routes and to limited number of passengers in the city. The study therefore focuses on the private transit operators that dominate transit business in Ibadan.

The data for the study was obtained through questionnaire survey. The survey was targeted at public transport users within the city. The users are in best position to give judgment on the quality of services rendered by public transport operators in Ibadan. A self-rated questionnaire was used to collect data for this study. The questionnaire

was divided into two sections. First section obtained information on the socio-demographics attributes of public transport users such as gender, age, education, marital status, household size, monthly income, vehicle ownership and reason for using public transport. The second section deals with users satisfaction with public transport (bus services) in the city. This help to elicit information on the operations and facilities used by the private transit operators. This work developed 16 service quality attributes that could influence users satisfaction with bus services from existing literature (Ali, 2014; Eboli and Mazzulla, 2007;2011; Ismail et al., 2013; Noor et al., 2014; Transport for London, 2015). The ranking of the attributes was achieved with a five point likert scale where very satisfied =5, satisfied =4, undecided =3, dissatisfied =2 and very dissatisfied =1. The public transport users used this scale to rank the 16 parameters developed for the study to determine their level of satisfaction with public transport services and their overall satisfaction in Ibadan.

Four major bus terminals, that is, dugbe, sango, challenge and gate providing access to important educational, workplace, residential and commercial activities were selected for the questionnaire survey. In each of the bus terminals, 35 transit users were randomly selected for questionnaire administration. The total of 120 questionnaire that were properly filled was used for the analysis. The data collected were analysed using descriptive and inferential statistics. The socio-economic characteristics of transit users were analysed using frequency values. The mean score and standard deviation of the ranked 16 service quality attributes of bus services was used to discuss users satisfaction with public transport services in the study area. Furthermore, principal component analysis (PCA) was performed to identify clusters of attributes or important underlying factors (dimensions) of service quality determining users satisfaction with public transport services. The PCA is appropriate in this work because it is a tool for exploratory analysis. The regression analysis was performed to evaluate the contribution of each factor on overall satisfaction.

## 4. Results and Discussions

### 4.1. Socio-Economic Characteristics of Users

The characteristic of the sampled transit users is shown in Table 1. The gender of the respondents reveals that 51% are male and 49% are female. The age of bus users may impact the patronage of the services. Most of the respondents 40.8% are younger than 30 years, 55% fall within 31-60 years and 4.2% are older than 60 years. The sampled users are adequate for this study because majority of them fall within the active age that people make frequent trips. Hence, they patronises the public transport services regularly. The number of persons in a family unit is 5 on the average. All the respondents are educated with 81.7% having higher education, 15.8% secondary education and 2.5% primary education. Furthermore, 57.5% are employed while 29.2% are students. The high employed and student population suggests they make trips in public transport frequently. The income of users plays an important role in determining whether they are choice transit riders or transit-dependent riders. The majority of the respondents are in low-income class with 70.8% earning less than #50,000 (\$162.87) in a month and only 11.7% earn more than #100,000 per month. This is responsible for their high dependence on public transport to satisfy travel needs, as majority (77.5%) of them do not own a vehicle. Half of the respondents trekked from their residence to the bus stop to join the public transport and this take an average of 14 minutes.

Table-1. Characteristics of the respondents (n = 120)

Characteristics	Frequency		
1. Gender	Male (51%)	Female (49%)	
2. Age	≤30 (40.8%)	31-60 (55%)	>60 (4.2%)
3. Household size	1 (4.2%) (17.5%)	2 (5.8%) ≥5 (62.5%)	3 (10%) 4
4. Education	Primary (2.5%)	Secondary (15.8%)	Tertiary (81.7%)
5. Employment	Student (29.2%) Unemployed (10%)	Employed (57.5%)	Retiree (3.3%)
6. Monthly income	≤#25,000 (40.8%) (9.2%)	#25,000-#50,000 (30%) #75,000-#100,000 (8.3%)	#50,000-#75,000 >#100,000 (11.7%)
7. Access to bus stop	Walk (50.8%)	Motorcycle (29.2%)	Others (20%)

