

Investigating user Characteristics and Transportability of Mass Transport Systems in North East Nigeria

Ahmad Abdullahi^{1*}, Zarma Ali Wakil², Ibrahim Durkwa Bukar²

¹Department of Geography, Federal University Kashere, Gombe, Nigeria

²Nigeria Building and Road Research Institute, North-East Zonal Office, Gombe, Nigeria

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*Corresponding author: Ahmad Abdullahi

Abstract

Original Research Article

Mass transport service in North East Nigeria was established in the last 20 years with millions of passengers, tons of freight and lot of information being transported within and outside the region. The sole purpose of transportation is to overcome physical and political constraints with ease otherwise known as transportability. There have been numerous literatures on transport system, nothing so far is found in the literatures that explore and expose the transportability of North East Mass Transport System (NEMTS) in terms of passenger conveyance, freight and information delivery services the NEMTS renders. The aim of this research work is to identify and assess NEMTS users and the transportability of NEMTS in terms of inter and intra-regional transportation; examine the problems they faced, and determine the transportability of NEMTS. Questionnaire was administered to 1332 respondents and Focus Group Discussion was made with 6 managers to compliment the information so far collected. The demographic information captured the respondents' age, education, marital status, and ownership of means of transportation, level of income and occupation of respondents. Another area of service the research looked at was transportation of freights and information. Research findings revealed that majority of passengers plying NEMTS are of youthful age and single, most of whom attended non-formal education system. It also revealed that most of the NEMTS clients are artisan workers and some are students with few of the respondents employed as civil servants. Of these respondents, a very negligible number owned personal means of transport. Along with passengers, this work looked at the transportability of freight and information. The research found that there is high transportability of the items when most passengers attested to the affordability, coverage of desired distance, free movement of good and information with ease.

Key Word: Freights, Passengers, Information, Transportability, Mass Transport System.

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INTRODUCTION

Transportation is the movement of people, freights and information from one destination to another [1]. According to [2], the specific purpose of transportation is to fulfill a demand for mobility. Transportation can only exist if it moves people, freights and information around, otherwise it has no purpose. They (1 & 2) further stressed that the sole purpose of transportation is to overcome physical constraints such as time, topography and distance, and administrative constraint, such as political boundary, laws, regulations, borders and tariffs. When these constraints are overcome, and when the movement of people, freights and information are made with ease and when value are added to them in the process, the goal of transportation is said to be achieved, otherwise known as transportability. Transport is often regarded as a prerequisite for economic development – although there is a dispute of the direction of the relationship. Maybe

economic growth has necessitated development of transport and infrastructure. Be that as it may – there is a general consensus that in order for our society to develop and for people to manage their daily lives, there has to be a functioning, well performing transport system [3].

The success in global economy was backed by increase in the rate of transportation and high level of accessibility to transport system [2]. Mobility and accessibility provided by the transport system have been playing a major role in shaping countries, influencing the location of social and economic activity as well as form and size of cities [4].

Specifically, 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

[5]. Public transportation therefore plays a very important role in both the developed and developing world cities. It serves to reduce reliance on private car-ownership by providing an affordable alternative for urban commuters. Demand for public transport service is a direct consequence of the quality of living environment, household, community, and social networks. It is therefore important to understand the user characteristics of the public transport system. Without a good understanding of the nature of the public transport users, it would be difficult to make usable demand forecasts, which is fundamental for public transport service planning and operation as well as policy formulation [6]. These characteristics include household characteristics (gender, age, education etc), type and quantity of freight and the type of information being transported. At city-wide level, understanding the socioeconomic characteristics of commuters can prove very valuable in evaluating public transport accessibility level and in detecting whether particular groups are underserved [7]. Passengers' travel habits relate directly to their socioeconomic characteristics. Modeling public transport patronage requires an understanding of the socioeconomic characteristics of the users and their travel demand requirements. Previous studies have established the critical importance of socioeconomic characteristics of the users in the construction of public transport models [8].

Public transport is a collection of modes of transport which are available to the public [4]. These include water transportation, air transportation, rail transportation and road transportation [9]. The dominant mode of public transport in developing countries is road based transport using conventional passengers' buses with capacity ranging from 10-50 seaters. It has wider social and environmental benefits. It is the only affordable means of transport to the urban poor [10]. It is most flexible as it satisfies short and long distance mobility demands. It needs less investment on infrastructure, feasible economically to all groups and environmentally friendly system [4].

