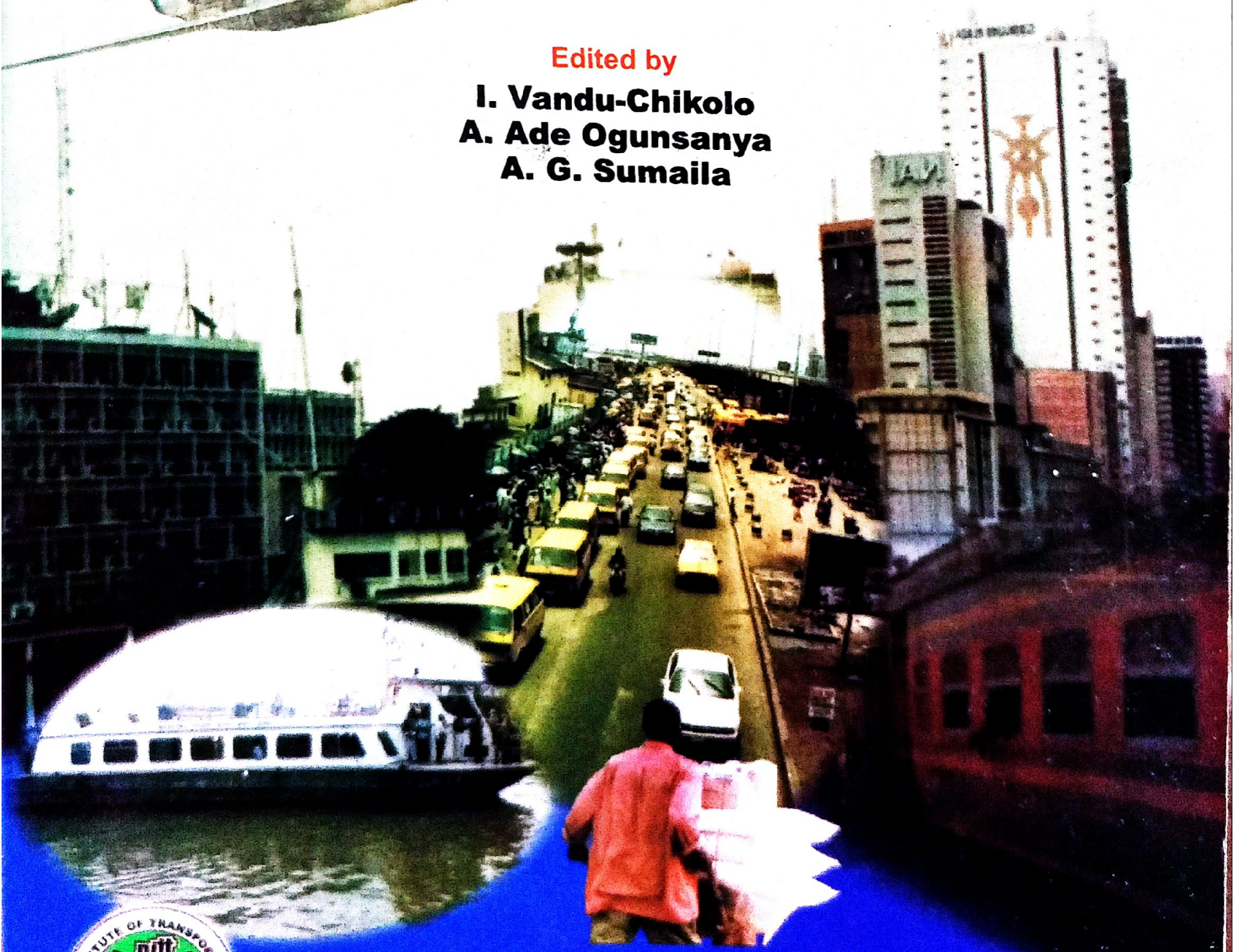


Perspectives *On Urban* **Transportation** *in* *Nigeria*



Edited by

I. Vandu-Chikolo
A. Ade Ogunsanya
A. G. Sumaila



Published by the Nigerian Institute of Transport Technology (NITT), Zaria.

