PRIVATE OPERATION OF PUBLIC BUS SERVICES: THE CASE OF METROPOLITAN LAGOS, NIGERIA.

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DEDICATION.

This thesis is dedicated to the glory of God in WHOM I put all my trust, to Oluwatoyin my dear wife and Abiola my darling daughter, for their understanding, support and encouragement, to my mother Maria Badejo for her untiring motherly care all these years and finally to the passengers of private sector operated buses in Lagos metropolitan.

ABSTRACT OF THE THESIS

In Lagos, urban public transportation, is operated by both the public and private sectors. But most studies on this subject in the city is dominated by the activities of the public sector, with complete disregard for the private sector. This thesis therefore, is about how public transport bus services are operated by the private sector in metropolitan Lagos.This is to minimise the gap in the existing information about this sector in urban public transport services of the city. Moreover, such study, about the activities of the private sector is long overdue especially for two very recent reasons; (i) the privatisation policy objective of the present military administration, is aimed at encouraging private entreprise in public transport provision, and (ii) for the fact that this sector accounts for 97% of passengers moved by bus mode in the city. All suggests for the need for an up to date study about the activities of the private sector in public transport provision in Lagos. Since little information exists in concrete forms about the activities of this sector, this thesis sets out to examine the structure, operational characteristics and the quality of services which they provide for passengers using their services in Lagos metropolitan.

In examining the structure of operators in this sector, the study identified two major categories of operators; the individual and the limited liability company. The individual form of operator is further made up of (i) owner - operator, (ii) non owner driver, while the limited liability company, is made up of (i) hire or rental and (ii) company.These forms of operators identified by this thesis have tremendous effects on how public transport is operated in the city. Especially by subjecting public transport services which they provide to disruption and unreliable. The findings in their operation of bus services, again show that there is a decline in the number of buses registered for public transport by this sector. Furthermore, the method of finance in this sector is dominated by the hire purchase agreement reached between the bus dealer and the bus owner. This method of finance is again very informal since no documents are exchanged between the various partners involved. It also explains why public transport in this sector is very crude and unsafe, because the hire purchase aggreement reached between the two parties make public transport operation difficult for the bus owner and subsequently affect the passengers who rely on them for movement. Route shifting and short turning are major attributes in the manner which this sector operate along approved bus routes. Travel fare are often raised by the operators and the more affected are the passengers on longer journeys. Arbitrary increase of travel fare by the operators is often used as a measure to dissuade passengers from overcrowding and

overloading their buses, since demand for their buses is far higher than supply. Therefore overcrowding at bus stops and overloading of buses are common scenes at bus stops and in buses operated by this sector in Lagos respectively. The study again, shows that the quality of bus services which this sector provide to users are deplorable and unsatisfactory. The indices used for measuring the quality of services in this thesis reveal that there is no schedule bus service operated by any bus operator in this sector, buses are not in good condition, they are overloaded and overcrowed. Ticketing method for travel fare collection is apparently absent, and the duration of bus service is unspecified since operation varies.

However, the study concludes that this sector despite its unsatisfactory and unreliable services, will dominate public transport provision in the city for quite sometime in the city and therefore suggests that for any meaningful solution on public transport in Lagos, the activities as well as the problems facing this sector need to be well addressed by the state which this thesis focussed . In other words, the state need to accept the role of this sector not as supplementary rather as complementary to its public sector counterpart. Hence, operators in this sector should be provided with institutional and financial support where need be and be integrated into the conventional public transport scheme enjoyed by the government owned public transport operator.

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NOTE ON ABBREVIATIONS

CLPA: Central Licencing and Parking Authority.

LASG: Lagos State Government.

LSTC: Lagos State Transport Corporation.

MTD: Motor Traffic Division.

NPF: Nigerian Police Force.

NURTWN: National Union of Road Transport Workers of Nigeria.

PAYE: Pay As You Earn.

RSTF: Road Safety Task Force.

RTEA: Road Transport Employers Association.

RTOA: Road Transport Owners Association.

TIU: Traffic Inspection Unit.

Naira : Nigerian currency.

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BAMIDELE BADEJO.

"Bus services play an important part in the economy of our towns and cities and in the lives of many of their citizens. They need to operate efficiently, so they can provide service to users at a price they and the country can afford."

Rt. Hon. Norman Fowler. M.P. (1981).

CHAPTER ONE.

INTRODUCING URBAN PUBLIC TRANSPORT AND RESEARCH OBJECTIVE.

1.1 INTRODUCTION.

The urban public transport industry has grown up on the basis of providing a service to the public. It began over 150 years ago with horse buses and later horse trams. The electrification of the tram ways around the turn of the century led to an enormous expansion of services and the development of today's towns and cities. After the first world war in 1919, the bus gained in importance until today, it is the major form of public transport throughout the world. (United Nations, 1985; Owen, 1988). This thesis is about urban public passenger transport buses in a developing country. Precisely, the study concentrates in the aspect of private operation of public transport bus service in Lagos metropolitan city of Nigeria.

By way of introduction, this chapter discusses the rationale for urban public transport generally, the salient issues involved in public transport operation and links it to the main research questions addressed in the thesis. In doing this, it examines the basic role of public transport and the principal benefits of public transport operation. Furthermore, the chapter presents the research problems, aims and objectives of the thesis as well as the organisational plan for the entire thesis. Firstly, however a few words about the definitions of vital terms used in this study may be in order, so as to clarify them at an early stage of the discussion that follows in the whole thesis.

1.2 DEFINITION OF OPERATIONAL TERMS USED IN THIS THESIS.

1.2.1 Public Transport: is often defined as a system whereby passengers and goods are carried by either private or public carriers for money. (Adeniji, 1984). It may be described as a common carrier for hire and reward purpose. (Nash, 1982). In another dimension, and more narrowly, public transport has been described as a vehicle licensed to provide stage carriage services. (Bus and Coach, 1984). This is a universal statement which represents

how public transport systems are licenced all over the world to operate their services. This is more so because any other type of transport not licenced as stage carriage is often regarded as private or personal transport. This view suggests the major distinction between private transport and vehicles used to provide public transport services. (O'Flaherty, 1969).

Apart from the type of registration which differentiates private transport from that of public, very often, public transport operation is supported by law or statute. (Hobbs, 1974, Bus and Coach Council, 1984). This further subject vehicles providing public transport services to additional regulations and organisational framework under which they are to operate.

This study, has declined to adopt the stand point that any vehicle used for hire and reward should be regarded as public transport, including vehicles not registered as stage carriages. This is because of the ambiguity which this view presents about the subject matter in the study area selected for this thesis. In this study therefore by stage carriage, it implies vehicles such as buses that have fixed routes and are available to the general public at a price. In the case of the taxi, it has no fixed routes, and the fare varies accordingly, hence it is not incorporated into this study. In other words, this thesis is concerned with vehicles used for hire and reward, registered as stage carriage (but operating or expected to operate on fixed bus routes) and supported by Law of the country. This therefore remove the informal public transport operators, as well as the taxi cab operators from the various arguments to be highlighted throughout in the thesis.

1.2.2 Public Transport Bus: The main focus of this thesis is on bus. It is therefore right at this point to discuss what is meant by public transportation by bus. It is a large motor coach or vehicle for carrying many passengers, usually along a regular route. The difference between a public transport bus and a taxi cab is in the number of passengers they can carry at a time. While the bus can carry many passengers the taxi often carry less. In this thesis, vehicle that carry more than six passengers is regarded as a bus and vehicle carrying less than this number is regarded as a taxi cab.

Furthermore, taxi cab differs from the bus even though they are both licensed as stage carriage and to operate public transport services. A taxi cab, is a motor car in which passengers are carried for a fare on a meter. Such fares appearing in the meter are not fixed and the route which they can operate is flexible. Whereas, in the case of the public transport bus, its route is fixed and not flexible, and its fare is also fixed. There is no taxi cab in Lagos that operates a meter system. This means that taxi cabs in Lagos do not display any meter in

their cabs and travel fare by taxi in the city is not determined by the amount shown in the meter. For instance, the taxi cab has no limit to where it can go or travel to in the city, but the public transport bus is restricted to a route where it can only operate. This route is often described as bus route, which is fixed. While it is not mandatory for the taxi cab to stop at every bus stop to pick up passengers, it is compulsory for the public transport bus except in the absence of passengers willing to alight from the bus or enter it. All these attributes along with many to be discussed later in this thesis have brought out a pattern that is only common to public transport bus operation.

In any event, there are different types of buses, this classification of buses is often based on the number of passengers they can carry at a time. Hence, there are minibuses which are the smallest size of all, the midi bus, and big bus and the omni bus. There are also articulated buses. All these briefly mentioned will be discussed extensively later in this thesis.

1.2.3 Public Transport Bus Operators: There are basically two forms of bus operators frequently referred to in this study. These are; (i) The government owned public transport operator, which is interchangeably used as 'public - public transport operator' or 'public transport operator in the public sector'. They all mean the same thing. (ii) Public transport services provided by the private sector. In this thesis they are often described as 'public transport operator in the private sector' or as 'private -public transport operator'. These expressions have been used in this thesis interchangeably to imply the same thing.

Finally, the terms used in this thesis have tried to avoid the controversy over their universal applicability. Suffice to say that they have been evolved and adopted for this study on the bases of the nature of information available for the research especially when due consideration about the study area has been reviewed.

1.2.4 Ownership and Operator: In some literatures concerning public transportation, the terms 'ownership' and 'Operator' are not used to imply the same thing. For instance, the owner of the public transport bus might not be the operator of the bus. Hence, the difference can be seen. But in this thesis, both the bus owner and the bus operator, are used interchangeably to mean the same thing as no distinction seems to exist between ownership and operator in the study area. Again, it is often very difficult to exhibit a situation where the owner do not interfere with the operation of public transport services in the city of Lagos.

1.3 THE ROLE OF PUBLIC TRANSPORT.

Our towns and cities have grown up around their public transport systems. But the changes in lifestyles and patterns of development together with the increase in car use, have reduced the visible contribution that public transport makes to urban mobility. Nevertheless, buses, taxis and trains used for public transport purposes continue to play a major role in urban life --- one that is complementary to the car.

People of any society have a requirement for mobility and the function of public transport is therefore to enable people without access to private transport of their own to satisfy those economic and social needs which cannot be fulfilled within walking distance. And also to provide an alternative to people with personal or private transport where, for physical and or economic reasons unrestricted personal transport use cannot be accommodated, or is undesirable for social, environmental and or safety reasons. (Addenbrooke, 1983; White; 1986 and O' Flaherty, 1969).

All people have similar needs to get to work, to shops and leisure pursuits. Even in the high car ownership areas there are many who rely, some or all of the time on public transport for their journey. Hence, the needs of the bus must be planned together with the provision of all other services, especially that of the household characteristics and car ownership ratio. (Bruton, 1974; Cresswell, 1981; Owen,1988 and Hobbs, 1974).

In another dimension, long term prospects for traditional fuel supplies seem likely to be limited. Increased costs or reduced availability may well demand changes in travel modes. To change to new forms of fuel will be both expensive and have lengthy time scale to achieve. The transition between existing and future technologies implies greater reliance or dependence on public transport which is inherently more energy efficient. (Bus and Coach Council, 1984).

It is a world wide view that the major source of environmental pollution especially in urban areas is derived from vehicle emissions as a result of combustion. The environmental effects of these emissions can be reduced if more personal car owners are encouraged to use public transport. This general reduction in the effect of vehicle emission on the environment is due to the withdrawal of more vehicles from the road. Public transport system is more energy efficient than the private car and can as well carry more people at once than the car can offer.

However, public transport will only be capable of meeting its new demand if the pattern of trips is understood and the basic infrastructural facilities

are provided to enhance efficient operation. In essence, the importance of public transport in any society cannot be overemphasised. But the role of public transport cannot be respected unless the magnitude of those who rely on the services are numerous to justify its provision. This is so because public transport provision is both labour and capital intensive.

1.4 DEMAND FOR PUBLIC TRANSPORT.

Demand in economic terminology, is the willingness and ability to pay a sum of money for some amount of a particular good or service. (Lipsey, 1976; Samuelson, 1972). For instance, someone who wants to visit a friend must be able to provide the means of getting there, either by using private or public transport. (i.e. effective demand). The demand for public transport, derives from the needs of people to travel from one place to another to carry out the activities of their daily lives and where the only available means of achieving this is by using public transport.

It is necessary to explain the demand aspect for public transport in any community be it developed or developing. In developing countries many urban dwellers cannot afford the cost of buying their own private or personal vehicle because of the high cost of buying one. Again, in a situation where some could afford to buy one, the vehicle may not be available for the journey for some basic reasons. For instance the vehicle may be under repairs, traffic restrictions, unsafe to use the vehicle or probably the owner of the car cannot drive etc.

Furthermore, many urban dwellers in less developed countries earn very low income and as such cannot afford to buy a vehicle of their own throughout their lifetime. Since there is no means of having a vehicle of their own, such people have to rely on public transport to satisfy their travel needs which cannot be overcome through walking most of the time. It is this group of people that generally constitute the bulk of the urban population. It has become a more complex issue in the developing world where urban poverty is extremely high. Hence, the reliance on the use of public transport in this part of the world is becoming greater. (Habitat, 1983 and Maunder, et al, 1986).

Again, many urban activities are not located in one place and there is an increasing need for people to travel to work, school, shopping and other places in the city so as to satisfy their daily needs. To overcome the distance separating them from their activity, requires the use of a particular means of movement, and those without a personal vehicle must make use of the public transport for such journey. (Ola, 1974 and Ogunsanya, 1986). Where the separating distance is great the reliance will be more on the use of public transport than walking.

(Black, 1979). This is not to say that the Los Angeles situation whereby every body seems to own a car and can go everywhere is the ideal.

This general discussion about demand for public transport tends to support the many views that have been raised in public transport related studies about demand for public transport. The works of Bruton, (1985), for instance, are very relevant to this discussion. Bruton (1985, p.15), relates demand for movement to :-

(i) the location of the home, work place, shopping, educational and other activities in space;

(ii) the nature of the transport system available such as the modal splits, private and public transport, fleet sizes etc. and;

(iii) the demographic and socio- economic characteristics of the population.

Of all the three factors that affect the demand for public transport the most important, is the demographic and socio - economic characteristics of the people in the community. The main issues in the demographic and socio - economic characteristics that affect the demand for public transport as identified by Bruton (1985) and other studies, (Adeniji, 1981), are population size, population structure by age and sex, household size, structure and formation rate. Others include the size and structure of the labour force, income level and socio - economic status as indicators that could be used to determine, predict and possibly understand or explain demand for travel within the community.

One major inference resulting from the above discussion is the possibility of identifying the spatial distributional aspect of demand, the socio - economic aspect of demand and the temporal aspect of demand for public transport. The spatial aspect of demand for public transport suggests that in some parts of a city system, the demand for public transport is greater in one area of the city than others. For instance, in the low income residential areas of any city the demand for public transport is normally higher, because city dwellers with low income tend to use public transport than those in the high income level. This view is more particularly true of the developing countries, than in the developed country where some studies have shown that the use of public transport in the developed world cuts across all income groups. (Bus and Coach, 1982). The issue of temporal aspect of demand implies that the demand for public transport can be higher at a particular time of the day than another time. In other words demand for public transport at any time of the day is not the same. Generally it has been established that there is greater demand

for public transport for work and school purposes. (Olayemi,1976, Zahavi, 1979, Walters, 1979 and Jacobs, et al, 1982).

This further, raises the issue of peak periods since it has been observed that the demand for public transport seems to be greater at a particular time of the day for meeting some particular travel needs. The term peak period in public transport operation simply implies a particular period of the day when the passenger demand for public transport service is at the greatest. (Nash, 1976 and Bell, et al ,1983). It also represents the period when there are more people to be transported at the same time. It is this period that many public transport operators also brings out more vehicles into operation so as to cope with the demand for their services. Because of the high demand for public transport at this time of the day followed by a very sharp decline for the service the term peak period and off peak period demand for public transport use has evolved overtime. (Bell et al, 1985; White, 1986 and Senior, 1983). Subsequently, two major peak periods have been identified in the process of meeting these daily travel needs. These two peak periods are the morning peak and the evening peak periods. The morning peak, coincides with the period when workers and school children are going to resume work in their various offices or place of work and school children going to resume classes. Again the evening peak falls within the closing time of workers when they are returning homes. During these peak periods traffic movement is generally slower than the off peak periods. Depending on the time when people resumes and closes at work place the peak period for the morning extends from 0630 - 10.00 hours while the evening peak ranges within 1530 - 1900 hours. (Thomson, M.J, 1977). There are more buses in operation during the peak periods than during the off peak period (Bell, et al, 1985). The off peak period is the time which does not fall into the category when the demand for public transport is very great.

Nonetheless, the demand for public transport in the developing countries is very great. This is as a result of many people falling within the low income level. Hence, the tendency of owning a personal car seems unrealistic. Furthermore, the available modes for public transport are very limited and few. Very few cities of the developing countries make use of trains as intra city public transport mode except for intercity service. (Fouracre and Maunder, 1987). The public transport mode dominating this part of the world is the bus system, especially the paratransit or intermediate transport. (Fouracre and Maunder, 1987). By contrast, in the developed communities there are numerous urban public transport modes available for the passenger to choose from. They

transport operation which is government owned and sponsored). This led to the encouragement of the private sector to participate in the provision of public transport services. (Adeniji, 1981; Adenle, 1984 and Pope, 1985). In allowing the private sector to participate in the provision of public transport services, different types of public transport vehicles are used.

Studies about the activites of the private operation of public passenger transport services are very scanty in the developed countries. This has to do with the system of public transport provision and organisation in many of these countries, where public transport provision for passengers is regarded as the sole responsiblility of the government and competition is only allowed to the bearest minimum. This probably accounts for the low level of information about the situation of the private sector involvement in public passenger transport system and that of the informal sector. (This situation is rapidly changing now due to the corresponding changes that have taken place in the economic policies of the affected countries which are now focussing on privatisation or deregulation).

It is important to distinguish between the private sector public transport operator and the informal sector. The regulated private public transport operators in developing countries can be described as formal while the unregulated and unlicensed public transport operator can be categorised as informal. Their informality is derived from the fact that they are unlicenced to provide public transport service in the city.

In some developing countries like Ghana, Ivory Coast and India where the demand for public transport are high, and the ability to cope with the demand is low the informal sector has prospered. One major attribute that seems to be common among informal private public transport operators in Kuala Lumpur (Malaysia), for example is that many of them operate during the peak periods and provide their services along city peripheries.(Pope, 1985).

In the developing countries the activities of the private sector in urban passenger transport operation are known to far more exceed that of the public sector (government owned) especially the bus mode. (Adeniji, 1983, 86 and Heraty, 1985 and Pope, 1985 and Anderson, 1988). Despite the dominance of the private sector over the government owned in terms of fleet numbers and spatial coverage, little is known about their activities until recently.

This is partly why this research study is focussing on the operation of urban public transport bus services provided by the private (formal) sector in a city of a developing country, where such activities of the private sector bus system dominate.

1.5 SUPPLY/ PROVISION OF URBAN PUBLIC TRANSPORT.

The patterns of demand for public transport described in the preceding section can best be perceived against the background of the patterns of supply. In this section the principal issue that is being examined is that of public transport provision.

In economic terms, demand to a greater extent determines the level of supply as well as how supply of the services can best be distributed over space geographically. Therefore the demand for public transport in any city will determine the extent or the number of public transport services that can be provided all other things being equal. Furthermore, the intensity of demand also indicates the form of public transport system or mode that can best be adopted or developed to cope with the corresponding demand for it.

In the provision and maintenance of public facilities, a government provides its citizens with facilities which the private sector cannot in many cases single handedly provide such as water supply, electricity and public transport. Even though this tradition of relying solely on the government for the provision of public facilities is changing, the government is still strongly involved in how they are organised, regulated and operated.

In contemporary societies be it developed or developing, the case for public transport provision is no longer the sole responsibility of the government (i.e the public sector) rather a combination of efforts between the private and the public sectors. For instance, the United States of America situation shows that public transport is mainly privately owned and operated, but under close governmental regulations which aim to ensure that the utility serves all those who apply for it, and are willing or are able to pay for the services it operates. Furthermore these services are ensured to be provided in a safe and adequate manner that serves all customers on equal terms and that its rates are just and reasonable. To this end, all governments that do not provide public transport themselves have regulatory bodies charged with the effective handling of this utility.

The inability of the supply aspect of the urban transport mechanism to cope with the subsequent demand for public transport, are reflected in urban traffic congestion, auto- emissions, deteriorating urban environment and air quality in many urban areas. (Thomson, 1977, Owen, 1988 p.1). As described by Owen (1988), "the transportation facilities that helped build the cities, however, are running into trouble. Heavy concentration of traffic and lengthening trip distances are overloading the system in most of the world's big cities. Large numbers of people, especially those with low incomes, must

forego the benefits that urban life is assumed to confer. Both living and working environments are being eroded by massive traffic jams, air unfit to breathe, excessive noise, overcrowding of public conveyances and difficulties in getting from house to jobs. Efforts to increase transportation capacities are extremely costly; they often prove ineffective and they divert resources from other urgent needs. In most big cities around the world the demand for transportation is increasing much more faster that the rate of supply or provision".

Public transport, can be supplied or provided for passengers using it by the public or private sector as the case is in India, Malaysia and in Britain after 1984. It can be provided by only one particular sector or a combination of the two sectors depending on the type of public transport mode. It is the combination of efforts of the two sectors to provide public transport services that is predominant in the developing societies and this is equally gaining prominence in the developed countries as a result of changing governmental policy towards how public transport can be provided and financed. Moreover, as we can recall that the earliest or first providers of public transport were commercial firms who saw the need to provide mobility for the expanding urban population and who could make some profit by so doing to enable it to be in business. (Kitchin, 1947).

In the process of public transport provision, apart from the issue of demand that is the basic factor responsible for the degree or intensity of provision, there are other issues that are very basic to effective and smooth running of public transport service. One issue that readily comes to mind is who pays for the true costs of provision? Is it the state or the users?. Generally, it is the user. But depending on the policy of the government, some elements of subsidy can be introduced. Subsidy, can be provided to help or assist the operators to reduce the financial burden which they encounter for providing certain types of social services during transport operation. (Nash, 1976).

Taking into consideration the low level income earned by many public transport passengers, especially in the less developed world, it is apparent that they cannot pay for the public transport services which they use if they are to be charged the true value of provision. Hence in some countries the government provide subsidy to some public transport operators to reduce the loss which they make for providing public transport on social cost basis. There are however many various ways that can be used to determine the extent of financial subsidy that will be provided. (Nash, 1976; Blackledge et al, 1984; Stubbs et al, 1980 and Suchorzewski, 1988). This is normally worked out between the government and the public transport operator. For instance, subsidy can be

provided only if the operator provide services along some selected routes which have been agreed upon. Again, subsidy may be in form of lump sum. (Nash, 1976 and Blackledge, 1984).

In the process of public transport provision, the operator takes into consideration the cost of providing all the necessary requirements that will enable it to be in public transport business. For instance, the operator needs to buy vehicles, like buses that will have to carry passengers, employ the bus crews which include the bus driver and the bus conductor who will be responsible for the driving of the bus and collection of travel fare from passengers respectively.

Again, the operator considers if its operation will only be during peak hours only when the demand for public transport is greater and he is certain to make some profit by operating. Furthermore, some may be licensed to operate along a particular route and cannot be allowed to provide services along any other route.

Generally, public transport provision is capital and labour intensive. Capital intensive, in the sense that it is very expensive to run financially. For example, it involves the purchase of vehicles, paying salaries and wages to staff and bus crew, fuel to run the buses, spare parts need to be purchased in order to put the vehicle in constant good shape, office staff need to be paid, tickets are to be printed, office equipment are also needed for an effective public transport operating environment. (Pope, 1985). On the other hand, the only source of revenue for the operator to enable it to continue to be in business is the fare which passengers pay for using the bus, and the small amount that can be derived through advertisement.

Many public transport operators cannot afford to expand their bus fleets because of the huge financial requirements that is involved. And at the same time many have run into liquidation because of financial crisis. This accounts for why there is a proliferation of public transport operators in the developing countries. (Podoski, 1980). This is further justified because the government cannot solely provide for public transport in these less developed countries. Hence they encourage the private sector to participate but under strict operational control or regulations. One major observation arising from public transport operation in the developing countries is that many of the operators have very smaller number of bus fleets. As observed by Maunder, (1981) and Pope, (1985), many of such public transport operators are limited to only one or two buses. The various forms or modes of public transport systems that can be made available for passengers relying on public transport, will be discussed later in this chapter but in another section.

1.6 ORGANISING URBAN PUBLIC TRANSPORT OPERATORS.

Generally, public transport as narrated by Kitchin, 1947, was first provided by private operators who could make profit by so doing. During this time, it was possible to operate under true value cost for providing such service. Individual operator existed by providing competitive services and in a very discriminate manner. At times descriminate travel fare is charged. During this time there was no uniform rate therefore the rich or wealthy transport operator was capable of out - running the poor operator who lost passengers to the rich operator because such rich operator could afford to charge lower fares. (Kitchin, 1947). The subsequent outcome was the merging up into some sort of partnership arrangement between the rich and poor operator. The implication was the reduction in the actual number of public transport operators with marginal effects on the actual number of fleet in operation.

However, with the increasing difficulty in the operation of public transport, through traffic congestion, competitive fare charges imposed on passengers, travel by public transport was becoming unsafe, as well as the environmental effect becoming greater. Invariably, the government saw the need to control the activities of these operators through adequate and proper regulations which must be adhered in order to preserve the environment, life and property. This ushered in another era of public transport organisation and operational / ownership structure, whereby the government nationalised some principal public transport operators and paid them off. It also refused to renew the licenses of the very minor operators when their permit ran out. In the case of the less developed countries, public transport was first provided by the private sector, especially merchants who have come to trade in their cities. However what seems to be responsible for the rapid development of public transport in many of the cities of is due to the estasblishment of western democracy through colonisation, as well as the rapid rate of urbanisation. The two factors provided room for safe operation of public transport as well as the demand for it.

For effective control of the operational activities of the public transport operator, there is need to establish a regulatory body that will be responsible for the carrying out of these regulations. Many of such regulatory bodies started by attempting to classify the various operators under certain categories for effective monitoring of their activities. Such classifications are discussed hereafter.

There are five main characteristics of public transport operators often taken into account when considering organisational issues. (Bell, et al, 1984). These are:- (i) Size and size distribution of competitors. Public transport

operators can be classified according to the number of buses or fleets which they operate and the sizes of buses they use for providing public transport service. By this, it is possible to identify small or mini bus, midi bus omnibus etc.. The bus size also determine the passengers that can be approved to carry and also like in some developing countries e.g. Malaysia, it can be used to segregate (traffic separation) the areas where certain types of buses are not approved to run their services. (Pope, 1985). (ii) Ownership and control. This is when urban public transport operators are grouped on the basis of the type of ownership. For instance, the public or private owners, and cooperative forms of public transport owners, in Malawi, Zimbabwe and Uganda are examples of classification by ownership structure. (iii) Types of traffic handled. Urban public transport can be organised according to the type of traffic handled. For instance, there are operators handling both cargo goods and passengers or passengers only. In another dimension some operators may handle only traffic along local routes and are not expected to ply the major routes of the city. It is possible to determine the most frequent form of traffic handled by a particular public transport operator either by their form of operation or licence and ownership. Nonetheless a public transport operator may handle more than one particular type of traffic. Hence, one can talk of multiple traffics that can be handled at the same time by any public transport operator. However this again depend on the type of public transport mode. (iv) Mode or modes of transport operated. Operators of public transport can be grouped according to the mode of public transport services which they provide. For instance, it is possible to identify public transport modes such as bus, taxi, rail, ferry services, as well as metro in one urban city. (v) Geographical / spatial area covered. Whatever the mode of public transport that is involved, there is a limit it can go in the city. For instance all public transport modes have areas which they cover and it is along these areas that commuters can make use of the services which they provide for them.For instance minibuses are not allowed in the city centres in some countries hence their spatial coverage does not include the city centre. Furthermore, some buses are restricted from providing their services along main routes except along local routes depending on which type of service they are licensed to provide. Many various examples of this can be found in Singapore, Egypt, India and Ghana. (Sofretu, 1973, Jacobs, et al, 1983 and Akintola - Arikawe, 1983).

Public transport operators again can be classified according to their geographical coverage. Some operators with one bus can only ply along one route. Those operators with many buses have the probability of operating along

wider areas. In the case of ferry services, the areas which they can cover is drastically determined by the availability of channels to cross.

In the process of organising public transport operators, the government has a fundamental role to play in order to assertain that the organisation of public transport system is carried out in such a way that it benefits the majority in the community. Generally, the government has an established department responsible for the coordination of the activities of public transport operation. In the developing countries many of such agencies are created as a separate entity away from the ministry but in close supervision by the transport department.

1.7 SOME URBAN PUBLIC TRANSPORT MODES.

There are various modes of public transport systems that are introduced for the use of passengers in any city. These modes vary from country to country depending on the proportion of demand for public transport, the importance attached to it and the amount of investment available for such passenger mode. Also affecting the mode of public transport that can be provided equally depends on the geographical location of the city and the demand for it.

Of all modes of public transportation, the bus is the most important mode that is operated and this mode will be specially discussed in a separate section because of its direct relevance to this study, as well as its greater popularity over all other modes of public transport both in the developing and developed communities.

The most common modes of urban land passenger transportation are grouped in table 1.1, by their degree of mechanization and the characteristics of these various modes are described briefly below;

(i) Walking, is one of the most efficient modes of travelling, both in terms of low cost of facilities and space required as foot paths. It is of low speed and of poor comfort. It is more difficult to walk in a geographically poor terrain like swampy and marshy regions, and also in areas of high altitudes, hot and very cold weather and rain. It is observed that the average limit of walking in towns of the developing countries is between 2-3 kilometres. But distances covered is far greater than this among the low income and very poor groups in many communities of the developing world, more especially when other forms of public transport are not available or affordable. In Kenya, household interviews on trends in road use conducted in 1981 showed that over 90% of trips are on foot. (Ministry of Transport and Communication, Kenya, 1981 p.47). Also in the Aurangabad district of India, which is served by a fairly comprehensive network of bus services, walking acccounted for 83% of trips made in 1978. (National Traffic Planning and Automation Centre, India. 1981).

Whereas average walking distance to the nearest public transport facility in some cities of the developed world like London, is four hundred metres or five minutes walk. This is the standard limit set for public transport passengers in Britain. (Adeniji, 1983 and Podoski, 1980 and TRRL, 1974).

Table 1.1

CLASSIFICATION OF URBAN TRANSPORT MODES:

MODE OF TRANSPORT	INDIVI-DUAL	PUBLIC	PARA TRANSIT
Non-mechanised	Walking Bicycle	_____	Animal-drawn vehicle Rickshaw Tricycle
Mechanised	Motorbike Motorcycle Car	Bus Trolley Bus Tramway Bus Rapid - Transit Rail Rapid - Transit Suburban-Railway	Motorcyle with side car Tractor with trailer Motor assited tricycle Minibus

Source: UNCHS - HABITAT, NAIROBI, 1984 P.21

(ii) Bicycles, are another form of urban land transport. This mode has proved very reliable and important in many developing countries like China, India and other south east Asian countries. This is generally the dominant form of personal transport that is affordable by the low income groups or the poor among the urban population in developing countries. The range of cycling is between 10 - 15 kilometres, a distance which is considered sufficient for the majority of trips in most urban areas. (Fouracre and Maunder, 1979). The bicycle offers some possibilities to transport goods as well, but unfortunately bicycles, in a mixed traffic, present a serious obstacle to faster modes of urban travel. Other obstacle is the difficulty in organising traffic on congested roads, particularly at intersections and accident risk in bad weather are disadvantages of this mode.

(iii) Tramways, use electricity powered cars also known as 'street cars' individually or 'trains on public roads'. This is to say that the tram is sharing a road network system with other vehicular traffic like cars and buses along a

particular route which the tram has been designed to run through. Tramways can be found in Brussels (Belgium) for example.

(iv) Light- rail transit, is in fact an improved tramway, operating on an exclusive track network which has at-grade or graded - separated crossings. It requires more investment than a conventional tramway but has a better performance, especially in congested areas. The cost effectiveness of light rail transport has still to be proved, but there is a growing interest in this mode in several developing countries of the world.