Public mass transport system in north-east Nigeria is referred to as North-East Mass Transport System (NEMTS). It attends to the demand of the constituting households, movements of goods accompanied or unaccompanied by owners, and the flow of information. This research focused on public road transport system, especially the characteristics of mass transit users in north-east Nigeria and the transportability of NEMTS in terms of passengers, freights and information. There have been numerous literatures on transportation system, but little is known about the characteristics of travelers and the attributes of items transported using public mass transit as their means of transportation in north-eastern region of Nigeria. A better understanding of travelers' characteristics will help transport planners, policy makers and investors to identify the area of need and how to meet it. Precisely, the aim of this study is to

assess the characteristics of mass transit users in north eastern Nigeria through the following objectives.

- Identify the characteristics of mass transit system users.
- Examine the problems being faced by Mass transit users
- Determine the transportability of Mass transit systems in north eastern Nigeria.

MATERIALS AND METHODS

Description of the study area

Nigeria is located between latitude 4° N and 14° N and longitude 3° E and 15° E within the tropic of Cancer and tropic of Capricorn. The study area for this research is the north east region of Nigeria. The region covers close to one-third ($280,419\text{km}^2$) of Nigeria's land area ($909,890\text{km}^2$). It comprises 6 states: Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe. According to projections for 2011 by the National Bureau of Statistics [11], these States have 13.5% (i.e. 23,558,674) of Nigeria's population which is put at 173,905,439. Additionally, the Zone shares international borders with three countries: Republic of Cameroon to the East, Republic of Chad to the North East and Niger Republic to the North [12].

The NEMTS operates from their state capitals and comprises of Adamawa sunshine in Yola, Yankari Express in Bauchi, Borno Express in Maiduguri, Gombe Line in Gombe, Taraba State Transport Corporation in Jalingo and Yobe Line in Damaturu. These mass transport systems are operated and managed by their respective State governments in their states of domicile. They provide inter and intra-regional transportation services. These transport companies have a total of 423 vehicles in their fleets.

Data required for the study include

- Data describing the demographic characteristics of mass transport users. These data include users' age, education, occupation, and marital status, level of income and ownership of means of transportation. This information highlights the routine and characteristics of NEMTS users. This information was obtained from on the spot questionnaire administration at the six terminuses of the mass transit system.
- Data showing problems faced by NEMTS users. These data include delay in delivery, coverage of distance, safety of life, confidentiality of information and comfortability of the vehicle used. These was extracted by administering questionnaires to travelers on the spot and focus group discussion with the managers of each transport service system in their offices located at the terminus.
- Data showing the transportability of the systems. These data revealed information on ease of movement among passengers within and outside

the region, cost of transportation, time taken to get to destination, and political considerations such as tariff, laws, regulations and political boundary. These data was obtained from the literature, passengers as well as mass transport administrators.

RESULTS AND DISCUSSIONS

Demographic Data

Demographic data was obtained from 1332 passengers in the six states of the North-East mass transit terminals. Data collected include age, education, marital status, ownership of car, level of income and occupation.

Table-1: Demographic Characteristics of Passengers

Age Distribution			Education			
Age	Frequency	Percentage	Institution	Frequency	Percentage	
15-20	100	7.51	Primary	19	1.43	
21-26	263	19.74	Secondary	434	32.58	
27-32	253	18.99	Tertiary	180	13.51	
33-39	253	18.99	Non- formal	694	52.10	
40-46	296	22.22	None	5	0.38	
47-52	137	10.29	Total	1332	100	
53-59	30	2.25				
Total	1332	100				
Marital Status			Ownership of Car			
Marital Status	Frequency	Percentage	Response	Frequency	Percentage	
Single	666	50.00	Yes	40	3.00	
Married	596	44.74	No	1292	97.00	
Divorce	67	5.03	Total	1332	100	
Others	3	0.23				
Total	1332	100				
Level of Income			Occupation			
Income(N/Month)	Frequency	Percentage	SN	Occupation	Frequency	Percentage
<30,000	391	29.35	1	Civil Servant	386	28.98
31,000-50,000	549	41.2	2	Student	386	28.98
51,000-70,000	305	22.9	3	Artisans	519	38.96
71,000-90,000	44	3.3	4	Business	41	3.08
>91,0000	43	3.2		Total	1332	100
Total	1332	100				

The demographic data collected on age distribution revealed that those from the age of 15-39 constitute the highest number at 65% of users that patronize NEMTS. These age groups constitute the active or youthful population of the study area. Passengers that are 40-59 years constitute 14% of the population.