PERSPECTIVES ON URBAN TRANSPORTATION IN NIGERIA

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DEDICATION

To all Stakeholders of the Nigerian Institute of Transport Technology Who seek expertise; Cherish, Support, and Patronize Transport Education, Training and Research.

FOREWORD

Writing a Foreword in a special collection such as *Perspectives on Urban Transportation in Nigeria* co-authored by the Director General/Chief Executive of Nigeria's premier Institute of Transport Technology (NITT), Zaria, Dr. Ibrahim Vandu-Chikolo, Professor A. Ade Ogunsanya and Dr. A.G. Sumaila is a great honour

In spite of the general paucity of information on urban transport issues in Nigeria, the book has attempted to capture the directions in urban transportation in Nigeria. With a telescopic view of Nigeria's transport system into the future, it becomes necessary for policy makers, especially the Federal Government of Nigeria and all the stakeholders of the transport industry to give the sector greater attention to save an obviously gloomy future.

I commend the publisher, the Nigerian Institute of Transport Technology for supporting the publication and recommend the book to all stakeholders including the Federal and State Governments, which have the main responsibility for initiating legislation and making concerted efforts towards ameliorating the transport situation in the country.

Senator Timothy A. Adudu, Esq
Chairman, Senate Committee on Land Transport

PREFACE

Urban transportation is an issue of daily concern. It is a catalyst to a country's social and economic development. It is a dynamic urban infrastructure. It should therefore attract a continuous viewing, reviewing and understanding. Nigeria has been growing with little or no deliberate and sustained efforts to implement the plans for their transport system even where the plans exist. Though transportation influences, accelerates and sustains city growth all over the world, when overlooked or treated with levity, it generates far more problems that tends to impinge on city growth and development.

In Nigeria, literature on urban transportation is at the best scanty. Learning and research in this field is therefore difficult. Perspectives on Urban Transportation in Nigeria is a collection of dispersed literature from experts in the academia on different topical issues that affect our urban transport system.

The book will guide policy makers in taking key decisions that affect the urban transport system of Nigeria. It will also avail researchers and students undergoing various transport and transport related study programmes in the country with up to date information and data for academic and business research.

The twenty-chapter text takes a leap into the evolution of cities in Nigeria as well as in the development of urban transportation in Nigeria. It views the general functioning and operation of the Nigerian urban transport system while considering issues of policy, planning, control and regulation as well as transport expenditure. In the final analysis, the book predicts the future of urban transportation in Nigeria.

The publication of this book by the Nigerian Institute of Transport Technology (NITT), Zaria gives credence to its being socially responsible as the nation's apex transport management education, training and research institute. I find this effort commendable and encouraging.

This contribution will not only make policy changes and management of our transport system possible, it will also provide solutions to the looming scarcity of indigenous transport literature, and then promote and encourage local authorship.

Dr. Abiye P. S. Sekibo
Honourable Minister of Transport

ACKNOWLEDGEMENT

A productive endeavour such as book writing and publication cannot be realized by the efforts of a single individual. One discouraging factor to research, book writing and publication in Nigeria is the poor financial base of individuals, even though there is a great desire to do research and publish. The success story of *Perspectives on Urban Transportation in Nigeria* is therefore a result of the cooperation and support of many people.

However, I must express my sincere appreciation to the Honourable Minister of Transport, Dr. Abiye P. S. Sekibo for gracefully approving this publication by the Nigerian Institute of Transport Technology, Zaria. I also want to specially acknowledge the support of Albarka Air Plc and the Benue State Government for this publication.

Mention must also be made of a professional colleague and close friend of the Institute Professor A. Ade. Ogunsanya, of the University of Ilorin, for his relentless support on the project and for serving on the editorial team. I am also indebted to my colleague at the Institute Dr. A. G. Sumaila for working assiduously with me on the editing team.

I want to specially thank chapter authors for accepting and positively responding to my call towards this noble goal despite the many competing assignments on their limited time.

I acknowledge the support of my staff at the Institute, Mr. Joseph Nashakyaa and Mr. Charles Arobani for their Coordinating and Typesetting roles respectively on this project.