(v) Rail rapid transport, also referred to as metro, subway or underground has high capacity, electrically powered cars and operates in trains over fully -exclusive and fully - grade-separated tracks with level platform boarding. The high investments required constitute a great obstacle to its introduction in developing countries; yet in large cities, such as Mexico city and Caracas, rail rapid transit has been built in recent years.

(vi) Suburban railways, are normally the portion of an inter urban railway system which serves large metropolitan areas, usually for long trips over 10 kilometres between suburban and central city stations. They use either standard railway cars or special commuter cars, sometimes double- decked.

(vii) Automobiles, are the costliest but the most attractive means of transport. This is the level which every person in the society aspire to attain, i.e. that of having its own vehicle. This arises because of the comfort, convenience, flexibility of use and speed obtained in average conditions. However, in terms of road space needed, energy consumption and adverse effect to the environment, the disadvantages are great. In countries where the resources available for infrastructure are limited, the benefits to the few automobiles using the roads at peak hours are inevitably accompanied by intensified difficulties for the many travelling by public transport, walking or cycling. (Bus and Coach Council, 1983).

1.8. PUBLIC TRANSPORT BUSES IN CONTEXT.

The term bus has been described in section 1.2 of this chapter, however, the main characteristic issues concerning conventional buses will be highlighted hereafter. Buses were first started in Paris (France) in 1820. In 1829, they were introduced into London, by a coach builder who adopted the french name 'Omnibus' which means "for all". Buses and coaches are now used for almost all public road passenger transport in many parts of the world especially in many African countries like Nigeria, Ghana, Sierra- Leone, Zimbabwe, Kenya, and Egypt. For example in Nand Nagri area of Delhi (India), 20 kilometres from the city centre, is where the average monthly household income

is 450 rupees. 81% of employment trips in this area are by bus. (Maunder, 1981 p. 9).

Buses normally operate on the public road system and share rights-of-way with other forms of traffic. Of all the means of public transport, the bus is the most widely used, important and operated, worldwide, usually accounting for over 50% of all motorised trips. (United Nations Centre For Human Settlement, 1984). In some cities, this share reaches even a level of 90% especially in the developing countries like Ghana, and Jamaica. (Adeniji, 1981 and Heraty, 1979). Owing to its flexibility, the bus is particularly well suited to serve expanded urban and suburban areas with a medium population density. (Owen, 1988 and Fouracre et al, 1987).

Various sizes of buses carry from 12 to 120 people, but in heavy demand situations, up to 150 passengers may be carried in a standard bus and up to 200 in an articulated one. (Addenbrooke, et al, 1981). Recently, in congested urban areas, some bus lanes or even whole streets have been reserved for the exclusive use by buses in order to speed up traffic and to encourage more personal car owners to use this mode of transport. (Hobbs, 1974 and Hibbs, 1986).

There are also some various types of urban public transport buses, such as; (i) Bus rapid transit, which operates on an exclusive, separated right- of-way with stations along the route that in some cases is used for other purposes like by fire engines, police and ambulances. It is often practical to operate in a mixed system: on a separated right-of-way in congested areas and on public road network in outlying peripherial areas where the expanded bus service is needed. (ii) Trolley buses, which consumes electricity instead of petroleum products, a feature that makes it least harmful to the immediate environment. However, because of the high investment required to install trolley lines, they are cost- effective only where they serve considerable volumes of passengers.

1.8.1 Characteristic Features of Urban Public Transport Buses:- In Britain, buses are of two main types, single and double deckers. The longer types of single deckers of about 11 metres long, have replaced double-deckers particularly in the country side and smaller towns. Double deckers still dominate city's bus fleets, but the recent trend seems to be towards smaller single decker buses. Modern double deckers are between 9 and 10 metres long. Nearly all new buses are designed for one-man operation in Britain. (Bus and Coach, 1984).

One man bus operation saves money (by reducing costs) for the operator, but seems to increase congestion costs for the society at large. It is

important to note that staff costs account for nearly 75% of the total cost of a bus service (Adeniji, 1981). The driver of a one-man bus either collects the fares from the passengers as they board the bus or supervises loading if the fares are to be paid directly into coin machines by the passengers. Sometimes, prepaid tickets are used to simplify the driver's job. Drivers and conductors are still being used in the older buses, and the conductor moving through the bus to collect fares from passengers.

A modern double decker, has seats for between 70 - 80 passengers and some can carry about 100 people; including standing passengers during peak hours. Double decker buses weigh up to 10 tonnes and are up to 4.5 metres high. A single decker bus carries from 60 - 75 passengers depending on the number of seats designed for the bus. (Addenbrooke, et al, 1981 and Bus and Coach Council, 1984).

In some buses, their engines may be front mounted, or rear and in some instances beneath the floor where the bus driver is seated. However in order to give more space at the front entrance (needed for one-man bus operation), most modern buses have their engines at the rear or under the floor of the bus.

Engines at the front, as could be found in some of the older buses of Gt. Britain make the design simplier and are more prefered for lighter types of buses and single-deckers. Front mounted bus engines are also used in countries where there are many rough, dusty and dirty roads, since dust can cause problems for rear mounted engines. (Banjo, 1982 and Addenbrooke, 1981). This type of front mounted bus engines are the most common in the developing countries. (Adeniji 1981 and Sofretu, 1979). A typical modern heavy duty bus engine is a 6 cylinder diesel unit of around 150 horse power. Engines of up to 200 horse power are used in countries where weights and passenger loadings are greater as it is the case in the less developed countries. (UITP, 1986).

Public transport buses can again be classified into two forms namely as; conventional and unconventional buses. The conventional buses are those that are designed from the onset for the use of public transport, while the unconventional type is the bus that has been adapted for public transport purpose. This unconventional form of public transport bus system, can again be described as intermediate or para-transit transport. (UNCHS, 1985). This type of intermediate bus or para-transit, is very common in the developing countries. Their popularity is mainly due to the general shortage of conventional buses which are too expensive to acquire by public transport operators. (Heraty, 1979 and 1981; Anderson, 1988; Adeniji, 1981 and Pope, 1985). In the developing countries where a city undertaking has failed to provide a satisfactory public

transport service through conventional means, the authorities have sometimes encouraged by allowing the introduction of private buses or para-transit service. (Habitat, 1982, p.22).

1.8.2 Para -Transit or Intermediate Transport Service: It is appropriate to mention intermediate transport, often described as para-transit, because of its importance for developing countries. Para-transit, refers to a form of passenger transport service which has been flourishing in many developing countries in different forms and under various names such as collectives in Argentina, jeepneys in Phillippines, peseros in Mexico, sherut in Israel and trotro in Ghana etc. Intermediate transport services (paratransit) are one of the most important means of transporting people and goods in many cities of the developing countries, since they are culturally adapted and provide socially necessary services. Para-transit services may be divided into two main categories: namely;

(1) Bus-like services in which vehicles are used on relatively fixed routes on which there are recognised stopping points and for which each user pays a pre- determined travel fare for any journey. The para-transit type of buses are commonly available in the following developing countries and they are known in their local names as, tempos in India, matatus in Kenya, jeepneys in Philippines, bemos in Indonesia, minibuses in Jamaica and molue/ danfo in Nigeria. This is a situation whereby paratransit public transport system is planned to provide commuter services in a manner that conventional public transport operation is expected to operate generally.

(2) Taxi-like services in which the user or users hire the vehicle for a pre determined or bargained charge and have control over its destination. The taxi type of services appear to be more confined to the south- east Asian cities. Examples of some Asian countries where this type of service are common include; India where it is known as cycle-rickshaws and hand-shaws, In Indonesia it is described as auto-richshaws and in Thailand as samlor.

Views about para-transit are very polarised. On the one hand, proponents of public bus services oppose this means of using para-transit or adapted vehicles for the provision and operation of public transport system, on the grounds that they undermine the efficiency of conventional bus services by concentrating upon high- density corridors and ignoring the sparse flows of passengers elsewhere, where the municipal services may have to operate. (Adeniji, 1983, Podoski, 1985). This can be corrected through effective control and punitive measures imposed on defaulters. (Fouracre, 1984 and Jacobs, 1981). On the other hand, there are those who point to the relative efficiency of para-transit services as reflected in the willingness of private individuals to

supply the services and of the public to use them and who advocate that public transport services should be left to private enterprise. (Hibbs, 1986 and Jacobs, et al, 1984). Although, para-transit services are not generally accepted or welcomed by city authorities because of their contribution to traffic congestion, the competition they present for city buses and their frequently unsatisfactory and unsafe modes of operation, they are often tolerated because of the travel demand they satisfy and the employment they provide. In Manila for example, 53, 000 persons are directly employed in para-transit operations and support a population of about 350,000 in 1982. Also in Surabaya (India), 10% of the total population is supported by cycle-rickshaw (a form of para-transit mode) oparations. (Habitat, 1984).

Nevertheless, both forms of services (conventional and unconventional) are to be found in most cities of the developing countries, where para-transit services are regulated and licensed by the government to provide public transport services. The acceptance of this form of public transport provision has not been solely approved by the government because of the popular demand for their use but also because the government of areas where para-transit prospers cannot meet the demand for public transport without their participation. This brings in the potentials of para-transit systems in the developing countries where their services have proved useful. For instance, they can be used where conventional public transport is inadequate, they are again useful when public transport services are not operating . Finally, they can be used in conjuction with conventional public transport especially in the local areas.

Operators of para-transit services are often penalised because of defective operating practices and poor safety records. Moreover many public agencies tend to despise para-transit simply because it does not present a proper civic image. Their operation, negates the conventional manner through which public transport system is expected to be run. (Podoski, 1984). The use of paratransit services by the low income groups of the populations is reflected for example in the case of Kingston Jamaica, where users of the minibuses were found to be in the lower socio-economic groupings than conventional bus passengers, even though fares were lower on conventional buses (Heraty, 1985 and Anderson, 1988). This occured because the needs of the urban poor were better met by para-transit than by bus services. In Manila, para-transit dominates all the modes of urban movement. For instance, in 1978, jeepneys, account for about half of the total trips made in Manila, while buses and private cars including taxis account for 25% each. Fares are however at similar levels to those of the regular bus companies, but while the regular bus companies are in

financial difficulties, those operating the para transit can still cope better financially.

The general opinion that seems to emanate from the above discussion about para-transit, suggests that the intermediate transport services if properly promoted, can play an important role in serving cities of developing countries, reducing the need for unprofitable conventional public transport services and increasing the options available to users. This study is an attempt to examine the operational characteristics as well as the quality of bus services that are provided to passengers by the private bus system in Lagos metropolitan.

1.9 PRINCIPAL BENEFITS OF URBAN PUBLIC TRANSPORT.

There are six main benefits of the bus, which are highlighted hereafter:

(i) Mobility for all; Access to a car is limited. For instance 60% of the households in Gt Britain have a car. Mobility is particularly important for children and the elderly if they are to benefit from all the urban community has to offer them. As it has been described, the bus 'opens up' life to the young and allows those growing old to continue to be involved physically in making journeys. That people like to use private cars, and they must be given reasonable facilities and opportunities to do so is very important. In fact no government can fail to recognise this, and it would be undesirable to try to restrict personal mobility by failing to provide facilities for the private car. However at the same time, for easy mobility, buses are a necessity because of the underlisted reasons. Firstly, everyone, (car owner or not), is a potential or actual public transport bus user. Secondly, not everyone has access to a private car now nor will they in the forseeable future. In Britain, most of the 60% of car owning households have only one car and only one driver. (70% of women have no driving licence), so other family members continue to depend on public transport. Thirdly, the congestion caused by large numbers of vehicles concentrated in specific areas destroy the very mobility which the private car is designed to provide; and finally, the environmental damage caused by large numbers of cars and provision for them lowers the quality of life as well as costing large amount of tax payers money to provide.

(ii) Reduced urban traffic congestion; It is not just those without cars who benefit from the use of buses, car owners will often find it better to take a bus and they will always find towns more pleasant places in which to drive if only those who have to travel by car actually do so. If a higher proportion of car owners could be attracted back to buses, the benefits of all who live or work in towns and cities would be significant. It was shown that in Britain at peak time,

on average one bus carries the occupants of 22 cars. (Bus and Coach Council, 1984.

(iii) Positive impact on commerce and industry; Many of those who work in city centres travel by bus. Those who shop in city centres, particularly housewives, do not generally have the use of the family car, neither, do most teenagers who go out at night . The absence of effective and regular public transport reduces the overall level of economic activity and therefore has a 'knock-on' effect which could destroy the viability of many regional businesses. Fare levels are particularly important for theatres, cinemas, sports halls, restaurants which all survive through people making journeys for leisure and recreation. Such journeys are the ones to go first when travel costs rise. In fact it is not an exaggeration to say that in many developing countries, the bus is the life blood of many of their towns and cities.

(iv) Land use to its best effect; New city roads may occasionally be valuable, but it should be remembered that a mile of new urban motorway is very expensive to build and incurs substantial recurrent maintenance costs. For instance a section of the London's north circular road recently constructed to 3 - lane motorway standard, cost £23 million per mile to build. So also is the Nigerian situation, where the Lagos - Ibadan expressway third mainland extension will cost 500 million naira to complete a distance less than six kilometres. There is need to keep a sense of value and balance and to remember at all times the alternative to improving the way existing roads work by inexpensive traffic management schemes and by properly supporting public transport. In Plymouth for example, each day 39,000 people travel to work using 27,000 private cars, but 20,000 people travel on only 150 buses. (Bus and Coach, 1984). Again the effects of public transport on urban landuse are wider than roads and car parks provisions. By allowing people to travel quickly and economically round cities, public transport can maintain the vitality of those cities and help to reinvigorate inner cities. So it is maintaining and developing the whole economic infrastructure of urban areas.

(v) Fuel savings and reduced pollution; In cities at peak times of the day, the bus is approximately eight times more energy efficient than the car. Regardless of the future of the world oil markets, energy conservation will remain important. Real oil prices are bound to increase. All vehicles will need to be designed to use fuel as efficiently as possible and here the bus has a real advantage. Many buses run on diesel fuel for instance, which is lead free and produces considerably less carbon monoxide. These are the two most dangerous and controversial emissions of petrol - driven engine. There can be

no doubt that increased car use both accelerates the rate of depletion of scarse resoursces and pollutes the atmosphere, hence, endangering the entire human race.

(vi) Safety; It is natural to focus attention on accidents involving buses. However the bus industry has a better safety record. A passenger travelling in a bus is much less likely to be involved in an accident than someone travelling in a car, and on rare occasion when an accident does occur, the passenger is much more likely not to be seriously injured. Transport casualty of Great Britain for example, shows that between 1976 and 1986, the rate of bus and coach casualties remained at about the same level. In the past few years the death rates for cars has been on the increase. (Transport Statistics, 1989).

1.10 RESEARCH PROBLEM.

The role of public transport has been discussed. The inability to meet these fundamental roles has made movement by public transport difficult for passengers who rely on their services. (Thomson, 1977; and Black, 1978 and Owen, 1988). In many countries of the third world for instance, capital investment in the transport sector has not facilitated the solutions of emerging urban transportation problems in their cities. (Suchorzewski, 1987). There are numerous and chronic urban public transportation problems facing most cities of developing countries. Hence, shortcomings in personal movements and transportation of goods are causing mobility problems and hampering economic activity by slowing it down.

In Nigeria for instance, there has been a general decline in the number of buses that are registered annually to provide public transport services in the country. This decline has led to shortage of vehicles that can be used for public transport purpose. If this is the situation in Nigeria, the question that can possibly be asked is why has there been a decline in the number of fleets registered to operate as public transport in the country? And furthermore what implications does it hold for the future public transport demand? In other words, is it possible to establish the trend in the registration of public transport vehicles in Nigeria and its implication for passenger movement as well as their causes? It is important to stress the implications of decline in the number of vehicles made available for public transport, because it is fundamental to demand for public transport and the manner which the services are subsequently operated. However, decline in bus fleets registration does not imply that public transport generally is in a mess, or endangered, except in a situation where the decline is applicable to all the categories of bus types used as public transport in the city then fears can be entertained. For instance, if decline in the number of registered

fleets has been observed, it is important to examine which of the bus sizes is adversely affected by the decline. Because the implication of this decline on public transport provision and operation in the city for passengers relying on their services will vary from one type of bus to another. The need for this examination becomes necessary because public transport buses used in Nigeria are of different sizes and of seating capacities. This view is more realistic because the use of public transport vehicle depends on the availability of seats for the passenger. For example, buses of bigger sizes have greater seating capacity than the smaller ones, hence, if the trend in decline is towards bigger buses then the number of passenger seats affected by this will be more grave than if the decline has been concentrated on the smaller buses.

In Nigeria, public transport service provision and operation is by both the private sector and the public sector (government owned). Most studies conducted on public transport in Nigerian cities have solely focussed on the government owned public transport. (Adefolalu, 1978, Adeniji, 1981, 1982, 1985; Kotun, 1985 and Banjo, 1984 1986). Therefore, little information are available about how the private sector provide and operate their own form of public transport system. Despite the fact that their operation is regulated by the government no attempt has been made to involve the operators on matters affecting public transport in the city. For example, in solving the problems encountered by public transport operators in the country, the government has often relied solely on providing solutions to the problems facing the public - public transport operator (government owned) without taking into consideration those problems which the private - public transport operator encounters. It is often assumed that the problems experienced by the government owned public transport operator in providing public transport services are similar to the private operator. But results emanating from this research study have proved this assumption to be untrue.

This omission, probably might be responsible for why many positive and well designed measures that have been initiated and implemented by the government to correct public transport problems in the country have failed.

This view becomes more convincing when it is further noted that the private public transport operators provide more buses and transport more passengers in their totalilty than the government owned operator. For instance in Lagos, the private public transport operators account for about 90% of the public passengers transported daily in the city of Lagos, and also provide about 90% of buses used as public transport in the city. Furthermore, they cover larger geographical space than the government owned operator.

Inspite of the overwhelming dominance of private public transport operation in Nigeria, little information exist about the manner which this sector operates. It is pertinent to ask why public transport activities of this sector has not been seriously documented or studied for so long and even taken into consideration in policy matters involving public transportation in Nigeria, unlike what the situation is in some other developing countries of the world like Jamaica, Malaysia and India, where their services are recognised and have been integrated into the public transport programmes of these countries. One of the basic reasons that seems to account for this has to do with the difficulty of gathering information and the general unwillingness of the operators in the private sector to provide vital answers to some questions often raised about their activities. For instance no operator would like to reveal its revenue derived from operating public transport, or establish the cost of running the bus etc. Today, this view previously held by private operators have changed because they themselves have recognised the need for improvement in the manner which they operate. And this is demonstrated by the huge cooperation which was received from them during the field work exercise conducted for this study.

This study therefore is concerned about provision and operation of public transport by the private sector in the country. And also to suggest means of improving the present level of public transport services provided by this sector, which can be achieved only when adequate understanding of their operational characteristics has been established. It is the understanding of the manner which the sector operates that proper integration of its activities can be transformed into conventional public transport system in the country. This study on private operation of public transport in Nigerian cities is very necessary, considering the dissappointing results emanating from the government owned public transport operators. For instance the case of Lagos State Transport Corporation (LSTC), owned by Lagos State government, is very relevant at this stage. The Corporation's accident record is very alarming (appendix 1) and it casts shadow on the continuous rationality for the over protection and financial commitment which the government has provided this sector against competition from the private sector over the years.

Because of the nature of public transport operation in many Nigerian cities, it is not possible to examine all the cities of the country. Furthermore, because of the poor data situation about the subject to be examined in the country, it becomes more difficult to cover the entire country. More importantly, Nigeria, operates a federal system of government, currently made up of twenty-one states. The decentralisation of the country therefore, makes such study on

the entire country more complex since each state would evolve its own policy as it may affect their cities. Hence, this study will focus on one important Nigerian city which falls within Lagos State. This city is Lagos Metropolitan. The choice of this city is the focus of discussion in the next chapter. Public transport operation in Lagos metropolitan is the most prominent in the country as well as the most organised. (Adeniji, 1981 and Kotun, 1985). In essence, private sector operation of public transport in Nigeria, has not been well investigated and documented, which this study believes that any future improvement on the public transport situation of the city of Lagos or any Nigerian city to be realistic the activities of the private sector in public transport provision must be seriously considered and investigated, particularly when the contemporary trend in public transport provision is changing generally all over the world towards privatisation. To achieve this objective, there is need for better articulation and understanding of how the private sector operates and why they operate in like manner, which this thesis is set to examine.

1.11 AIMS AND OBJECTIVES OF THE STUDY.

The specific aims of this study are:

(i) to highlight the current urban public transport problems of Lagos metropolitan (Nigeria);

(ii) to account for the factors responsible and propose probable solutions for them.

The emphasis of this study will be on private operation of public transport bus services, the essence being to provide the basis for a positive approach to the improvement of urban public transport of Lagos metropolitan. Many studies on public transport in Nigeria and Lagos in particular, have noted the importance and the need for it. (Lagos State Government, 1979). The principal need for the provision of reliable and efficient public transport in the country is unquestionable. Despite the acknowledgement of the importance of public transport and the need for it, it is noted by this study that there are no general descriptions and explanations of the phenomena involved in the present role of private operation of public transport bus in any Nigerian city, particularly that of Lagos where their activities predominate. Hence, this study attempts to improve this situation by raising the existing level of information and understanding of the private operation of public bus service in Lagos. To achieve this, the study will present a general description of the major operating characteristics and quality of bus services which the private sector exhibits.

To achieve the above aims of this study, the main task of this research are:

(i) To present an overview of the urban public transport situation of Lagos metropolitan. This is to lay the foundation for the subsequent analysis of private operation of public bus service which is the main thrust of this study;

(ii) To examine the nature, organisation and control of private operation of public transport buses in the city of Lagos. This is necessary in order to ascertain whether these issues affect the contribution of private operation of public transport buses to the community and to what extent;

(iii) To highlight the operating characteristics of private operation of public transport bus in Lagos metropolitan. This is to provide some basic information and understanding of private bus services, how they operate, why they so operate. This will help to provide how the present public transport problems of the city can be ameliorated; and

(iv) Arising from the above discussions i.e. i - iii, is to finally examine the quality of public transport bus services that are provided for bus passengers in the city. This is to show the extent to which the sector needs to be monitored from time to time in order to reduce passengers' hardships in the process of using buses provided by the private sector.

In terms of research focus (subject matter) this study will concentrate on the activities of private operation of public transport bus system. However, mentions will be made of other aspects of public transport systems from time to time in the study area, especially where mentioning them will provide a better understanding of current discussions. Such inferences will be in form of examples, justifications of some arguments and to provide for comparisms. The main public transport systems that are likely to come to light during the study include; taxis, government owned public transport buses, water transport and rail systems etc.

1.12 PLAN OF THE THESIS.

This thesis falls into two parts. Chapters one to three, deal with the general issues in public transport regarding the role, demand, and provision, objectives of study and the study area. Chapter one provides an introduction to the issues concerning public transport, and outline the research problem, aims and objectives of the thesis as well as the operational terminologies adopted for the study. Since this thesis is concentrating its research preoccupation on a particular geographic area, chapter two attempts to provide a detailed insight into the study area of Lagos Metropolitan.

This study is concerned with private sector passenger bus operation, which an aspect of the entire public transport systems of the metropolitan Lagos. To appreciate the discussion about the private sector more, it is

necessary to provide a general insight into the public transport situation of the city. Therefore, chapter three has been used to highlight the existing situation of public transportation in Lagos metropolitan. The second part of this study is covered by chapters four to six, which discuss the empirical data generated from the field surveys for the thesis in details and to account for the results derived from the surveys conducted. Chapter four presents the conceptual framework for the study. Chapter five presents the empirical results of a survey conducted on private public transport bus operation. In this chapter attention on how public transport in the private sector is structured and operated in the city of Lagos is discussed in full details. Chapter six, concentrates on the quality of services which public transport operators in the private sector provide passengers using their buses. The indices used for measuring quality of bus service are also discussed in this chapter.

Finally, the concluding chapter draws the trends together in the context of a brief discussion about the future of public transport bus system in Lagos by equally highlighting the role of the private sector in Lagos. It highlights the research findings, discussed the policy and planning implications for the city, as well as providing some recommendations.

CHAPTER TWO.

METROPOLITAN LAGOS.

2.1 INTRODUCTION.

The aims and objectives of this study will be examined against the background of Lagos metropolitan. In other words Lagos metropolitan will constitute the case study under which all the issues expected to be raised in this thesis will be highlighted. Hence, it is important to provide some background about the metropolitan city, which is the focus of this chapter.

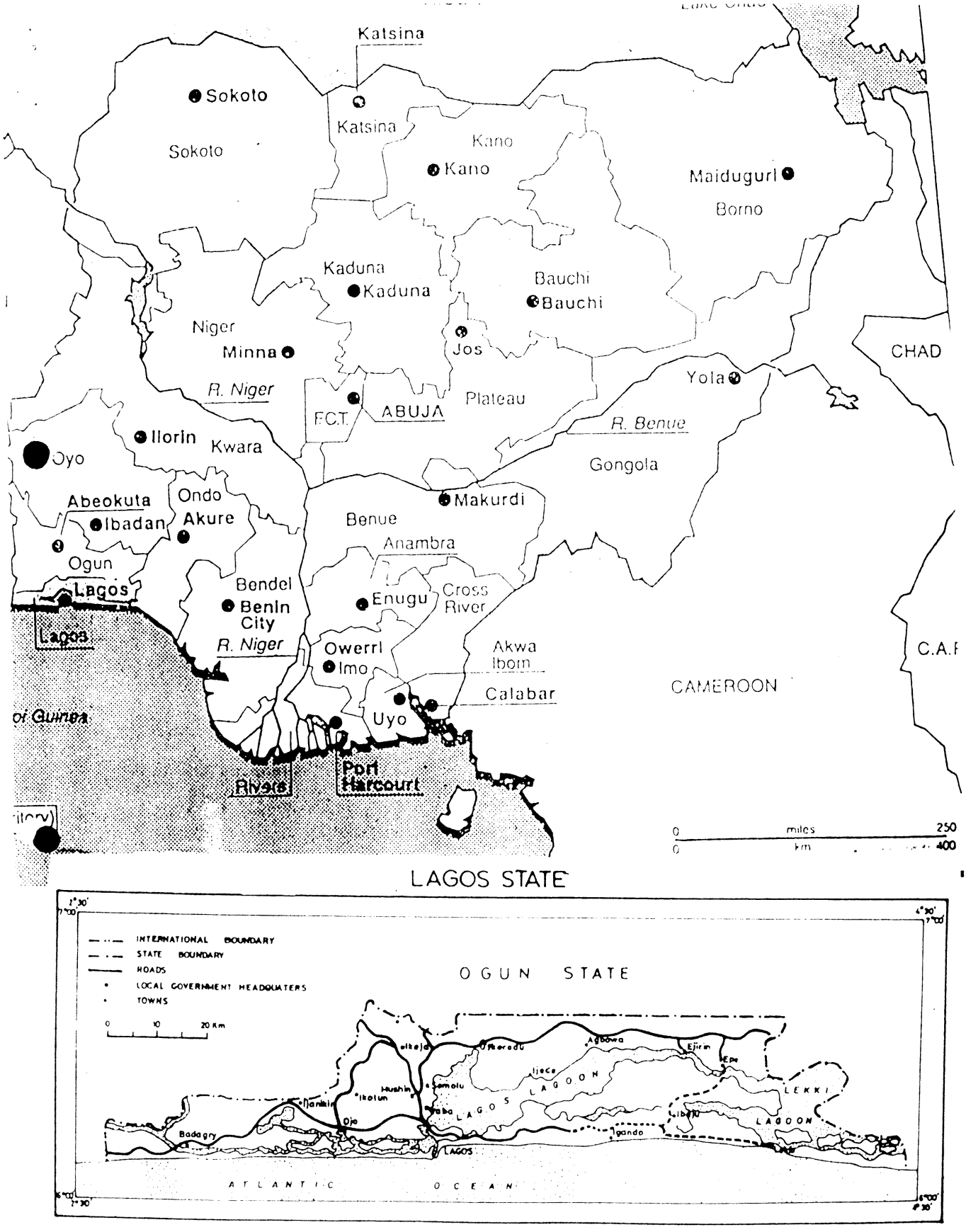
In this chapter, issues to be discussed about Lagos include its political and historical growth, physio- geographical aspects, population and the demographic characteristics, and the socio- economic attributes of the metropolis that makes the city attractive to many Nigerian businesses, landuse characteristics as well as the major problems bedevilling the city with emphasis on transportation problems will be highlighted. They are to provide the bases for the understanding of the issues that are discussed in subsequent chapters of the thesis.

Metropolitan Lagos is Nigeria's premier city, located on the coastal extremity of the country (figure 2.1). The largest Nigerian seaport and airport are sited in the city. Over 80% of the total freight imported into the country through the seaport for instance, is destined for the metropolis. (Ekong, 1983). Lagos, is also the largest industrial concentration centre in the country, accounting for over 60% of the total industries in 1972, and 43% of the employment in manufacturing sector in 1973. (Onyemelukwe, 1978).

This situation whereby Lagos metropolitan accounts for a greater percentage share of economic activities in the country, is gradually changing. Many of these changes are caused by first, the creation of new states in the country which took place in 1967, 1976 and 1987. The status of some provincial headquarters were elevated to that of a state capital, which therefore call for more investment in these emerging towns. Secondly, the deliberate policy of the government to decentralise its resources tends to slow down the rate of which investment are made in Lagos, since other parts of the country now serve as strong competition. Thirdly, the development of the new federal capital territory at Abuja, suggests that the political and administrative power earlier enjoyed by the city is gradually being eroded.

As an industrial and commercial centre, which still houses the political seats of the federal and state governments, coupled with its high population

FIGURE 2.1 POLITICAL MAP OF NIGERIA. (1989).
(WITH LAGOS STATE OF NIGERIA INSET).



Source: Federal Government of Nigeria. Information Department.

concentration estimated at 5.3 million in 1987, the metropolis has become a focal point for regional, national, and international trade in the country. This metropolitan city is served by significant road, rail, ocean and air modes of transport. As a service centre, the efficient movement of people and goods is essential to the continuing functioning of the city. This efficiency could be affected or deterred through inadequate transport system, especially urban public transport.

2.2 DESCRIPTION OF THE STUDY AREA.

Lagos, the largest metropolitan area in Nigeria, is located along the southwestern coast of Nigeria, at the only outlet to the sea of a lagoon that extends from West of Cotonou in the Republic of Benin to the Niger Delta in Nigeria. This was the only natural break along some 2500 kilometres of the West African coastline which again made Lagos a very important port in the trading activities of the eighteenth and nineteenth centuries.

Lagos is the capital city and major commercial centre of Nigeria, though a new federal capital is being built at Abuja. The growth of Lagos is due to the growth of the colonial economy of Nigeria. As the seat of government since 1914, harbouring the largest seaport and the most important railway and air terminus, the city had maximum significance in the predominantly export oriented economy of the country. In 1950, the city was given the status of a municipality, and its area was subsequently extended to incorporate parts of Lagos mainland through boundary adjustment.

Lagos Metropolitan area, is geographically located within the mangrove-rain forest belt of coastal Nigeria. The landform rises gradually through poorly drained marsh and mangrove strata to an altitude of about 100 metres at a distance of some 50 kilometres inland from the coast. About 50% of this land area has an elevation of less than 15 metres. The uplands are divided and given form by two major river systems. The most important of them is the combined Ogun - Owuru river system and their principal tributaries which have created a broad valley, most of which has an elevation of about three to five metres above mean sea level. This valley separates the eastern highlands to the north of Ikorodu from those lying north and north west of Lagos. The valley is poorly drained and does not provide a good site for many urban activities. To the west, a similar river system composed of the Owa, Ore, Iju, Ilo, and Oruku rivers and their tributaries have etched many long finger like valleys into uplands which lie largely in part of Ogun State. The lower reaches of many of these stream valleys are wetlands. Lagos Metropolitan area is centrally located within the coastal fringe of Lagos state, comprising of seven Local Government

Areas (LGA) which have shared in the urban development of the city. Five of these local government areas are entirely within the boundary delineated for the metropolitan Lagos, while the remaining two local government areas (Ikorodu and Badagry) have small portion of their boundary falling into Lagos metropolitan. (Figure 2.2).