The educational characteristics of NEMTS users revealed that 53% of passengers attended non-formal education at various western and Islamic schools. These passengers obtained different types of qualification ranging from basic literacy certificate, post literacy certificate and continue education certificate. 3% of the passengers attended secondary school, 13.5% tertiary, while 1.4% attended primary school (Table. 1). Of the 1332 passengers interviewed on marital status, analysis revealed that exactly 50% of the respondents are single, while 44.7% are married. This corroborate with the earlier findings on age distribution where age group of 15-39 constitute the highest number of passengers. The remaining 3% are those that fall within divorced and others.

In terms of ownership of a means of transportation like, cars, and other vehicles used for

long journey, the research revealed that 97% do not have means of transportation. That means only 3% (40 respondents) have a personal long journey means of transportation. With less number of people having a means of transportation, it becomes obvious that NEMTS offers to the poor a viable alternative means of transportation in north-east, Nigeria. The research findings revealed that car owners use public transport in preference to private cars in order to cut cost of buying fuel, and vehicle depreciation.

The study also looked at the level of income of respondents. The Nigerian minimum wage of N 30, 000 per month paid as a reward for labour or services rendered in the civil service was used as a yard stick to the level of income of respondents. Analysis revealed that those earning N30, 000 – N50, 000 constitute 41%. This is followed by 29% of respondents who earn less than or equal to N30, 000 monthly. The remaining 26.2% of the 1332 respondents are those earning from N51, 000-N90, 000. Only 2% of the respondents earn more than N90, 000 per month as wages. The implication of this is that majority of the respondents use NEMTS for its cheap charges to make their journey possible.

Attributes of Freight and information in North-East Mass Transport System

Apart from passenger services, the NEMTS renders freight service to passengers/clients. These services can be categorized into freight accompanied by owners and those that are unaccompanied by owners. Freight services accompanied by owners include goods/commodities that are light weight, which include passengers' packages, luggage, and other items that could be held by passengers which do not occupy large space. Those that occupy large space are charged fees by the transport service providers, depending on the weight, volume and space occupied by the goods. These categories of goods are transported with the passengers that own them or under the care of the drivers to their destinations. On the other hand, those freight that are unaccompanied by owners includes heavy weight goods. These goods tend to occupy much space or even the entire vehicle space. These types of goods are delivered to their intended destination under the custody of the driver. The north east mass transit system charges those goods depending on several factors: These factors are; type of items being carried, the volume of the items both in terms of size and quantity, the freight weight and the distance to be transported [13].

Another item being transported by NEMTS is information. The information being transported is referred to as a 'waybill'. A waybill is a parcel, letter, money or verbal message that is transported for a fee, from a source to a destination where the information will gain value. A lot of people and corporations prefer to use the NEMTS to deliver messages and information instead of the post office or courier service. It was observed by this research work that the transfer of written information by mass transport system is faster in that it lacks too much protocol and bureaucracy in delivery and receiving of messages. The movement of information through mass transport gained momentum with the advent of Global System for Mobile Communication (GSM). Information senders write names and phone numbers of the recipients on the items being transported. On getting to the destination of the

message, the driver of the bus simply call the numbers on the messages on board. The recipients then go the mass transport terminal to collect the information. This method to a large extent is now being used by media houses especially magazines and newspapers companies. Papers are transported from publishing offices to zonal and states offices even to newsstands in some cities.

Problems Faced by NEMTS Users

In examining the problems being faced by Mass transit users, and bearing in mind that the sole purpose of transportation is to overcome physical constraints and administrative bureaucracy, this work tried to find if things being transported in the north-east mass transport systems are being jeopardized in that regard. Focus Group Discussion with the management of NEMTS in Gombe Line Service station revealed that there is an established synergy and inter-state cooperation among the six state governments in the north-east that operate the system. A memorandum of understanding (MoU) is in place which allows free movements of mass transit buses within the region without hindrance or tariff. This MoU is further supported by the Nigeria Constitution which guarantees the free movement of Nigerian citizens within the country without hinderance. According to the Nigerian constitution of 1999, "Every citizen in Nigeria is entitled to move freely throughout Nigeria and to reside in any part thereof, and no citizen shall be expelled from Nigeria or refused entry thereof or there from [14]".

The work also tried to find whether passengers are comfortable; if fees are affordable; and if distance meant to cover are accomplished within a reasonable time. Another area looked at by this work was the safety and confidentiality of freight and information being transported. Research findings revealed that transport fees are affordable by most travelers after 55% of them attested to that during interview. The remaining 45% called for downward review of transport fares to enable people travel more often (Fig.1).

