ABUJA URBAN MASS TRANSIT COMPANY OPERATIONS IMPACT ON PASSENGERS' MOVEMENT WITHIN ABUJA METROPOLIS

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ABSTRACT

Abuja Urban Mass Transit is faced with various challenges such as long queue of passengers, long waiting time, stampeding, loss of valuables as a result of struggling for buses and lateness to work. This paper examines the impact of Abuja Urban Mass Transport Company (AUMTCO) on passenger movement. Primary and Secondary sources were major source of data collection, data collected were on the commuters waiting time at the bus stops, their level of satisfaction, reasons for patronizing AUMTCO as well as records from Abuja Urban Mass Transit were used. The research reveals that the bus stops were not adequate, the buses are inadequate and the few available ones are over-loaded resulting to commuters standing, thereby leading to poor services rendered. The study further reveals that there are no dedicated lanes for buses, long waiting time, poor reliability, not comfortable while in the vehicle, low efficiency and also long-down time of vehicles due to lack of proper maintenance. The study finally recommends that more buses and bus stop should be provided, dedicated lanes should be marked for the buses and the organization should abide with good culture of maintaining the buses.

INTRODUCTION

Transportation is the bedrock for development of any nation. Every country required a good transport system to develop economically. Transport enhances production, trade and exchange ideas in the economic development of mankind. A country without transport facilities is less advantageous in the global economics.

According to Gubbins (1996), Transportation is the movement of passengers and goods from one geographical location to another to enhance their utility. The development of modern society is very complex, the peace and stability of the world depending on the ease of social interaction and trade between nations. Transportation has been seen by many as the hub on which revolves the entire economy of any nation. At a more comprehensive conceptual level transportation involves the movement of people, goods, services and information from one point called origin to another point called the destination using a given mode or combination of modes which could be land based, water, air and pipelines modes.

According to Benson and Whitched (1975) regard transport as a crucial part of economic activities, which centered on increasing human satisfaction by changing the geographical position of goods, people and services. Aluko (2000) also viewed transportation as the ability to overcome space whereby passengers, goods and services could be moved or transported from one place to another so as to achieve some element of social, economic, political and psychological aspiration unhindered. This means that transport is comprised of routes, media and traffic of persons, goods and services.

Transport system permits goods to be sold to consumers in places far distance from the region where they are produced. Economists assert that goods have not been produced until they have actually been transported to the final consumers who will satisfy their wants (utility) by the consumption of the goods. It therefore means that transportation by moving goods from one point of consumption is fulfilling productive services or creation of utility, utility being an economist term for ability of good or services to satisfy a want (Obasanjo, 2013).

People travel long distance to fulfill their needs for business and leisure. Transportation is becoming increasingly more efficient because the development of science and technology have been introduced into transport. Public transportation system of a city does much more than it citizen from one place to another. It can play a major role in encouraging and controlling urban growth. One of the most serious problems of urban centers of the developing world today is that of "urban transportation crisis" which actually a complex bundle of interrelated problems is. They can be grouped into three major categories: Congestion, Mobility (accessibility) and ancillary impacts.

Population in Abuja is increasingly much faster than car ownership levels, and therefore an increasing proportion of the population is depending on public transport except for very short journeys. Public transport but are sometimes differed from using it because of traffic congestion, parking difficulties or problems in accessing certain streets.

Public transport is vital for the vast majority without access to private transport. There is need for personal mobility in particular for access to employment opportunities but with low income level affordability is a common problem while the services provided as often regarded as inadequate. In most modern countries, there is demand for public transport because of the proper arrangement in the industry, therefore the level of car ownership has decline while reverse is the case in a developing countries i.e. Nigeria.

The main factors to the public transport problems in Abuja are the rapid growth in population, particularly in the satellite towns, low standard of efficiency, reliability and safety, poor enforcement of regulations, shortage of bus shelter and bus stops, poor maintenance culture.

Inadequate public transport services have a detrimental effect on the economic and there would be far reaching benefits if the demand for public transport in order to enable people to go about their business without unnecessary hindrance. Improve public transport services in urban areas would help to reduce the tendency for public passengers to upgrade to private transport. Abuja urban mass transit company was established by the Federal Capital Territory Administration to alleviate transport challenges of citizens dwelling in and around Abuja. In order to achieve this, over 1.5 billion was spent to procure 192 buses to ply different satellite town within the city at affordable price to solve the mobility challenges. Among those challenges are long waiting time, long queue of passengers' at various bus stops, stampeding due to rush, loss of valuable items as a result of struggling for buses, lateness to work, loss of man hours.