Above all, I am grateful to God for His guidance, protection and strength as well as for the responsibility of leading the Editorial Team.

Dr. Ibrahim Vandu-Chikolo
Director General/Chief Executive

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CHAPTER TWELVE

URBAN FREIGHT TRANSPORT

By

Ojekunle, J.A

INTRODUCTION

Freight transport is an integral part of urban system. The functioning of urban centres requires among other things efficient freight transport. This is because urban centres are characterized by high concentration of people, land uses and activities. When people and activities interact together between and among various land uses they generate and attract traffic along transport channels. The flow generated or attracted can be grouped into three: vehicles, passengers and freight.

In many countries, much attention has been given to vehicular and passenger flows. The reason may be due to the high volume of vehicular and passenger traffic often generated in urban centres. However, over the years, it has been observed that adequate attention has not been given to urban freight transport by urban policy makers, researchers, planners and managers particularly in developing countries like Nigeria, which has resulted into many traffic and transport related problems. (Wood et al, 1981). It is evident in many Nigerian cities that apparent traffic congestion problems are partly caused by high volume of freight vehicles.

This is more noticeable in big cities like Lagos, Ibadan, PortHarcourt, Warri, Enugu, Kano and Kaduna among others. The increased urban freight volume, the poor urban traffic flow and its attendant problems on urban economy necessitated even the few research efforts made in urban freight transport in the 70s and 80s in Nigeria. Thus, there is paucity of information, which has hindered policy makers in understanding the nature of urban freight transport problems in developing countries particularly in Nigeria.

In addition, it has long been recognised by developed nations that explicit consideration of urban goods movement has the potentials of contributing in a useful and positive way to achieving both the goals

of urban transport and some of the broader goals of urban policy and planning (Ogden 1992). The need to provide concise and current information on the structure of urban freight flow, the organization of urban freight transport and also discuss the pattern of urban goods movement in Nigerian urban centres as well as the implications of these on urban policy and planning in Nigeria form the basis of this chapter.

To achieve this, the chapter has been organised into the following major sub-headings:-

- urban freight transport - a global view
- pattern of urban freight flow in Nigeria
- factor affecting urban freight flow in Nigeria
- freight cost and freight transport
- organization and structure of urban freight operation
- management and control of urban freight traffic flow
- integrating freight into urban transport planning in Nigeria
- conclusion
-

URBAN FREIGHT TRANSPORT – A GLOBAL VIEW

Urban freight transport has been viewed from different perspectives by researchers, policy makers, urban planners and managers both in developed and developing countries. Various attempts have been made at defining urban freight transport. Watson (1975), for example has agonized over the definition and played with the meaning of words like 'urban' 'goods' and 'movement'.

US Department of Transportation (1973) gave quite an unwieldy definition of urban freight transport:

"The transportation of and terminal activities associated with the movement of things as opposed to people in urban areas. It includes movement of things into and out of the area, through the area as well as within the area by all modes, including transmission of electricity to the extent that it relates to the transportation of fuels, pipeline movement of

petroleum, water and waste and collection of and movement of trash and mail, service truck movement not identified with person movement, and even some person trips which involve substantial goods movement such as shopping trips. Activities involving urban streets, waterways, rail roads, terminals loading, docks and internal distribution system including elevators and related facilities must all be considered in fostering greater efficiency in the movement of urban goods”.

The above definition does not seem to show the boundaries of urban freight transport. Perhaps, this is why House (1979 p4) correctly asserted that “the definition of urban freight is essentially arbitrary. Wood et al (1981) also confirms the assertion because they discovered that in Canada people are affected and concerned with urban goods movement. For instance, carriers of goods see the attempt to regulate or control his activities as paramount among his problems. Shippers are concerned more with the level of service and cost. City officials are interested in alleviating congestion caused by freight vehicles, while the residents are concerned with environmental issues arising from freight traffic. Governments at all levels are concerned with finding some equitable balance amongst these sometimes conflicting interests. Table 12.1 presents the main issues in urban goods movement among various interest groups.

In some cases, stake holders in freight transport are not really consistent even across a set of issues. For instance, residents doubtless would argue for improved environment while at the same time aiming to reduce living cost. In other cases, the concern for issues varies widely between groups. For example, shippers and municipalities tend to have completely divergent interest on almost all issues.

