



ISBN: 978 125 161 1



JOURNAL OF LOGISTICS AND TRANSPORT
(Journal de Logistique et Transport)

Vol. 2, No. 1, 2010



JOURNAL OF LOGISTICS AND TRANSPORT



A PROFESSIONAL PUBLICATION

OF THE NIGERIAN INSTITUTE OF TRANSPORT
TECHNOLOGY (NITT), ZARIA

E-MAIL: officeofthedgnitt@yahoo.com

VOL. 2, No. 1, 2010

Journal of Logistics and Transport
Nigerian Institute of Transport Technology (NITT)
Zaria, Nigeria



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THE NATURE AND DIMENSION OF URBAN MOBILITY PROBLEMS IN NIGERIA

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Abstract

The paper has so far examined the nature and dimension of urban mobility problems as they relate to Nigerian cities and the underlying causes of these problems. Through this, it is revealed urban mobility problems in Nigeria are quite numerous and complex in nature. The paper therefore identifies some measures that could be adopted by the governments at various levels to tackle the problems. It is finally concluded that efforts towards solving urban mobility problems should be a coordinated one through a deliberate policy action, that will involved all the stake holders in the sector.

Introduction

Cities are centres where socio-economic activities agglomerate. They are complex spatial structures created and sustained by transport systems. All over the world, the historical development of cities is closely associated with the history of transport system. No wonder Pederson (1980) asserts that cities are creatures of transport system. Ogunsanya (2003) further observed "that transport is the maker and breaker of cities". According to him, transport makes cities the same transport also sustains cities. As much as transport brought about emergence of cities as we have them today, the same transport could also become a major factor of cities' destruction and stagnation if they are not effectively planned and managed.

Therefore, effective functioning of cities depends largely on the efficiency of transport systems. In other words, urban productivity is

highly dependent on the efficiency of its transport system to move labour, consumers and freight between multiple origins and destinations.

Today, numerous problems bedevilled cities resulting from the development and operation of transport system, which was in the first instance the basis for its emergence. Cities transport problems are diverse, some problems are ancient, like congestion which plagued cities such as Lagos, Port Harcourt, Ibadan etc., while others are new like urban freight distribution or environmental impacts. Among the most notable urban transport problems are, traffic congestion, parking difficulties, inadequate public transport, difficulties for pedestrians, loss of public space, accidents and safety, environmental problems, land consumption and freight distribution accessibility and mobility problems

In this paper, our attention is more focus on looking and the nature and dimension of mobility problems in Nigeria cities. In trying to do this, we have attempted to look at the concept of mobility and accessibility, the global perspective of urban mobility problems, their main causes, the best practice of managing urban mobility and policy actions required for managing mobility problems in Nigerian cities.

Concept of Mobility and Accessibility

Mobility is defined as the ease or difficulty with which people and goods in an area can move from one place to the other. It has been identified as of one the measures for determining the quality of transport system. The twin concept of mobility is accessibility, which is defined as the "ease access" to a location or activity. It has to do with how people in cities are able to access various centres of economic and social activities. In trying to improve accessibility of a city, a strategy of improving mobility of the people may be the answer. However, it is also possible to increase accessibility without improving the existing transport system especially when there is improvement in the location and or quality of facilities. For example, provision of modern marketing facilities can improve the level of people's access to markets.

Since economic activities are of necessity spatially located, bridging the spatial gap therefore requires efficient and effective transport system. The increased population and economic activities as well as increased

motorisation level in many cities across the world has made issue of urban mobility a crucial issue.