This situation has reached an alarming proportion which has attracted the attention of FCT administration by procuring additional 200 high capacity buses for transportation within FCT in order to improve its availability, reliability, safety, efficiency, comfortability, accessibility and convenience. However, this strategy does not seem to solve the magnitude of problems

at hand. It is against this backdrop that this paper intends to analysis the impact of Abuja Urban Mass Transit Company. The objective of this paper is to determine the adequacy and functionality of the fleet size and personnel for various assigned route. The level of assessment will be limited to the objective of the study and operation on the mobility requirement. To this effect, the scope of the study will cover the following routes, Abuja – Mararaba, Abuja – Bwari, Abuja – Kuje, Abuja – Gwagwalada and Abuja – Suleja.

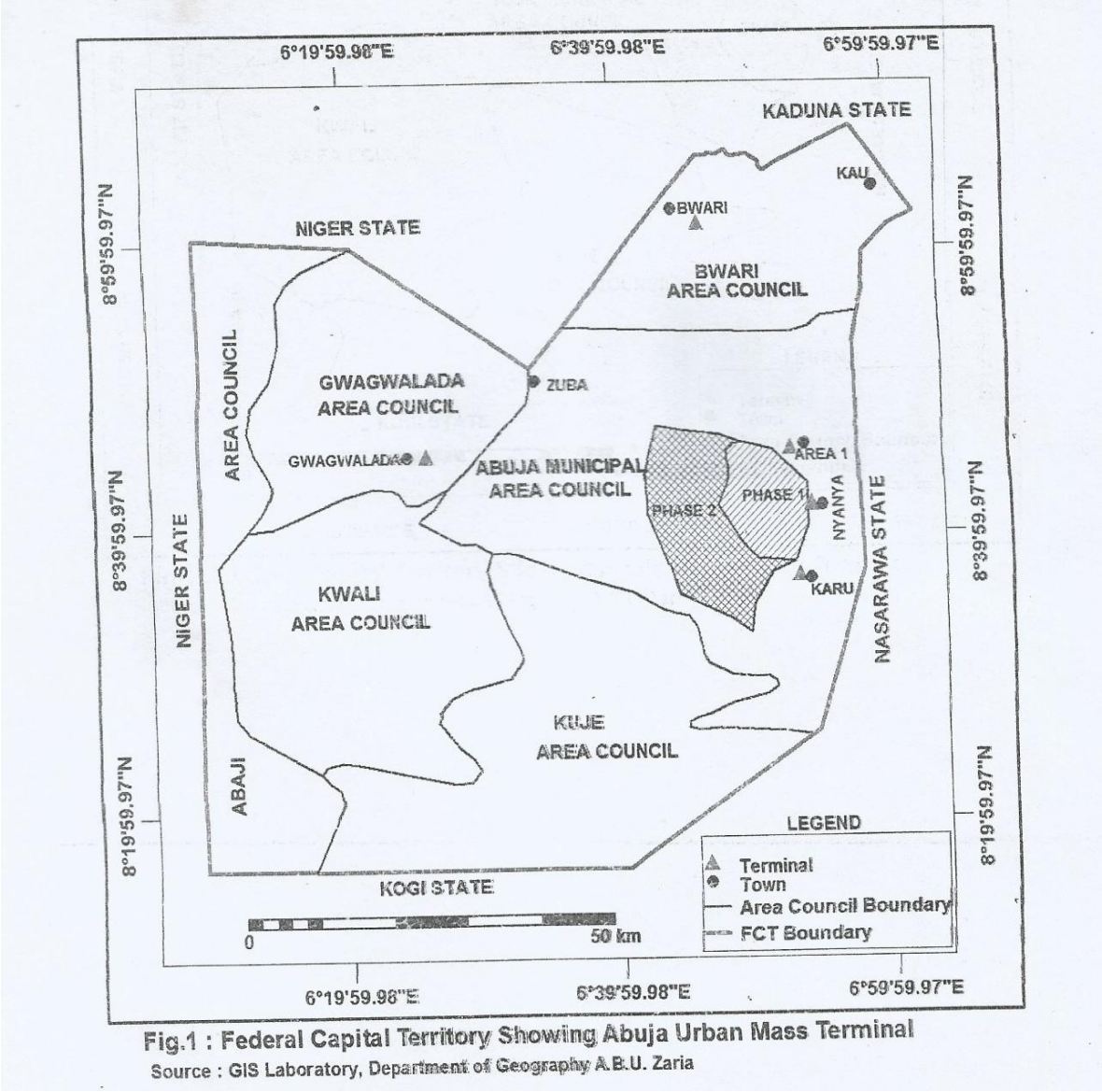


Fig.1 : Federal Capital Territory Showing Abuja Urban Mass Terminal
Source : GIS Laboratory, Department of Geography A.B.U. Zaria