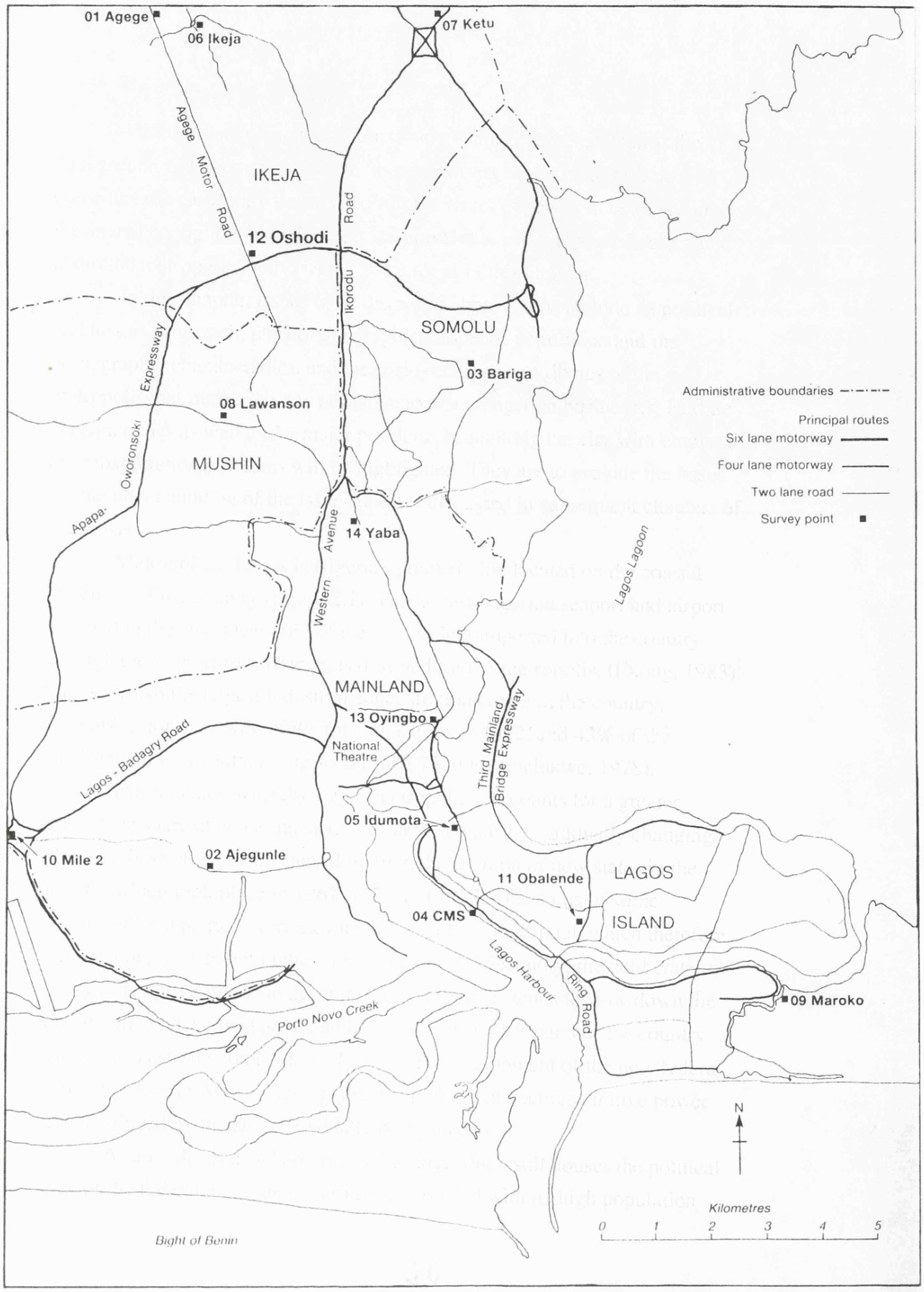
2.3 GEOGRAPHICAL CHARACTERISTICS.

The geographical features of metropolitan Lagos, have some significance to how public transport in the city is operated and also explains the types of public transport mode that can be introduced. Furthermore, it also assistsin understanding the morphology and shape of metropolitan Lagos which is equally fundamental to how public transport services on land are operated.

The area referred to as Lagos state has an area of 3,577 square kilometres and it is in this state that the greater proportion of what is known as Lagos metropolitan is located. A smaller proportion of the metropolitan city is lying in Ogun State of Nigeria. (This State, shares territorial boundary with Lagos metropolitan in the north). Lagos State occupies 0.4 % of the country's territory, which makes it the smallest state in the federation. For instance, it is one sixth the size of Ogun state and one thirty seventh the size of Borno state. Lagos state lies to the south west of the country. It shares boundaries with Ogun state in the north and east, an international boundary in the west with the Republic of Benin, and in the south, it stretches for 180 kilometres along the coast of the Atlantic ocean from Badagry in the west and to Epe in the east. (Figure 2.1). Apart from the sea to its south, the state is virtually divided into north and south by stretches of lagoons and creeks which occupy over 787 square kilometres of the state's landed area. The state has numerous islands most of which are sparsely populated. The general landscape (topography) of the land is very low and undulating having an altitude of about 15 metres above sea level.

The climate of the city is not dissimilar to that of the country as a whole. Even though rainfall is throughout the year in this city, there are two distinct seasons - the dry season, from November to March and the rainy season from April to october. Throughout the year the temperature hardly falls below eighteen degrees centigrade and averages of about twenty- seven degrees centigrade. The average daily maximum temperature is about thirty degrees and the average minimum is about twenty - four degrees centigrade. However there is a seasonal variation of about six degrees centigrade between the hottest month (march) and the coolest month (August). The average annual rainfall for Lagos metropolitan is about 1,830 millimetres with some variations within the

FIGURE 2.2. ADMINISTRATIVE BOUNDARIES OF LAGOS METROPOLITAN. (By Local Government).



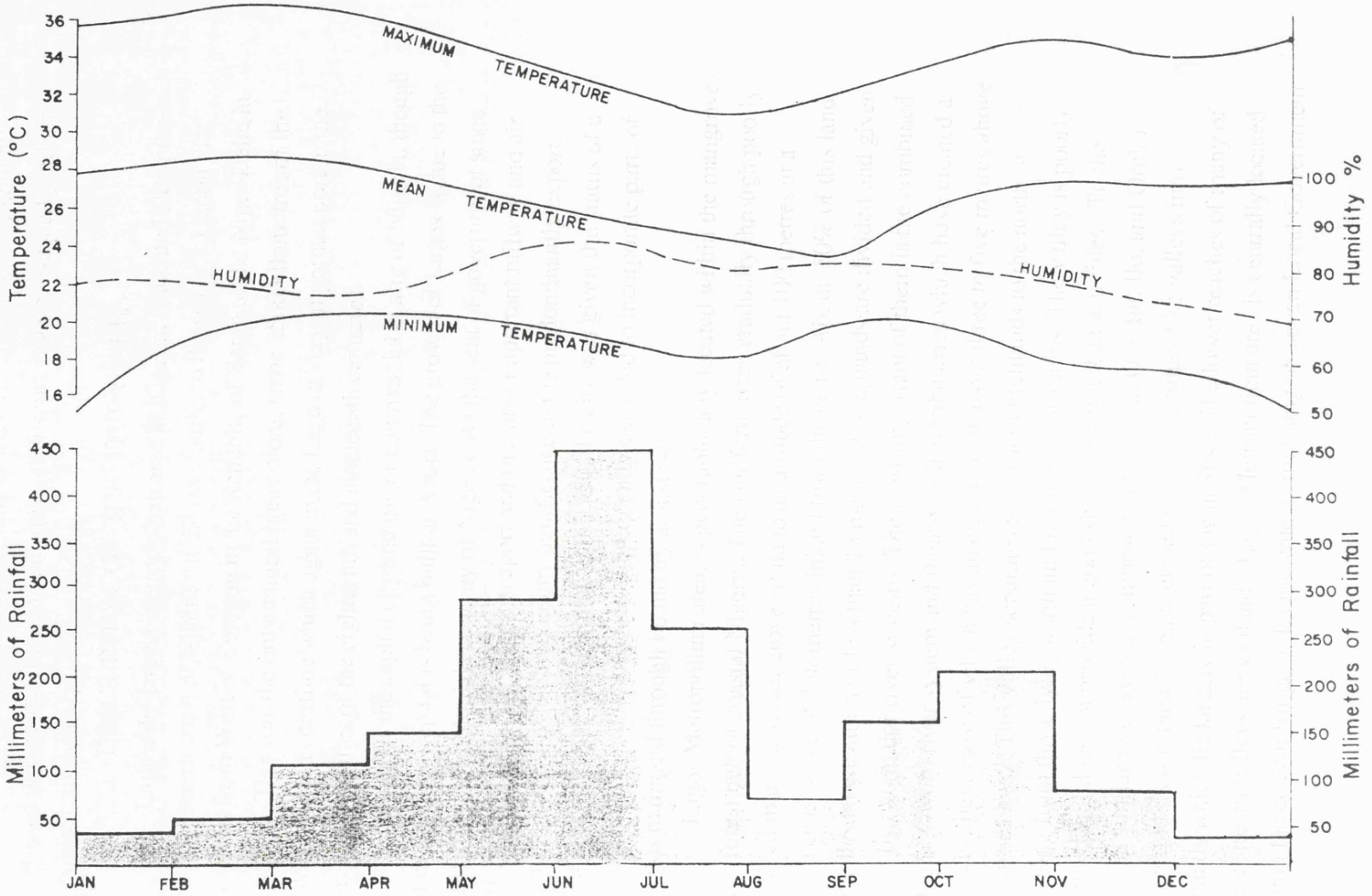
metropolitan area. For instance, Apapa has an average of 1,895 millimetres per year, Ebute metta has 1,702 millimetres and Ikeja averages 1,466 millimetres. Generally, on the average 85% of the total annual rainwater falls during the rainy season lasting for seven months. The average monthly climatic parameters for Lagos metropolitan are indicated by figure 2.3.

Water and wetland areas comprise about 40% of the total area of the metropolitan. However the land area indicated includes those parts of the total that are subjected to periodic inundation due to stormwater runoff. A much greater proportion of developable land lies available in the north of the city with a substantial parts of this developable land falling into the political and administrative boundary of Ogun State. This land tends to be higher and better drained naturally than much of the metropolitan. Probably, this explains why land development is moving towards the north faster than other places in the metropolitan area which has implications for transportation especially by depicting the north - south pattern of traffic movement in the city.

Flooding is a big problem in the city. Serious flooding occurs in the entire metropolitan city of Lagos. The topography is flat and made up of low sandy soils and flat swampy areas. The soils are mostly colloidal with a correspondingly low rate of infiltration. Natural flooding is caused by intensive rainfall on flat, relatively impervious ground. Many of the interior swamps are of six metres above mean sea level. The western portion of the metropolitan area has no natural outlet to the sea. The river shasha, which is the major natural drain for the area, empties into the swamp west of Iganmu. The lack of an outlet for surface water, the low elevation above sea level, the imperviousness of the soil, and heavy rainfall all contribute to the high water table found in most parts of the metropolitan. This situation again, has tremendous effects on the general performance of transport especially public transport in the city. Another cause of flooding in Lagos is the work of man. The rapid growth of the city population has severely over stretched existing drainage facilities, coupled with the government's inability to construct new drains, to maintain existing ones and to coordinate the activities of those agencies (public or private) whose construction programmes affect drainage patterns. These physical and geographical attributes of the city have implications for the modes of public transport that can be effectively and economically operated. This probably accounts for the dominance of bus among all the modes of public transport that can be used in the city. Again, it also help to assist in searching for an alternative viable means of improving public transport provision.

FIGURE 2.3.

AVERAGE MONTHLY CLIMATOLOGICAL DATA AT LAGOS STATION



SOURCE : LagosMetropolitanMaster Plan. 1980 - 2000.

2.4 HISTORICAL AND POLITICAL GROWTH.

It is relevant to our study to briefly review the history and political growth of metropolitan Lagos which can be categorised in four periods.

2.4. 1 Pre - Colonial Era: Lagos was founded in the early 17th century by the Awori settlers, a subgroup of the Yoruba speaking tribe, On the mainland at Ebute Metta. Later, for security reasons, the town was moved first to the island of Iddo and later to Lagos Island. Geographically, the position of Lagos as a natural port contributed to its early development as an important trading centre in modern Nigeria. Before the introduction of effective colonialism by the British, the town has been very properous as a trading port, whereby, the British explorers, traders in slaves and religious missionaries used the town as a major slave collecting point in West Africa. (Aderibigbe, 1987). The impacts of the missionary activities were first felt in Lagos and its environs. Hence, the city served as a spring board for the religious expedition and conversion into the hinterland, as well as the preparatory ground for various military conquests of the hinterland embarked upon by the British.

During this period, the King 'Oba' of Lagos was the political head and assisted by the traditional chiefs in the day to day running of the town. The traditional chiefs assisted in the collection of taxes and tithes from traders and subjects of the town. The Oba was also the head of the army and as such its main preoccupation is to forestall external attacks and to protect his subjects. His ability to protect and defend the people of Lagos was a major factor in boasting trade and justifying the loyalty of his subjects to the crown. By 1851, when Oba Akitoye was crowned the king of this small town of Lagos, his authority was challenged by this nephew Kosoko, who eventually usurped the throne by banishing Akitoye from Lagos. With the help of the British, Kosoko was defeated and Akitoye re- installed. The death of Akitoye enabled his son Dosumu to succeed him. Dosumu, was too weak and because of constant wars from neighbouring states, he seeked for British protection. The protection seeked for by Dosumu, was actually for military defence which does not include participation in the administration of the town. By 1861, Dosumu ceded Lagos to Britain, heralding the effective involvement of the British in determining the political future of Lagos. This cession, eventually led to the establishment of the Lagos colony by the British. This period was a very important turning point in the economy of Lagos.

The economic implications of this change were enormous to the town, and accounted for the rapid increase in the population of the city since 1861.

(Table 2.1). It ushered in a new orientation in the system of commerce tailored towards the British style and devoid of the local trend which Lagos benefitted.

2.4. 2 Colonial Period: Historically, in 1861, the small Yoruba kingdom of Lagos was ceded to Britain by its ruler king Dosumu. Fifteen years earlier the British had been very active in Lagos as well as in many parts of the West African coast as traders and missioners. Lagos Island is considered to be the first place that the British occupied in what is known as the Federal Republic of Nigeria. (Lagos Island is today the main centre business district CBD of the metropolitan). Lagos had since developed into a metropolitan city with high population concentration.

Lagos was developed by the British as a seat of colonial administration, as the terminus of the railway system which opened up the agriculture of the now known Central and Northern Nigeria to the world market in 1896, and as a major port town through which the exports of the vast Nigerian hinterland were funnelled. The city's role as an entrepot attracted other modern urban functions, a growing and relatively affluent population through massive migration, which later formed the main consumer market of the town, once the process of industrialisation got under way. By 1884, the impacts of British colonialism had been felt in the Southern and Northern Protectorates as well as in Lagos Colony. The Southern and Northern protectorates formed parts of modern Nigeria. They served as protectorates of the British. The original intention of the rulers of the two protectorates, being that of signing military pacts against external aggression especially to curtail the French expansion tendency in West Africa.

But, with the final abolition of slave trade, the early prosperity enjoyed by many west African port towns like Lagos were in jeopardy. It was this abolition of slave trade as well as the scramble for Africa, that opened up the idea of effective colonialism. Hence, the need for political involvement of the British in the administration of Lagos. The policy of indirect rule was pursued by the British, in order to avoid direct confrontation with the people of modern Nigeria whose loyalty to their rulers is not negotiable. The British aware of this, allowed the loyalty to remain intact, but have won over the Obas or kings to their side.

By 1901, Lagos was proclaimed the capital of Lagos colony as well as that of the Northern and Southern Protectorates of Nigeria. This position of Lagos as the capital city was further enhanced in 1914, when the Northern and Southern protectorates of mo dern Nigeria were amalgamated and named Nigeria by Lord Lugard in 1914. The choice of Lagos as the capital of Nigeria

in 1914, again boasted the economic and commercial roles which the city maintained till today. For instance many foreign establishments started to spring up in the city because of assured political stability and protection guaranted by British occupation. Even though Lagos colony remained part of Nigeria in 1914, it was regarded as a separate political entity of its own. Lagos colony maintained its own separate budget and it was administered directly from Britain by the Colonial Secretary, whereas, the other parts had a joint budget and administered by the Governor General whose seat was in Lagos. The Governor General received directives from the Colonial Secretary in Britain. The choice of Lagos as the capital city of Nigeria in 1901 and re- affirmed in 1914, had political and economic reasons. Politically it was to reduce conflicts and remove suspicion from the peoples of the two newly amalgamated protectorates, and also to consolidate its earlier activities in Lagos colony. In economic terms, Lagos was already a prosperous town and the need to choose another town as capital would have been administratively expensive, and would had defeated the British government motive which is to exploit the colony's resources rather than to develop them. It would have been very difficult for existing commercial establishments already flourishing in Lagos to move. It was rather obvious for the British to accept Lagos as the defacto capital of the country.

Geographically, its coastal position also supported the choice of Lagos as the capital. It was the most accessible Nigerian city to Great Britain before the advent of aeroplanes. As rightly summarised by Adebayo, (1987, p.314), by virtue of its coastal location, as the seat of government and economic life wire of the country, many establishments flourished and it was the most attractive city to the people in the hinterlands. It therefore encouraged rural- urban migration. This huge migration, contributed to the swelling population of Lagos which later became the main cause of urban problems facing the city today. This had been described by Mabogunje, (1968) as the consequencies of urbanisation. The development trend as well as the investment dominance attracted by Lagos remained until after the second world war in 1945 when Nigeria was proclaimed a federation in 1953. In other words the effect of decentralisation process embarked upon by the government after the war, took its own toll by reducing the concentration of developmental efforts on Lagos.

2.4. 3 Post Second World War: By the provisions of the 1953 / 54 Richards Constitution, Nigeria became a federation of three regions. Each region with its own full legislative and executive authority, over matters within its area of jurisdiction. These three regions namely; Northern, Western and Eastern regions therefore stood independent of their own but responsible to the

federal or central government whose seat was in Lagos. In like manner because of the political alteration, Lagos colony, was proclaimed a federal territory. In essence, it suggests that the reasons behind the choice of Lagos as the nation's capital in 1914 still prevailed. For instance, there were series of agitations especially from the representatives of Western region to incorporate Lagos colony as part of the region because of geographical contiguity. (Aderibigbe, 1987). Their requests were turned down because it meant that Western region would have inherited all the investments and resources in Lagos colony, thereby making the region far richer than the other regions of the country. Apart from the wealth it could have inherited, Western region could have wanted to cede from the country and cause political instability. (Adebayo, 1987). As rightly put by the Colonial Secratary in 1953, Lagos was the political capital of Nigeria, and had been since the amalgamation in 1914. Earlier, it had served as the seat of the government of the protectorates. Infact, since its cession in 1861, Lagos had served as the seat of an expanding British commercial and imperial enterprise or interests in Nigeria. As the political capital all sections of the country, especially the dominant classes had a sense of ownership and pride in Lagos.

Besides, the end of the second world war, triggered in a new approach in the colonial policy of the British in Nigeria from which Lagos benefitted tremendously. The most important and relevant of these colonial policies to Lagos was the policy of import substitution and goods valorisation process. This policy came when things were taking a new dimension in Britain after the war. For example, in Britain, there was the need to rebuild all the areas affected by the war. This therefore call for reconstruction and rehabilitation of Britain, just recovering from the effects of war. The need to meet these commitments in Britain, signalled the intensification in the rate of exploiting Nigerian resources (both minerals and agricultural products). The establishment of processing industries in the country was meant to help raise the value of goods to be transfered to Britain. For instance, cotton mills were located in some places in Nigeria where cotton is found in great quantity to remove some of the unwanted parts of cotton products before they are exported to Britain. The end result of this drive however, was the expansion of the Apapa port (Nigeria's premier port located in Lagos), to cope with the bulk of goods brought from the hinterland ready for export. The industries that were ushered in by the change in policy towards valorisation served as impetus for development in Nigeria. Lagos was highly favoured by this new trend, because it was the city where many companies first located. For instance, between 1947 and 1960, Lagos accounted

for over 60% of the industrial firms sited in the country. (Mabogunje, 1968 and Onyemelukwe, 1978).

2.4. 4 Post Independence Era: After independence in 1960, Lagos still remained a federal territory and the seat of the central government. This, again further enhanced the economic, political and administrative dominance of the city in Nigeria. Many post independence industries established in the country had their head offices in Lagos. The Central Bank of Nigeria was sited in the city in 1958. The role of the central bank is to coordinate the country's banking activities, made it possible for Lagos to benefit a lot from early domination of financial institutions that wanted to be closer to the banking hub of the country.

In 1966, there was the first military intervention, through a coup d'etat. The civilian administration both at the regional and central levels were toppled and replaced by soldiers. The military that took over the government in 1966, still maintained the original federal status of the regions as well as that of Mid - Western region which was created in 1963. Lagos still remained the seat of the military government and its status quo as federal territory remained under the military unchanged and unchallenged. In May 27th, 1967, Lagos state was created in a military administration led by Lt. Colonel (later General) Yakubu Gowon. The entire country was restructured and divided into twelve states. Lagos State was one of the states which emerged from this exercise. Geographically, the federal territory of Lagos after the creation of Lagos state in 1967 was extended to incorporate some parts of the then Western region. Such former provinces of Western region gained by Lagos state during the state creation exercise were Badagry province, located along the western part of Lagos metropolitan, Ikorodu, Epe and Ikeja provinces. The greatest loss of this state creation exercise to Western region was Ikeja province. Ikeja, emerged as the capital of Lagos state. Many of the industries sited in Western region before the state creation were concentrated at Ikeja area, because of its proximity to Lagos port and other economies of scale or benefits associated with the concentration of industrial activities around Lagos. (Ikeja is less than 10 kilometres from Lagos island). Ikeja was made the capital of Lagos state in order to underplay the administrative conflict between the state and the central governments in areas of amenities provision and social service obligations of government in the city. Today, Ikeja has been engulfed by development through spatial development and expansion to form part of metropolitan Lagos.

In 1976, the need to resite the federal capital was considered by the military government administration of General Obasanjo, and justified on the ground that Lagos had become saturated, land price had become expensive. Possible avenue for future expansion was by reclaiming land from the sea, which is very expensive. Politically and strategically, the federal capital need to be located in a more centrally positioned place in the country. This implied an attempt to build a new capital from scratch like Washington D.C. (United States of America), Brasilia (Brazil), Dodoma (Tanzania). It is observed that the political influence enjoyed by Lagos would be reduced by moving the seat of government away from the city, it will still remain the economic hub of the nation, Because the proposed capital will only perform an administrative role rather than economic cum political roles which Lagos has enjoyed as the federal capital all over the years. However one major likely effect that Lagos will experience by the movement is in its population. Unlike the case of New York when the capital city of the United States was moved to Washington DC, the public sector of the country is the largest employer in Lagos. Should those employed in the public sector by the federal government move to the new capital, the population of Lagos is assumed will decline taking into consideration their dependants who are likely to move with them to the new federal capital. Another likely effect, is the reduction on pressures placed on the social amenities of the metropolis through fall in the city's population. It is not sure whether this will have tremendous or noticeable effect on public transport demand in the city when the movement is eventually completed.

In any event from our discussion above, Lagos has been developed by the British as a seat of colonial administration from which the city benefitted enormously. The political, economic, industrial and social affluents enjoyed by the city led to the migration of peoples into the metropolis, hence the main causes of the city's urban problems. Some of the main urban problems afflicting the city of Lagos are discussed later in this chapter.

2.5 DEMOGRAPHIC CHARACTERISTICS.

The population of Nigeria, was put at 95.7 million in 1985, but it is estimated now at 105 million. This national population is assumed to be growing at about three percent per annum. The population and economic growth are the principal forces behind the form and content of the Lagos metropolitan area urban structure as it is known today. These two forces combine to give the city the importance and vitality it currently enjoys but, at the same time, are the cause of many problems which the city is experiencing and the deficiencies in infrastructure facing the government.

To ensure a reasonable level of reliability of the demographic analysis and accuracy of population projections for the study area, every recent source of information made available has been utilised. It is sad that the last officially accepted population census was conducted in 1963. This and other previous censuses, and demographic surveys conducted by government organisations provide the data for discussing the city's demography. Due to the quality of the country's past population census data, there have been considerable differences in population estimates for metropolitan Lagos prepared by various institutions and agencies.

In 1800, the population of Lagos was estimated to be about 5,000. By 1850, it had grown to 20,000, primarily because of an increase in trade activities which encourages in- migration. The first officially documented population census of Lagos was in 1866, and it recorded a population figure of 25,083 for the city. This figure increased to 41,847 by 1901. During this period, trading in Lagos expanded and became more institutionalised. With improved port facilities and better access to Lagos by rail and roads, the area experienced a great increase in all urban activities. Lagos in turn became more attractive to immigrants. In the first half of the 20th century, the population grew from 41,847 in 1901 to 230,256 in 1950. This rapid increase in population was due to heavy immigration and a high natural increase in birth rate resulting from improved health facilities and environmental conditions. Table 2.1 represents a summary of the population growth of Lagos between 1800 and 1987.

The major explosion of the city's population occured after 1950 as shown in table 2.1. Furthermore, table 2.2 and figure 2.4 represent the population distribution spatially over the city according to local authority.

The demographic characteristics of the city as revealed by census data used for this discussion, is dominated by a youthful population, with a significant increase in the 0-9 years age group. This general demographic characteristic is attributed to improved health and environmental conditions, thus leading to a reduction in infant mortality rate in the metropolitan city. On the other hand, the increase observed in the data between the 10 - 19 and 20 - 29 age categories, is attributed to in- migration to the city, especially rural - urban migration.

Furthermore the metropolitan's population has been dominated by males since 1901. For instance, a study by the Human Resource Research Unit of the University of Lagos, in 1976, suggests a sex ratio of 120 males per 100 females for the year 1976. This increase is due to the decline in inter tribal wars which

TABLE 2.1

LAGOS METROPOLITAN POPULATION

1800 - 1987.

YEARS OF CENSUS	AREA COVERED BY CENSUS (M 2)	TOTAL POPULA-TION	ANNUAL GROWTH RATE (%)
1800	---	5,000	---
1850	---	20,000	---
1866	---	25,083	---
1871	---	28,518	---
1881	---	37,452	---
1891	1.6	32,508	---
1901	---	41,847	2.5
1911	18.0	73,766	5.7
1921	20.2	99,690	3.1
1931	25.6	126,108	2.3
1950	27.2	230,256	3.3
1963	69.68(km)	1,136,154	---
1973	---	2,583,876	---
1976	271.20(km)	3,519,000	---
1986	---	4,954,040	8.0
1987	---	5,360,363	8.0

Sources:

1. Akin Mabogunje, "Urbanisation in Nigeria." University of London Press, 1968.

2. Population Census of Nigeria, (1952, 1963).

3. Ayeni, M.A.O. "Urbanisation in Nigeria: Processes and Problems." 1978.

4. Lagos State Government, (1986, 1987).

claimed the lives of many males in an attempt to defend their land and, inmigration into the city from the hinterland in order to benefit from the economic prosperity which the city is enjoying from colonial influence.

TABLE 2.2

POPULATION OF LAGOS STATE
(by local government)

LOCAL GOVERNMENT AREA	POPULATION 1963	POPULATION ESTIMATE		
		1973	1986	1987
LAGOS ISLAND	410,772	886,826	1,302,334	1,341,404
LAGOS MAINLAND	254,474	549,390	806,798	831,002
MUSHIN	230,882	498,457	1,355,615	1,464,061
SOMOLU	82,646	178,427	487,253	524,073
IKEJA	81,445	175,834	478,201	516,457
*EPE	130,395	175,240	257,346	265,066
[1]BADAGRY	122,159	231,021	560,807	601,711
[1]IKORODU	130,795	175,778	258,135	265,879
TOTAL	1,443,568	2,870,973	5,504,489	5,809,656

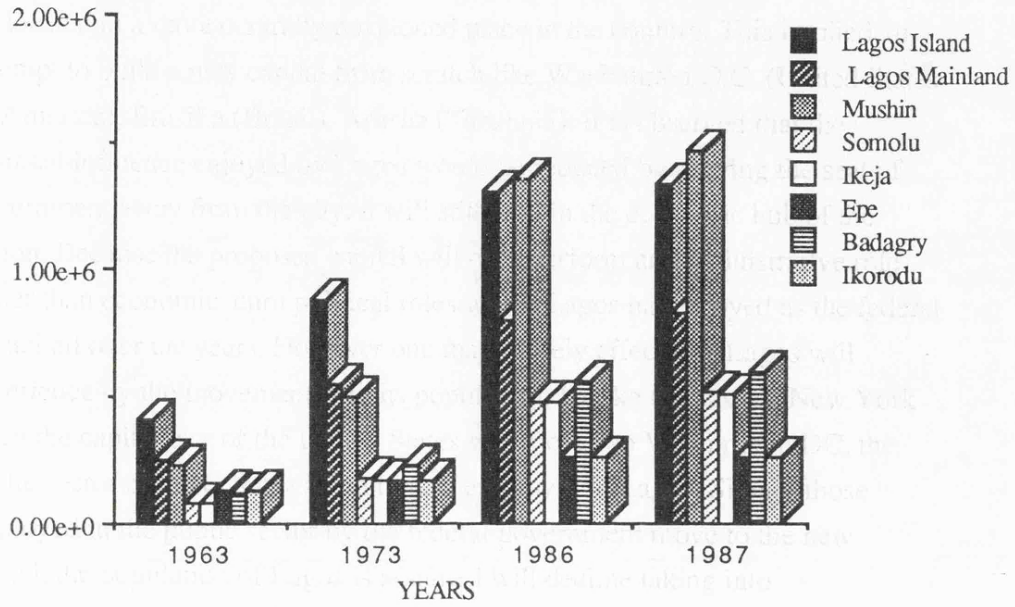
NOTE:
1 = Part of the administrative boundary falls into Lagos Metropolitan.

* = Shares no boundary with Lagos Metropolitan.

SOURCE:
Lagos State Government Nigeria, Statistics Division, 1987.

Adegbola, (1975, p.31). This youthful nature of the city's population has implication for public transport demand.

Figure 2.4 Population of Lagos State by LGA



It is of importance to highlight the household population or size of the city because of its relevance to the research. A household in this context, refers to a group of people living in the same dwelling unit, sharing the same housekeeping unit and eating from the same pot. The 1976 qualitative landuse survey results for the city of Lagos revealed that Mushin West Area contained 31.6% of the metropolitan area population, while the Lagos mainland local government area only accounted for 14.7%. The majority of the population when the survey was conducted (1976) lived in rooming houses and the average number of inhabitants per household ranged from 32 to 69 in different local government areas falling within the limit of Lagos metropolitan. Of the housing stock in the metropolitan area, 27% were located in the Mushin West Local government area, while the Badagry area, contained only 7%. (Table 2.3).

2.6 ECONOMIC ACTIVITIES.

The economic dominance of Lagos in Nigerian foreign trade remained at about 70% up till 1967. It further rose sharply to 90% during and after the country's civil war (1967 - 1970). In terms of value of foreign trade, Lagos port handling about 80% of the total value of imports remain the largest Nigerian seaport. The emergence of the crude oil (petroleum) as a major force in the national economy, the city's share in the total volume of exports has fallen in

Table 2.3

Houses and Inhabitants in the Local Government Areas of Metropolitan Lagos. (1976).

LOCAL GOVERNMENT AREA.	NUMBER OF HOUSES	%	PREDOMIMANT TYPE	AVERAGE NUMBER OF INHABITANTS.	ESTIMATED NO. OF INHABITANTS	%
LAGOS ISLAND	15,800	18.7	Flats, Rooming single.	32	507,000	14.5
LAGOS MAINLAND	14,000	16.6	Flats Rooming	37	514,000	14.7
MUSHIN WEST	22,700	27.0	Rooming	49	1,106,000	31.6
MUSHIN EAST	10,200	12.0	Rooming	45	458,000	13.0
BADAGRY	5,900	7.0	Rooming	69	408,000	11.7
IKEJA	15,900	19.0	Rooming	32	507,000	14.5
TOTAL	84,500	100.3		41.5	3,500,000	100

SOURCE: MASTER PLAN BULLETIN, NO.1 FOR LAGOS METROPOLITAN. 1979.

recent years. This fall is generally attributed to the proliferation of Nigerian ports between 1975 and 1981, coupled with the fact that crude oil is not extracted in Lagos area. In considering the city's contribution to production, the metropolis accounts for about 50% of the total value added by the manufacturing sector in the country. Furthermore, as it has been observed that industry in Lagos is much more capital intensive than in any other part of the country, the proportional total of capital invested is greater in the city than in any other part of the country. Manufacturing employmemt is less concentrated in the centre business district of the city as a result of the relative capital intensity of its production structure and the space required. A high proportion of the country's skilled manpower is concentrated in the metropolis. A survey of the National Manpower of 1977, estimated that over 40% of the nation's skilled manpower is employed in Lagos whereas, another study puts one in every four workers employed in the modern sector in Nigeria to be in Lagos.