The Nature and Dimension of Urban Mobility in Nigeria

The problems of urban mobility are diverse depending on the size and the scale of socio-economic activities of city and the level of urban transport development. The problems can be manifested in different forms, they include the following

- **Traffic congestion and parking difficulties.** Traffic congestion occurs when transport demand exceeds transport supply at a specific time in a specific section of traffic corridor. Congestion is one of the most prevalent transport problems in large urban agglomerations. It is particularly linked with motorization and the diffusion of the automobile, which has increased the demand for transport infrastructures. However, the supply of infrastructures has often not been able to keep up with the growth of mobility. Since vehicles spend the majority of the time parked, motorization has expanded the demand for parking space, which has created space consumption problems particularly in central areas. The spatial imprint of parked vehicles is significant. Plate 1 shows a traffic congestion situation in a Nigerian city



Plate 1 Traffic congestion in Kaduna city

- **Public transport inadequacy.** Many public transit systems, or parts of them, are either over or under used. During peak hours, crowdedness creates discomfort for users as the system tries to cope with a temporary surge in demand. This is typical of major cities like Lagos, Abuja Port Harcourt, Ibadan, Kaduna and Kano. Low ridership makes many services financially unsustainable, particularly in suburban areas. The inability of state owned urban mass transit to break even in many cities in Nigeria make them to abandon the city service to inter-city services. In spite of significant subsidies and cross-financing (e.g. tolls) almost every public transit systems cannot generate sufficient income to cover its operating and capital costs.
- **Difficulties for pedestrians.** These difficulties are either the outcome of

intense traffic, where the mobility of pedestrians and vehicles is impaired, but also because of a blatant lack of consideration for pedestrians in the physical design of transport facilities. Most Nigerian cities highways do not have adequate provision for pedestrian traffic. Pedestrian walk ways are practically absent, no segregation between vehicular and pedestrian traffic. In many cities zebra/ pedestrian crossing are not provided to remove vehicular- pedestrian conflict. Where they are available there is no proper orientation for their uses. Plate 2 shows conflict situation often occurs between pedestrians and vehicular traffic in many city highways in Nigeria.



Plate 2 vehicular-pedestrian conflict in Kasuwa area in Kaduna City

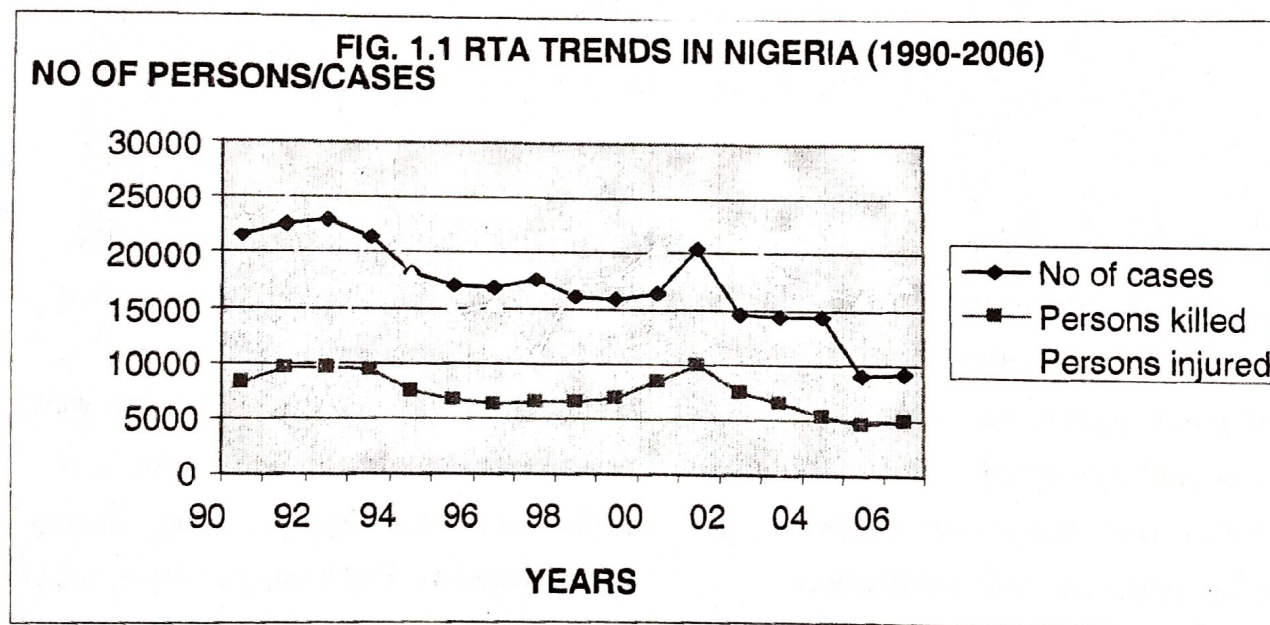
- **Loss of public space.** The majority of roads are publicly owned and free of access. Increased traffic has adverse impacts on public activities which once crowded the streets such as markets, parades and processions, games, and community interactions. These have gradually disappeared to be replaced by automobiles. In many cases, these activities have shifted to shopping malls while in other cases, they have been abandoned altogether. Traffic flows influence the life and interactions of residents and their usage of street space. More traffic impedes social interactions