METHODOLOGY

The data used for this research includes: socio-economic data, total number of fleet, origin and destination, open and closure time, fleet maintenance policy, number of routes, transport fare, number of bus stops, journey time, personnel staff strength, bus capacity and vehicle replacement policy. Data were gotten from commuters, AUMTCO drivers and vendors of AUMTCO through questionnaire administration, interviews and observatory survey at various routes. Total of 400 questionnaires were administered to the four different routes and each of the routes were allocated with 100 questionnaires. Random sampling method was employed and analyzed using graphical, descriptive and inferential statistics.

RESULTS AND DISCUSSIONS

Socio-economics Characteristics, Origin, Destination and Waiting time analysis

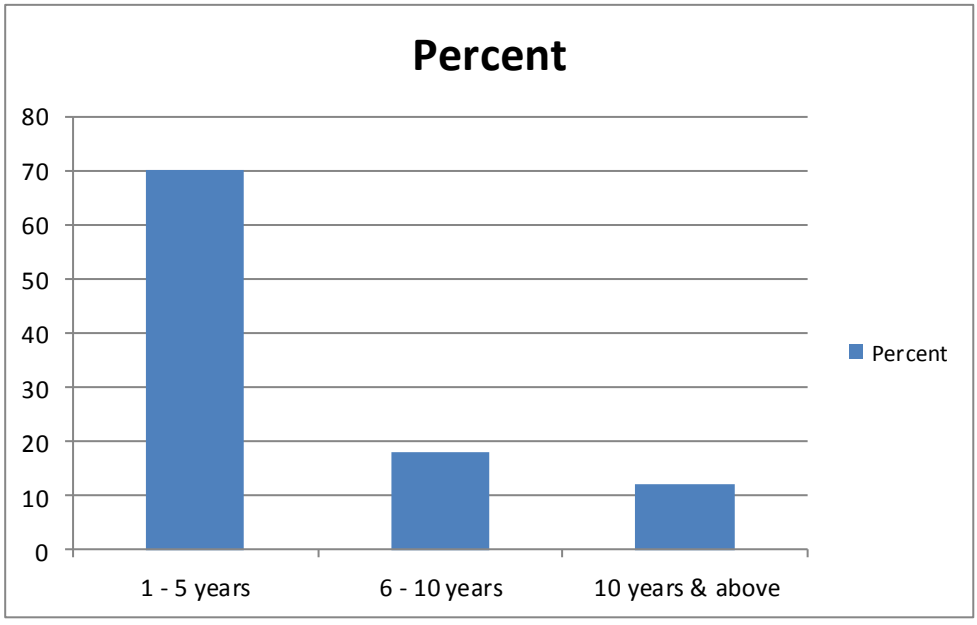
In analyzing and evaluation passengers' movement, there is the need to consider the socio-economic characteristics of the respondents as indicated in this survey. The information is fundamental to this study as it facilitates the understanding of more complex analysis of data obtained from the sampled respondents. The occupation has significant implication on the patronage choice of route and reason for movement within the sampled areas. The nature one's occupation has a long way of determining the density of route usage. Table 1 reveals that self-employed personnel dominates the usage of public buses available in the study area, representing 37.0% while civil servants dominates by 26.0%, 19.0% indicates that occupants work in public companies. Bus passengers' occupation is an important aspect of the patronage of bus services. Daily mobility needs arise primarily because of the need to meet occupational demands or requirements. Bus passengers with different occupational status tend to move to their various places of work, business, social and educational purposes. A deduction from this result implies that self-employed individuals and civil servants are the major users of buses within Abuja Metropolis.

Table 1 - Occupation of Commuters

Occupation	Frequency	Percent
Civil Servant	104	26
Private Employee	76	19
Self employed	148	37
Others	60	15
No response	12	3
	400	**100**

Source: Field Survey, 2012.