An examination of the country's second national development plan programme (1970 - 74) of investment in Lagos metropolitan area, shows that the investment placed on the metropolis was far greater than the total investment provided for the entire country in the 1962 - 68 first national development plan period. Again, the federal government's investment in Lagos during the third plan period of 1975 -80, according to the revised estimate was 2.7 billion naira. To highlight the impact of the planned federal investment, it is only necessary to point out the cost of constructing the Lagos inner ring road complex which alone was estimated at 580 million naira. This estimate, exceeded the total capital budget of Lagos state government for the Third plan period which was 578 million naira. Hence, economic investments in Lagos were stronger and performed better than in any other part of the country. It was not surprising then that between 1971 - 76, the reported average annual rate of increase of aggregate profits was 39.7%.

Perhaps the most important and serious implications in human terms for concentrating huge economic activities and investments in Lagos metropolitan is the migration of people to Lagos in search of jobs. The concentration of trade, investment and industry in Lagos has resulted in a noticeable difference between wages and expected income in Lagos and in rural areas. This in addition to other social facilities like health and education have attracted migrants in large numbers adding to the problems of exploding population and congestion facing the city.

Structure of Lagos Economy: The economy of Lagos can be structurally classified into two: 'modern' and the 'informal' sectors. The modern sector

consists of the economic activities under conditions where the production methods, consumption patterns, business organisation, level of personal sophistication and the relationship with various units of the economy are formal and legal in the Western sense. Hence, the rest of the income generating sector falling short of the above description is regarded as informal. By this definition, many activities in Lagos metropolitan can be regarded as informal.

Structurally, the economy of the metropolitan region can be divided into nine activity areas, with each of the activity area, potentially demonstrating the structural components of either informal or modern sectors. Although the impact of one sector varies from one activity group to another. These nine activity groups are represented in table 2.4.

The primary sector, incorporates agriculture, forestry and fishing. In Lagos, there is very little land available for practising agriculture in large scale because of the size of the metropolitan and its geographical characteristics. But greater fishing activities are undertaken in a noticeable scale by the informal sector that have organised themselves into cooperative societies. The impact of the modern sector is little felt in this area. However, there is little mining and quarrying activity taking place in the metropolitan especially in the form of sand and gravel quarrying operations. It is the modern sector that dominates the activities because of the technical knowledge required as well as the heavy overhead cost it entails in procuring machines meant for quarrying activities.

The manufacturing sector as enumerated by the Federal Office of Statistics (FOS) are those establishments employing more than ten people. In other words, manufacturing establishments with less than ten people are grouped in the informal sector. Nonetheless, the importance and contribution of manufacturing activities in the city of Lagos is very great as shown in (table 2.4). For instance, it is the second largest sector by sector employer in the metropolitan city in 1975 and the highest in 1978.

Building and construction is much more prosperous in the informal sector. However initially, it was very low and insignificant sectoral activity. But since after the Nigerian civil war in 1970 and the subsequent reconstruction and rehabilitation programme of the government it has attained a very prominent position as an economic sector. The construction of the Festival of Arts and culture village (FESTAC) in 1977, the Tin Can Island Port (1977), the third mainland bridge and the federal secretariat are some of the government projects that aided the sector to prominence. All these projects were possible because of the emergence of Nigeria as major oil exporting country and revenue derived from oil trades were used to finance these huge projects.

Table 2.4

EMPLOYMENT STRUCTURE. (1975 AND 1978).

ACTIVITY GROUP / SECTOR	1975 EMPLOYMENT (OOO'S)	1975 % OF TOTAL	1978 EMPLOYMENT (OOO'S)	1978 % OF TOTAL	1975-78 ANNUAL GROWTH RATE (%)
Agriculture, Fishing & Forestry.	6.9	1.7	7.1	1.3	1.0
Mining & Quarrying	2.9	0.7	3.9	0.7	10.4
Manufacturing	105.0	25.7	156.3	29.0	14.2
Utilities	20.0	4.9	8.8	1.6	---
Building & Construction	34.3	8.4	41.4	7.7	6.5
Distribution	30.5	7.5	37.4	6.9	7.0
Transportation & Communication	18.8	4.6	46.7	8.7	12.6
Public Administration	112.2	27.5	135.0	25.0	6.4
Others	77.3	19.0	102.9	19.1	10.0
Modern sector	407.9	100	539.5	100	9.8
Informal Sector.	545.6	----	594.2	---	---
TOTAL	953.5	---	1,133.7	---	---

SOURCE: REGIONAL ACCOUNTS OF NIGERIA. 1975 AND 1978

The distribution sector covers the whole range of wholesale and retail, ranging from importing companies and departmental stores to the range of single individual selling a few goods at a market. It is this sector that easily brings out the distinction between the formal and informal sectors of the city's economy. Trading activities in the informal sector of metropolitan Lagos is organised through market places. These market places are very popular in the entire country. They include the traditional market centres of Obun Eko, Ebute-Ero, Egerton Square, Olowu street, Faji, Docemo and Obalende and the emerging traditional market centres of Teju-osho, Mushin, Oshodi and Ikeja. These traditional market places play important roles in the distributive trade of the country in general and Lagos in particular. The development of a modern central business district along Marina, Broad street and Nnamdi Azikwe street, Allen Avenue, Western Avenue and Herbert Macaulay, has also enhanced the commercial role played by the metropolis. The city's commercial role has made Lagos to be the most popular and important region in the country today.

Transport and communication are also functionally described to include publicly provided services in the modern segment. Public transport operation for instance, is provided by both the private and public sectors who are regulated to do so, and the informal sector who provides public transport services illegally. The private sector has a combined fleet that exceeds that of the public sector in actual fleet numbers. But the public sector public transport operator, is the single largest public transport operator in the city. Telephone and postal services are monopolised by the public sector and are owned by the government. So also are the rail, seaports and air transport systems in the city which are run by government agencies.

The public administrative sector includes all the government workers, but excludes service oriented workers in the government employment like medical doctors, fire servicemen, and those employed in utilities, transport and communication. The government is the largest single employer in the metropolitan city.

Finally, the service sector is a very large complex and heterogenous activity group. It incorporate all activities excluded from public adminstration, especially those in the private sector like lawyers, accountants and other professionals. The informal category in the service sector for example, include road side automobile repairs, vulganisers and tailoring.

2.7 URBAN DEVELOPMENT AND LAND - USE.

The configuration of and extent of present landuse development, and the principal thrust of the urban growth in Lagos metropolitan are products of its

geographical location, historical antecedent and its unique physical site characteristics. These influences have accounted for the city becoming the main primary industrial, economic and administrative centre of the country. All these combine to affect once again how public transport is operated in Lagos.

According to Whitford, (1976), the advantageous coastal location and the convergence of inland trade routes for example combined to create " the best situation for trade on the Bight of Benin", and assured the early commercial eminence enjoyed by the metropolis. Furthermore, the internal (inter- tribal) wars, the slave trade in the hinterlands of modern Nigeria and colonisation combined to cause the southernly migration of peoples and the early settlement of coastal areas which assisted in the establishment of Lagos as an important adminstrative centre for which the federal and state governments have taken root.

The urban development of the city has utilised approximately 172 square kilometres of metropolitan area in 1976. The major part (97.5%) of the urban development occur in the contiguous built-up area which is within a broad triangle; extending from Maroko and Ikoyi (east), westward to Ojo, and The Isheri Water reserve in the north. This pattern, is changing rapidly because more lands especially around the fringes are been encroached upon and developed. This trend has been further accelerated by the recent movement of people in the city reacting to the growth pressures of the central Lagos.

The Lagos urban area has developed northward from the port area progressively. The city's development has tended to center around a flat, low ridge that marks the extent of the watersheds of the two river systems draining the area. This spine is generally crudely delineated by the Nigerian national railway and the Agege motor road. Urban development along this higher land in recent years has reached beyond the boundary of Ogun State, north of Lagos metropolitan area.

While the marshy lands adjacent to Lagos Lagoon have tended to forestall continuous and extensive urban development to the east of the city. However, Ikorodu represents a nucleus of development that has experienced rapid growth in the immediate past. The dredging of canal across the Lagos Lagoon from the port and the prospects for a major industrial area and other improvements suggest that extensive metropolitan related growth is likely to occur in this area in the future. On the other hand, the ocean frontage east of the city seems better drained than to the west, and has been a location which has attracted extensive formal and informal development on Victoria Island and Maroko. Numerous development proposals have been earmarked and the

prospect of a new port at Lekki peninsula by the state government suggests that major metropolitan growth will occur in this area.

2.7 .1 Existing Land Use: Data on the extent, distribution and intensity of urban landuse are derived from various sources. The most important of these sources are the twenty year master plan development programme for the metropolis (1965- 1985), and the 1976 Qualitative land use survey of 1979. These two studies incorporate the contiguous built up area, and the surrounding urban fringe of Lagos. (table 2.5 and figure 2.5). Overall, 17, 228 hectares of land held 3.3 million inhabitants in 1976. This suggest an overall population density of 200 persons per hectare of developed land.

Examining the urban landuses of the metropolis spatially, the largest residential tracts are located around Agege, Mushin, Ikoyi, Maroko and Ijeshatedo. These are places where residential landuse accounts for more than 80% of the total built up area. Predominantly non residential districts are Mushin NW, Lagos Island, Ketu- Oregun and Ojota, Airport- Sogunle and Ikoyi west and the Central Business District area. (Figure 2.6).

Residential: The area of residential use in the city accounts for 51% of all urban land utilised. This use seems to be in a fairly consistent proportion of each of the areas shown in the metropolis. However, the intensity of residential landuse is to be more dominant in the external fringe where other land uses are poorly represented. An important aspect of residential landuse is with the areal separation of people by socio- economic characteristics. For instance, certain neighbourhoods like the Victoria Island, Government Reservation at Ikeja, Ilupeju and Palmgrove and Ikoyi east residential estates are inhabited by the high income group. These areas are low- density residential areas generally dominated by the presence of tracts of open land. Medium to high density residential areas exist in Yaba, Surulere, Ebute metta, and in many privately owned residential areas like the Anthony Village and Okupe estates. Other places like Ajegunle, Kirikiri, are low and sometimes substandard residential areas, where a variety of mixed residential and other activities are common scenes.

Transportation: Transportation facilities, which include the airport and seaport complexes, rail systems and its associated right of ways, and road networks constitute the second largest consumer of urban land in the metropolis. The 3,200 hectares of land consumed represent 19% of the city's developed land. The largest single transport facility, the Murtala Mohammed International Airport complex at Ikeja, accounted for over 50% of metropolitan Lagos land use for transport purposes in 1976. During this time the airport

represented the north western extreme of urban development of the city. However, some areas in the city, like Mafoluku, Agege, Ipaja, Alagbado, Egbe and Isolo have expanded and encroached into and beyond the airport vicinity. The site of the airport can no longer be regarded as the north western extreme of the city.

Institutional / Special: This type of land use include the University of Lagos at Akoka, sites for colleges and schools, hospitals, military sites, and police colleges and government offices. This form of land use in the city represents 13% absorbing 2,365 hectares of urban developed land. The proportion of institutional land use may vary from 9.3 - 39.4% in the various local government areas of the metropolis. For instance, institutional use is high in the land use activities taking place in the Lagos island accounting for about 20% of land use development in the city's island.

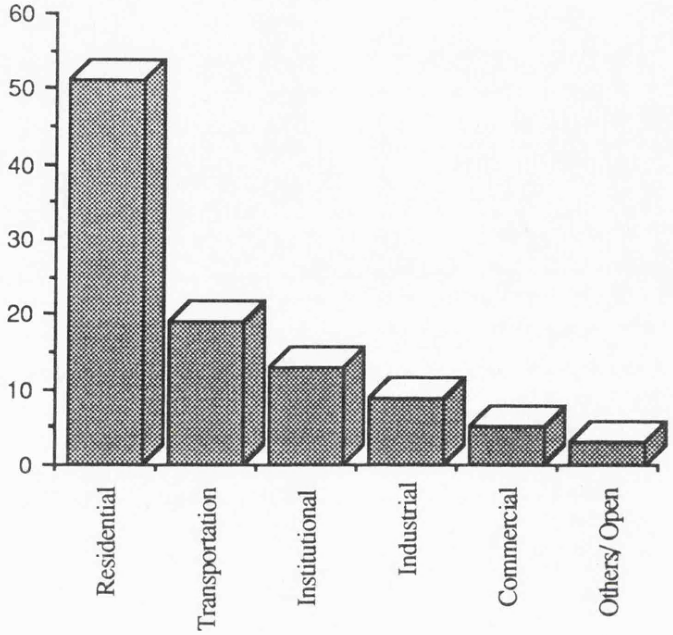
Table 2.5

LAND USE IN METROPOLITAN LAGOS. (1976).

LAND USE ACTIVITIES	TOTAL AREA (HECTARES)	PERCENTAGE. (%)
Residential	8,288	51
Transportation	3,065	19
Institutional/ Educational	2,141	13
Industrial	1,426	09
Commercial	809	05
Others (open space)	448	03
TOTAL.	16,177	100

Source: Land Use Survey. Lagos State Ministry of Information. Ikeja, 1979.

% Figure 2.5 Landuse in Lagos Metropolitan (1976).

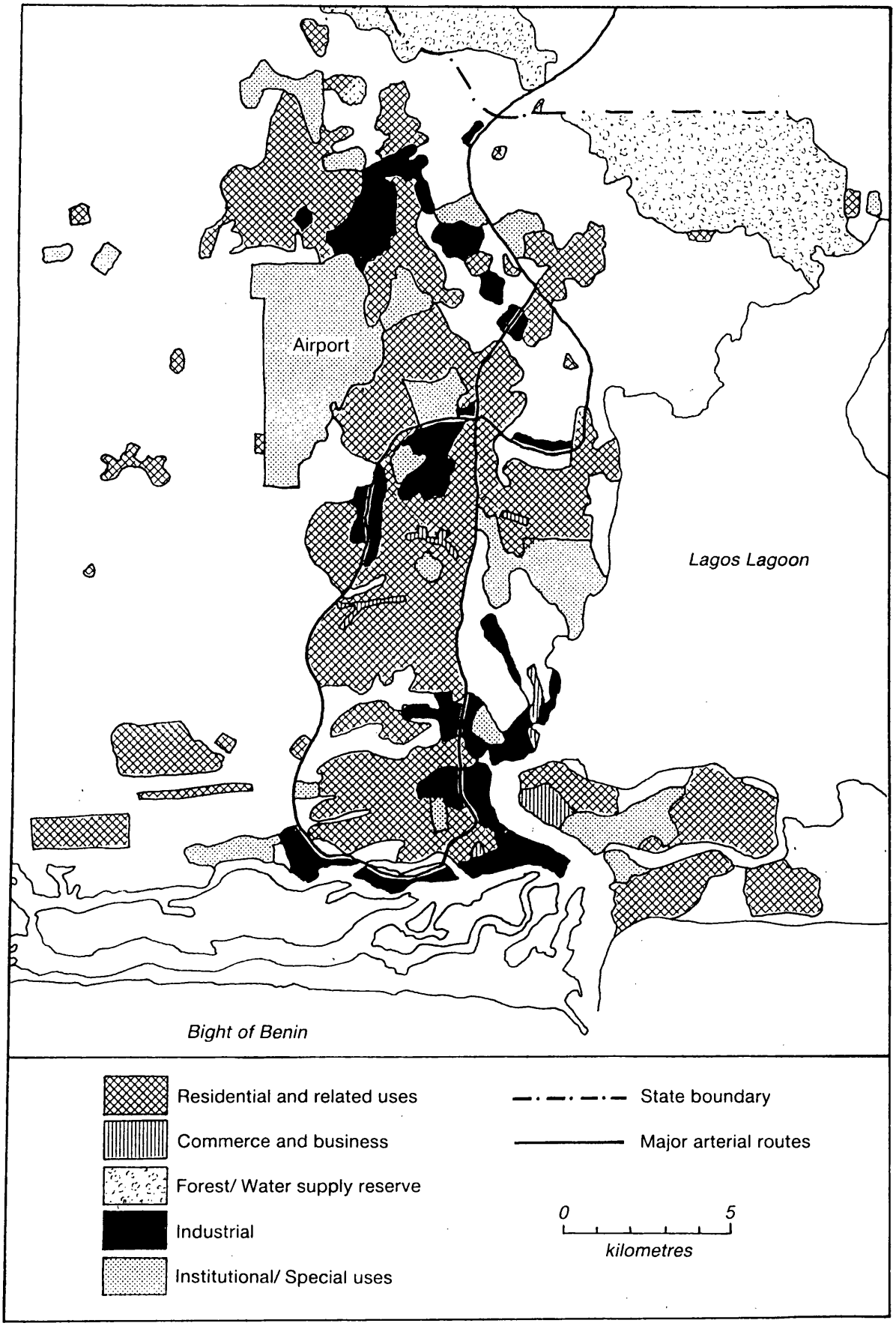


The largest single component of the institutional use is the Ojo Military Cantonment along Badagry road occupying approximately 2,000 hectares of land. While being very large, the cantonment occupies a limited developable land and embraces extensive areas of swamps and wetlands, so its effect on urban development seems negligible.

Industrial: Land for industrial use in the city occupies 9% of the city's developed urban land. A total of 87.7% of the industrial land area (which includes 91.2% of all manufacturing activity) can be found in 11 industrial estates of the city. In terms of employment opportunities, the industrial estates, are responsible for most of the 225,000 employees in the manufacturing industry. The largest Ikeja, had 71 manufacturing establishments and employed over 35,000 persons in 1979. Ilupeju, Isolo and Mushin have a combined areas of 310 hectares with 88 establishments and employing about 31,000 persons. Employment densities in industrial areas of the city ranged from 100 to 140 workers per hectare in 1978. (Arikawe, 1980).

2.7.2 Future Land Needs: The areal implications of expanding the metropolitan area from the current 5.3 million population size to 13 million will be better perceived when seen in light of current population/ landuse relationships. In 1976, the contiguous urban area of Lagos covered 16,178 hectares to accomodate the estimated population of 3.2 million persons and the associated economic and social activities and institutions. The only other major urban community in the vicinity is Ikorodu which in 1973 had an urban

Figure 2.6 Land use map of Metropolitan Lagos



population of 92,000 and a built -up area of 365 hectares. The overall population density of these urban developments was about 200 persons per hectare (pp/ha).

Traditional patterns of land development shaped by natural physical constraints are now being increasingly altered due to accelerating urbanisation pressures. This unfortunate trend seems to be characterised by larger and larger land reclamation projects, increased building in drainage ways and wetlands, and rapidly expanding squatter settlements along the metropolitan area water fronts. Most of these activities, engaged both by the private and public interests, has not been accompanied by proper planning and engineering design efforts.The eventual results being increased flooding throughout the metropolitan area, loss of life from both flooding and unsanitary living conditions, and constant reduction of necessary open space vital to the environment, health and recreational interests of the community.

2.8 THE URBAN PROBLEMS OF METROPOLITAN LAGOS:

A notorious feature of the territories now comprising Lagos metropolitan over the years has been haphazard development. Many areas of the metropolitan were unplanned. They sprang up as contravention and government of the day, rendered helpless by their sheer quantity, eventually accepted them as defacto districts. Ajegunle, Amukoko, Somolu, Bariga, Ketu, Ojota and Maroko are some of the settlements in the metropolitan which have haphazardly evolved over time. The direct results of these unplanned developments is that there are no infrastructural services in most of them and as such those that exist are grossly inadequate. The principal cause of these conditions described above was the neglect of the community and failure to plan effectively by successive governments of Lagos State.

No where are problems of Nigerian urbanisation and urban development more visible than in Lagos. Here, urban problems range from unemployment to traffic congestion and environmental deterioration. Green and Milone (1972) summarised the situation as follows; that chaotic traffic conditions have become endemic; demands on water supply system have begun to outstrip its maximum capacity; power cuts have become chronic as industrial and domestic requirements have escalated; factories have been compelled to have their own wells and to set up standby electricity generating plants; public transport has been inundated; port facilities have been stretched to their limits; the conditions have degenerated over extensive areas within and beyond the city's limits in spite of slum clearance schemes; and city government has threathened to breakdown amidst charges of corruption, mismangement and financial

incompetence. Moreover, although employment opportunities have multiplied in industry, commerce, and public administration, there is no doubt that thousands of in migrants have been unable to find work, and the potential for civil disturbances has increased.

Udo, (1980 p.1), further upheld the views of Green and Milone,1972, that the situation remains unchanged and unchallenged. Hence, according to Udo, "Nigeria is probably the most disorganised, dishonest and indiscipline country in the world today. Abundant evidence exists in the nations' capital city, Lagos, to show that the state of disorder and lack of organisation, caused partly by lack of planning or poor planning and partly by the deplorable attitude of the Nigerian to work which is so staggering as to appear to defy any meaningful solution. In the larger cities, the traffic situation is chaotic, most telephones are dead through mechanical and human faults, while power, fuel, and water shortages are frequent. The residential areas of these cities are an eyesore and are constantly expanding as houses spring up in periphery of urban areas, on locations without access to roads or drainage and all these in total disregard to local building regulations, where such regulations exist."

These two instances suggest that there are many urban problems afflicting metropolitan Lagos and many of these problems affect how public transport buses are operated in the city. Mabogunje, (1974 p. 2-6), described these problems afflicting the city of Lagos as; problems of serviceability, moveability, manageability, unemployment, environmental degradation and deterioration, and urban management.

2.8.1 Inadequate and Inefficient Provision of Basic Services: The problem of serviceability in the city of Lagos which has been described thus by Mabogunje (1974) is synonymous with inadequate and inefficient provision of basic services discussed by Ayeni. (Ayeni, 1983). The provision of basic services and conveniences as public transport, health facilities, housing, electricity, water, recreational and educational facilities remains the greatest failure of Lagos metropolitan. Even in a situation where these services and facilities are available, they are more often inadequately provided and inefficiently managed. The failure of the metropolitan authority to provide enough of these facilities cannot be separated from the city's rapid population growth.

The inadequacy of housing structures in the metropolis, is a major problem affecting the city. This problem of housing is not only reflected in the soaring rents a house or room occupier has to pay but also in high class residential areas, there is overcrowding. The average number of people per

room in Lagos was 4.1 in 1976, the high class residential areas of Victoria and Ikoyi and the medium residential areas of Ebute Metta and Yaba also had the same figure. Higher densities were found in Agege 5.0, Mushin Central 4.5, and Lagos Island 5.4. (Ayeni, 1983). The magnitude of overcrowding is again reflected in the high ratios of inhabitants per house in the metropolis. The average for Lagos is 40.8 although higher figures can be found for places like Ajegunle 55.7, Oregun and Ketu 54.9, Mushin Central 67.4, Mushin West 64.6. The lower figures for Victoria Island 15.3 Ikoyi East 21.9 and Ikoyi West 27.9 suggests the lower densities in the high class residential areas. As Ayeni, (1983 p.134), suggests that high densities of people per room and per house leads to over utilisation of space and household facilities such as water, electricity and toilets. This constitutes one major reasons why these facilities never seem to function efficiently in many homes. Again, as a result almost all available space has been used for the construction of the rooming houses in which most of the inhabitants reside. The development of other social and recreational amenities such as parks and recreational grounds are also hindered.

2.8.2 Environmental Deterioration and Degradation: It is important to stress the implication of environmental deterioration and degradation on effective public transport operation especially the bus system.

Solid wastes for instance are expected to be collected at designated refuse collection points. These collection points are often along streets to enable refuse collecting vehicles to perform their duties. The rate at which refuse accumulate exceeds the rate at which they are collected. Hence, these sites are quickly filled up, which eventually spill over to the road network. At the points where the refuse has spilled the road system narrows. This point now constitutes another bottle neck for vehicles. This affects bus operation especially when the road network has been narrowed down hence making traffic movement slower, since the vehicles have to wait to ensure that there is no oncoming vehicle on the other side of the road before they can use it to manoueve.

Again, the effect of flooding on effective public transport bus running cannot be overemphasised. One of the major problems hampering public transport operation in Lagos is the deplorable road condition. Many of the city's road systems are full of potholes and open drains at the side of the roads are filled up with dumps. Hence, when flooding occur, through heavy rainfall, the potholes are filled up with water and the open drains are also full up. It subsequently become more difficult for the bus operator to know how to manoueve along the city road and also where to stop at the side of the road for

passengers to alight or board the bus. The fear of flood has further increased among Lagos residents because in many parts of the city, flood is caused by blocking the drainage network systems used by residents for their solid wastes disposal. The flood prone areas of the city include Marina, Yaba, Akoka, Itire and Surulere. This again affects how public transport especially the bus operates in the city.

Environmental deterioration is one of the uncomfortable problems facing Lagos. It is reflected in the form of heaps of garbage, waste materials and also in the structure of houses in the central slums of Lagos island and the fringes of Ojota, Agege, Ajegunle and Maroko areas of the city. Solid wastes in the metropolis include food waste, dead animal matter, solid industrial wastes and combustible materials. The major problem of solid waste accumulation arises because of the imbalance between the production of waste and the capacity of existing clearance facilities. The consequence from the accumulation of solid wastes for bus use is the characteristic filth and bad air which makes travelling by bus uncomfortable. Areas in the city like Central Lagos, Mushin, Ajegunle, Oto, Apapa and parts of Agege and Ikeja readily come to focus.

Since the rate of refuse removal and collection from the approved location or site by the authorities responsible for collection is slow and low, garbage accumulation is therefore unavoidable, while the inadequacy of dumping of refuse on open spaces especially public grounds, undeveloped lands, streets and drainage systems persisted. This inadvently again, affect the manner which public transport bus system operate since many of the refuse have found their way into the road network especially refuse dumped in drainage and along the streets.

Sewage disposal has another huge problem for a clean and liveable environment in Lagos. This affects the prospects of an alternative to the bus system as a means for public transport provision. The use of ferry as public transport has been suggested in the city of Lagos. It seems that one of the major setbacks for exploring this alternative to the bus has to do with the poor situation of our water fronts which are filty, dirty and stinking, making the bus to be more and more dominant and this alternative least attractive.

Some other aspects of environmental deterioration include the dumping and subsequent abandonment of breakdown vehicles on the city network systems. The abandoned vehicles decay and they constitute blind spots and causing road accidents. Again the emission of gases from automobiles and industries and the discharge of industrial effluents into the streams and local

rivers, cause lots of problems in the city. The adverse effects of this has not been realised in the city, but is a potential problem for the future.

2.8.3 Urban Unemployment: A major problem of urbanisation in Lagos is unemployment. (Ayeni, 1983 p.144). Even though there is no systematic record keeping on unemployment in Nigerian cities, there is enough evidence of its extent. For instance, since 1971 it has been observed that Lagos has the highest unemployment level in the country. Falae, (1971) put the unemployment level of the country at 1.7 percent and that of the urban centres including Lagos between 5 and 20 percent. The high level of unemployment observed in Lagos metropolitan is attributed to the rapid rate of urbanisation particularly through in- migration. For instance, between 1952 and 1963 migrants accounted for an increase of 393,000 in the population of Lagos, representing 75 percent of total increase of the city's population during the same period. The major problem with unemployment is that the rate at which job opportunities are created is far slower that the demand for jobs. The slow rate for job creation is again due to the fact that the main employment opportunity is concentrated in the civil service sector and slow industrialisation process of the city. However, it is anticipated that with increasing pace of industrialisation the level of unemployment will drop.

In Lagos one can observe the dimensions of unemployment. There are those to be classified as underemployment or hidden unemployment as described by Ayeni, (1983). This comprises the large number of street traders and hawkers found in the city. These hawkers and traders are often seen selling articles along the busy streets especially where the traffic hold up is always occuring. This trend, creates more demand for public transport especially the bus from the unemployed. This is likely to be true because the bus system is the cheapest means of urban mobility in the city and many of the unemployed would like to make use of the cheapest means of movement available to them in the city.

2.8.4 Problem of Urban Management: It has been suggested that many of the urban problems in Nigerian cities today particularly that of public transport are due to lack of effective urban management and planning. Mabogunje, (1974, p. 5). suggests that urban governments are seen to be ineffective because they are financially poor and weak and because they lack executive power to enforce schemes. Much of the financial difficulty facing urban governments is due to their inability to tap effectively all revenue yielding resources in the city. Furthermore, the problem of urban management is compounded and complicated by the poor quality of urban administration and

management, technical personnel and skilled manpower which are very short in supply.

The provision of services in most cases is beyond the scope of the local authority. The state and federal governments also function in the city through agencies like the State or Federal Ministries of Health, Works, Agriculture, Transport, National Electric Power Authority (NEPA), Nigerian Railway Corporation (NRC) the Police etc. Since these organisations are responsible in one form or the other for the provision of certain services, they significantly affect urban development if not well coordinated. As rightly pointed out by Ayeni, (1983) and Ola, (1977), the serious functional and jurisdictional fragmentation between them further retards the effective and efficient administration and general management of the entire Lagos metropolitan area.

Considering the problems of public sector management, may suggest the need for private sector solutions which is highly relevant to the bus issue that will be discussed in this research.

2.9 PROBLEMS OF TRANSPORTATION IN LAGOS.

The problem of intra city movement in Lagos metropolitan are clearly apparent all over the city. Tamar Golan (1975) describe the situation as follows; "Driving into Lagos centre, be it from the mainland, Ikoyi or Victoria Island, is an experience not to be repeated, and only the ordeal of coming into the city from Ikeja airport can be compared with it. Driving into Lagos, you have ample time to look around as your car is stuck in innumerable traffic jams, your driver gets into long arguments with others who are trying to get inch ahead of him". Golan's description of the traffic situation of Lagos city, was very true in 1975, however less true today because of the great efforts made to improve the situation. However, the problems still remain and planners are far from achieving a long lasting solution.

Geographically, Lagos metropolitan has the potentiality of developing water and rail transportation systems. However almost all the traffic in the city is moved by road. This near complete monopoly of intra city movement by road in the city leads to very serious congestion on the road network systems. The congestion experienced on the network systems is further heightened by the external roads that connect the city region with the rest of the country. This is because traffic not meant for the city passes through the city itself, making its own contribution to the city's traffic congestion. The same road network used for through traffic serves as the major connecting links between Lagos Island and the other parts of the metropolitan like Ikeja, Agege, Yaba, Mushin, Apapa and Badagry road. Most of the existing roads in the city are too narrow with the

exceptions of the newly constructed roads of the metropolitan such as the Western avenue - Agege motor road, Ikorodu road, third mainland bridge, Herbert Macaulay road, Lagos - Badagry express road and the Ikeja- Alausa road. Because the roads are too narrow in the city, make adaptability of the city networks to mass transit system very problematic and difficult. The most affected form of mass transit system are the public transport operators using large buses. The Lagos State Transport Corporation (LSTC) and the many private bus operators with big buses are the most handicapped by the nature of the city's traditional network system.

In Lagos metropolitan (figure 2.6), the city's land use shows a concentration of work activities on Lagos Island, (which is often described as the centre business district of the metropolitan), Ikoyi and Victoria Island, while workers live mainly in the mainland part of the city. This include areas like Ebute Metta / Yaba, Mushin / Idi-oro, Surulere and Ikeja. In a survey of the distribution of employed people vis- a- vis the location of their employment in the city shows that the residential areas in the selected work places accounts for 23% in Ebute Metta/ Yaba, Mushin / Idi-Oro (22%), Surulere (14%), and Ikeja (12%). (Fapounda, 1975 and Ayeni, 1983, p.144). This implies that the majority of the people residing in these areas of the city have to commute to work, since their work place is not within their area of residence.

On the other hand, the major work centres of the city in Lagos Island, Ebute Metta, Apapa, and Ilupeju/ Ikeja (i.e where the concentration of work activities are greater), provide 28%, 18%, 13% and 11% of job opportunities to the population of the city respectively (table 2.6). The last column of the table represents the proportion of the people who must commute to work by different zones of the city.

A major outcome this pattern of interaction in the city therefore, is a rather inefficient diurnal movement pattern in the city from the south to the north and back again. This trend is very likely to change due to problem of space which many entrepreneur are facing in the city centre or Lagos island. For instance, the newly created Agbara Estate is a move towards correcting the north south pattern of traffic movement in the city of Lagos.