- and street activities. People tend to walk and cycle less when traffic is high.
- **Environmental impacts and energy consumption.** Pollution, including noise, generated by circulation has become a serious impediment to the quality of life and even the health of urban populations. Further, energy consumption by urban transportation has dramatically increased and so the dependency on petroleum. The implication of increased fossil fuel consumption is very great on the environment, the need to reduce this impact bring about various global research efforts towards alternative energy sources

that are more environmental friendly such as biodiesel.

- **Accidents and safety.** Growing traffic in urban areas is linked with a growing number of accidents and fatalities, especially in developing countries. Accidents account for a significant share of recurring delays. As traffic increases, people feel less safe to use the streets. In Nigerian cities accidents are common due

to poor road design, poor road condition and poor driving behaviour of motorists as well as lack of proper regulation of urban transport system. The road accidents' records in Nigeria show that majority of the reported cases of accident take place in cities. Figure 1.1 shows road traffic accident trend in Nigeria between 1990 and 2006.



- **Land consumption.** The spatial consumption of transportation is significant, particularly for the automobile. Between 30 and 60% of a metropolitan area may be devoted to transportation, an outcome of the over-reliance on some forms of urban transportation. Yet, this land consumption also underlines the strategic importance of

transportation in the economic and social welfare of cities.

- **Freight distribution.** Globalization and the materialization of the economy have resulted in growing quantities of freight moving within cities. As freight traffic commonly shares infrastructures with the circulation of passengers, the mobility of freight in urban areas has become

increasingly problematic. City logistics strategies can be established to mitigate the variety of challenges faced by urban freight distribution. The freight distribution problem is a serious one in city like Lagos particularly along main traffic corridors. Lagos being the economic city of the country over 50% of freight vehicles have either their origin or destination in Lagos.

- **Poor traffic management system.** One major challenge to effective urban mobility in Nigeria is ineffective traffic management system. The existing traffic management put in place in many Nigerian cities are mainly manual and erratic policing of motorists, which are not effective especially in big conurbations like Lagos, Ibadan, Port Harcourt, Abuja Kaduna and Kano. The use of traffic wardens instead of traffic signals in managing intersections and absence of traffic management centres in all the cities in Nigeria are some of the reasons for ineffective control of traffic in Nigerian cities. Furthermore, there is inadequate monitoring of traffic, traffic information and education are practically absent.
- **Lack of policy on urban transport.** The major underlying factor of urban mobility problems in Nigeria lies on the lack of government's clear cut policy direction on the development and management of urban transportation. Most government

actions on urban transportation are disjointed and not based on well articulated set goal and objective. This is the reason for uncoordinated activities witnessed in the urban transport sub sector in the country.

- **High cost of urban transportation.** Due to numerous problems highlighted, the cost of mobility in many Nigerian cities is highly exorbitant. The high cost urban mobility has adverse effects on income of urban residents as well as on the prices of goods and services provided in cities.

Many dimensions to the urban transport problem are linked with the dominance of the automobile.