Figure 2 shows that 70% of the commuters have been using the Abuja Urban Mass Transit for about 5 years which is an indication that majority of the commuters in Abuja patronizes the public transport system.



Source: Field Survey, 2012

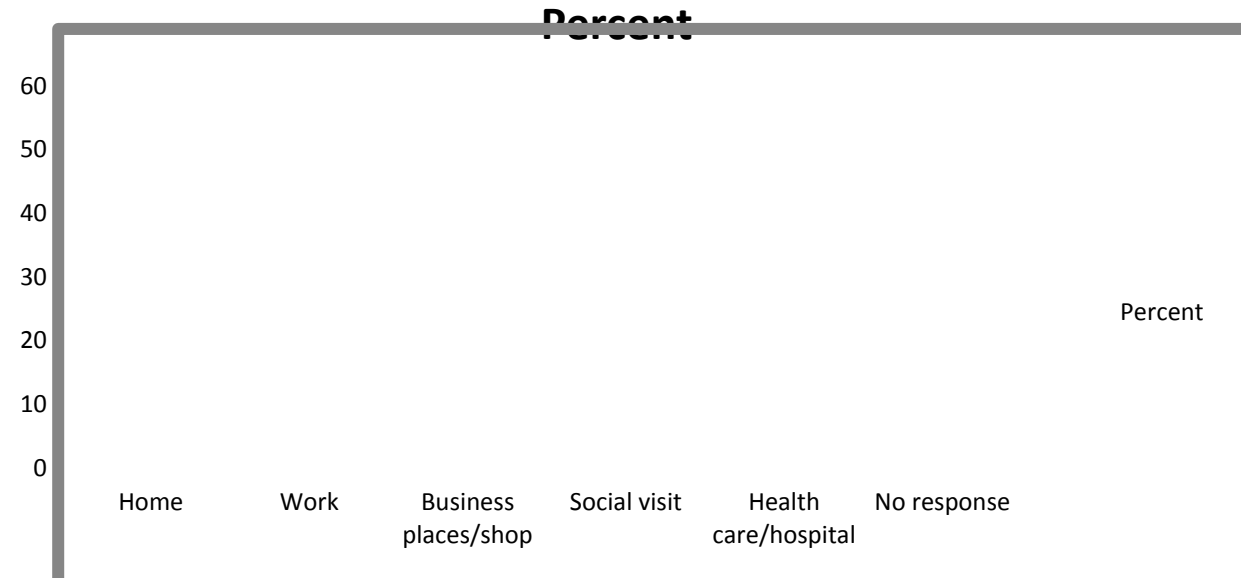
A total of 72 respondents fall between 6 – 10 years while 48 respondents were within 10 years and above in patronizing the public transport systems. Origin of commuters and nearness to bus stop is one of the important elements that determine the quality of bus services in any given urban area. Walking distance of a bus passenger can be defined as the distance passengers walk before reaching the nearest bus stop from origin or destination to catch bus services (Obasanjo, 2015).

Table 2 - Origin of Commuters

Origin	**Frequency**	**Percent**
Home	144	36
Work	120	30
Business places/shop	36	9
Social Centres	52	13
Health Care/Hospital	12	3
Education	28	7
No response	8	2
	400	**100**

Source: Field Survey, 2012.

Table 2 indicates that 36% of the respondent comes from their homes, 30 % from work, 36% from business places/shops, while 13% comes from social centers. This implies that majority of people boarding the bus comes from their homes. Meanwhile, from the destination of commuters after boarding, Figure 3 shows that 53% were going home, 34% to work places while 28% are off to their business places/shops.



Source: Field Survey, 2012

This implies that majority of commuters that boarded were returning home during the evening trips while many go to their offices during the morning trips. An important characteristic of transport service is the time passengers have to wait before boarding a