In the end, this multiplicity and conflict of interests has made dialogue very difficult among various interest groups. Given that there is a problem of definition, the job of the researcher is to try to point out the path of the reasonableness and strike a balance between and among various groups.

Table 12.1 Issues and Problems in Urban Goods Movement

INTEREST GROUPS/ ISSUES	REGULATION/ CONTROL	ENVIRONMENTAL QUALITY	CONGESTION	COST	SERVICE
Society	Control intrusion	Maintain or improve	Reduce	Reduce	Maintain quality or improve
Resident	Remove trucks from environment	Improve	Remove trucks from traffic	Reduce	Maintain quality
Carrier	No regulation	Internal policing	Treat just like cars	Already as low as possible	Maintain quality
Shipper	N/A	N/A	Lack of parking space causes congestion	Keep cost low as feasible	Maintain or improve quality
Developer	No building code restriction	N/A	N/A	N/A	N/A
Municipality	Building Codes and truck routes	Respond to citizen pressure	Keep trucks out of cars way	N/A	N/A

Adapted from Wood et al 1981.

In most western countries, the carriage of goods in the urban areas is carried out by the private sector. In terms of modal contribution in U.K. road transport dominates the freight movement and it accounts for 86% of all freight tonnage in 1996. The situation is not different in Nigeria where over 98% of goods movement both within and outside urban areas is provided by private sector. The only mode where government participate in the movement of urban goods is railway. In Nigeria, railway is solely owned, managed and operated by government because it is capital intensive in nature. Presently, less than 2% of goods are moved by rail. The only area where public or government plays a major role in urban goods movement is in regulation and control.

In most developed world, the issue of regulation and control is taken very seriously in order to minimize costs and conflicts arising from the movement of goods in the urban centres.

PATTERN OF URBAN FREIGHT FLOW IN NIGERIA

One of the problems confronting urban transport researchers and policy makers in developing countries particularly Nigeria is the paucity of data. The available data on urban freight flow in Nigeria is limited to only few cities. These few ones are also the result of the research efforts of individuals in some universities and research institutions in the country.

FREIGHT FLOW CHARACTERISTICS

Using the Standard International Trade and Commodity (SITC) classification, freight flow in Nigerian urban centres varies both in volume and types. For instance, food and live animals constitute over 35% of good transported in Lagos metropolis. This is closely followed by manufactured goods classified chiefly by materials. The least type of commodity that is transported in Lagos is commodities and transactions not classified according to kind (See Ogunsanya, 1981, 1982).

In terms of freight orientations, four major observable pattern of flow have been identified in Nigerian cities. These are urban export-freight, urban-import freight, intra-urban freight and urban transit freight. The urban export-freight is that which originates from the urban centres but is destined for areas outside the urban centre. Most of the goods in this category include manufactured products like building materials, domestic durables, processed goods and other products manufactured by the industries in urban centres.

The urban import freight include those which have their origin from outside but terminates in the urban centres. These consist mainly of raw materials particularly cocoa, cotton, ground nut, food items (e.g. yam, gari, tomatoes, live stocks etc) which come from the rural areas. The third category is intra-urban freight which are goods that

have both origins and destinations within urban centres. The goods in this category include fresh vegetables produced in the adjoining area of urban centres, fresh fish produced in the local ponds and rivers within urban centres, assorted drinks, biscuits and some manufactured goods produced within an urban centres. The fourth category is urban-transit freight. These are goods that its origin and destination are not within urban centres but they are moved through urban centres and constitute part of freight flow in the urban centres. The goods in this category are agricultural products passing through an urban centre to another rural location.

FACTORS AFFECTING URBAN FREIGHT FLOW IN NIGERIA

The review of available literature on urban freight flow in Nigeria reveals that the following factors affect the flow pattern of urban goods in Nigeria.