Automobile Dependency

Automobile use is obviously related to a variety of advantages such as on demand mobility, comfort, status, speed, flexibility, door to service and convenience. These advantages jointly illustrate why automobile ownership continues to grow worldwide, especially in urban areas. When given the choice and the opportunity, most individuals will prefer using an automobile. Several factors influence the growth of the total vehicle fleet, such as sustained economic growth (increase in income and quality of life), complex individual urban movement patterns (many households have more than one automobile), more leisure time and

suburbanization. Therefore, rising automobile mobility can be perceived as a positive consequence of economic development. This is evident in Nigeria especially in the last one decade of the democracy in which there has been appreciable increase in the national wages and salaries. The increase in the Nigerian workers' income has impacted positively on the car ownership level in the country particularly in cities.

The acute growth in the total number of vehicles also gives rise to congestion at peak traffic hours on major thoroughfares, in business districts and often throughout the metropolitan areas.

Cities are important generators and attractors of movements, which have created a set of geographical paradoxes that are self-reinforcing. For instance, specialization leads to additional transport demands while agglomeration leads to congestion. Over time, a state of automobile dependency has emerged which results in a diminution in the role of other modes, thereby limiting still further alternatives to urban mobility. In addition to the factors contributing to the growth vehicles, two major factors contributing to automobile dependency are:

- **Underpricing and consumer choices.**

Most road infrastructures are subsidized

as they are considered a public service. Consequently, drivers do not bear the full cost of automobile use. Like the "Tragedy of the Commons", when a resource is free of access (road), it tends to be overused and abused. This is also reflected in consumer choice, where automobile ownership is a symbol of status, freedom and prestige, especially in developing countries. Single home ownership also reinforces automobile dependency.

- **Planning and investment practices.**

Planning and the ensuing allocation of public funds aim towards improving road and parking facilities is an ongoing attempt to avoid congestion. Other transportation alternatives tend to be disregarded. In many cases, zoning regulations impose minimum standards of road and parking services and de facto impose a regulated automobile dependency.

There are several levels of automobile dependency, ranging from low to acute, with their corresponding land use patterns and alternatives to mobility. Among the most relevant indicators of automobile dependency are the level of vehicle ownership, per capita motor vehicle mileage and the proportion of total commuting trips made using an automobile. A situation of high automobile dependency is reached

when more than three quarters of commuting trips are done using the automobile.

For instance, in the United States, this proportion has remained around 88% over the recent decades. Automobile dependency is also served by a cultural and commercial system promoting the automobile as a symbol of status and personal freedom, namely through intense advertising and enticements to purchase new automobiles. Not surprisingly, many developing countries perceive motorization as a condition for development. Even if the term automobile dependency is often negatively perceived and favored by market distortions such as the provision of roads, its outcome reflects the choice of individuals who see the automobile more as an advantage than an inconvenience.

The second half of the 20th century saw the adaptation of many cities in North America and Europe to automobile circulation. Motorized transportation was seen as a powerful symbol of modernity and development. Highways were constructed, streets were enlarged, and parking lots were set often disrupting the existing urban fabric with the creation of motorized cities. However, from the 1980s, motorization started to be seen more negatively and

several cities implemented policies to limit automobile circulation, at least in specific areas, by a set of strategies including:

Urban Mobility Management (UMM)

The need to tackle numerous urban mobility problems has been recognised globally. This need brought about the development of a new area of research interest and emerging thoughts on how best to tackle urban mobility problems facing many cities across the globe. These new ideas and thoughts result into what is now known as urban mobility management. Urban Mobility Management is the application of strategies and policies to reduce travel demand (specifically that of single-occupancy private vehicles), or to redistribute this demand in space or in time. In some countries like United State of America it is referred to as **Transport Demand Management (TDM)**.