### 4.2. Users Satisfaction with Service Quality Attributes

The values of the ranked service quality attributes by bus users in Ibadan metropolis is shown in Table 2. The table reports the mean and standard deviation of the parameters used for calculating users satisfaction of the service quality. The mean score ranges from 2.56–3.68 indicating that the users have a varied perception of dimensions of service quality attributes. The average value of the attributes indicate that seven met the expectation of public transport users in the city showing satisfaction score higher than 3. The two attributes that users are highly satisfied with are “service frequency” and “punctuality” each having a mean value of 3.68. The reason for high mean score may probably be due to the individual ownership of the mini bus which afford them the opportunity to run free (unrestricted) schedule competing for passengers at the stops. Only one attribute “availability of shelter and seats at stops” is considered very critical service aspect because users assign value much lower than the mean value. Hence,



the attribute “availability of shelter and seats at stops” is highly unsatisfactory. This is due to inadequate provision of shelters and seat at most bus stops in the city.

**Table-2.** Users satisfaction with service quality attributes

Service Attributes	Mean	Std. Dev.
1. Frequency of service	3.68	1.05
2. Punctuality	3.68	1.07
3. Travel time	3.37	1.16
4. Safety and competence of driver	3.38	1.17
5. Cleanliness in bus	2.83	1.21
6. Bus crowding	2.72	1.26
7. Comfort of seats on bus	2.86	1.25
8. Fare charge	3.45	1.13
9. Condition of bus	2.96	1.18
10. Travel information on bus	3.28	1.12
11. Availability of shelter & seats at stop	2.56	1.29
12. Waiting time at bus stop	2.78	1.15
13. Security against crime on bus	2.88	1.22
14. Access to bus stop	3.30	1.12
15. Security against crime at bus stop	2.68	1.17
16. Behaviour of driver and conductor	2.74	1.14

The variability result of users satisfaction reveal that the perceived service quality attributes is not very homogeneous. The standard deviation of the satisfaction rates of the service quality attributes varies from (1.05–1.29) from an average satisfaction rate of 3.07. The attributes with the most homogeneous judgements are also the most satisfactory ones. On the contrary, the unsatisfactory attributes have high heterogeneous judgements. The attributes with the most heterogeneous judgements are the service characteristics regarding comfort and security. Comfort aspects are influenced by users states (Eboli and Mazzulla, 2011). For example, the non-provision of shelter and seats at stop causes discomfort for users while waiting for bus and exposes them to weather conditions like rain and sun which may cut short their journey especially if their clothes get wet. The heterogeneity of users judgement about security aspect can be influenced by their experience in using the transit. Users do not feel sufficiently secure probably due to experience of harassment or theft at the stops.

### 4.3. Principal Component Analysis

The responses of the users to the 16 service quality attributes of public transport bus services were subjected to principal component analysis. The principal axis method was used to extract the components and varimax (orthogonal) rotation factors. Only the first four components displayed eigenvalues greater than 1 and the results of a scree test also suggested that only the first four components were meaningful for discussing factors that determines users satisfaction of bus services in Ibadan metropolis. Therefore, only the first four components were retained for rotation. The result of the analysis of the varimax rotated components is presented in Table 3. The 16 variables have been reduced to four components. The four factors (components) with the initial eigenvalues of between 1.152 and 5.250 were extracted with 57.03 percent of the total variance explained. The value in each item in the four factors produced exceeds the value 0.4. Out of the 16 variables, 12 items loads on the four factors and they have high and positive loadings ranging from 0.522-0.827. Using the criteria, four items were found to load on the first factor. It has an eigenvalue of 5.250 which contributes 30.88 percent of the total explained variables. The items are bus crowding, cleanliness in bus, condition of bus and comfort of seat that are labelled ‘comfort in bus’. The three items loaded in the second factor are punctuality, service frequency and travel time. The factor has eigenvalue 1.805 that accounts for 10.62 percent of the total explained variance. The factor is identified ‘service reliability’ of public transport services.