(i) Location of Markets and Industries:

Movement of freight in urban centres in Nigeria particularly in Lagos is dictated by the location of markets and industries. This is because industrial centres and markets constitute major freight generating and attracting nodes in urban centres. For instance, Lagos has the largest number of urban markets and industries in Nigeria thus generating the highest volume of urban goods movement. Other cities where there is high concentration of industries such as Kano, Port Harcourt, Ibadan, Aba, Onitsha, Kaduna, Warri etc are likely to generate high volume of freight flow.

(ii) Location and Operation of Ports

A large volume of urban goods are generated and attracted by sea and airports in Nigerian cities. This is more evident in cities where sea ports are located. For instance, Lagos and Portharcourt generate and attract the highest urban freight flow in Nigeria. Nigeria's economy is import-oriented, thus, there is massive flow of goods out of its

seaports, and there are firstly destined to urban centres before they are redistributed to other locations. Apapa port complex and Tin Can Island Port in Lagos, Onne and PortHarcourt ports located in Port Harcourt constitute the major ports in Nigeria. Their sizes and scale of operation greatly affect the volume of goods generated by these two cities.

(iii) Modal distribution of urban goods

The modes of goods transportation available to urban centres in Nigeria affect the volume of freight flow. Ogunsanya (1984) has shown that freight generated by urban markets in Lagos are transported mainly by road. Table 12.2 shows transport modes for intra-urban freight in Lagos.

Table 12:2 Transport Modes for Intra-Urban Freight in Lagos

MODE	%
Road	96.10
Rail	3.7
Water	0.19
Air	-
Pipeline	-
Total	100

Source: Ogunsanya (1981)

In terms of means of transport, different types of vehicles are used for urban goods movement. The various means of urban goods transport are as listed in Table 12. 3.

Table 12.3 Means of Freight Movement

S/N	ROAD	RAIL	WATER	AIR
1.	Trailers	Goods Trains	Ships	Cargo Planes
2.	Lorries/Trucks	Goods/Passengers Trains	Berges	Helicopters
3.	Tankers		Ferry	Passengers Planes
4.	Delivery Vans		Lighters	
5.	Cars (Including Taxis)		Boats Canoes	
6.	Old Trucks (aje-igboro)			
7.	Bicycles			
8.	Hand Pushed Truck (omolanke)			
9.	Head Porterage			
10.	Burrow			

Movement of goods by air is limited to inter city flow especially as, goods transported by air are mainly for international and inter-regional movement. Rail which would have been very much useful and efficient in urban goods transportation in the country has been relegated due to its continued neglect in Nigeria. The current poor performance of Nigerian Railway system has given room for undue dominance of road mode in the movement of goods not only in inter-urban movement but also in intra-urban freight movement.

(iv) Population Concentration

The demand for goods is affected by the population of a place. The higher the population the higher will be the demand for goods and services in the urban centre. This is true of Nigerian urban centres, Lagos with the highest population generating in Nigeria generates the highest volume of goods and services. This is also true of cities like Kano, Port Harcourt, Ibadan and Kaduna. Apart from manufactured goods generated by industries in these cities, they also attract a large

volume of raw materials, food and agricultural products either for industrial inputs or for feeding of the populace. This is why all these factors must be taken into consideration when planning for freight transportation in Nigerian urban centres.

FREIGHT COST AND FREIGHT TRANSPORT

One of the major issues of concern in urban freight transport is the cost. The cost is viewed differently depending on the nature and type of interest groups affected.. As far as the operators of freight transport are concerned, freight cost is seen from the point of view of expenses incurred in providing freight transport service to the shipper. They are more interested in minimizing this type of costs and maximizing their profit.

However, to the shippers, freight cost is viewed from the amount spent in moving their goods from the origins to the desired destinations. This is a function of freight rates charged by their operators. On the other hand, the society and other users of transport facilities, would view cost from the point of view of delays, and environmental pollution caused by freight transportation.

The second aspect of freight cost is freight rate. This refers to the amount charged by the operators of freight transport for providing transport service to would be shipper. Available records show that freight rates charged for the movement of freight in Nigerian cities are determined by the size of goods, weight of goods, length of haulage, means of haulage, scale of operation, value of goods and fragility of goods to be hauled. Among these factors, weight of goods and distance of haulage as well as mean of haulage seem to be the dominant factors usually considered by the freight transport operators (Alokan 1990).