Objectives of UMM

UMM has to do with how best to move people, goods and services in cities. It is meant to achieve the following objectives

- Remove delays and traffic congestion
- To minimise monetary, social and environmental cost
- To provide sustainability
- Promote equity

- Promote safety and security
- Taking care of the disadvantaged groups
- Increase access to public transport in cities

Measures for Solving Urban Mobility Problems

- **Dissuasion.** Although automobile circulation is permitted, it is impeded by regulations and physical planning. For instance, parking space can be severely limited and speed bumps placed to force speed reduction.
- **Prohibition of downtown circulation.** During most of the day the downtown area is closed to automobile circulation but deliveries are permitted during the night. Such strategies are often undertaken to protect the character and the physical infrastructures of an historical city. They do however, like most policies, have unintended consequences. If mobility is restrained in certain locations or during certain time periods, people will simply go elsewhere (longer movements) or defer their mobility for another time (more movements).
- **Tolls.** Imposing tolls for parking and entry (congestion pricing) to some parts of city has been a strategy being considered seriously in many areas as it confers the potential advantage of congestion mitigation and revenue

generation. Most evidence underlines however that drivers are willing to bear additional toll costs, especially when commuting is concerned since it is linked with their main income. Example of this is recent legal tussle over the collection of toll on Badagry expressway by Lagos State Government

- **Ramp metering.** Controlling the access to a congested highway by letting automobiles in one at a time instead of in groups. The outcome is a lower disruption on highway traffic flows.
- **Traffic signal synchronization.** Tuning the traffic signals to the time and direction of traffic flows. This is particularly effective if the signals can be adjusted on an hourly basis to reflect changes in commuting patterns.
- **Incident management.** Making sure that vehicles involved in accidents or mechanical failures are removed as quickly as possible from the road. Since accident on average account between 20 and 30% of all the causes of congestion, this strategy is particularly important.
- **Carpooling.** Concerns two issues. The first and most common is an individual providing ridership to people (often co-workers) having a similar origin, destination and commuting time. Two or more vehicle trips can thus be combined into one. The second involves a pool of vehicles (mostly cars, but also bicycles)

that can be leased for short durations when mobility is required. Adequate measures must be taken so that supply and demand are effectively matched.

- **HOV lanes.** High Occupancy Vehicle (HOV) lanes insure that vehicles with 2 or more passengers (buses, vans, carpool, etc.) have exclusive access to a less congested lane, particularly during peak hours.
- **Congestion pricing.** A variety of measures aimed at imposing charges on specific segments or regions of the transport system, mainly as a toll. The charges can also change during the day to reflect congestion levels so that drivers are incited to consider other time periods or other modes.
- **Public transit.** Offering alternatives to driving that can significantly improve efficiency, notably if it circulates on its own infrastructure (subway, light rail, buses on reserved lanes, etc.) and is well integrated within a city's development plans. However, public transit has its own set of issues (see next section).
- **Promotion of bicycle paths and cycling for urban mobility.** The promotion of bicycle as a means of urban mobility is one of the recent measures for managing mobility problems in many European cities. Apart from reducing traffic congestion, bicycle has an advantage of promoting

urban environment quality and public health. As matter of urgency cities' roads should be redesigned to provide cycling paths and parks In addition to this, a deliberate policy should be adopted to promote the use of bicycle for urban mobility

- **Odd and even numbering** In Mexico City, vehicle use is prohibited according to license plate numbers and the date. This same was adopted in Lagos in the 80s. This could achieve the desired result as affluent families have circumvented the rule by purchasing a second vehicle, thus worsening the existing situation. Singapore is the only country in the world which has successfully controlled the amount and growth rate of its vehicle fleet by imposing a heavy tax burden and purchasing permits on automobile owners.

Conclusion

Urban mobility problems in Nigeria are quite numerous and complex in nature. One particular measure is not likely to suffice to solving these problems, but rather a combination of measures. In addition, research interest in urban mobility should be promoted by government to provide useful information on various aspects of urban

mobility issues and problems in Nigeria. Not only that, government at various levels needs to be involved in the planning and management of urban mobility. Finally, efforts towards solving urban mobility problems should be a coordinated one through a deliberate policy action that will involve all the stake holders in the sector.

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