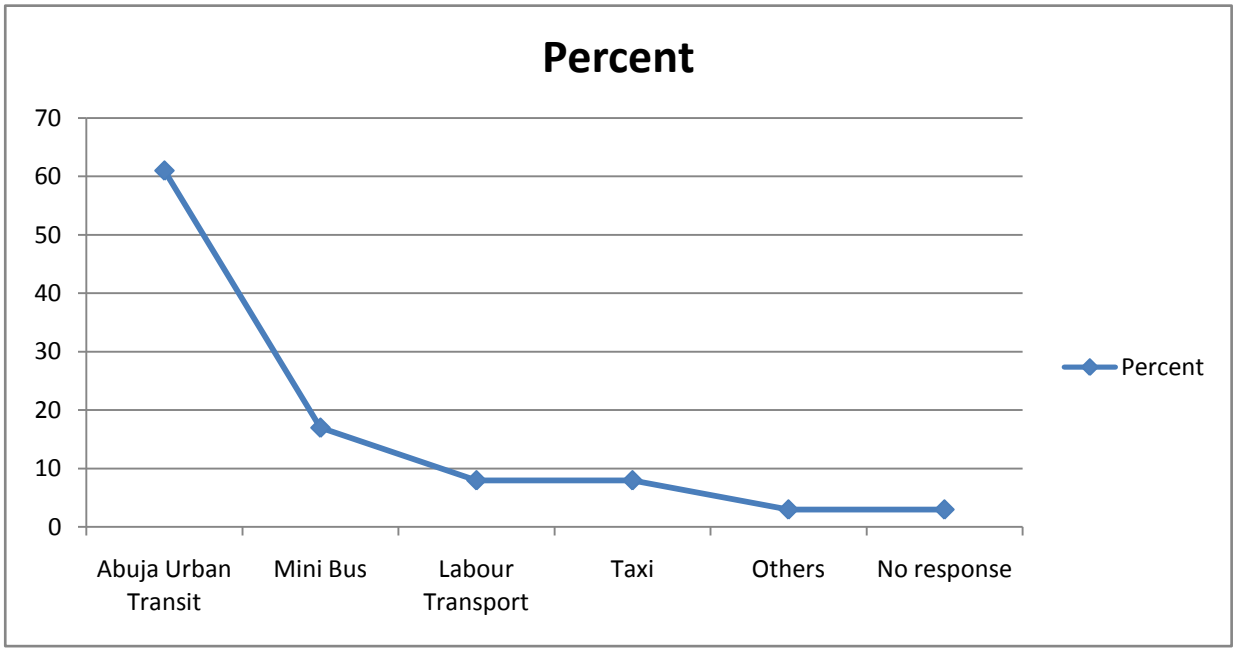
vehicle. In this study, waiting time for bus is defined as the time passengers spent at the bus stop between the passenger arrival at the bus stop with the intention of catching bus and the time the passenger boarded the bus departs from the bus stop (Obasanjo, 2015). The average waiting time as advised by the World Bank (1987), ranges from 1 – 10 minutes indicating high quality of services and the maximum time passengers are expected to wait for the arrival of buses at the bus stop ranges from 11 – 20 minutes.

Table 3 – Waiting time of commuters before boarding the bus

Waiting time	Frequency	Percent
1 – 10 minutes	136	34
11 – 20 minutes	28	7
21 – 30 minutes	64	16
31 – 40 minutes	140	35
41 – 50 minutes	8	2
51- 60 minutes	4	1
60 minutes & above	8	2
No response	12	12
	400	**100**

Source: Field Survey, 2012.

Table 3 reveals that majority of the commuters about 34% spend between 1 – 10 minutes at the bus stops while 8% spends 41 – 50 minutes. This indicates that the quality of bus services in Abuja with respect to waiting time is moderate. Public transportation, while maybe not as enjoyable as commuting in your own personal vehicle, does ease congestion, reduce emissions and give you plenty of quality time to people watch, as well as get to know your "neighbours". In addition, public transportation allows you to relax, read or nap during transit instead of fighting and stressing ad feeling the road rage which may lead to choice of buses. Issues such as timeliness, comfortability and reliability can give room to choice of public transportation.



Source : Field Survey, 2012.

Figure 3 shows that 61% commuters travels with Abuja Urban Transit while 3% travels with taxi. This can be associated with the level of satisfaction, fare rates and timeliness. Service satisfaction indicates the performance of bus services in relation to convenience, safety and transport fare. Table 4 indicates that 40% are satisifed with the level of bus services while 57% are not satisfied with the level of services provided by Abuja Urban Mass Transit.

Table 4: Commuters' satisfactory level on Abuja Urban Mass Services.

SATISFACTION	**F**	**%**
YES	160	40
NO	228	57
NO RESPONSE	12	3
TOTAL	**400**	**100**

Source: Field Survey, 2012.

The major challenge may be aligned to long waiting time and so many of the commuters' stands for long while the buses are on transit.

Table 5: Commuters' evaluation on Abuja Urban Mass Services.