The costing of freight operation in urban centres are also determined by economic factors. Due to the state of Nigerian economy, most vehicles used in urban freight transport operation are fairly used ones popularly known as 'Tokunbo'. The reason for this, is that, the cost of brand new freight vehicles is too exorbitant for as average hauliers to afford.

Table 12.4 shows the prices of some selected freight vehicles in Nigeria as at year 2003.

Table 12.4 Prices of Some Selected Freight Vehicles in Nigeria

VEHICLE TYPES	COST OF FAIRLY USED	COST OF BRAND NEW
DAF 2800 (Trailer & Tanker)	N8,000,000	N20 Million
Peugeot 504 S/ Wagon Ordinary	N800,000	N1,722,000.00
Mini Bus	N900,000	N2,500,000
Motorcycle	N50,000	N120,000
Tricycle	N/A	180,000
Bicycle	4,000.00	N8,000.00

Source: Market Survey 2003

Table 12.4 shows that there is a wide gap between the prices of brand new vehicles and fairly used ones. This accounts for the continuous increase in the use of fairly used vehicles for freight operation in urban centres in Nigeria.

Apart from this, there are other expenses that are incurred by the operators which add to the cost of freight operation. In Nigeria, a typical cost of freight vehicle operation can be summarised as follows

- A) Vehicle Insurance (comprehensive 10% of truck value or merely a third party policy)
- B) Goods in Transit GT1 (Insurance 5% of goods value)
- C) Value licence = N1,750.00
- D) Road Worthiness Certificate = N1,000.00
- E) Withholding Tax = 5% of pay load income
- F) 2 Batteries = N13,000.00 (Six months life span)
- G) Admin/Over head Expenses = Depending on fleet size
- H) Interest on loan (21% per annual) some banks charge 30%
- I) Tarpaulin for coverage = N35,000.00

In Nigeria, truck life span is between 6 and 8 years for old and new respectively. This is against the international standard of 3 and 4

years. The implication of this is manifested in poor service delivery, high frequency of freight vehicle breakdown, obstruction of traffic flow on urban roads which consequently results into urban traffic congestion in many Nigerian cities.

ORGANISATION AND STRUCTURE OF URBAN FREIGHT TRANSPORT OPERATION

Urban freight transport operation in Nigeria is dominated by unorganised private individuals who organise themselves into various groups in different locations within the urban centres. For instance, in the South-Western Nigerian cities, they are popularly known as 'Ajeigboro'. The operators use old rickety vehicles such as pick-up vans, small lorries, trucks etc for their services. They operate from a fixed location, while prospective costumers usually look for them and hire them for haulage services.

The freight operators use available open space such as market centers, in any freight generating zone within the urban centers. Other centers include industrial zones and inter-modal terminals, like sea and airports. These open spaces are not necessarily motor parks, but operating bases where people who need their services contact them. Due to their unorganised nature, they sometimes obstruct the free flow of traffic. This type of operators are found in Lagos, Ibadan Abeokuta, Osogbo, Kano and many cities in the country.

The other group of urban freight operators are private organised companies. These companies include manufacturing haulage firms and construction companies who carry goods within urban centres. In case of manufacturing and construction companies, they use their vehicles to move goods to and from urban centres. The goods carried may be raw materials or finished products moved to the factory locations, markets, ware housing and construction sites.

For the haulage companies, they usually operate from their yards where customers contact them for hiring and charter services. Among these are Kalilih & Dibbo, Chanchangi, Panalpina and Dangote. According to Alokun (1986), there are over 2,375 haulage operating

companies in Nigeria. Out of this, Lagos alone has about 13%, followed by Benue State with 224 representing 9.4%. The state with the least number of haulage firms is Cross River with 22 number firms, representing only 0.9% of the total in the country.

The services provided by organised haulage companies are not limited to intra-urban freight movement, but also include inter-urban and rural-urban goods movements. Many of the operators in this category have their own private trailer/truck parks in cities for maintenance and haulage operation.