Measures introduced to ease the problem of traffic congestion in the city have further encouraged commuters to own motor vehicles and also because there are no alternative routes to the centres of employment traffic congestion has quickly developed. For example, there are three main routes connecting Lagos Island to the city's mainland and 75% of traffic in the city make use of these three outlets in and out of Lagos CBD which is in the island.

The traditional road and vehicle oriented policies usually introduced and enforced in metropolitan Lagos, take little account of the needs of the less priviledged who unfortunately constitute the majority of the city's population. Often, such policies when introduced do not favour the low income group that have no personal means of transport of their own. For example, the 'Odd and Even Number' policy measure introduced by the Lagos State government in 1978 to reduce the number of vehicles on the roads on a particular day of the week, led to greater demand for public transport. (Ayeni, 1981). This measure is still in operation till now. But because of the present economic situation of the country does not seem to justify is continous presence, because many vehicles have been withdrawn from the road due to incresing cost of maintaining them and buying a new one.

The Odd and Even number policy simply means that vehicles with their registration number beginning with an odd number like 1,3,5 etc. are allowed on the city's roads only on mondays, wednesdays and fridays. While vehicles with there registration numbers starting with an even number like 2, 4, 6, etc. are allowed on tuesdays and thursdays only. However this policy was only operational between monday and friday. The measure is to ensure that odd number vehicles are not on the road when even number vehicles are expected to use the road network in the city. Again, it is not all the city's road system that is affected by the policy. There are some certain areas in the city where the policy is not enforced. This implies that all vehicles (both odd and even), can ply on any day and at any time as long as the vehicle is not operated along the restricted zones. This policy suggest for the creation of a cordon area in the city which certain vehicles are restricted. The main areas in the city where the policy is most effective and enforceable are in the Lagos Island, part of Surulere and Ebute Metta. The operational hours of this measure is between the hours of 0600 anf 1800 hours in the areas where the policy is enforceable. Rather for the measure to solve by reducing the problem of traffic movement and encouraging the use of public transport in the affected areas of the city, it further compounded it by making movement more difficult and chaotic. The first problem created by the measure, was the greater increase in the demand for public transport services in the city. Without a corresponding increase in the public transport facilities to cope with the expected increase in demand for public transport services again brought a major setback to the policy objective and more hardship to public transport users. Secondly, it did not take into consideration the quality of public transport services that must be provided or maintained in order to attract and retain the affected car owners who are

expected to make use of public transport when their vehicles are off the road due to the policy.

Table 2.6

DISTRIBUTION OF EMPLOYED PEOPLE IN LAGOS ACCORDING TO PLACE OF RESIDENCE AND PLACE OF WORK. (%) 1975.

AREA	WORKERS RESIDING IN THE AREA. (%)	THOSE WORKING IN THE AREA (%)	THOSE WORKING IN OTHER AREAS (%)
Victoria Island	1.9	2.7	54.8
Ikoyi	1.7	2.8	21.8
Obalende - Lagos Island	13.7	28.2	63.3
Ebute Metta / Yaba	22.5	18.4	30.4
Apapa	4.5	13.3	55.1
Ajegunle/ Ajeromi	5.3	2.4	19.0
Surulere/ Ijora/ Iganmu	11.7	6.3	21.6
Igbobi / Somolu/ Bariga	7.9	2.3	18.0
Mushin	21.9	7.5	27.4
Oshodi	3.1	1.3	16.2
Ilupeju/ Ikeja	2.2	10.5	33.3
Agege	4.6	2.5	42.4
Others	---	1.8	---

SOURCE: Fapounda, O.J. (1975).

Thirdly, the role of the wealthy people in the city was not taken into consideration. These are people who can afford to buy a second car to enable them be on the road at all times and every day. This is achieved by ensuring that one of the two vehicles is registered as even and the other as odd. Belonging to this category are those rich people who have all their activities taking place all of the time within the cordon area which the policy measure covers.

However, the Odd and Even number policy measure does not affect operators of stage carriage or commercial vehicles like taxi and buses used for public transport and school buses. Hence, vehicles in this group are always on the road in the city and can go anywhere. For example, the stage carriage or commercial vehicles in Lagos can be differentiated from any other form of vehicle in the city by the colour of the vehicle as well as the colour of the registration plate number. Stage carriage or commercial vehicles used for this purpose in Lagos are painted yellow with black stripes at the sides of the vehicle.

Even though recently, the registration of vehicles has declined in the city, which suggests that more vehicles are not brought into the city's network, this still does not provide for good transport situation in the city. Traffic congestion is still high in the city's network which is due to the fact that the centre business district (CBD) area of the city is within the Lagos Island and this island is linked to the mainland through three main roads and it is these roads all vehicles entering the (CBD) use to commute, thus causing serious traffic congestion or hold ups.

One can question the validity of the measure because it has not helped public transport users in the city. The policy seems to have introduced a new dimension to the city's public transport problems. This dimensional problem can be described as increased demand for public transport without corresponding increase in public transport provision. The introduction of the Park and Ride system in Lagos and selection of the parking sites at Iganmu, and Yaba in 1977 became unpopular as a result of increased theft of vehicles parked at selected parking points and the general insecurity of the sites made the system very unreliable. The use of traffic warden was also tried but failed and remained unsuccessful, because of the general absence of coordination of their activities and on many occasions the traffic wardens do not work in conjuction with the police. Many of the traffic wardens were not trained for this job hence their activities rather caused further traffic hardships on the road for commuters.

The view presented by the percentage share of the transport in the city's landuse pattern again is very erroneous. Because over 70% of the transport share of the city's land use are accounted for by the Murtala Mohammed Airport and the seaports of Apapa and Tin- Can Island. Hence the transport network itself seems not to be enough for the city. It therefore suggests for the building of more roads especially in the urban fringe to improve accessibilty to these areas.

2. 10 CONCLUSION.

Many of the physical and spatial features of urban development in Metropolitan Lagos are the direct consequencies of varied economic and political roles that Lagos have played in the history of Yorubaland and of colonial and independent Nigeria. From its beginnings as a fishing and farming settlement, Lagos has experienced great long term growth to become one of Africa's largest, most densely populated and important cities. Hence, the problems attributed to urbanisation generally have also taken their tolls on Lagos, just like other third world cities have been affected by the consequencies of urbanisation. However this study will be focusing on the activities of the private sector public transport operators in the city.

CHAPTER THREE.

PUBLIC TRANSPORTATION IN METROPOLITAN LAGOS: EXISTING SITUATION.

3.1 INTRODUCTION.

The main thrust of the research will be addressed in this chapter. Questions such as who provides public transport buses will be examined, especially the relationship between the government owned and privately operated public transport buses. The different categories of people for whom the transport is provided will also be examined. The regulations and control measures, and the organisation of bus provision in the city will be analysed.The types of buses in use will be reviewed, and there will be an overview of their operating routes as well as the problems that emanate from plying the roads. Finally the chapter will give an insight to the role of government and available alternatives to bus provision in metropolitan Lagos.

3. 2. EVOLUTION OF PUBLIC TRANSPORTATION.

The history of public transportation in Lagos would not be complete without paying tribute to Messrs John Nicholas Zarpas and company. Zarpas was a Greek businessman who pioneered the first organised bus transport service in Lagos in 1929. He operated his transportation business on a small scale from Olowu street Lagos, with a staff strength of 100. With little or no competition, the transport business boomed. The success of his business, was a challenge to many other prospective operators who ventured into the same business of providing public transport in the city. Notable operators who later came into the business to compete with J. N. Zarpas and company, in order to satisfy the transportation needs of the inhabitants of Lagos were the now defunct Elias Transport Service, Nigerian Union of Transport Service Limited, Oshinowo Transport Service, Charity Transport Service, Benson Transport and a host of others.

The evolution of public transportation in Lagos shows similarity with the developed countries such as Britain and France, where it was first operated by the private sector. Again, the proliferation of public transport operators in Lagos is an indication that the need for public transport was growing, hence new operators were sure of passengers for the buses they provided. The private

sector provided all public transport in the city between 1929 and 1958. The government did not participate in public transport provision in Lagos until 1958. The involvement of the government in public transportation in Lagos, started with the acquisition of the Messrs J. N. Zarpas and company in 1958, which was the largest single private sector public transport operator in the city during the period. The acquisition ushered in the Lagos City Council transport service, operating under the name of Lagos Municipal Transport Service. (LMTS). The argument for the involvement of the public sector in mass transit provision in the city of Lagos was to improve the public transport services provided by the private operators as well as extending the areas covered by their operation in the city at that time. To achieve this, the Lagos City Council, purchased more bus fleets. The buses were often imported from abroad. Inspite of the acqusition of Messrs J.N. Zarpas and company by the government, other private public transport operators in the city were allowed to continue providing public transport service along with the public sector. This suggests that the operators were performing a valuable service and they provided the extra capacity on several routes.

There are very important issues missing in the history of public transportation in Lagos. These omissions include the types of buses that were used by the pioneers of public transport in the city, and their passenger capacity. Furthermore, the need to consider how the buses performed during the period is equally important. Unfortunately, such information has not been documented and therefore cannot be reviewed in this section. Nonetheless, a brief description of the types of buses that were first used for public transport could be provided. These vehicles were built on a vehicle chassis, and constructed with the use of solid wood. They carried both passengers and goods at a time during this period. The present day type of smaller bus (mini bus) was not in use as public transport in the city until early 1970. The mini bus, when first introduced in Lagos was licenced to operate inter city or inter state public transport services. They were later licenced to operate intra city services along with their traditional inter city services in 1976. Also not available for this study is how the operators provide their services and the areas covered by their services in the city. Except that of the Zarpas which was known to operate only in the Lagos Island, which constitute the main central business district of the city today.

It was noticed that the government before 1958, was unclear about the role of public transport provision in the city. The reason for this unclear position of the government can be related to the colonial policy of the British towards the country, which was to exploit the national resources of the country rather than to develop them. The changing political trend explains for the government intervention in public transportation in Lagos in 1958. Because, at this period

programme towards achieving political independence of the country has been itemised. In essence, apart from the historical record of public transport provision in Lagos, hadly any other information is available about other issues concerning operation, fares and routes. Even the record of who controls cannot be unambiguously assertained, except that public transport operation in the city was licensed and approved by the Lagos City Council.

Alongside the bus services, is the ferry service run by the private sector and operating along the creeks surrounding Lagos. There was not any established government owned ferry service to cater for mass transit movement in the city until 1987. However, the Inland Waterways Department and the Nigerian Ports Authority, often provide ferry services as shuttle between the Apapa quays and the Marina street in Lagos Island. The services provided by this department started in 1974 and it was mainly initiated to connect people that have need to visit the port for easy access between the city's main economic hub and the port complex. The Nigerian Railway Corporation, a federal government establishment, often provide intra city movement along with its schedule inter city service. The railway service is very low and often in skeletal form because there is no distinction between the intra city and inter city services of the Corporation.

3.3. ORGANISATION OF PUBLIC TRANSPORT.

The primary justification for the government of Lagos State participating in transportation arose from the need to provide an efficient public transportation system in Lagos. Transportation of people and goods within the city has always posed a problem. As rightly put by the state governor for Lagos, Alhaji Lateef Jakande, in 1979, that the important role which an efficient public transportation system plays cannot be overemphasised because such a system provides the mode by which the majority of the city can be moved. (Lagos Master Plan, 1979). Therefore, such an important sector cannot be allowed to exist and function without proper avenue for organising and regulating its activities. The manner which the activities of public transportation in the city of Lagos is organised is highlighted hereafter. First of all, it is important to establish the role of Lagos state government in public transportation of Lagos. It is this role of the government that suggests for how the sector is organised, because of this, the role of the government will be used to examine the entire public transport system by revealing how the roles of government are being pursued and achieved.

There are many specific roles that are expected to be performed by the government on issues concerning public transportation in any city of the world. These roles are not only to achieve a reliable public transport service but also a safe one. They range from organising the industry effectively, to ensuring that adequate modes like buses are used, providing safety requirements, regulations

and enforcement mechanisms. Other functions include specifying the passenger capacity for each type of bus used as public transport, setting the standards that must be maintained by bus operators, seeing to the enforcement of the various rules and regulations like traffic regulations and road signs. In addition the government is expected to oversee the infrastructural facilities that will enhance efficient public transport service deliveries, like bus stops and bus terminals, where major passenger interchanges take place.

3.3.1 Organisation of Public Transport Bus: It is the responsibility of the Lagos state government to create an environment conducive to effective public transport operation in the city. In doing this, institutional bodies were set up by the government to coordinate and regulate the activities of the public transport operators. In Lagos, for example, the responsibility for the coordination of the activities of public bus industry is entrusted principally to the Lagos State Transport Corporation (LSTC) and the Central Licensing and Parking Authority (CLPA). In addition, other institutional bodies have been established to oversee the other public transport modes available in the city; an example is the Lagos State Ferry Services Corporation which is responsible for water transport mode. (figure 3.1). In the case of the bus system as shown in figure 3.1, it has been classified into two major categories. These are the private and the public sectors. The public sector represents buses operated by the government while the private sector covers public bus services provided by operators not regarded as government owned. Furthermore, in the case of the bus system, and using the two categories mentioned above, the government has created two separate bodies to cater for the sectors. While the Lagos State Transport Corporation is responsible for all the buses regarded as government owned, the Central Licencing and Parking Authority, is responsible for the organisation of the private sector public transport buses. These two principal bodies responsible for public transport bus system in Lagos are discussed below.

Lagos State Transport Corporation: The Lagos State Transport Corporation, was established by the Lagos State Edict No: 10 of 1977. The functions of the Corporation are:

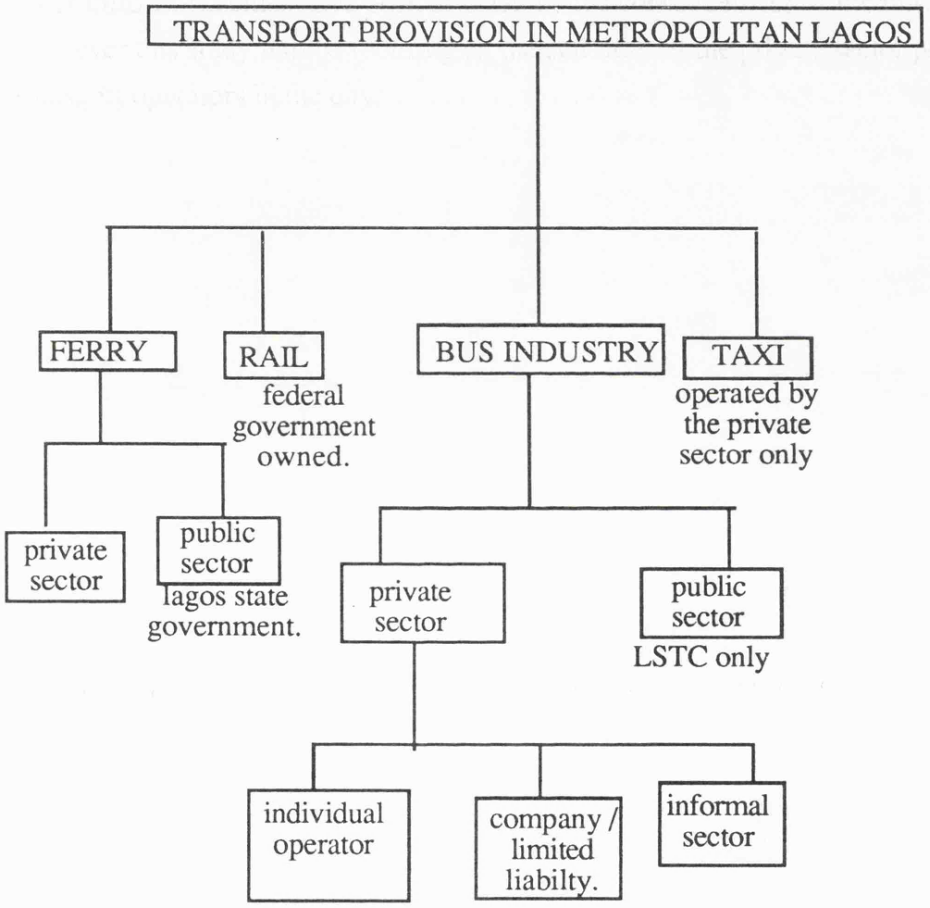
(a) to provide or secure or promote the provision of an efficient, adequate, economically and properly integrated modern system of public inland transport facilities for passengers and goods with due regard to safety of operation and to extend and improve such transport facilities to meet the needs of the public, agriculture, commerce and industry;

(b) to advise the State government generally on the utilisation and development of transportation in the state. (Lagos State Transport Corporation Edict No. 10 of 1977, Gazette No 26 Vol. 10 p.31)

The edict, further contains the composition of the board, their remuneration, the power to acquire land for the purpose of advancing public transport provision in the city. The Corporation is responsible to the Ministry of Works and Transport of the Lagos state government which is the supervisory department.

Figure 3.1

STRUCTURE OF PUBLIC TRANSPORT PROVISION



3.3. 2 Central Licensing and Parking Authority: The Central Licensing and Parking Authority on the other hand, is the governmental agency responsible for organising the activities of the private sector in the bus industry of Lagos state. It was established by the first civilian administration of the state on 29th December, 1980 by Law No 28. The law was titled " A law providing for the establisment of the Central Licensing and Parking Authority and for other matters connected therewith". The law, further provides for the composition of the Authority which consists of a chairman, and six other members. The document also states how members are to be appointed, giving guidelines as to their tenure of office and remunerations.

The establishment and functions of the Authority, are further strengthened by Cap 124, in accordance with the provisions of the road traffic law and regulations. Accordingly, the Authority has responsibility:

(a) to issue and renew :

(i) Licenses for all commercial vehicles as defined by the Road Traffic Law Cap 124 to mean hackney carriages, stage carriages,and motor vehicles primarily designed for the carriage of goods.

(ii) Motor vehicle licences

(iii) Local driving licences

(iv) Learners' permits

(v) Certificates of road worthiness

(vi) Articulated vehicles;

(b) To register new vehicles;

(c) To lay down conditions for regulating the granting of licences issued by itself;

(d) To revoke suspend or withdraw any licence granted by itself for breach of conditions;

(e) To regulate fares;

(f) To collect fees emanating from its operations and to pay the same into the appropriate sub- head of the state estimates;

(g) To prepare and keep statutory registers of all licences issued;

(h) To carry out such other activities as may be conducive to the discharge of the functions vested in the Authority under or pursuant to this law or any other law. (Lagos State Official Gazette No 77 Vol.13 of 1980. pg 171).

The authority is responsible to the Lagos State Ministry of Works and Transport who is the supervisory ministry just as the case with the LSTC.

Another role of the government is to ensure road safety. This is the responsibility of the Road Safety Task Force (RSTC), which was established in 1980. The task force, was established to ease the traffic flow in the city as well as control the parking systems on highways. The task force therefore introduced traffic wardens on the roads to achieve its main objective of facilitating the flow of traffic in the city.

Road construction and the provision of public transport infrastructural facilities, are the responsibility of the government. To ensure they are properly and adequately provided, the government established the Works Management Board, which was set up in april 1980 (Law No 2 of 1980). The functions of the board include among other things the construction of roads, drainage, sewage, bus stops, terminals, and such other incidental and relative functions as the

governor may by order publish in the gazette. (Gazette No. 14 Vol. 13 of 1980. P. 53).

The responsibilities of these institutional bodies established by the government differs. For instance, while the CLPA is mainly concerned with the regulation and licencing, and control of public bus operation by the private sector in the city, the LSTC is predominantly interested in the provision of buses by the public sector on behalf of the government, the Road Safety Task Force concentrates on easing traffic flow, while the Works Management Board provides good roads and public transport infrastructural facilities like bus stops and bus terminals. Despite the functions performed by individual establishments in relation to meeting the public transport requirement of the metropolitan city, there is little attempt at coordinating their activities in Lagos. Each parastatal sees itself as the most competent establishment responsible for public transportation in Lagos. Even though some of these establishments have the same supervising ministry, attempts to harmonise their functions have failed. There seems to be complete lack of institutional coordination of activities which have effects on how public transport performs in the city.

3.3.2 Public Transport Regulation and Control: Stage carriage public bus system in metropolitan Lagos operated by the private sector is regulated by the Central Licensing and Parking Authority. (CLPA). The operation of buses by the public and private sectors is expected to be carried out along routes approved by the CLPA and passenger buses are usually licenced to operate their services along specific routes. But this arrangement only exists on paper as far as private operators are concerned. (Adeniji, 1984; LASG, 1987). It is usual to find buses operated by the private sector plying routes which they are not licensed. It is the responsibilty of the government to minimise this through the regulations and control mechanisms introduced by the CLPA. The Central Licensing and Parking Authority, has no control over how the government owned public transport corporation operates, apart from issuing the registration numbers for buses of LSTC and allocating the buses to bus routes. The allocation of LSTC buses to bus routes is based on the request often made by LSTC. Moreover, the CLPA cannot regulate LSTC's activities and also inspect the road worthiness of buses which they use for public transport in the city. In essence the government owned public transport (LSTC) is not within the scope of the CLPA regulations and therefore no type of changes can be enforced on LSTC in relation to public transport by the CLPA.The CLPA has a considerable control and complete monopoly on how the private sector bus operators provide their bus services in the city. The CLPA control over the private sector public bus operators starts right from their entry procedures into the stage carriage bus industry.

In entering the stage carriage public bus industry, the basic requirements are;

(a) valid insurance certificate of the bus;

(b) vehicle licence;

(c) road worthiness certificate; and

(d) tax clearance certificate of the operator for three years (i.e. evidence that the applicant has been paying tax in the state over the period indicated above).

Along with these four basic requirements other information has to be provided by the applicant. Such as, the model of the vehicle, intending route to ply, and approved passenger capacity of the vehicle. (appendix 2).

When such application has been submitted and subsequently approved, the bus operator is expected to paint the vehicle in the conventional colour specified for public buses in the state. The route number is also inscribed on the side of the bus.This route number is expected to indicate to passengers the bus route. But the manner which the route numbers are displayed on buses does not enhance efficient public transport operation in Lagos. This is so because route numbers only appear on the side of the bus and written in tiny inscriptions. This means that the passenger cannot determine which bus is approaching until it has stopped finally at the bus stop before the destination of the bus can be known.

3.3.3 Enforcement: This section examines the major avenues through which regulations and control measures meant to enhance public transportation in Lagos are enforced. The major avenues for enforcing regulations in the public bus system are through the governmental agencies stated below :

(i) The Central Licensing and Parking Authority especially through the Vehicle Inspection Unit, (VIU).

(ii) The Nigerian Police Force especially the Motor Traffic Division (MTD).

(iii) The Road Safety Task Force (RSTF) through the Traffic Warden.

As already discussed earlier in this chapter, it is the responsibility of the Central Licensing and Parking Authority, to oversee that the rules and regulations for effective public transport operation are observed in Lagos by the private sector, and to ensure that the buses in use are mechanically safe and roadworthy. The Vehicle Inspection Unit (VIU) of the CLPA is responsible for enforcing and ensuring that regulations concerning stage carriage public transport in the city by the private sector are observed and obeyed. It ensures that vehicles which are roadworthy are used by the operators of public transport. Road worthiness certificate is issued to the bus operator after subjecting the vehicle to some automobile mechanical tests, notably by checking the braking system, lighting

and ignition, passenger capacity, ventilation and engine test. The Unit also sees that vehicle documents like insurance, hackney permits, road worthiness are valid. The unit also carries out unscheduled checks on bus routes, ensuring that the private public bus operators comply with certain norms of their registration. It has the right to arrest or apprehend illegal buses found on unauthorised routes to which they are not allocated. Nevertheless, the unit is not properly equipped for its task . The staff strength is very low and the quality of the staff in terms of competence is poor. Proper records about the activities of this unit is very often not available. For instance, the Unit has no record of the number of arrests which they have made on operators found along unapproved routes or operators without valid documents.

The general absence of proper records and lack of necessary personel, partly seems to account for the high degree of poor public passenger transportation in metropolitan Lagos. The problem of lack of adequate record facilities in the Vehicle Inspection Unit for example has prevented the unit from carrying out any effective planning or from having basic experiencies to refer to in improving on past mistakes which could make for better services. In most cases the Unit works in conjuction with the Police and the Traffic Warden in order to pull resources together.

The Police Department responsible for the enforcement of general traffic laws and regulations in the city, is the Motor Traffic Division (MTD). This Division ensures that general traffic laws and road signs are obeyed and followed by all road users especially all vehicular traffics. It also prosecutes traffic offenders and carries out inspections of vehicles on the road. There is a common responsibility shared between this Division and the Vehicle Inspection Unit of the CLPA. However the Police Division has a wider scope of responsibility than the unit. Its activities cover all forms of vehicles in the city in their totality.

The Road Safety Task Force was established in 1979, to assist in the clearing of abandoned vehicles on the roads, direct traffic in areas of road intersections and ease traffic flow, where the traffic situation is very bad. At times the traffic wardens working for the Road Safety Task Force, spill over on the functions of the police which they are not expected to carry out e.g. arresting and detaining vehicles.

The various establishments created by the government to cater for public transport bus system in Lagos highlighted above, seems to perform related activities and functions, which results in overlapping of responsibilities. But ironically, none of them is responsible to the other and they do not know what the other is actually up to. Detailed information on the staff strength for these agencies responsible for enforcing the regulations for effective public

transportation in Lagos is not available for this study. The agencies further declined to make available for this study the records of resources available for them to effectively perform their duties. Field observations conducted for this study clearly show that the level of enforcement of traffic regulations is very low.

This lack of enforcement of traffic regulations and coupled with the general lack of obedience of road signs is part of the principal causes of traffic chaos in the metropolitan city. The lack of enforcement of traffic regulations is evident in everyday life of the city. In all areas of the metropolitan, vehicles are parked on the footpath, in the street or on the road median; double parking is observed, and this frequently results in the blocking of one or more traffic lanes. Passenger, goods loading and unloading take place even in the middle of the road. In fact from field observation, it is the police and military vehicles that are frequent violators of these regulations. Drivers frequently drive at excessive speed, creating safety hazards for themselves and to other road users. Very rarely is any attempt made to regulate or check the driving speed. At road intersections, it is common for drivers to block the intersections thereby preventing other vehicles to cross the street. The enforcement problem is aggravated by the lack of training of the traffic police and the traffic wardens; lack of clear traffic regulations, poor communication with the public, and lack of adequate communication equipment. For example it is impossible for a police or traffic warden to pursue a disobeying driver since most of these officers do not have motorcycles or police vans to chase the offender. They also lack systems for communication to other traffic police in the area of tracking down an offender.

3.3.4 Infrastructural Facilities for Public Transport: The provision of basic infrastructure for effective and reliable public transport operation in Lagos is the sole responsibility of Lagos State government, through the Works Management Board and the maintenance of the facilities often divided between the Works Management Board and the various local government authorities in the metropolitan area. Such infrastructural facilities provided by the (WMB) include;

(i) provision of bus stops where buses can park to allow passengers in and out of their vehicles. These bus stops are provided at selected points along the bus routes.

(ii) Bus terminals where the bus may terminate its journey. A bus terminal is a major interchanging point for passengers to either change for another bus or terminate the journey. In this terminal, turning facilities and important intermediate points should be available to enable buses to turn without reversing.

The main concern of the local government is the maintenance of the facilities provided by the state government within its area of jurisdiction. The local government derives its source of finance from the state, and in most cases

money provided by the state to the local government is not often enough to finance minor road repairs, since most of it is spent on paying staff salaries. The state, on the other hand also rely on funds provided by the Federal government and locally generated funds to provide for these facilities. The state government has not been able to make adequate provision for public transport infrastructure.

3. 4 BUS PROVISION.

The urban public transport system of Lagos metropolitan consists of taxi, bus, ferry services,and rail. (figure 3.1). On the whole, the bus is the most important public transport system in the city, satisfying about 90% of the public transport passenger demand for Lagos since 1979. (Banjo, 1986). Furthermore, within the public transport bus system, the private sector accounts for 97% of the passenger demand of the city in 1986, while the government owned accounts for the remaining percentage share. (Lagos State government, 1986).

3.4.1 Public Sector: The government started providing buses for public transport in Lagos in 1958, with the acquisition of the J.N.Zarpas and Company. The number of buses in operation in 1958 were 43. It operated in the name of Lagos Municipal Transport Service (LMTS). In 1963, the number of buses used for public transport increased to 148 in 1963. Between 1964 and 1974, 100 additional Scania buses were provided by the government operator to boast passenger transportation in the city. Table 3.1, provides a summary data of the number of buses belonging to the government owned public transport operator, Lagos State Transport Corporation. In this summary data, the number of buses operated per day is indicated. For instance, in 1978 a daily average of 243 buses were operated with a daily operating cost of 77.8 naira per bus, by 1984 with a total bus fleet of 430 only 73 or 17% buses were in operation per day on the average with a daily revenue of 199.86 naira per bus, while the number of people operating a bus per day has been on the increase until 1986 when drastic measures were taken to utilise the employees more effectively. This summary of operational data for LSTC shows a rapid decline in the number of buses which the LSTC has and that can be operated until 1985, when new buses were provided in order to improve its public transport performance.

3.4.2 Private Sector: This sector was the first provider of public transport in Lagos and remains as strong as it first started. The sector provides supplementary services on some of the routes expected to be serviced by the public sector owned buses as well as to run its on exclusive routes as licensed by the regulating body. Table 3.2, shows public transport buses provided by the private sector. The available data on the number of buses provided by the private sector operators is based on new and renewal registrations. Using this information, the registration of new buses and the renewals of existing ones for

Table 3.1

LSTC: Summary of Operational Data (averages) 1978 - 87.

Year	Total Fleet	Buses operated per day	Vehicle operated as % of Total Fleet	Passenger Volumes per day (000's)	Passenger Carried per bus	Revenue/ day (ooo's N)	Revenue per day per bus	Operating Cost/ day / bus (n)	Total Employees	Employees/ Operated bus.
1978	---	243	---	244.57	1006	24.46	100.66	77.88	---	---
1979	---	217	---	227.70	1049	22.77	104.93	92.76	---	---
1980	---	245	---	258.02	1053	25.80	105.31	107.78	2986	12.19
1981	---	210	---	235.87	1123	23.59	112.33	132.85	2778	13.23
1982	---	115	---	185.81	1616	18.37	159.74	171.66	1487	12.93
1983	---	112	---	146.06	1334	14.61	130.45	141.45	1455	12.99
1984	430	73	17	145.94	1999	14.59	199.86	---	---	12.70
1985	371	70	19	140.00	2000	---	---	---	---	13.80
1986	358	250	69	325.00	1300	---	---	---	---	5.5
1987	580	464	80	510.40	1100	---	---	---	---	4.5

public transport is declining. For instance, 6,190 minibuses were registered in 1980, this declined to 813 in 1986. Also 347 big buses were registered in 1982 which increased to 506 in 1986. However, the overall number of buses registered (irrespective of the type of bus) has also declined. The figures highlighted by table 3.2 and figure 3.2, suggest a changing trend in the types of buses used by the private sector. It seems that operators in this category prefer the use of smaller size buses (minibus). This trend can be justified taking into consideration the narrowness of the city's network systems and the cost of buying bigger buses in the city.

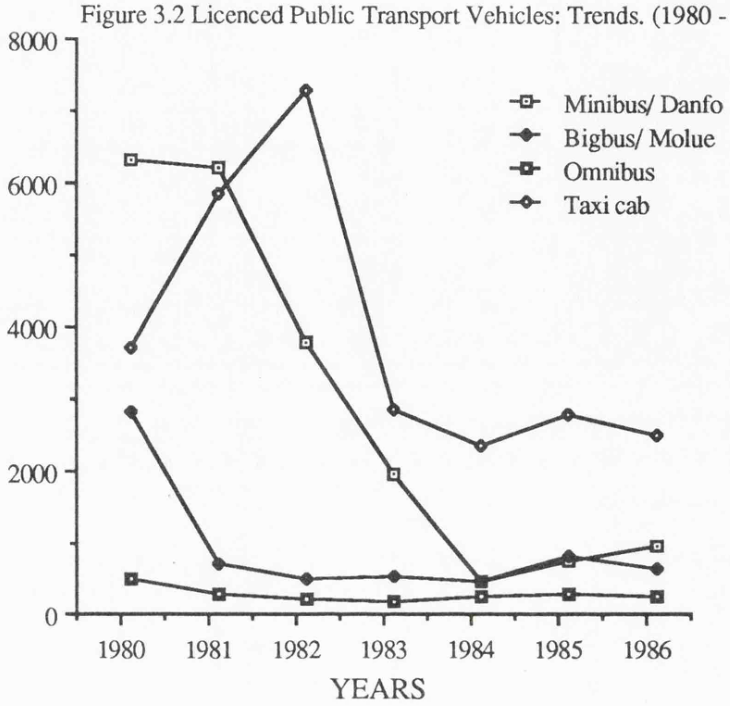
Table 3.2.