**Table-3.** Result of Principal Component Analysis for service quality attributes of bus services

Items	Factor			
	1	2	3	4
Bus crowding	0.747			
Cleanliness in bus	0.697			
Condition of bus	0.681			
Comfort of seat	0.618			
Punctuality		0.827		
Service frequency		0.824		
Travel time		0.607		
Security against crime on bus			0.797	
Security against crime at stops			0.761	
Availability of shelter & seat at stop			0.719	
Access to travel information				0.656
Access to bus stop				0.522
Eigenvalues	5.250	1.805	1.488	1.152
% variance explained	30.883	10.619	8.753	6.776

Notes: Kaiser-Meyer-Olkin Measure Sampling Adequacy = 0.804; X = 679.240; Bartlett's Test of Sphericity Significance = 0.000; df = 136

The third factor also has three items loaded with eigenvalue of 1.488 that contribute 8.753 percent of the total explained variance. The items in this factor are security against crime on bus, security against crime at stops and availability of shelter and seat at stop which is referred to as 'security' in public transport. Finally, the fourth factor has two items loaded on it. It has an eigenvalue of 1.152 that accounts for 6.78 percent of the total explained variables. They are access to travel information and access to bus stop. This factor describes service quality attributes that influence users access to bus services; hence it is labelled 'accessibility' to public transport services.

#### 4.4. Regression of Factor Component

Furthermore, the regression model was used to predict the effects or contribution of the four underlying factors (comfort, service reliability, security and accessibility) on user satisfaction. Table 4 show the regression coefficients for satisfaction model. The result shows that all variables have positive influence on user satisfaction. Accessibility with value of ( $\beta=0.620$ ) has the greatest impact on users satisfaction of bus services in Ibadan metropolis. This is followed by service reliability ( $\beta=0.341$ ), security ( $\beta=0.106$ ) and Comfort ( $\beta=0.061$ ) having the least impact. The  $R^2$  for this model indicate that 51.6 percent of variations in user satisfaction are explained by the variables comfort, service reliability, security and accessibility.

**Table-4.** Regression model of the underlying factors of service quality attributes

Model	Non-standardized coefficients		Standardized Coefficients	t	Sig.	$R^2$
	B	Std. Error	Beta			
Constant	3.325	0.069		48.443	0.000	0.516
Comfort	0.065	0.069	0.061	0.945	0.347	
Service reliability	0.363	0.069	0.341	5.263	0.000	
Security	0.113	0.069	0.106	1.638	0.104	
Accessibility	0.659	0.069	0.620	9.557	0.000	

Dependent variable: Satisfaction

#### 4.5. Users Perception towards Bus Services in Ibadan Metropolis

##### 4.5.1. Comfort

Comfort is an important service aspect determining users satisfaction with bus services. Crowding, cleanliness and condition of bus and comfort of seat describe requirements for comfort in this study. Crowding occur when the number of passengers in the bus are more than the seats available. Many of the buses are usually crowded with some passengers having to lap their companions and conductors not having a reserved seat. Passengers discomfort worsens during the rush hours when transit operators carry more than required passengers to earn extra income. Cleanliness deals with the frequency of cleaning the interior and exterior part of the bus. The passengers are of the opinion that the buses are dirty most of the time, which means the owners do not wash them frequently as expected. The seats in most of the buses are in deplorable condition, which makes passengers to feel discomforted. If the transit operators provide basic comfort standards, they will enjoy increase ridership from the passengers.