MANAGEMENT AND CONTROL OF URBAN FREIGHT TRAFFIC FLOW

One of the serious challenges facing urban managers and governments at the state level in the country is how to manage unprecedented high volume of vehicular traffic flow in urban centres. The emergence of a new democratic era coupled with national wage increase and its resultant increased socio-economic activities has worsened the traffic situation in Nigeria urban centres. Recently, passenger and freight vehicles have increased thus requiring the search for more effective traffic management measures to provide free flow of traffic on urban roads.

It has been observed that freight vehicles constitute the major component of traffic flow on urban roads in Nigeria especially in port cities like Lagos, Port Harcourt, Warri and other industrial cities like Kano, Ibadan, Aba etc. The need to decongest urban roads has led to the introduction of some traffic management measures, such measures which include the following.

- i. Restraining of truck movements during a particular period of the day
- ii. Banning of on-street parking of truck vehicles.
- iii. Provision of traffic control system
- iv. Installation of signalized traffic control system
- v. Use of Traffic Wardens

In spite of these, the problems remain unabated, thus, there is need for a more effective solution to urban traffic problems.

One major problem associated with managing and controlling freight traffic in urban areas is the absence or inadequacy of terminal facilities for loading and off loading of goods. A recent survey conducted by Transport World (2003) in Nigeria shows that, there are no organised parking facilities for freight vehicles in Nigerian cities; lorries trucks, trailer, tankers are usually parked along roadsides thereby obstructing traffic flow.

New freight traffic management measures in Nigeria should explore the possibility of providing organised parking facilities for good transportation in urban centres.