Licenced Public transport Vehicles In Lagos Metropolitan. (1980 - 87).

YEAR	TYPE OF PUBLIC TRANSPORT VEHICLE.				TOTAL
	MINI BUS/ DANFO	BIG BUS/ MOLUE	OMNIBUS	TAXI	
1980	6190	2691	357	3575	12,813
1981	6085	555	137	5726	12,503
1982	3628	347	89	7152	11,216
1983	1823	376	51	2716	4,966
1984	337	331	113	2205	2,986
1985	617	677	125	2648	4,067
1986	813	506	109	2344	3,772
1987	266	192	56	1037	1,551
TOTAL	19,759	5,675	1,037	27,403	53,874

Source: Compiled from CLPA Records, Ikeja.Lagos State. 1987.

Figure 3.2 Licenced Public Transport Vehicles: Trends. (1980 - 86)



3.4.3 Types of public transport Buses and Sizes : In this section focus shall be on the types of buses which the private and public sectors use for operating public transport in the metropolitan city. We shall consider the types of buses which the operators adopt, their sizes, and the passenger capacity for each category of bus. Operators in the private sector make use of buses with varying sizes and passenger capacities. Minibuses ranked first (51.7%) catering for (20.3%) of the total passengers that were served. Passenger buses of the Bedford type popularly known as ' molue' locally, ranked second (25%) of all the different types of passenger buses plying bus routes in metropolitan Lagos. But it accounts for the highest percentage of passengers carried (43%).Other types of buses provided by the private operators is the TJ 610, TJ 850, TJ1090 of which TJ 610 is the mostly used of the three major models. Table 3.3 shows the types of buses that are used for public transport services in the city, as well as their contribution to public transport demand which are further highlighted in figure 3.3.

It is important to stress that the popularity enjoyed by some types of buses is attributable to the fact that some of them are assembled in Nigeria, such as the Bedford type often described locally as 'molue', Volkswagen kombi bus known as 'danfo' and the Mercedes, while the remaining passenger buses were wholly imported.

All stage carriage buses are licensed to carry a specific number of passengers. However this is not strictly obeyed in practice. The passenger capacity specified for each bus is based on the type of bus. But given the fact that many types of buses are used by the private sector, it becomes rather problematic

to monitor the activities of these buses effectively. In the case of the public sector public transport (LSTC) it has an established passenger capacity which is strictly observed.

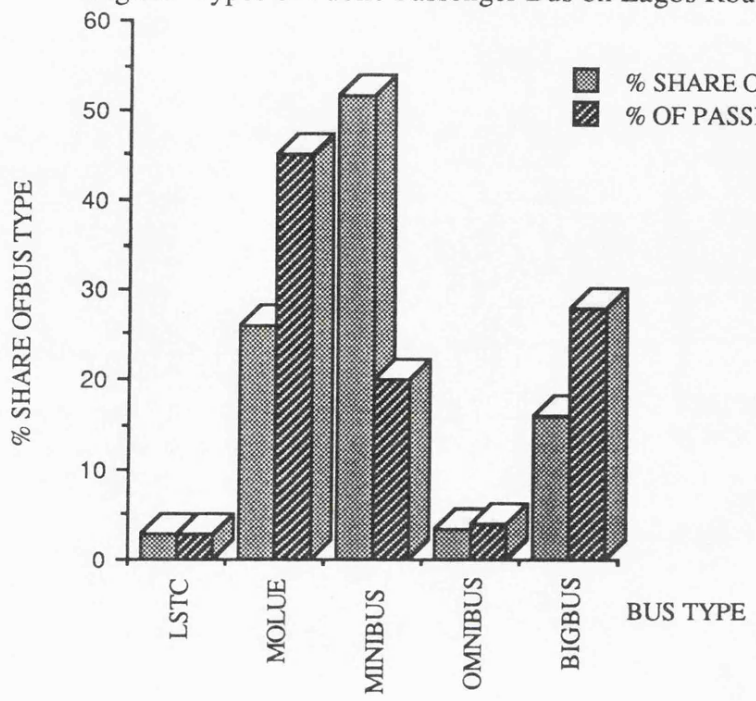
Table 3.3

TYPES OF PASSENGER BUSES ON LAGOS METROPOLITAN ROUTES. 1986.

TYPES OF PASSENGER BUSES	% SHARE OF ALL BUSES	% OF PASSENGERS CARRIED
1. LSTC. (i) 1617 (ii) 1313 (iii) 508 / 608	3	3
2 MOLUE (i) Bedford (ii) TJ 610 (iii)TJ 850 (iv) TJ 1090 (v) Others (austin)	25 1	43 2
3. MINIBUSES (i) Volkswagen Kombi (ii) Toyota Liteace (iii) Datsun E20 (iv) Toyota Hiace (v) Others	 21 8 16 5 1.7	 6 3 8 2 1
4. OMNIBUSES (i) Civilian (ii) Coaster.	3.3	3.8
5. BIG BUSES (i) Mercedes 911 (ii) Marcopolo.	16	28

Source: Lagos State Ministry of Finance, Statistics Division., 1986.

Fig.3.3 Types of Public Passenger Bus on Lagos Routes. (1986).



For instance, the 1617 type of bus is a 49 seater bus with standing for 22 passenger, while the 1313 and 508/ 608 types of buses are made up of 42 and 24 seaters respectively. However, during the period when the LSTC operated their buses in a 'contract scheme', the passenger capacity approved for the buses were grossly disobeyed. The contract scheme referred to here will be highlighted later in this chapter.

3.5 PUBLIC TRANSPORT USERS.

It is important to highlight the people who rely on public transport in Lagos. In chapter two, it was revealed that the projected population of Lagos metropolitan for 1987 was put at 5.3 million, which is expected to grow rapidly to about 12 million by the year 2000 AD. As shown in table 3.4 and figure 3.4, there is a continuous decline in the registration of new vehicles and also a fall has been noticed in the renewal of licenced public transport vehicles in the city. This suggests that the rate at which new vehicles are purchased has slowed down. Moreover, vehicles used for operating public transport services are being withdrawn by the operators, because of the difficulty which they are facing in running public transport services in the city. Given the economic situation of the country, which makes it very expensive to buy vehicles or purchase spare parts to repair the existing ones, one could easily understand why the decline in public transport vehicles as well as in other ownership sector is so alarming. The economic difficulty of the country has led to the extent that only few people in the city can purchase spare parts for their vehicles so as to maintain them as well as acquiring a new vehicles. For instance, 72,264 vehicles were newly registered in

1982, out of which 52,467 vehicles were registered for private / personal usage, (i.e. not licenced to provide stage carriage services in the city). By 1986, it dropped to 17,608 vehicles of which 10,900 vehicles were registered for private/ personal use. There was also a corresponding decline in the registration of commercial vehicles (under which category is the private sector public bus operator). (table 3.4 and figure 3.4).

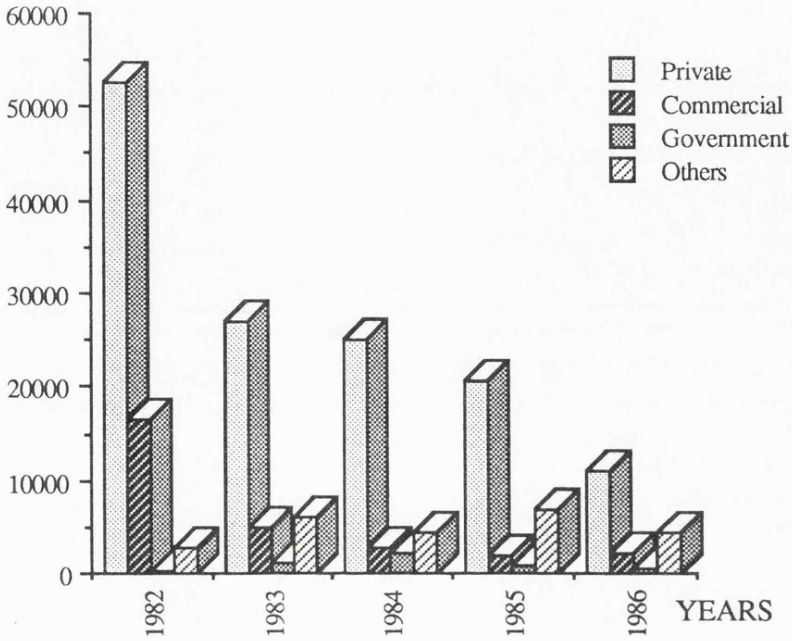
Table 3.4

Vehicles Licenced by form of ownership. Lagos Metropolitan. (1979 - 86)

YEAR	PRIVATE	COMMERCIAL	GOVERNMENT	OTHERS	TOTAL
1979	---	---	---	---	43,767
1980	---	---	---	---	50,652
1981	---	---	---	---	46,400
1982	52,467	16,589	389	2,819	72,264
1983	27,074	5,053	1,058	6,103	39,288
1984	25,033	2,702	2,116	4,285	34,136
1985	20,756	1,966	875	6,933	30,532
1986	10,900	2,128	432	4,348	17,608

Source: Lagos State Governor's Office, Statistics Division.Ikeja. 1987.

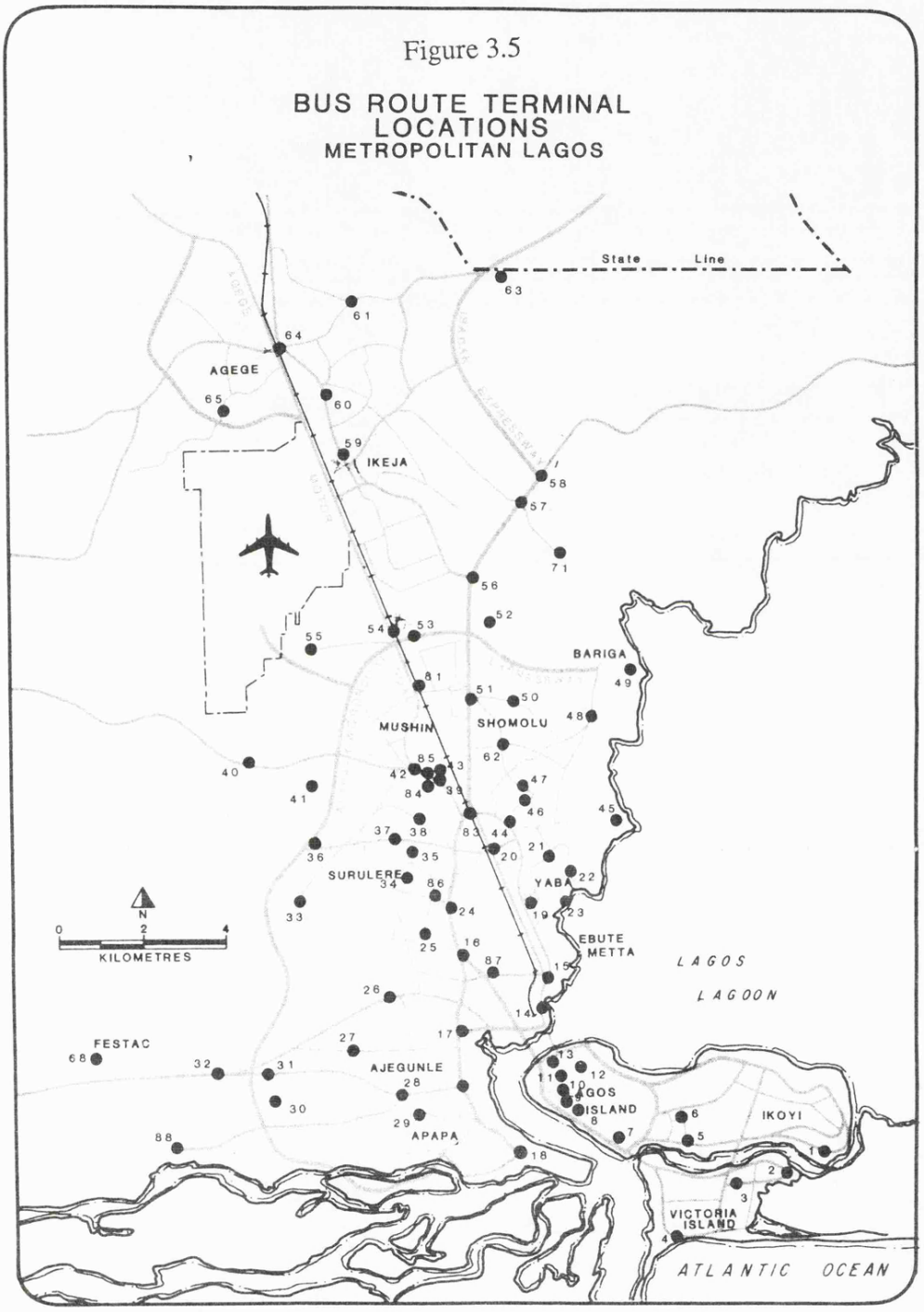
Figure 3.4 Vehicles Licenced By form of Ownership. (1982 - 86).



The irony of all these declines is that they are occuring in midst of increasing population of the city, which has a tremendous effect on how public transport especially the bus mode performs in Lagos. To complicate the matter for public transport demand or usage in metropolitan Lagos, is that a greater percentage of the population is within the low income bracket as the case is in many cities of the developing world. (Maunder, 1986 and Habitat, 1983). This level of income which is very low again hinders people's ability to acquire personal vehicle of their own. (Ayeni, 1983). Many household members rely on public transport, since a large percentage of them do not have access to the use of car, even if there were to be cars available in their households. In the views of the users, the bus is still the best available means of public transport that is accessible to them in the city. Overcrowding at bus stops and overloading of public transport vehicles have become a characteristic part of the public transport system of Lagos city even though the operators face strong criticism from both the users and government. But the quality of bus services which the public transport operators in the private sector provide for their users which has not been documented in any form of study will be discussed in chapter six in order to highlight the problems faced by bus users who rely on services operated by the private operators.

In Lagos, it is very important to mention that public transport services operated by the government owned system, has limited areas in the metropolitan that it can cover spatially. Many of these routes through which the LSTC operates do not pass through the city periphery or urban fringe since it only run its services along major distributive routes of the city. It is along these areas not covered by the government owned public transport system that many operators

Figure 3.5



Source: Lagos State Master Plan, 1980 - 2000.

in the private sector are licenced to operate their public transport services especially the mini buses. (figure 3.5). But a closer look at the population distribution of the city shows that the majority of the population of the city are found in areas where the services of the government owned public transport system is least effective. (figure 2.6). This is not an attempt to criticise the government owned system in terms of spatial coverage and its implication on revenue yield, but to highlight that the private sector seems to dominate the public transport activities in the city fringes. In essence, public transport use in Lagos is dominated by the low income groups, school children and the unemployed. And because it is the cheapest means of urban movement in the city it is attracted by the bulk of the urban population. The survey carried out for this study have further confirmed this view which will be discussed in fuller details in chapter six.

3.6 PUBLIC TRANSPORT OPERATION.

This section will concentrate on how public transport bus system is actually run in Lagos metropolitan by operators in public and private sectors.This section will focus on; (i) mode of operation; when the bus operators start operating their public transport services daily and close, the types of services which they provide, how travel fares are determined and collected and the various strategies for revenue yielding. (ii) Scale of bus operation; how fleets are operated and put into use, the number of vehicles, the spatial coverage of the operators in the city, and the routes which their operations cover.

3.6.1 Mode of Operation: The government owned public transport bus system (LSTC), makes use of various types of bus sizes to operate public transport. (table 3.3). The LSTC start daily operation of their fleets at 0600 hours. This continues till 2100 hours. There is no difference in the number of buses operated during the off peak or peak periods by the LSTC. This is generally due to the fact that the number of buses allocated to a route is not enough. Hence, the need to reduce the number in operation again subject public transport users to prolong waiting and delays at bus stops. (Appendix 3). Furthermore the LSTC buses do not operate night services. The number of buses provided varies from route to route as well as in the day of the week. For example, there are fewer buses in operation at the weekends. The corporation, at its inception is expected to operate scheduled services along fixed routes and run these services from four designated depots namely;

(a) Ilupeju depot 'A',
(b) Ilupeju depot 'B',
(c) Oshodi depot
(d) and Olowu depot.

The Olowu depot is the oldest depot which was acquired in 1958 from Messrs J.N. Zarpas and company during the nationalisation exercise. The locations of these depots are shown in the map provided. One of these depots is located in the Lagos Island (Olowu), and the others are found in the mainland. One of the depots in the mainland also houses the LSTC office as its headquarters i.e. (Ilupeju 'A'). (figure 3.6). It must be emphasised that there is no service schedule provided by the LSTC buses even though the Corporations management claim that schedule bus services are expected to be operated. The LSTC is expected to operate its services as a conventional public transport system found in many cities of the developed communities. Hence its buses are allocated to certain routes on which the operators in the private sector are not allowed to operate their public transport services in the city (exclusive routes). But in some routes which are allocated to LSTC, private sector operators with buses in the big category are licenced to operate along such routes with the LSTC buses. Minibuses are restricted from these routes. (figure 3.6).

Generally, there are different types of bus services which can be operated to meet the needs of any particular movement by public transport operators. Some of the types of services which public transport buses often provide are discussed in chapter four. In the case of Lagos metropolitan, five different types of services were identified during the field survey carried out for this research. Even though some of the services are not well organised or formal as presented hereafter. These are:-

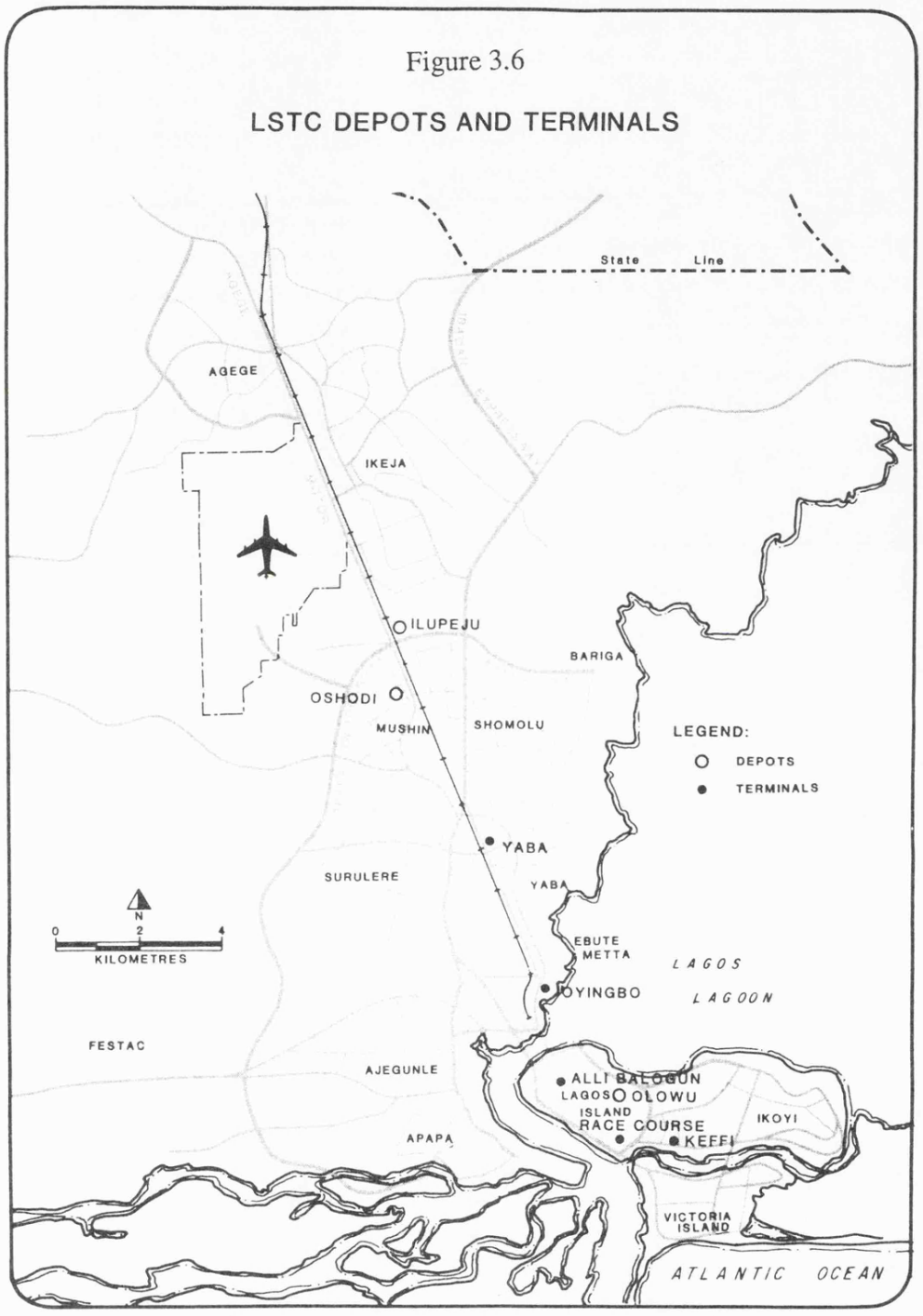
(i) Stage Carriage: This is the normal bus service which involve the stopping at frequent intervals known as bus stops over the whole route. The stage carriage service is attributable to both the LSTC and the private public bus operators.

(ii) Limited Stop: This is a semi - fast service which allows buses licensed to operate the service stopping at regular but less frequent intervals when compared with the stage carriage. This service is exclusively provided by the LSTC only. The public transport operators in the private sector are not licensed to provide such service. This is one of the measures devised by the government to make the LSTC buses more attractive to bus passengers than the buses operated by operators in the private sector. This service expected to be operated only by the LSTC is an attempt to make the journey time by LSTC buses shorter and quicker than the private sector operated buses. However in practice, the private operators do provide such service especially in the early morning rush hours when there are greater demand for buses.

(iii) Express service: it is a service operating non stop or with only a small number of intermediate stops. It is expected to provide an origin -

Figure 3.6

LSTC DEPOTS AND TERMINALS



Source: Lagos State Master Plan, 1980 - 2000.

destination type of service. This is a new development in public transport service delivery of the state government and it is only LSTC that is approved or allowed to provide this service exclusively in order to protect it from stiff competition. Nonetheless, the private operators are known to provide such services even more efficiently than it is being operated by the LSTC. This is because the private bus operator does not keep to the route to which it is assigned, and when there is any traffic holdup along its route the bus driver normally changes the route by diverting the bus into another route in order to avoid any delay, and this the LSTC does not do.

(iv) Local or Feeder service: This is a short service covering a particular locality, linking it with longer distance bus or services at a district centre. Generally, all mini buses in Lagos are licensed to operate their buses along feeder routes while the big buses also provide their services along the same routes as the LSTC buses. This arrangement is very diffused in Lagos since buses are licenced on the basis of the route they intend to ply, and along a particular route the role of local or feeder service is not easily percieved by both the operator and the CLPA. However the LSTC does not provide feeder route service irrespective of the bus size.

(v) Contract Service: Contract service takes place when buses are contracted out to organisation for a short period in form of hire or rental. This is a specific service, not normally available for the general public. It is the LSTC that provides this service but very limited in operation. Again in 1981, the LSTC used this service as a strategy for yielding higher revenue. During the period when this strategy was in enforce, daily operation of their buses were contracted out.

For licensing purposes the first four (i -iv), are known as stage carriage type of bus services.

In metropolitan Lagos the period of private bus operation is between 05:00 and 22:00 hours, and services may be broken during this period of service by operators in between these operating hours. In these hours of bus operation, there are peak period, off peak period, and basic all day time services. The bus routes followed by a particular service in Lagos may terminate in the city centre. Big buses (in the 'molue' category) as well as LSTC buses mainly terminate their services along major centres of the metropolis like CMS, Obalende, Yaba, Ikeja and Mile two. The LSTC makes use of their four depots as terminals along with those terminals shared with the private operators. The operators in the private sector are not allowed to use any of the LSTC depots. The local routes serving a particular residential area and local centre are also identifiable in the city. This type of route is where the small buses (minibuses) are licensed to operate their

services in the city. The minibuses are therefore seen as playing the connecting role to longer distance buses with more capacity for passengers.

Finally, it is important to note that bus routes in Lagos are allocated as requested by the private bus operator from the CLPA, who is responsible for the allocation of buses to routes. The criteria for route allocation to bus operators in the private sector is by request. The bus operator make this request by indicating the route it intends to run its services at the time of its application for licence to operate stage carriage public transport service.(appendix two). As it can be seen from appendix two the private public bus operator is given three options of routes to choose. It is very rare for an operator in the private sector not to be assigned to the route of his choice. Nonetheless, even though the operators in the private sector have the right to indicate the route of their choice, it is still a common practice for some of them not to operate along the routes which they are allocated. This bus route allocation method adopted by the CLPA is unconventional to general public transport operation and planning. This method again seems to make the issue of route planning in public transport too simplistic. This may suggest for one of the very reasons why it is difficult to monitor operators, as well as actually determine the route capacity, which is fundamental to efficient bus delivery and operation. Nevertheless, one must still recognise the fact that this method of allocating private bus operators to routes adopted or pursued by the CLPA in Lagos may be one way of encouraging the private sector in public transport bus operation in Lagos. Normally, bus operators in the private sector do not receive any material or financial assistance from the government in the day to day running of their business. Hence, the regulatory framework is very loose.

The typical maximum speed for public transport buses is 80 - 100 kph however, for urban areas it is much less because of the restriction placed on all vehicles in the city in form of speed limit. In the case of Lagos metropolitan, it is simply not obeyed or observed if such regulation does exist. Sadly enough, bus operators compete against each other, and they are in constant hurry to complete a turn round. This contibutes to the high accident rate which is noticeable in the city. Fuel consumption, varies not only with the type of vehicle, but also with the terrain, loading conditions maximum speed and the frequency of stops and traffic delays. All the minibuses used for public transport in the city make use of ordinary fuel while the bigger buses make use of both diesel and ordinary fuel. The private sector operators do not keep proper record of their operation on direct costs profile. The direct costs profile available for this study is that provided by the LSTC for 1978. In the information provided it is revealed that fuel consumption accounts for 42.4%, of the total costs, tyres and tubes 27.8 %, spare parts and reconditioning 27.8 %. (Table 3.5 and Figure 3.7).

Another fundamental key factor in the operation of public transport is the level of fare charged, the method by which it is charged and how it is collected. This is so because public transport operation relies strongly on revenue collected from passengers as travel fare. Hence, it is an issue to be examined, because the manner which the fare is collected and accounted for help to boast public transport bus system. On the other hand, it is the main responsibility of the government to see that travel fares are not only determined on the basis of profit (market price) but also with some social considerations. In the case of Lagos, travel fares by bus are fixed and determined by the Lagos state government after due consultation with the LSTC and the CLPA officials. Ironically, the public transport operators in the private sectors are not represented when such issues concerning the travel fare to be charged are being determined.

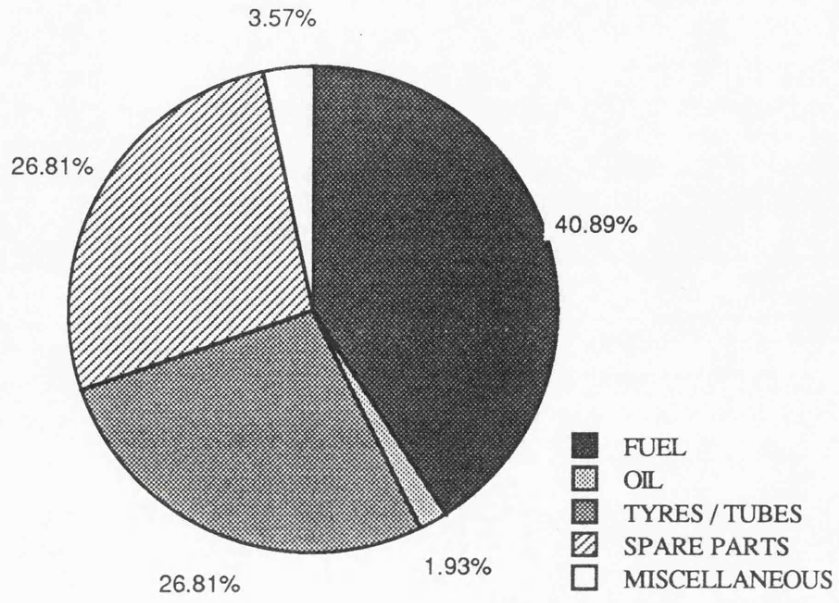
Table 3.5

DIRECT COSTS PROFILE OF LSTC, 1978.

DIRECT COSTS	PERCENTAGE (%)
Fuel	42.4
Oil	2.0
Tyres and Tubes	27.8
Spare parts and maintenance	27.8
Miscellaneous	3.7
TOTAL	100

Source: LSTC, 1986 Annual Report.

Figure 3.7 Direct costs profile of LSTC. 1978



The criteria often used for determining travel fare are not available for this study. It is the travel fare fixed by the government that constitutes part of the agreement which the public transport operator in the private sector must accept and comply with in order to be licenced to operate a stage carriage service. In reality, it is only the LSTC that charges fares as stipulated by the government and this is probably because the sector receives various forms of subsidy from the Lagos state government. The operators in the private sector have devised many ways of disregarding or circumventing the travel fare fixed for them by the government. Their methods for generating more revenue by the private sector are examined in chapter five of this thesis.

Generally, the fare system mechanism, can be understudied in some broad categories as will be highlighted in chapter four. They include namely; fare levels, fare scales, and ticketing arrangements. The LSTC does not participate in unauthorised way of charging more fares of any kind as practised by the private operator. However the only known period when LSTC buses were involved in charging excess fare was during the 1981 contracting policy which the corporation adopted. There is no private bus operator that issues tickets of any type for services rendered to passengers, fares are collected by hand with the aid of the bus conductor, whereas, in the LSTC, tickets are issued for every passenger carried but the passenger must more often ask for it. Again, it is expected that from the tickets issued, every bus operator could monitor the revenue generated from operating the bus as well as determining the number of passengers moved, either on hourly, daily basis or, per bus turn round. In the case of Lagos, all these cannot be determined due to the failure of the operators to

provide such monitoring mechanism. The ticketing policy of the LSTC for example is equally a very weak one, as one cannot derive from the tickets issued the number of passengers moved as well as know the revenue collected by the bus driver and conductor in the process. For example, in the case of the LSTC, because of low revenue returns derived from bus operation, accidents and staff attitude to work, the Corporation adopted a strategy for revenue yielding. This strategy known as the 'target' system was introduced in 1981; it was a policy in which the bus crew (driver and conductor) were assigned a monetary target for the day. Failure to meet the target earns the crew stern warnings which can lead to expulsion. But if the crew succeed in exceeding the revenue target , they are specially commended for their efforts and such commendations usually earn them a bonus and in some other cases promotion (table 3.6). In addition, 'contract' system mentioned earlier in this chapter, was also introduced along with the target policy of the Corporation in the same year. Contract drivers who were engaged by the Corporation were expected to meet certain requirements before they could be allowed to take the bus out for the day. These include making a deposit of the sum of five hundred naira (500 :00 naira) and a daily repayment as shown in table 3.6 depending on the type and size of bus. As revealed by (Banjo, 1986), the LSTC bus drivers on contract were operationally limited to Lagos metropolitan area but not restricted to a particular route. These bus drivers operating on contract - agreement were demand responsive like the private bus operators during this period when the LSTC adopted the policy. This contract policy approach which generated a better revenue prospect led to the misuse and abuse of the LSTC vehicles; and limited their bus operation only to those routes with greater demand for public transport. As a result, the corporation was unable to monitor the use of its vehicles and started to experience increased maintenance costs on the buses routes originally allocated to LSTC buses were abandoned. Despite the high revenue record derived from the contract policy approach adopted by the corporation it became increasingly difficult for the LSTC to put buses on the road.

There is no official record of the operational activities of the private sector bus system, which is one of the gaps this study aims at closing.The little or scanty information about its operation is that which have been provided by the CLPA. The CLPA record only indicate the main types of buses in use, structure of the operators in the private sector as that of the Individual and Limited Liability Company types. In spite of the awareness of this classification there is no data to show how they are shared or distributed. A more detailed discussion about their operation and quality of services will be highlighted in chapters five and six.