EVALUATION	**RESPONSE**	**%**
RELIABILITIES	YES	14.2
	NO	85.8
EFFICIENCY	YES	14
	NO	86
SAFETY	YES	8.2
	NO	91.2
COMFORTABILITY	YES	8.2
	NO	91.8
AVAILABILTY	YES	14.8
	NO	85.2
AFFORDABILTIY	YES	14.75
	NO	85.25
ACCESSIBILITY	YES	15
	NO	85
CONVIENENCE	YES	13.2
	NO	86.8

Source: Field Survey, 2012

Issues such as time, safety, cost, reliability, speed, capabilities need to be considered for a transport system to be effective and efficient (Obasanjo, 2015). Safety measures in a bus tell how efficient and effective a bus safety could be, which will eventually encourage the bus passengers to patronize the bus. In most developed part of the world that uses conventional buses, before any bus ply the road for commercial purpose, safety measure must be put in place. Based on this study research; most of the respondent rated issues on reliability, efficiency, safety, comfortability, availability, affordability, accessibility and convenience on the fair note. That is, it is not well acceptable as occasion and transport standard demands.

The bus capacity is 46 seats covering Bwari route of 35km, Masaka 21km, Kuje route 45km and Gwagwalada route 56km. From the research findings, the employee training and re-

training has been on the low side which implied that the drivers have not been trained for the past 5 years based on the time of carrying out this research.

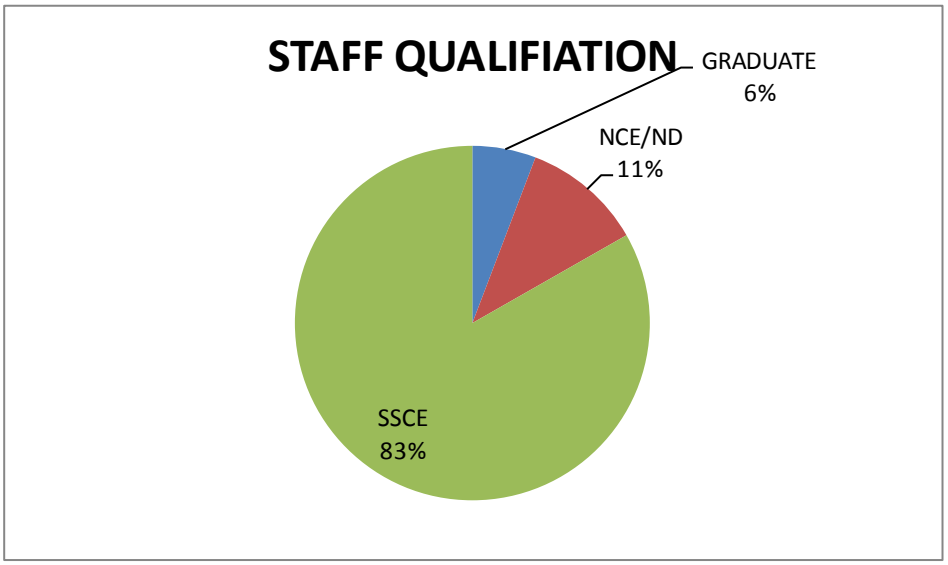
Table 5: BUS CAPACITY

BUS TYPE	CARRYING	STANDING
Marcopolo (Benz)	49	nil
TATA	46	30
ASHOK Leyland	42	20

Source: Field Survey, 2012

This table shows that Marcopolo bus has a sitting capacity of 49 passengers and no standing capacity, while TATA has 46 passengers sitting capacity and 30 standing capacity; with 42 sitting capacity and 20 standing capacity for Ashok Leyland.

Figure 4: STAFF STRENGTH AND QUALIFICATION



Source: Field Survey, 2012

Figure 4 indicates that the highest numbers of employees are SSCE holders. This indicates that the least employee is educated to a certain level which can also aid productivity and operational handling of buses. However, graduates can be encouraged to have a better standard of drivers. Using the Pearson correlation and the Kendall's tau-b correlation coefficients, the result reveals that the Pearson correlation coefficient r = 0.707, p>0.001 shows that there is a strong association between the level of education and the problem passengers' encounter in usage of buses.