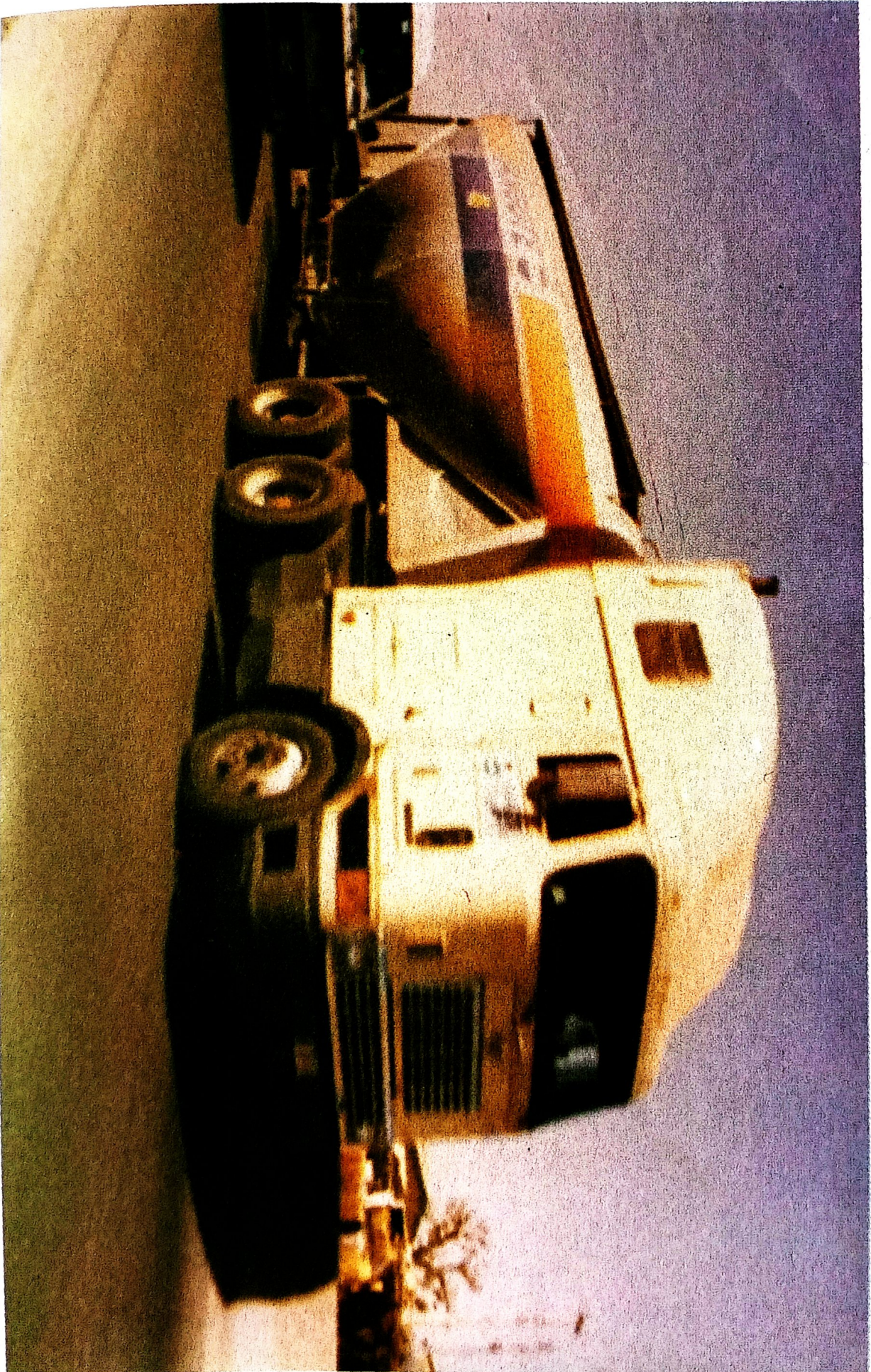
INTERGRATING FREIGHT INTO URBAN TRANSPORT PLANNING IN NIGERIA

The planning for transport in urban centres in Nigeria has also been based on sectoral and direct-attack approaches. These approaches usually have the disadvantage of being narrow in scope and eventually not very effective. For instance, in the last three decades, most planning efforts at solving urban transportation has always been on road passenger transport. There is no doubt that, with increased freight vehicular traffic in urban centres due to increased urbanisation and industrialization, there is the need to incorporate freight transport in the planning of urban transport system.

The attention of policy makers should not only focus on urban passenger movement but also on urban freight movement. Specifically, attention should be given to the following specific areas.

1. Land use planning.

The planning of land use and location of economic activities should be in such a way that there would be harmony between the land use and transport system. The traditional approach of concentrating economic activities in one place should be discouraged to create room



A Truck of the Dangote Transport, one of the leading logistics support companies in urban Nigeria.



Haulage & Warehousing in urban centres

for traffic diffusion. In other words, landuse planning and development should be carried out within a comprehensive transportation planning programme for Nigerian major cities.

2. Provision of Terminal and parking facilities:

As it has been observed earlier, freight vehicles are not given enough consideration in the planning and provision of transport facilities in most Nigerian urban centres. Most motorparks in cities are mostly for passenger boarding and disembarkment. It is very obvious, that allocation and building of organised freight vehicle parking facilities will reduce the menace of indiscriminate parking by operators of freight transport thereby improving traffic flow problems.

3. Urban Transport Policy.

Integration of freight transport in urban transport also requires that an effective and operational urban transport policy document should be put in place. The policy document should not only focus on addressing urban mass transit problems but also urban freight problems. This underscores the need for policy makers to look at the existing urban policy document, up date it and make it operational.

4. Research and Planning

More research works, that will not only provide information for planning but also provide a better understanding of the type and nature of urban freight transport problems should be carried out. This implies that there is need for increase in the funding of urban transport researches in the country to achieve this goal.

As it has been observed, trailers and trucks are the major means of freight conveyance. These, because of their weight, size and length, are often difficult to maneuver in urban centres and they cause serious delays and congestion problems. There is therefore the need for planning of modal coordination to enhance maximum utilization of routes

thereby minimizing congestion problems and ensuring an effective functioning of urban centres in the country.

CONCLUSION

This chapter has examined freight transport in Nigerian urban centers, its role in the functioning of urban system, issues and problems associated with its operation as well as the need to properly integrate it in the planning and development of urban transport system. The problem of scarcity of data and lack of effective planning requires that government both at national, state and local levels should fund research works on urban freight transport. This would not only provide information for planning, but also provide a better understanding of the roles played by transport and other components of the urban transport system.

Finally, it is therefore believed that increased government attention on urban freight transport planning and development would enhance the growth and development of Nigerian urban economy.

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