3.6.2 Scale of Public Transport Bus Operation: The number of buses operated as public transport in the city of Lagos, varies according to the type of ownership. For instance the government owned public transport (LSTC) is the single largest bus operator in the country. The total fleet owned by LSTC is shown in table 3.1 and the actual number of buses in operation are also revealed in the table. LSTC, started keeping records about the number of buses in operation after 1984. As shown in table 3.1, out of 430 buses owned by LSTC in 1984, only 73 or 17% were actually in operation throughout the year.

Table 3.6

LSTC: DEPOSIT / TARGET PER BUS
(DURING THE CONTRACT SYSTEM)
(In Naira). 1981.

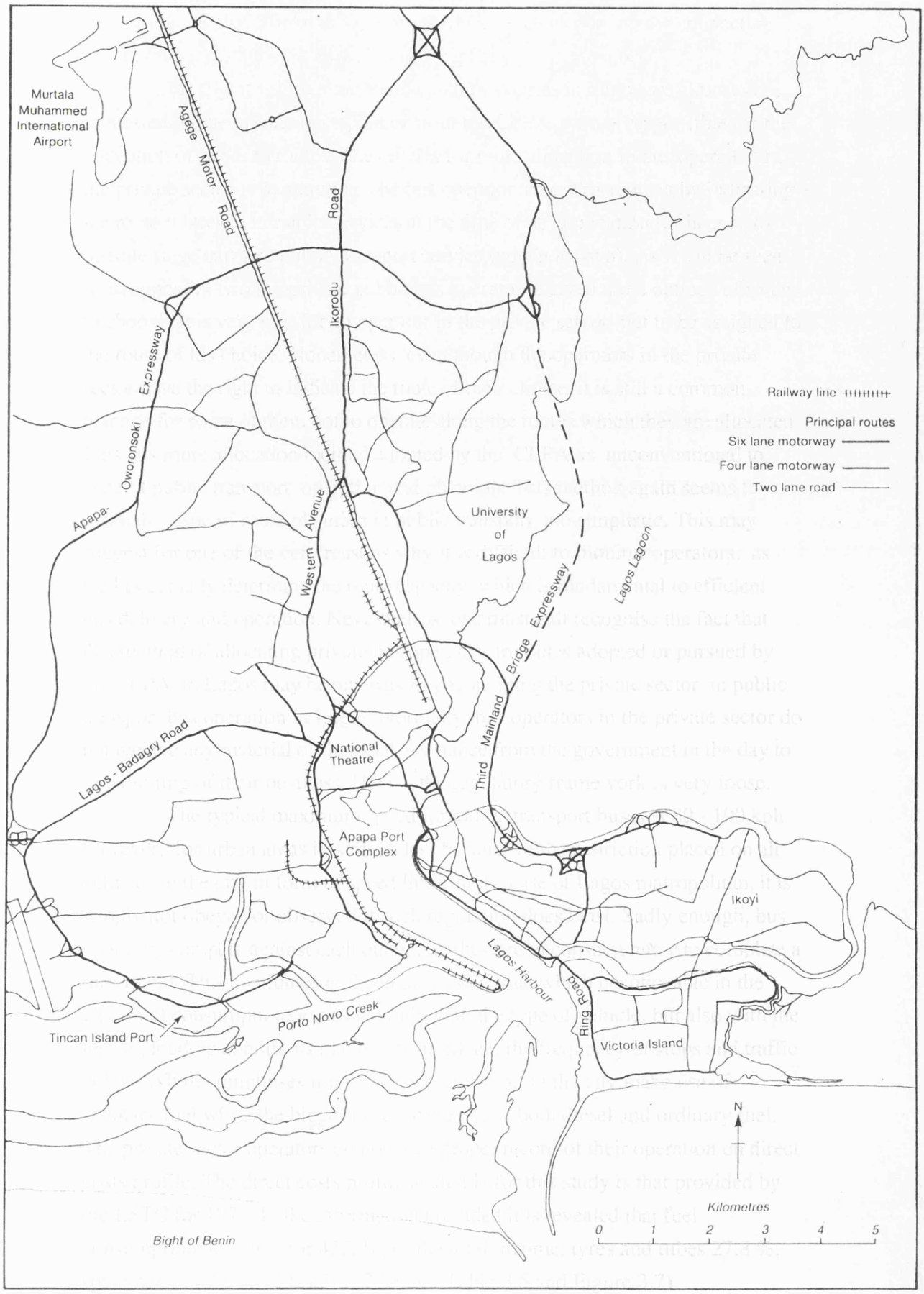
TYPE OF BUS	OPERATING AREA	CONTRACT	TARGET
1617	Mainland Only	140.00	200.00
1617	Mainland - Island	140.00	200.00
1617	Island Only	190.00	200.00
1617	Epe*	260.00	200.00
1617	Seme*	350.00	200.00
508/ 608	Routes not Indicated	---	---
608 D	"	90.00	150.00
508 D	"	80.00	150.00

* Inter city service

SOURCE: LSTC: Annual Report, 1983.

This suggests than less than one - fifth of the bus fleet were actually being used by the corporation to meet the public transport demand of the city. Even though the total number of employees were not provided for that year it can be derived from the summary table. For instance, using the figures provided on the number of employees per bus the LSTC use 12.7 employees to operate one bus. which suggests that the bus crews of the corporation could roughly be taken to be 927. According to the qualitative interview, the staff in question here are bus crew which does not include the Corporation employees in the administrative section. By 1987, the total fleet of the corporation had increased to 580 out of which 464 or 80% were actually operated to provide public transport services in the city. This suggests for an improvement in the operation of bus services in this

Figure 3.8 Principal public transport routes in Metropolitan Lagos.



sector. However, this increase has become possible for the LSTC because the Lagos state government had just raised a loan for it, enabling it to purchase more buses and repair the grounded ones. The result of this increased number of buses in operation by the LSTC, is the fuller utilisation of its employees. For instance, the number of employees per bus has dropped to 4.5 persons per bus in 1987. However, the number of passengers carried per bus has also dropped, for the reason that buses are being used for shorter hours of operation in an attempt to reduce bus mileage and prolong the bus life span.

In the private sector, the number of buses in daily operation is not known. It has been observed during the field work conducted for this study that only few operators in the private sector own more than one bus. This observation has been confirmed from the data gathered for this study which tend to support the observation made available by the officials of the CLPA, of which details are provided in chapter five.

The principal public transport routes in Lagos metropolitan are shown in figure 3.8. The routes are allocated to private bus operators by the Central Licensing and Parking Authority while the government owned (LSTC) public transport bus system, only informs the CLPA of the routes it intends to operate its buses. Altogether, public transport operators in the private sectors are licensed to provide bus services along 85 routes (minibuses), 94 routes (omnibuses), and 30 routes for (big buses). In the public sector, there are 152 routes allocated to the LSTC. Minibuses are not permitted in the Lagos Island but are dominant else where especially along the secondary streets (feeder routes) network on which conventional buses like that of the LSTC and the big buses are unable to operate effectively because many of these roads are too narrow for the larger buses to manoeuvre.

3.7 PROBLEMS WITH BUS PROVISION.

The problems facing public transportation generally in Lagos has been highlighted in chapter two. In this section emphasis will be only on the problems affecting the public bus mode. One of the problems with bus provision in Lagos metropolitan can be expressed in a simple economic term, a situation where supply for public transport is unable to match the demand for it. This has created a complex situation for how public bus transport is operated and provided in Lagos. As discussed in chapter two, the population of Lagos metropolitan is increasing and this is expected to continue for quite some time, while the number of buses that are used for public transport purpose is declining. Because the demand for public transport is far greater than the supply, series of operational characteristics attributeable to the bus system have evolved, which tend to constitute the problems which the bus mode is facing in the city. According to

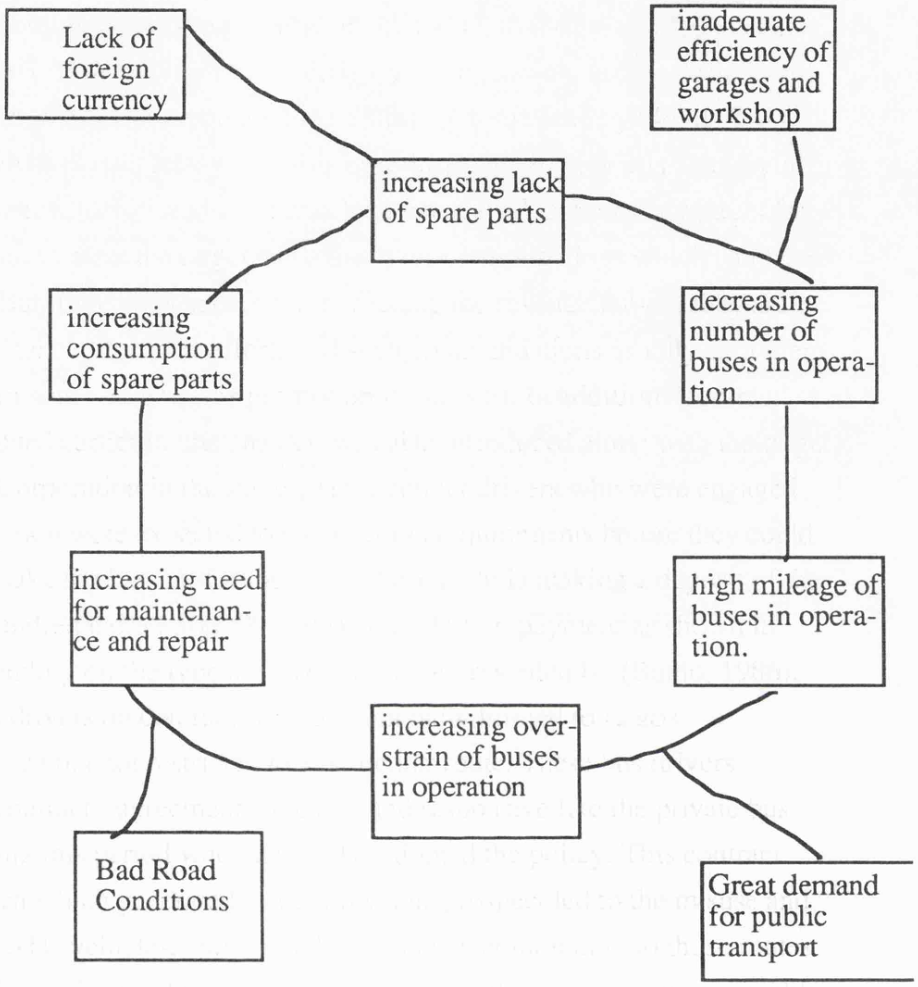
Adeniji, (1984), they are responses due to problems which they (operators) encounter. These problems of public transport experienced in the bus mode, are expressed and illustrated in figure 3.9.

From this illustration, the public transport bus problems can be said to occur in a vicious cycle, which suggests for a situation whereby a particular problem leads to another by compounding the existing one the more.

These problems as illustrated in figure 3.9 are; decreasing number of buses in operation, which leads to high mileage of buses in operation. Higher demand for public transport contributes to an increasing overstrain on buses in operation. These, in combination with bad road conditions lead to an increasing need for bus repair and maintenance. Because buses are in state of disrepair and depreciate quickly, they generate a consumption of spare parts which are not readily available locally. All these problems are again aggravated by the general lack of foreign currency to import buses that can be used for public transport in the city. This perpetuates and enhances the increasing lack of spare parts. In addition to all the problems already raised above, there are inadequate and inefficient garages and workshops to guarantee proper servicing and repairs for the few public transport buses that are in operation. The lack of adequate garages and workshops to ensure that public transport buses are well maintained, further leads to decrease in the number of buses in the city. These problems all combine together to provide a deplorable situation under which public transport by bus mode is operated in Lagos.

The general assumption among policy makers and advisers concerned with public transport matters in the city is that the problems encountered by the government owned public transport bus operator, are similar to those experienced by bus operators in the private sector. This impression that the problems affecting the government owned public transport bus operator are similar to the private sector public bus operator, may look realistic. But the dimension under which these problems affect operators in the private sector seems different from that of the LSTC. It is how these dimensional issues differ from LSTC problems that has been ignored by the government or by those concerned with public transport in the city. Meanwhile, results from the field survey conducted for this study tend to show that this assumption that the operators experience the same problems seems to be untrue. For instance, under their own way of operation, the private bus operators face other huge problems which the government has not actually seen as a setback for an efficient public bus transport provision. Such problems include the issue of hire purchase agreement entered into between the bus owner and the vehicle dealer. Also, the excessiveness of the law enforcement agents, especially in the manner which they harrass bus operators in the private sector

Figure 3.9



AN ILLUSTRATION OF PROBLEMS OF PUBLIC TRANSPOR PROVISION IN METROPOLITAN LAGOS.

and lack of good understanding between the bus driver and the law enforcement agents, constitute other major problems.

These problems for example are not experienced by the government owned public transport operator. Because such problem hadly affect their operation it is never mentioned or made known to the government as a problem by the LSTC. Moreover, where the issue of finance has erupted, the government is always there to assist the government owned operator (LSTC) to secure a favourable long term loan which is not accorded the private sector bus operators. It is important that equal attention must be focussed on the private bus operator if the poor bus transport image of the city is to be rectified. This is so because the private sector accounts for about 97% of passenger carriage in the city as well as providing over 90% of the buses for public transport services. In 1984 for example, the LSTC had 73 buses in operation while the private sector had about 780 buses. This implies that LSTC only accounted for less than 10% of the buses used for public transport in the city during this period in Lagos. (Tables 3.1 and 3.2).

3.8 ALTERNATIVES TO PUBLIC TRANSPORT BUS.

There are many alternatives to public transport bus system that can be employed in Lagos metropolitan as revealed in chapter two, which include, Walking, Bicycles, Motorcycles, Private vehicles, Taxi, Ferry services and Railway system. However these alternatives have their own varying degree of influence, importance, accessibility and flexibility, as well as their own individual modal disadvantages and potentialities for the city and passengers.

3.8.1 Walking (footpath and other pedestrian facilities):-This is the most important means of movement in the city where the distance involved is very short. It has been observed that many people have to walk a long distance in Lagos (Thomson, 1977). Walking is very dangerous and risky in the city because of the deplorable road transport situation and lack of concern for the well being of pedestrians by highway engineers and the government who are responsible for the provision of network in the city. (Adeniji, 1981; Adefolalu, 1979; and Banjo, 1985). This again is the general situation in many third world cities or cities of developing countries as revealed by Fouracre and Maunder (1986). For instance, while many streets and highways have been improved in recent years, very little attention has been paid to the pedestrians who generate a very large percentage of the total trips made in the metropolitan. A survey of shopping patterns in Lagos indicated that 51% of all the trips made to traditional food markets are on foot. (Lagos Metropolitan Master Plan, 1980 p. 159). Another survey on households conducted during the study of moving the federal capital out of Lagos revealed that 13% of all trips in metropolitan Lagos are made on foot. Despite the

importance of walking stressed by these studies, the design plans of the express way facilities like airport road, the Apapa- Oworonsoki Expressway, and other roads ignore the needs of pedestrians. Therefore, pedestrians must have to cross the roads at grade against high speed traffic, a situation that can result in accidents. The design plans for Ikorodu road provided for foot bridges without paying regards to where pedestrians have to cross. Some of the foot bridges actually provide means of crossing the express road only with the result that the pedestrians still have to cross the heavily travelled service roads. Foot paths or pedestrian ways are absent in recently completed roads of Somolu, Lawanson, Aguda, Surulere and Yaba areas of the metropolitan. Many footpaths in congested areas of the Lagos Island have been destroyed or taken over by the practice of parking or driving vehicles on footpaths. Some foot paths have been damaged by parked vehicles since such paths were not designed to support them. Along several roads, there are no kerbs provided to separate foot paths from roadways. This is partly due to the inadequate provision of drains and lack of consideration for pedestrians' welfare. People carrying loads on their heads (head portage) remain a common sight in metropolitan Lagos and footbridges do not provide the optimum means of crossing roadways for these people. Many of the signalised intersections and crossings which are supposed, wherever possible to cater for the pedestrian needs are not functioning. Many of the foot paths are also too narrow for two people to pass without one bumping on the other. The presence of hawkers, street traders and peddlers along the foot paths again further reduces the space available for pedestrians.(plate one). As observed in the general report submitted by ESCAP, 1981, that in developing countries, pedestrian facilities are usually of very poor quality. Where pathways exist, they are often heavily encroached on by development and frontage activity. Road widening, accommodation of street furniture and even cosmetic treatment of roads are carried out at the expense of space for pedestrians. Further, on main roads where heavy pedestrian traffic often concentrates, walkers commonly have to walk in the path of motor vehicles or use unpaved and ungraded earth tracks parallel to the carriageway. (ESCAP, 1981).

3.8.2 Bicycles and Motorcycles:- Bicycles and motorcycles, were considered very important in the Lagos metropolitan in the years before and after the Nigerian independence in 1960. Since this period, the use of bicycles and motorcycles has generally become unpopular. Its unpopularity is due to the risk of riding bike on Lagos roads. In 1979 for instance, 13,170 motor cycles were newly registered in Lagos state and by 1986, the annual registration declined to 1072. (Table 3.7 and Figure 3.10).

PLATE 1. Presence of hawkers, peddlers and street traders along pedestrian walkways.

One major factor responsible for the decline in the use of bicycle and motor cycle in Lagos metropolitan is the hazards and risks involved in their usage in the city. It has nothing to do with improved economy or standard of living of the people. There is no right- of- way for them, and the bad driving habit of public transport drivers especially the minibus, big bus, taxis, and the private car drivers, coupled with the infrastructural disadvantages discussed earlier in this chapter make the riding of bicycles and motor cycles unpopular. Such infrastructural facilities which are absent in the city include traffic lights, and traffic signals and signs meant to control traffic movements especially at intersections.

Table 3.7

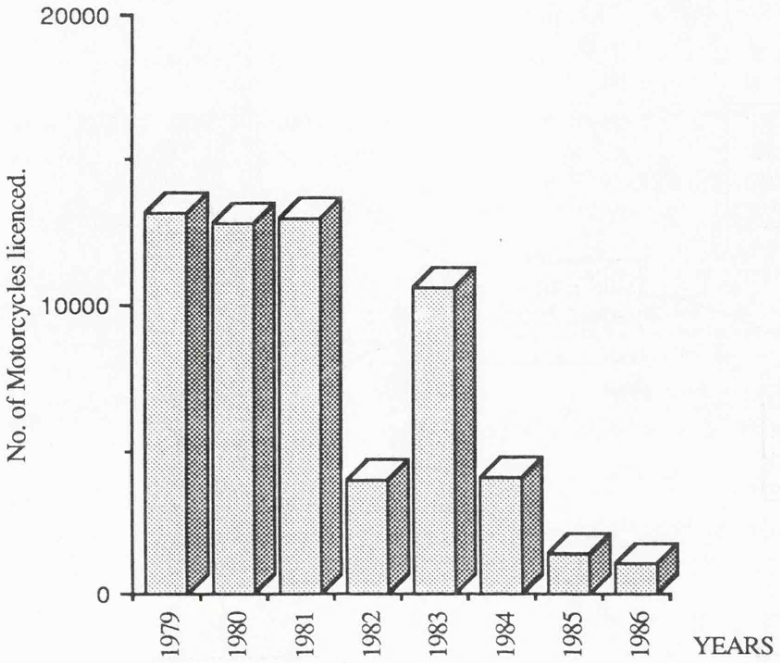
Motor cycles licenced in Lagos State. 1979 - 1986

YEAR	TOTAL
1979	13,170
1980	12,818
1981	13,026
1982	3,961
1983	10,661
1984	4,059
1985	1,389
1986	1,072

Source: Statistics Division, Lagos State Ministry of Finance Ikeja. Lagos. 1987.

The gradual elimination, and the non recognition of the likely contribution that this mode can make in easing the movement difficulty of certain socio- economic group of people in the city may suggest a further reason why transport of Lagos is in a very chaotic state. It meant that because of the danger of using motorcycle potential riders have gone to seek the use of buses thus increasing the demand for buses. The highway engineers and traffic planners responsible for the design of Lagos network have made a vital omission in their plan.

Fig. 3. 10 Motorcycles licenced in Lagos state. 1979 - 86.



3.8.3 The Private Car:- The private or personal car, is the most desired type of vehicle ownership in Lagos. It gives the owner prestige in the society. It is also used as an indicator for measuring affluence in the city. Unfortunately, it does not provide the door to door type of service to many owners because of the city's landuse system and building layout of the traditional core areas of Lagos, such as Isale Eko, Mushin, Agege and Ajegunle areas of the metropolis where some private car owners do not have direct access to their frontage. Such vehicles are parked somewhere not too far away from the home. Few lucky ones are able to park their vehicles very near their homes and those in the planned areas of the city like Ikeja GRA, Ikoyi, Victoria Island and Festac Village enjoy direct access to their frontage.

The car ownership ratio in metropolitan Lagos is generally low. The annual new registration trend of private vehicles has further compounded this deficiency (in car person ratio) by declining over the last five years. For instance, in 1982, 52,467 vehicles were newly registered as private by type of usage, by 1984, the annual registration of new private vehicles rapidly declined to 25,033 recording a fall of over 50%; and by 1986, annual registration has further worsened to 10,900 vehicles (table 3.4). The major reason for this decline has to do with the general economic recession and the subsequent devaluation of the national currency (naira) which made the cost of buying a vehicle rocket by over 600%. For instance, a Peugeot car worth 9,000 naira in the Nigerian motor market in 1982, cost over 60,000 naira to buy in 1987. Moreover, the lack of spare parts for the vehicles has made it difficult for many private car owners to

use their vehicles often. They have therefore resulted into using public transport facilities especially the bus system. Finally, to worsen the situation up, was the closure of the country's motor assembly plants due to non availability of foreign exchange currency to import the vehicles which are to be assembled. These motor assembly plants are the Volkwagen of Nigeria located in Lagos, the Peugeot Automobile of Nigeria situated in Kaduna and the Leyland at Ibadan.

3.8.4 Taxi:- Taxis are the other major component of Lagos metropolitan public transport services operated either on a shared - hire or single- hire basis; they have no fixed route and charges are by negotiation with the driver, to some extent (plate two). The provision of taxi services in Lagos is controlled and regulated by the Central Licensing and Parking Authority.The taxi service is operated only by the private sector. The number of taxi cabs licenced annually to operate as taxi are on the decline in Lagos metropolitan. For instance, in 1980, 3,575 taxi cabs were newly registered to operate cab business; in 1982, it rose to 7,152. However, since then, it has declined from 2,716 in 1983 to 2,344 in 1986 (table 3.2). The annual registration of new taxi cab out numbers the other public transport registration even though the record shows a drastic decline. In the city, the taxi cab had 28% share of public transport provision in 1980; 64% share in 1982; 65% in 1985, and 62% in 1986, in spite of the fact that the actual number of total vehicles newly registered annually has fallen since 1983.(Figure 3.11). Some of the factors responsible for the decline in the taxi cab registration are the increasing cost of buying a car or vehicle, the increasing cost of maintenance, lack of spare parts, accidents, coupled with bad road conditions and the general decline of the national economy. Infact, the increasing cost of buying a taxi cab and vehicle maintenance, are the two major factors responsible for the decline in taxi cab.

3.8.5 Ferry Service:- Passenger movement by means of water mode within the Lagos metropolitan supplements the land mode of transport in varying degrees (plate three). This depends upon the availability of adequate access to these services by vehicles. Water borne movement of passengers can therefore provide a useful service especially where the land mode of public transport may be inadequate to supply efficient public transport services to cater for the entire city as seen from discussions so far raised about public transport situation in Lagos metropolis.

Ferry services are mainly provided by the Inland Waterways Department of the Federal Ministry of Transport. The services are run between the Apapa end and Lagos island (Marina street) of Lagos metropolitan. The Lagos State government operates the Ferry Services Limited which was established in 1981 and officially commisioned in 1985. The Lagos state ferry service limited

PLATE 2. A typical cab used in Lagos.

PLATE 3. Ferry boat service.

have only two boats in operation between 1981-1985 and the two passenger boats were since burnt in a major fire outbreak in mid stream during a scheduled service. There are also the individually operated ferry services which are run from various places or locations within the metropolitan. The areas where the individual operators can be found are mainly between Maroko and Ikoyi areas of the city, the Federal Palace hotel in Victoria island and Tarqua Bay. Other private boats carry passengers and cargo on the Lagos lagoon.

The boat movement, which was once important and reliable especially during the pre- colonial era has declined in importance and the demand for its use has reduced very considerably. The blockade of the water front by the newly constructed Lagos island ring road is responsible for the decline in the use of ferry services.This seems to suggest a high level of ignorance in the urban transportation planning of the city as it reveals a complete disregard for the development of modal choice and the need for coordination in public transportation.

The Lagos island (Marina) - Apapa ferry service route is the most important of all the ferry service routes in the metropolitan. The ferry operating on this route is provided by the Inland Waterways Department of the Federal government. It has terminals at Apapa located between Berth One and the Dockyard of the Nigerian Ports Authority (NPA), and at Marina in Lagos Island. There are only two ferry boats out of a total fleet of four 800 passenger capacity boats that are in serviceable condition and functioning. The ferry boat departs at intervals of 40 minutes in the morning and evening peak traffic periods, and stays longer during off peak hours. The frequency of operation is completely unreliable during weekends.There are no accurate data available concerning daily volumes of passengers carried. However from observational surveys carried out during the field exercise for this research study showed that the boats were generally loaded to full capacity during peak hours along this route.

The Marina - Tarqua Bay service route is provided for recreational and leisure purposes. The ferry runs mainly on Sundays and public holidays. About 500 passengers make use of this service. (Lagos Metropolitan Master Plan, 1980). While the Ikoyi- Maroko ferry service is another important and popular route. Various types of boats operate across the Five Cowrie Creek between Queen's drive at Ikoyi island and the opposite shore of Maroko. The public transport bus terminus at Queen's drive provides the change of mode facilities for ferry passengers. The boats are old, not serviced regularly and are in deplorable condition. The boats are uncovered which expose the passengers to the hot tropical sun and the rain. Crossing the creek takes about three minutes. The carrying capacity of the boats is about 35 passengers at a time and the travel fare

is ten kobo along this ferry route. Again, the Federal palace hotel - Tarqua Bay ferry service, is mainly dominated by leisure and for recreational purposes. Along this route different types of ferry boats are used for carrying passengers. The route is heavily patronised during weekends by visitors or tourists.

The Kirikiri Canal -Ebute Metta ferry service, was used by the PGH Joint Venture for the third axial road project of the federal government to transport personnel from home to work and vice versa. It has a seating capacity for 84 passengers and making only a daily round trip originating from Kirikiri canal and terminating at the construction job site in Ebute Metta. The trip time is 33 minutes and this in combination with a bus link at the point of origin results in home to work travel time of 45 minutes.

Despite the benefits that could be accrued or realised in improving the ferry services in metropolitan Lagos, little is being done to boost them. For instance in 1976, a survey was conducted to determine the relevant characteristics of the Apapa - Lagos Island ferry traffic route.The results from the survey indicated that walking was the primary means of travel to and from the two terminals, with this route used by 65% of the passengers at the Lagos terminus, and 46% at the Apapa terminus. Bus services were used by 30% of the passengers at the Lagos terminus. On the whole, 'walkers' and bus users comprised 95% of the connecting mode of travel for passengers at the Lagos and Apapa terminals. Another household survey of 1972, conducted by the Human Resources Research Unit of the University of Lagos, indentified the places of work and residence, together with the mode of travel of the passengers making use of the ferry services.The study found out that 15.5% of those interviewed were employed people residing on the Lagos Island but working in Apapa, and 20% of those residing in Apapa were employed in the Lagos Island. The study further identified the benefits that could be derived in the process of developing ferry services. Some of these include: reducing the pressure on the road network, getting workable solutions to the problems of overcrowding at the bus stops and the overloading of buses. It also indicated that accidents would be minimised or reduced drastically on the road when alternatives to bus transport are available. Similar studies relating to the above survey by Ayeni, (1978) and Adefolalu, (1980) confirmed the relevance of these findings to the present situation. Nonetheless, further studies need be carried out to improve on the data base of the survey and make it more adaptable to the present metropolitan transport demand. Finally this type of survey is very useful and relevant for estimating future volumes of ferry passenger traffic demand, and could lead to the creation of a dynamic and meaningful passenger ferry transport system.

It is important to highlight why the importance of ferry service has been on the decline until 1986 when the Lagos State Ferry Service Corporation was officially inaugurated to revive the mode back to its past glory. The hover craft ferry services of the Inland Waterways Department that were introduced in 1979, has been discontinued due to high operating costs and the general decline of passenger traffic. This is attribuable, as already noted, to the construction of the new ring road on former ferry and boat landings along the Lagos island coastline. The construction of the new ring road led to the relocation of the ferry terminal on the Lagos island, (formerly situated near the Centre Business District), to a new site which is more than one kilometre farther from the CBD. The only effect of the ring road, along the lagoon shore of Lagos island was to eliminate the sites where boats operating on the lagoon previously discharged goods and passengers. Since their removal (ferry landing on the coastline), there is no longer any jetty or road connection to the lagoon shore that has been provided as an alternative landing for the ferry operators at both ends (origin and destination). In other words, the lagoon boat traffic is operated under a very difficult condition, entailing the manual movement of cargo and passengers over an extended foreshore.

In the ferry traffic study of 1976 (by the Master Plan Unit of the Lagos State ministry of Works and Transport), the indications were that the volume of traffic by ferry boats between Apapa and Lagos island was around 13,000 and 15,000 passengers per day and the volume of passenger traffic of the same service has declined to 6,000 and 7,000 on weekdays and 1,500 and 2,000 on weekends. The drastic decline is attributable mainly to the inconvenient location of the ferry terminal at Lagos island. Apart from the problem of location, the other setback is the lack of effectiveness and efficiency in its operation. It is quite obvious that the passenger ferry service between Apapa and Lagos island is not effective as it should be. There is need to inte grate the ferry terminals with bus terminals so that passengers could change mode quickly and easily. With the existing conditions, this need has not been met. Suitable terminal facilities are non-existent at either end of the ferry terminals. This lack of terminal facilities makes operation most ineffective and the mode very unattractive to prospective passengers.

The general conclusion among the studies carried out on the potentialities of the ferry service as serving as an alternative to the existing public transport to the people of Lagos metropolitan, is great. It is clear that people would make use of the service if the boats and shore facilities were of good standard, reliable and adequately provided. In addition, if the operationg schedules of the ferry were integrated with the bus schedule and if commuters

could transfer quickly and easily between bus and ferry, many people would opt out for such a service.

3.8.6 Rail System:- The Nigerian Railway Corporation (NRC) operates a limited number of peak - period, peak- direction passenger trains to and from Iddo and Apapa, in addition to its national passenger and freight services. Rail services for local passenger are scheduled to operate mainly during peak commuting times. The corporation has not got sufficient equipment for the present level of urban public transport demand of the city. It only provides 16 departures daily. The railway is located along the main axis of the urban development and has passenger termini at Iddo and Apapa. Other passenger stations within the metropolitan are located at intervals of about 2.8 kilometres apart; these include Iganmu (on the Apapa branch), Ebute Metta and Ebute Metta junction, Yaba, Mushin, Oshodi, Shogunle, Ikeja and Agege. The rail line is a single track of narrow gauge (1067mm). The line lengths used for local services include Iddo to Ebute Metta junction (3 kilometres), Apapa to Ebute Metta junction (6.5 kilometres), and Ebute Metta junction to Agege (15.5 kilometres). The line is located within a right-of-way of 15.4 metres wide between Iddo and Ebute Metta and 30.48 metres wide elsewhere within the local service area, except at the station yards where there is additional land. Trains providing local passenger services are operated daily along the main line to Iddo and via the branch to Apapa. (Lagos Metropolitan Master Plan. 1980.).

Adequate local area rail passengers volume data have not been provided by the NRC, therefore one cannot establish the magnitude of local passenger patronage. However, knowing fully well that the rail lines and stations are located along areas of thick population concentration in the city and its environs, one would expect passengers that live or work around these areas to be attracted by the local rail services which are provided by the NRC, that is, if the services are reliable and efficient especially in terms of adequate timing and schedule of train runnings. The number of rail passengers carried by local rail service has declined sharply in recent years due to operational problems and lack of coaches to expand its local passenger service as well as meet up with its national commitments. Constant engine failure and breakdown, and lack of spare parts constitute a major part of the problems. Another major significant rail problem which is not regularly referred to is the inadequate protection of the right- of- way of the rail line. Vehicular conflicts occur at the various grade crossings, and this poses traffic hazard and capacity problems, pedestrian use of the right-of-way provided for the train system and the other prevalent problems are seriously disruptive to rail operations and render them rather dangerous.