Table 6: Correlation between level of education and transport problems

Correlation	**Level of education**	**Transport problems**
Level of education Pearson correlation Transport problems Pearson correlation	1	0.707
	0.707	1
Level of education Kendall's tau_b Transport problems Kendall's tau_b	1	0.744
	0.744	1

Source: Field survey (2012)

Similarly, Kendall's tau-b is a nonparametric measure of correlation which indicates the direction of the relationship. The absolute value indicates the strength: The larger the value, the stronger the relationship. Hence the Kendall's tau-b of 0.744 indicates a strong relationship between the level of education and the problem passengers encounter in usage of buses. The relationship is statistically significant at 95 percent.

Table 7: Relationship between bus capacity and problems passengers' encounter

Bus design capacity	**Problems passengers encounter**					**Total**
	Traffic congestion	Overcrowding	Frequent Bus Breakdown	Delay	High fare	
6-passengers	46(22%)	0	0	0	0	46
8-passengers	103(50%)	0	0	0	9(19%)	112
42-passengers	58(28%)	48(100%)	12(100%)	43(100%)	38(31%)	199
Total	207	48	12	43	47	357
Cramer's V						0.51
Phi Value						0.72

Source: Field survey (2012)

This study identified two modes of access to bus stop which include walking and the use of motorcycle with walking dominating by 70.9%. Also, 70.3% of commuters walk within one to 500 metres to reach bus stop and 66.9% waited between one to 20 minutes before the arrival of bus. Pearson's correlation r = 0.707 and Kendal's tau_b = 0.744 shows a strong relationship between level of education and transportation problems encounter by bus passengers. Similarly, Cramer V value = 0.51 and Phi = 0.72 shows a strong relationship between capacity and the problems bus passengers encounter.

CONCLUSION

This study has accessed the impact of Abuja Urban Mass transit company operations within Abuja metropolis. This study has identified major findings which is the perception level of commuters towards the service of Abuja Urban Mass Transit Company is very poor because most of the commuters said that the comfortability, reliability, efficiency are not up to standard. It was revealed that the average waiting time of Urban Mass (AUMTCO) is between 31 – 40 mins which is very high. The study also revealed that the numbers of commuters standing are competing with those sitting. The study further revealed that commuters' kilometer coverage is 1.3km per person in Bwari route, 2.5km per person in AMAC route, 0.96km per person in Kuje route and 0.28km per person in Gwagwalada route. The major findings obtained shows that the perception level of the commuters is very low and the waiting time is on the high side and this component is very important in success of transportation operations, thus, the commuters prefer that the operations of Abuja Urban Mass Transit company to improve on their services level and always their commuters at heart. There is a great necessity for instilling order into the present level of bus service system in the city of Abuja. A starting point would be for the government to participate effectively and strengthen its commitment to orderliness and provision of good quality bus services. In the first instance, the demand for passenger bus services in the city is great and from many indications this situation will remain for quite some time to come in the city. This is so because bus services are the most available and affordable one in the city although there

are other alternative services which are grossly inadequate and unreliable. The quality of bus services provided by bus operators is appealing and at the same time exploitative. In spite of the moderate waiting and walking distance encountered by commuters in Abuja metropolis, bus services still suffer poor output. This is because of long in-vehicle time, bad seat, and untidy bus, lack of safety measures, overloading, traffic congestion and poor maintenance of buses by bus operators. Therefore, the following recommendations are made to improve the services of Abuja Urban Mass Transit.

(i) All AUMTCO drivers should be trained to improve the level of commuters' satisfaction.
(ii) Standing passengers inside the bus should be discouraged to enhance the level of comfortability.
(iii) All buses that are mechanically down should be put in order to increase the numbers of buses in operation. This study recommends a 24 hours maintenance service team.
(iv) Dedicated lanes should be marked out for the AUMTCO buses to reduce the time of arrival from origin to destination.

Finally, bus terminals in the metropolis need to be defined and upgraded to ensure they do not hinder the performance of services on that route. Route system within the metropolis should be enforced so as to provide adequate coverage of bus services in the entire city. There should be uniform rule controlling public transport operators in the city or regulations stating the level of services which public bus operators must provide. More roads should be constructed to link the Northern and Southern part of the metropolis so as to reduce the traffic congestion experienced on the major road linking the metropolis. Ticketing system of transport fare charges should be adopted. This will reduce to great extent the possibilities of exploiting passengers and create uniformity of fare in buses that ply the same route. Bus transport services should be run by companies rather than individuals for easy regulation and sanity in the transport system. However, individuals who can afford to buy bus or buses can lease them to the companies provided they meet up with the company standard (Obasanjo, 2015).

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