##### 4.5.2. Service Reliability

Service reliability is a very important aspect for the transit users. Reliable transportation means increased customer satisfaction (Cavana and Corbett, 2007). This is considered as the ability of the transit system to strictly

adhere to schedule as well as ability of the vehicles to depart and arrive on time. The service frequency deals with the schedule or regularity of bus service. This was difficult to ascertain in Ibadan because the buses do not operate on schedule basis. They are individually owned and have independence on their choice of route and service frequency. However, frequent services increase satisfaction and patronage by users (Taylor *et al.*, 2008). The punctuality has to do with arriving on time. Since, the transit operators are not on schedule it is difficult to ascertain whether they are punctual or not. Passengers are forced to wait at the stop until a bus going to their desired destination arrive without having a knowledge of how long it will take. The travel time cannot be predicted due to unpredictable traffic situation on most routes in the city. However, it usually takes longer time due to frequent boarding and alighting of passengers along the route especially during morning and evening rush hours. This adds to travel time and discourages passengers who spend longer time to the destination.

#### 4.5.3. Security

Security refers to the possibility of becoming the victim of a crime (Eboli and Mazzulla, 2011). The feeling of being secure while in the bus and at the bus stop is a major problem of bus users. This was influenced by users experience of transit service usage especially those that had experienced harassment and theft in bus and at the bus stop. The occurrence of this act generally makes users not to feel sufficiently secure using the public transport. The insecurity in public transport is caused due to crowding in and when boarding the bus and lack of lighting at bus stop as well as the environment they are located.

#### 4.5.4. Accessibility

The level of accessibility between residence and bus stops determine the extent passengers will patronise bus services. Transit users in Ibadan metropolis have poor access to public transport service. This is common in access to travel information and bus stop. The provision and usage of information in business can increase satisfaction of customers. The passengers think that they were not provided with enough information at the bus stop and when travelling on bus. There was no information on arrival and departure time at the bus stop. The passengers wait patiently until buses going their direction arrive. This adds to waiting time at the bus stop and force new users to seek information from passengers at the stops. Long distance between residence and bus stop discourages riders from having access to bus services.

### 5. Conclusion

The users point of view is important in evaluating service quality because they are the real consumer of the service and most suitable judge. This work evaluates users' satisfaction with public transport in Ibadan metropolis. The finding reveals the important factors influencing users satisfaction with bus service. The service quality attributes reveal that only six attributes influences users satisfaction with public transport services. This indicates that users have moderate level of satisfaction with public transport services. Furthermore, the result of principal component analysis found that four underlying factors contribute more to satisfaction with bus services. These are comfort, service reliability, security and accessibility. These factors have a strong influence on users satisfaction with bus services in Ibadan. Hence, these factors must be improved to increase patronage of public transport.

Creating an adequate system for measuring performance by transit operators produces higher level of service. The study recommends that comfort of users should be given priority by transit operators. The basic standards (cleanliness, good seats, bus in good working condition) that ensure passengers' comfort must be provided. Also, government should repair most of the local roads linking the major roads that are in deplorable condition. This will increase passengers' accessibility to public transport by reducing walking distance and encouraging bus operators to provide more services. The security of passengers can be improved by discouraging crowding in the bus and lighting especially at night. The city government must make effort to provide shelter and seats and lighting at the bus stops to ensure comfort and security of passengers. This can be done in conjunction with the transit operators association (NURTW and RTEAN) since they run individual business.

The authors admitted that there is limitation to the conclusion that can be drawn from this research due to the sample size of respondents. More detail research on users satisfaction of bus services that provides better explanation on this subject matter needs to be conducted. The studies should focus on using larger sample size and increase the number of terminals survey is conducted. Also, the only bus service in Ibadan (Ajumose bus) should be surveyed and new service quality attributes needs to be added to the 16 attributes used in this study because they explained only 57.03 percent of total variance. There is need to accommodate other factors influencing users satisfaction of bus services in the study area. It is also suggested specifically that studies that focus on comfort and security of users of bus service be commissioned. This will give a detail understanding of the perception of passengers to some important factors of service quality provided by transit operators and probable ways of improving them.

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