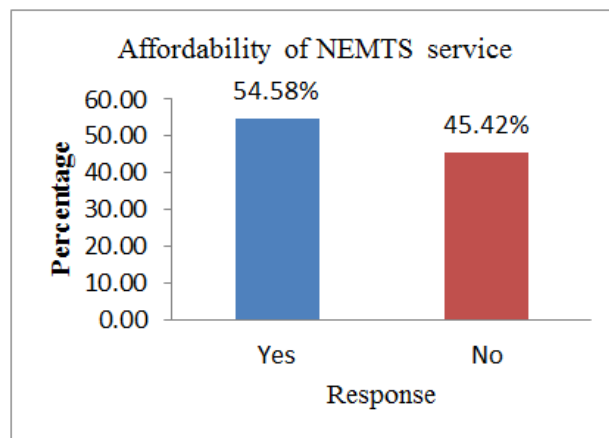


Fig-1: Affordability of NEMTS

In terms of distance meant to travel, 75% of respondents affirmed that NEMTS cover their distances and within reasonable time. The remaining 25% said

they always had to board another means of transport to get to the destinations they desire (Fig.2).

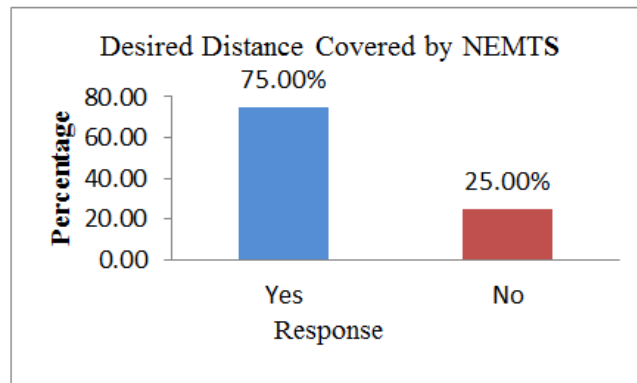


Fig-2: Desired distance covered by NEMTS

In term of comfort, respondents are categorized into three degree of comfort ability. 40% said the buses are comfortable and 25% of said they

were moderately comfortable. The remaining 35% called for the reduction of passengers per seat to make room for relaxation (Fig. 3).

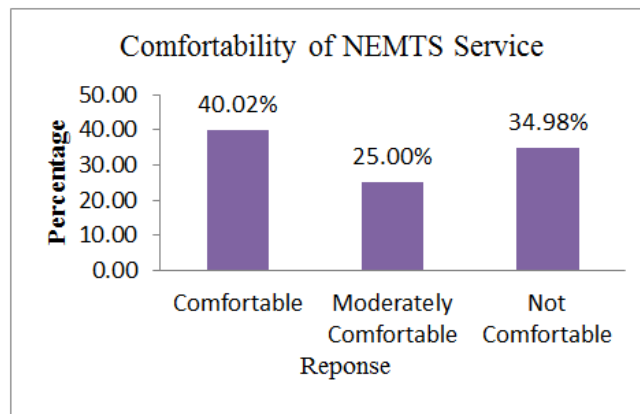


Fig-3: Comfort in NEMTS

By and large, the low transport fares compared to other commercial road transport workers, the covering of clients desired distance, the comfort driven from the buses, the security of life and property, the free movements of people, goods and information in time,

adding value to them in the process, within and outside the region, have been confirmed to be satisfactory by 57% of the respondents. 14% of the respondents were not satisfied with NEMTS services, and 4% of them rated the services as poor (Fig. 4).

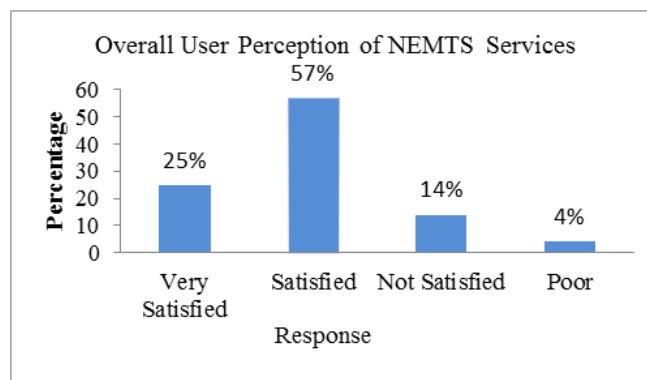


Fig-4: Overall Users Perception of NEMTS services

CONCLUSION

At this juncture, attention is drawn to the fact that this work has established that NEMTS attends to the needs of its clients in transporting people, goods and information by overcoming physical constraints of time, distance and topography comfortably. It has also established that measures have been put in place to check any administrative constraint that will hinder free movement of people, freights and information within and outside the region. For this reason one is free to conclude that transportability in NEMTS is high

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