3.9 CONCLUSION.

In this chapter, the existing situation of public transportation in Lagos especially that of the bus system has been discussed extensively. The major outcome of our discussions in this chapter is that the public transport systems in Lagos are inadequate, that the demand for public transport services are more and more growing, and the situation will continue to grow. Moreover, public transport services are unscheduled, thus making bus operation unreliable and unpredictable in the city. We have tried to highlight some of the basic issues concerning public transportation in the city, such as who provides for public transport and controls it. Furthermore, the role of government has been enumerated and the various problems affecting public bus mode reviewed. More important is the fact that Lagos seems to have the potentialities of developing other means of public transport movement rather than the continuous emphasis being placed on and the domination of the bus industry in the public transport of the city.

"... here is an interesting challenge to planners, to develop techniques and policies flexible enough to deal with an unexpected future and explaining complex situations in a simplified manner. ..."

Prestwood Smith, (1981).

CHAPTER FOUR .

METHODOLOGY OF STUDY

4.1 INTRODUCTION:

This chapter highlights the conceptual and theoretical issues, and the techniques to be used in analysing information available for this study, and how the data generated will be examined and interpreted. A further attempt is made in this section to reveal some of the inadequacies in the data derived for the study and the techniques used for analysing and interpreting the results of the survey. Furthermore mention will be made on some of the problems encountered during data collection and how these problems were minimised. Finally, the results used for this research study are based on extensive field work exercise carried out in the study area (Lagos Metropolitan, Nigeria) between the months of June - October, 1987, and more importantly literature review of past related research studies that help to further explain some of the findings revealed by this study.

4.2 RESEARCH QUESTION.

In cities throughout the world, it has been found out that people in general tend to travel in order to obtain access to variety of other people, services and facilities that are not readily available at the origins of their journeys. (World Bank, 1976). This eventually results into a complex interaction of physical, social and economic factors. (Bruton, 1974, Black, 1976, and Adeniji, 1986). However, the problems facing the urban centres of the developing countries today, are not only many but also very complex. One of the most apparent of these problems, which confronts the general public on day to day basis is that related to intra - city mobility. Many urban dwellers are now experiencing what can be described as a period of relative immobility. Immobility not in the context of absence of traffic on the urban road network systems but immobility due to traffic jam, consequent long journey from origins to destinations, the general decline in the number of public transport fleets or the continous difficulty in public transport operation and the fall in quality of public transport services that is being provided for bus commuters.

Within the past decade, many of these developing countries have come to realise that an important step for solving intra - city movement problem lies in a comprehensive urban transportation planning. In a country like Nigeria where studies in the intra-city public transport have been dominated by studies in public transport services provided by the government owned bus fleets with the total neglect of the private sector therefore do not provide a better framework for the comprehensive urban transportation planning that has been realised by many governments of the developing countries. A major emphasis of the comprehensive urban transportation planning process is to perceive the existing situation of public transport and forecast the likely situation for the future public transport requirements of the city. This has led to the application of western models or concepts indiscriminately, for example, in Nigeria the Transpoconsult document of 1976, used extensively models or concepts that have been developed between the 1950's and 1970's without adequate respect to the unique problems of this developing country.

This research is about public transport buses in Lagos metropolitan. (Nigeria). The emphasis of the study is particularly about private sector public bus services of the city, and need for focussing this study particularly on private public transport bus service have earlier been discussed. In focussing attention on private public buses in the city of Lagos, the researcher noticed or made some observations which make the study more necessary and challenging. Such observations note that many studies about public transport bus services in the city tend to focus mainly on the government operated buses with passive comments made about private public bus operation. This raises a lot of questions and doubts about the future of public transport proposals that are put forward as an attempt to ameliorate the public transport problems encountered in the city by bus passengers. Some specific questions that readily come to mind which also imply that there is a serious problem in the public transport operation of the city include; (i) Why are private public transport buses overloaded with passengers in the city of Lagos and why are passengers willing to overcrowd themselves in a bus knowing that is full ? (ii) Why is it a common scene to observe passengers overcrowding at designated bus stops and struggling to enter buses in the city when the city seems to have the potentialities for developing other modes as revealed in chapter three ? (iii) Why are private public bus operators charging excessive fare for journeys made by passengers using their buses and yet they do not loose them by so doing ? (iv) Furthermore, what is the government doing to protect passenger from being exploitated by the private bus operator especially in the area of travel fare which

is often raised above the government recommendation?.(v) Why is it that there is no existing information available about private bus operation in the city, in order to establish the operational problems which they encounter for providing public transport service? and finally, (vi) How can the problems of present public transport situation of the metropolitan city be improved?

Can the questions raised in i - vii above be conceptualised in order to provide a better understanding of public transportation in the city of Lagos ? If they can be conceptualised what available concepts can be emplored to simplify the problems thereby providing for adequate and comprehensive understanding of the entire issues interacting to provide the present deplorable situation of public transport of the city?.

4.3 CONCEPTUAL AND THEORETICAL ISSUES AND THEIR RELEVANCE TO THE STUDY.

Concepts are used in research studies of this nature as a mirror of reality. Further they are adopted in order to bring coherence and possibly better clarification into a disorganised or rather very complex subject matter of this nature (private operation of public bus services in metropolitan Lagos), where little study exists. Moreover, because little research activities has been initiated, it becomes important to attempt to conceptualise these problems in order to facilitate their understanding so as to achieve coherence and better perception of the sub sector. The theoretical and conceptual issues to be discussed in this section are those that have direct implications on urban public transport provision and operation generally, but with particular emphasis on intra city movement of passengers making use of public transport modes, especially the bus system. Such theoretical and conceptual issues to be reviewed in this section are;

(i) The concept of the eternal triangle;

(ii) The elements of a journey;

(iii) Route system and service pattern of public bus transport;

(iv) Fare system;

(v) Mechanics of bus operation; and

(vi) The concept of walking distance.

The main reason for examining these concepts is to reveal their relevance to public transport passenger operation and planning and the possibility of considering any of them that show strong relevance to this research study. Thus providing a framework for understanding and appreciating public passenger transport operation generally and particularly that of metropolitan Lagos. In other words, the theoretical and conceptual issues discussed hereafter, are seen

as an attempt to introduce organisation and consistency into the private operation of public bus services in metropolitan Lagos. Hence, providing a framework for future study, examination and analysis, for an effective public transport bus planning. Nonetheless, before proceeding on discussing the main conceptual issues of this study, it is important to mention also the manner which public transport provision is organised. This, also assist in simplifying the manner which public transport operation can be examined and understood.

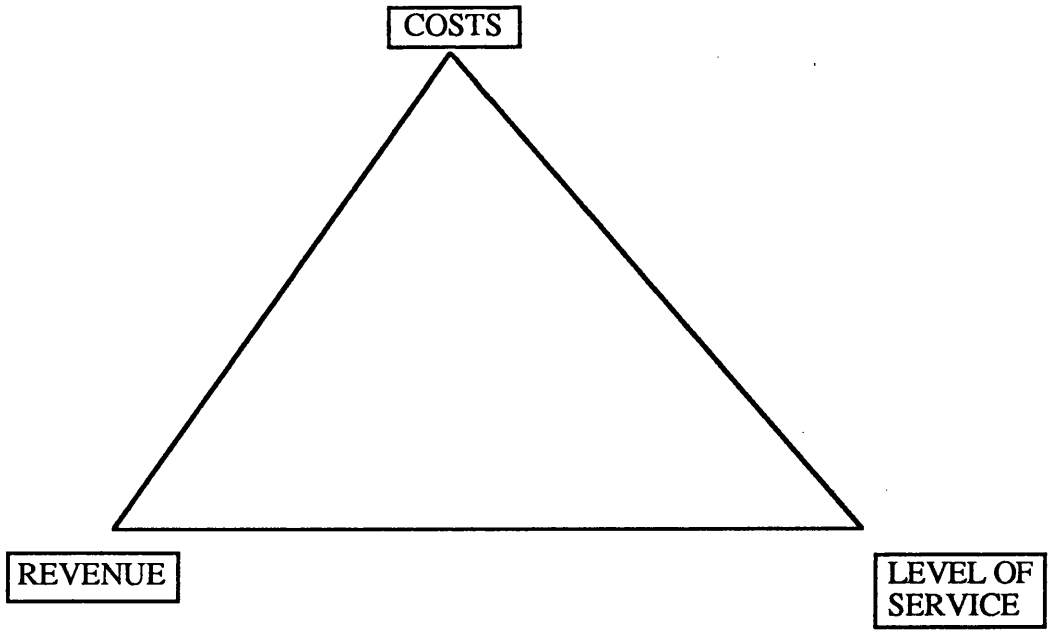
4.3.1 The concept of the eternal triangle: The public transport operator's pre- occupation, is to provide the service that the travelling public needs and the essential skill is the abilty to match the supply of buses with the demand for public bus transport by the commuters (bus users) and by doing so, the bus operator is operating as efficiently as it can. The main assertion of the concept of the eternal triangle is that there is a relationship between; (i) the level of services provided by the public transport bus operator (ii) The costs of operation and (iii) The revenue that is realised or accrued from operating the bus. These three key issues raised here constitute the main components of the concept. The concept of the eternal triangle argues further that if any two of the three components (i.e. service level, revenue, and costs) are fixed or determined, the third variable is calculable. For instance, according to the concept, the service level determines the costs of bus operation and hence the level of income necessary (from revenue and other services like advertising) can be calculated. Figure 4.1 illustrates the concept of the eternal triangle. As exemplified by Addenbrooke, et al (1981 p.13) if the level of income is fixed, the maximum cost levels are known, and the level of service which can be provided can be established. However this view presented here is not as simplistic as stated above for reasons to be discussed later in this chapter.

In this concept, the three key elements that are required for the understanding of the eternal triangle ideas are ____ Costs, Revenue, and Level of service which again have their own salient underpinnings as highlighted here; Costs, for instance, include wages and salaries paid to workers and the bus crew in the public transport sector, repairs and maintenance carried out on vehicle fleets and office premises, office equipment like typewriters, tables calculators and adding machines, rents, bills e.g. telephone, electricity and insurance. Other issues relating to costs include fuel consumed by operating the bus and depreciation of the bus, printing of bus tickets, Vehicle purchase, licensing of vehicles, registrations. In essence, Costs, in this concept imply or pre- suppose expenditure. In reality it might be very difficult to account for all expenditure but operators try as much as they can to quantify in monetary terms

all those activities assumed to constitute expenditure. Revenue, also implies monetary gains or returns as a result of operating the bus for public passenger transport system. Revenue or monetary returns are mainly derived from passenger travel fares, public funds (in a situation where subsidization for providing public transport services are present) and advertisements placed on buses. The most important source of revenue to the public transpot bus operator is the travel fare charged on passengers using their buses. Thus the manner which the fare is fixed and collected is therefore of great concern to the survival of operator's public transport provision. Level of service, constitutes three key factors that explain the service level which the public bus operator provides. These are (i) the density of the bus route network which the bus plies, (ii) period of bus operation and (iii) Frequency of bus service.

figure 4.1.

THE CONCEPT OF ETERNAL TRIANGLE.



The density of the bus route network and along with the spacing of bus stops for instance determines the degree of public transport accessibility to the bus passenger.While the period of bus operation represents the period of the day during which the bus operates, e.g. day time or night or all day period of bus operation, as well as the days of the week which the bus service operates. Public bus services may further be classified according to period of operation which include basic all day, peak period only, off peak period, night service, limited time service and occasional. Finally, the frequency of bus service

determines the waiting time of commuters at bus stops. This frequency of public transport service is of crucial consideration in determining the total journey time. In other words, the speed of public transport operation and turn round is fundamental to the three elements of service level highlighted above because it establishes the level of demand for public transport.

This concept is not without its own setbacks as pointed out by Addenbrooke et al (1981 p.13). For instance " the number of passengers likely to be attracted by alternative levels of service or fares will need to be considered". This is to say that the concept relied much on internal factors operating within the public transport system, with little consideration for external effects, whereas it requires the consideration of other concepts to actually provide that level of service anticipated. For instance the concept played down the consequencies which government policies and legislative matters relating to public transport operation might have in the process of providing public transport service. Again operating routes are determined and allocated by the government or by its representative and in the process of doing this some regulations are made which makes operation of public transport difficult. Again travel fares are fixed by the government and public transport infrastructural facilities like bus stops and bus terminals are provided from public funds by the government and in the process of providing these facilities some are not well located and in some cases absent. All these factors combine to affect the concept of eternal triangle. Despite the setbacks of the concept, it provides a better understanding of the salient issues that need to be considered in the process of providing public transport especially when such an operator intends to use the bus system. This concept of the eternal triangle therefore, suggests for what the public transport operator needs to be aware before embarking on public transport business, as well as highlighting the main key issues to bear in mind in the process of doing so. Again this concept seems to be very effective and more reliable when there is only one public transport operator in the city, but in a situation where there is competition among various public transport operators then a major problem might erupt.

The concept, is further seen to be inadequate to entirely explain the public transport mechanisms because it fails to take into consideration the organisation of public transport within the local environment which it intends to provide public transport services. Such local environmental issues that might affect the concept of eternal triangle include the level of perception of the people, safety standards or requirements, presence of other modes of transport which compete strongly with the public bus, the general market structure and the level

of urban mobility. In other words, the concept of eternal triangle alone does not provide a complete framework for the understanding of the operating characteristics of public transportation, therefore suggesting for the consideration of other relevant concepts which might assist in providing more wider and far reaching framework for the understanding of public transport system. Finally, the concept of eternal triangle seems to have concentrated more on the supply side of public transport system with little attention paid to the demand side of it. It is this gap that the elements of a journey attempts to reduce.

4.3.2 Elements of a journey: Prior to the making of a journey, the commuter needs to know where the bus goes, and what time it leaves. Any journey by public bus constitutes four basic elements as suggested by the elements of a journey. These are namely: (i) Access time; (ii) Waiting time at the bus stop; (iii) Journey time in the bus; and (iv) Access time at the destination.

Access time, is the time one spends for moving or walking from a origin (starting point) of the expected journey to the bus stop or bus boarding point. This origin of journey, may be from home, work place, hospital, and commercial place like shopping centre. The access time can be measured in physical distance as well as in hours or minutes. The most common measuring standard being in minutes because access time is expected to be a very short walking distance.

Waiting time, is the duration of time one needs to wait at the designated bus stop before boarding the bus when it eventually arrives. This waiting time also include all interchanging time, where more than one public transport bus is used before reaching the final destination of the bus commuter. Since physical movement by the bus commuter is not involved at this stage, the waiting time is measured in minutes and at times in hours depending on how long the passenger can wait before finding an alternative.

Journey time or travelling time, is the actual time the passenger spends in the bus before reaching its destination. This also include the entire time spent by the bus at bus stops along the routes where the vehicle stopped to pick up passengers until the bus passenger finally alights from the bus or reaches its destination. This is also described as in travel time.

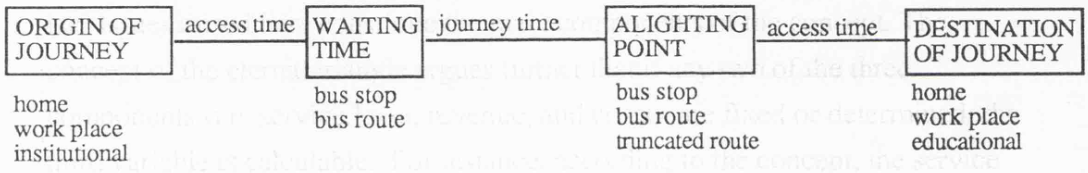
Access time, at the destination is the fourth of the elements of a journey. Since the bus passenger gets off from the bus at a designated bus stop, the commuter will have to walk from the bus stop in order to reach its final destination. The duration of time between the bus stop (alighting point) and the final destination is known as access time. This access time just like the

counterpart described above can be measured both in hourly or minutes and by physical distance basis.

Figure 4.2

Elements of a Journey Time by Public Transport Bus..

(An Illustration).



In other words, these four elements combined together to give the overall journey time by public bus of the commuter. This is further illustrated by (figure 4.2). It is this element of a jouney time by public bus that the person with access to a personal car compares with the journey time by car. For instance, for a car the access time at the origin is small, waiting time is nil, while the journey time or in- vehicle time may vary considerably depending on the traffic conditions, traffic regulations and time of the day. Access time at the destination, will also depend on accessibility of the final destination by car, parking location and its availability. However it has been observed that the greater the network density and the closer the bus stops spacing, the lower will be the access time both at the origin and the destination. While waiting time, on the other hand will be a function of bus frequency. i.e. the frequency of bus

services and its reliability. Hence the wider the frequency of bus service and the more unreliable is the service provided by the bus operator and the greater is the waiting time at bus stop. (TRRL, 1978). Nevertheless, it is important to establish here that there are factors that can affect access time consideraly. For instance, the topography of the urban area, the network density and absence of road seperation between pedestrians, cyclists, vehicles, truck pushers and animals common in Nigeria and many other third world cities can affect access time extensively. In many cases they prolong the access time. Whereas in the developed countries where considerable efforts have been made to seperate these modes on the road network have helped to quicken up access time. Other factors that seems to affect access time include the bus stop spacing, land use system, population density as well as the physical size of the city.

The travelling time or in- vehicle time for a bus are greater than that of a car over the same route because of the need for the bus to stop to allow passengers in and out of the bus at designated bus stops. However, in a heavily traffic congested urban areas the difference may be negligible especially where bus priority route is provided. Again fare collection system is important in speeding up journeys, if the delays are to be avoided or minimised. Finally access time at the destination, is closely related to the location of the bus stop to the ultimate destination of the bus commuter. The concept of walking distance, is very vital to access time and mode of access to the bus stop, where the bus passenger intend to join the bus for its destination. This concept is discussed below.

4.3.3 Walking distance: As from the mid sixties, the concept of walking distance has been employed in addition to traditional criteria in the planning of facilities in new urban sub - divisions. Although some of the urban master plans in Nigeria make passing comments about this concept, it seems that not much of it is known in the country. (Adeniji, K. 1985).

Walking distance is the distance from home or the origin of a trip to the bus stop or other public transport pick up point. But, further in a more broader situation it can be described as the hypothetical distance which people usually those without a car should be expected to walk to public transport stops as well as to locations of local facilities. This is the expected distance a bus passenger is prepared to walk before using the nearest bus stop to pick a bus. Keeping walking distance and walking times to a minimum is a key element in the overall attractiveness of public transport. Therefore the layout of any area should be in accordance with its need. For instance, in Britain 15 minutes is assumed to be the maximum walking distance for person who do not readily have the use of a

private car and 5 minutes as the maximum distance which a car owner should walk to local facilities or public transport pick up points without the use of car. Subsequently, in 1973, the British government issued guidelines on walking distances. In the guidelines, the government recommended that the distance from a bus stop should be 400 metres (1300 feet) representing five minutes walking time at 80 metres per minute along the foot path system. (HMSO, 1973). Very often, the concept of walking distance is used in conjuntion with many other factors such as population density, housing density and or local facilities in the area under consideration, but the effect of gradient (land topography) should be taken into consideration when providing for walking distance especially when older people are involved. A gradient can reduce or impede the distance which can be covered in five minutes and the linear physical distance has to be reduced accordingly. Similarly, the effects of pedestrian subways or overhead bridges on walking distance must also be taken into account particularly the psychological barrier which they create from increasing vandalism and assaults.

Criteria for determining walking distance: There are no generally laid down or accepted criteria for determining maximum walking distance for the planning of public transport stops or local faclities. However, an important study by Bandi, F. et al (1974), provides some guidelines on this concept. According to this study, the criteria to be used to determine maximum acceptable walking distances are still very much an open question. But there observation can be summarised as follows. (a) Walking Distance that are longer than acceptable would not provide an adequate public transport service; (b) Provided that the spacing of public transport stops does not become so close as to unduly prolong the journey time for the great majority of passengers. Public transport is more attractive with a shorter average walking distance; (c) Where population or job density is high walking distance should be kept shorter and vice versa; (d) Within limited limits longer walking distances are acceptable if the public transport stops are easily accessible. That is, where passenger does not have to cross heavy traffic roads or where the stops are made attractive by such amenities as sheltered stops, seats or in some cases shopping facilities; (e) Passengers are also willing to walk longer distances if time of waiting at stops is short and public transport services are frequent and reliable; (f) Presumably, the distance that people are ready to walk increases somewhat with increasing journey length; and (g) Trip purpose, car ownership, socio - economic status, local topography and climatic conditions are all other factors which either directly or indirectly influence walking distance in towns. So far, the elements

of a journey, seems to provide an insight into the components of a journey made by public transport passenger. It also provides the base for understanding the decline in public transport patronage in some parts of the world as well as issues that need to be considered at the early stage of general public transport planning especially for bus use as earlier discussed in chapter one.

In essence, the concept of elements of a journey does not critically explain the criteria for bus stop spacing, the rationale for the level of bus frequency. This suggests that even though the concept explain the issues that might help to improve public transport image and patronage, it does not focus on the effects of government policies and the supply aspect of public transport. The concept did not again account for the factors that might affect the demand for public transport. For example, factors which may influence the individual's decision are numerous. Price or fare is one of the most important but then so too are the levels of bus service that is provided, convenience and flexibility, comfort and journey time are some other factors. Imagine all the steps involved in making a journey by public bus, we have to walk to the bus stop, wait for the bus to arrive, hoping that it will be on time, pay the fare, hope we can get a seat and that the journey will be quick, safe and comfortable and then walk to our final destination or change to another bus or other mode of transport. All these things represent a deterrent to our trip making and can therefore be described as costs even though, some of them are very difficult to measure. They may however be summarised as : (i) Fare; (ii) Journey time; (iii) Ease of access to the bus system; (iv) Reliability; (v) Probability of getting a seat; (vi) Comfort in the vehicle and in gaining access to it; and (vii) Number of interchanges involved before getting to the final destination.

Another important issue that has been underplayed or omitted by the concept is the value of time. How individual commuter values time vary and as such very complex to understand because it depends on the individual situation under question. For instance, let us imagine you live on one side of the Thames river and work on the other side of it, and it takes you over one hour to drive to work, when a bridge is built across the Thames, it saves you one hour's driving but costs you one pound in toll fees. If you decide to continue going by the long way round. What this tell us about value of time is that it must be less than one pound otherwise you would have used the bridge and paid the one pound toll fees to save an hour. Equally, if you decide to use the bridge, we can suggest that from your behaviour that the value of your time at least is greater than a pound. In essence, people's value of time is important in demand for public transport. It enables us to forecast the impact of changes in the journey time.

(Bell, et al 1983. p. 13.). This the elements of a journey does not consider fully. This is not to say that the concept is not applicable to our study.

4.3.4 Bus route and bus service patterns: For public transport licensing and operational purposes, service patterns are classified and their costs for licensing vary. Buses, are allocated to routes in order to meet the demand for their services along that given routeand also to reduce or control the over concentration of buses on a particular route to the neglect of the other bus routes in the city which may probably be due to unprofitability of such route. Bus routes are important to the effective and efficient operation of public bus transport, especially when seen in terms of their spatial or geographical coverage, attempt at meeting the demand for public transport and reducing over concentration of buses on a given geographical zone.

There are various types of public transport services which the bus can operate or provide to meet the specific needs of any particular type of public passenger movement. These services can be grouped as discussed below:

(i) Stage carriage; this is the normal bus service which involve stopping of the bus at designated intervals known as bus stops. This is aimed to allow passengers in and out of the bus over the whole bus route.

(ii) Limited stops: this is a more faster service than the stage carriage. It also involve stops at designated intervals, however not as frequent as that of the stage carriage. It is a sort of semi- fast bus service.

(iii) Express service: this is a service which in most cases does not involve stops at intervals. It is an origin - destination type of non stop bus service. However, recently it is common to observe bus operating an express service stopping at a number of intermediate stops. Despite the intermediate stops the service can still be regarded as an express bus service.

(iv) Local or Feeder bus service: this is a short bus service covering a small particular geographical zone or locality, connecting with longer distance bus or rail services at a district centre. The sphere of operation of this type of bus service is normally very small and limited. Such bus service play complementary and supporting roles to the overall public transport of the city.

(v) Contract or Charter bus services: this is a specialised or specific bus service which is normally not available to the general public. It may be used to provide services for schools (as school bus), establishments with large work force or to promote tourism.

(vi) Dial - a - bus or community bus: this is flexibly routed bus service on demand particularly in low population density areas. This Dial - a - bus service is not available in Nigeria neither in Lagos metropolitan city. However

common and popular in the United Kingdom. (for more detail discussion about this section, refer to Addenbrooke, P. et al, 1981 and Kitchin, L.D. 1947, chapter 6).

In another dimension, bus services may be classified or categorised on the bases of their periods of operation. For instance, it is possible to identify the following periods of bus operation.

(i) Basic all day bus service ___ This is the regular bus service. In the cities of developed nations, such periods of bus operation is seven days a week and twenty four hours a day. However, the frequency and the timing of bus operation may vary according to the time of the day in these cities, especially during night and weekend bus services. Whereas in Lagos metropolitan the period of bus operation seems to differ from individual operator to another. The government owned public bus transport system operates less than fourteen hours for example.

(ii) Peak period only ___ This is essentially commuters trips which include journey to work, school, commercial etc... It is possible to identify peak periods in some cities and their duration varies. In the case of Lagos, the peak period seems to be longer further there are two main peak periods that are identifiable, (That of the morning and the evenning).

(iii) Off peak period only,__ This is perhaps the trip that does not involve journey to work or school because of its time of the day which is normally when offices and schools must have opened. The period between the morning peak and the even ing peak is mainly attributed to off peak period.

(iv) Night bus service,___ time of bus operation which is beyond the normal day time periods of bus service. It takes place only during the night.

(v) Occasional period of bus service ___ type of bus service meant for special purposes such as market days only etc..

The routes followed by a particular bus service may be; (i) radial i.e. a route terminating in the city centre; (ii) cross town i.e. two radial routes linked together; (iii) circular or circumferential i.e. providing inter sub urban links and (iv) local, which involves serving a particular residential zone or local centre. (Bell, et al, Addenbrooke, et al, 1981 and Hobbs, F.D. 1985). The routes followed by a particular bus service is very useful and essential in the future planning of a city, whereby harmonisation between public transport and land use activities are pursued. Further, a particular bus route may constitute any or all of the categories of routes highlighted above. The types of services and periods of operation also depend on the needs of the area as may be fashioned

out by the land use pattern, socio- economic conditions of the people and the topography of the area.

Criteria for bus routes is another very important issue that is seldom examined.It highlights the basic criteria that are used or considered for successful operation of buses in urban areas both from the point of view of the bus operator and the bus commuter. In any community, there is demand for public transport for work, school, shopping and social and leisure activities. The level and nature of demand for public transport depend upon densities of physical development, spatial distribution of activities, demographic characteristics of the people in terms of age distribution, income and other socio - economic dimensions of the area. Again, the extent to which public transport can satisfy the demand of the bus commuter through effective bus route allocation is strongly influenced by all these factors mentioned above. Bus route allocation is also dependent on the location of development activities in relation to the network geography of the area. Hence, recognising these relationships could greatly enhance the efficiency of public transport system and the cost of provision. This in turn, enables public transport to play more effective role in the community, not only to the benefit of the non- car owning household but also for the benefit of those in the car owning households who still require the public transport for certain trips. Such instances are when the car is either not available or not well suited to the particular purpose of the journey. If the bus can be an alternative for these trips, it reduces dependence on the private car and results in economic, social, energy and environmental banefits to the community.

One important outcome of this discussion on bus route and service patterns, is the relationship it has with the concept of eternal triangle. The concept of eternal triangle, raise three fundamental issues in public transport provision and operation especially that of the bus system. One of the issues raised in the concept is service level which has been discussed earlier in this chapter.The issues highlighted when discussing bus route and service patterns, actually show again how the manner which the bus route is planned and the types of services that it is expected to provide relects on the level of service that is expected from public bus operation and provision in any community. This is suggesting that for further simplification and understanding of service level in the concept of eternal triangle, the manner which the bus route is planned and service patterns are highly relevant. Hence, the two concepts seems to be interrelated and closely knitted together.

4.3.5 Fare systems: A key factor in the demand for public transport, is the level of fares charged by bus operators and the method by which the fares charged is determined. The fare structure can also have a considerable influence on the form of network structure of the city. The fare system can be categorised into four broad classes, namely; (i) Fare levels, (ii) Fare scales, (iii) Ticketing arrangements, and (iv) Market segments.

(i) Fare levels: the fare levels are determined principally by the financial policy adopted by the bus operator or the policy provided by the government. Such fare policy may be at an economic or commercial rationality if achievable or social level such as at a subsidized level by the government. For instance, in the past in Great Britain, it was possible to charge fare on economic rationality without loosing customers or patronage, this is no longer possible. Therefore some degree of subsidy is necessary to retain and maintain reasonable levels of service without increasing travel fare by bus. In the case of Nigeria, economic fare level seems to be the rule of the day because there is no subsidy for public bus service except those buses operated and owned by the government (LSTC). It is possible to charge higher fares in some cities without loosing patronage because transport alternatives are not readily available to the commuters and where the car ownership is very low. It becomes more critical when it is realised that the total number of newly registered vehicle is declining with increasing population.

In economic terms, when demand is greater than supply there is inflation; a situation where many people are chasing few commodity (bus). To worsen the Nigerian situation, is that public transport is entirely dominated by road based transport. There is no other reliable means of public transport like rail, waterways etc even though their potentialities abound. (Ogunleye, 1982, Lagos State Government, 1986).

It was the tradition of the Lagos state government to subsidise the Lagos State Transport Corporation (is the government agency responsible for public transport bus operation in the city of Lagos), by 1981 the policy changed to self financing when the contract and target measures were implemented. This idea was adopted by the civilian government because of the view that private bus operators are able to operate their buses and make profit by so doing and therefore concluded that the LSTC can equally operate its fleets and make profit in the event of doing so. However, the government failed to consider its social obligations to the people, the size of LSTC work force, salaries and wages etc, whereas a private bus operator who has only one bus and does not pay salaries to the bus crew has less financial obligation in public transport operation.

Nonetheless, the policy of self financing by LSTC was stopped in 1985 when the new and present military administration come to power in the state.

The actual level of subsidy varies as well. Some subsidues are provided in lump sum and the management determines the modality for its allocation to various commitments. Some subsidies are targeted towards specifically identified social and economic obligations. In this type of subsidy (targeted) diverting funds to other areas not involved are restricted. In other words, subsidy seems as a measure of operating efficiency, whereby the gap between the loss expected from economic level of operation is being compensated or provided for as subsidy.

(II) Fare Scales: This may be graduated or classified on the basis of (i) DIstance, (ii) Geographical zone, (iii) Flat Rate; and (iv) Time based. Fare scales graduated by distance implies a situation whereby travel fare is a function of the physical distance involved in the journey made by bus, i.e. travel fare is based according to the physical distance travelled in space. However, a taper effect is often applied which implies that fare cost reduces per mile as the journey distance increases. While zonal fare is another type of fare scale which involves travel fares charged on geographical zones crossed or traversed. The size of the geographical zones vary. However, the city centre zone is normally the smallest zone. Again the flat rate is a single travel fare charged irrespective of the distance travelled or number of geographical zones crossed. Such fare scales involves paying an origin - destination type of travel fare. Finally, the time based travel fare is a type of fare charged for a given time period of travel, e.g. peak period or off peak period travel and such as any distance travelled within one hour.

In the developed countries like Britain, various forms of prepayment methods have been implemented for the use of public transport purposes. Such forms of prepayment include weekly, monthly, quarterly and yearly bus passes. Prepayments, has tremendous operational advantages in improving cash flow for the operator and reducing boarding delays at bus entrances for passengers, especially on one person operated buses. In some buses slotting machines that can issue tickets have been installed while manually operated machines are also used by a bus conductor. In the developing countries like Nigeria, the commonest means of fare collection is the exchange of token between the bus conductor and commuter. Seldom is ticket issued except probably in the government owned public transport service. Hence, risk in cash handled by the bus crew is high, tendency for embezzlement and fraud is also great (Adeniji,

1983). Reduced fares are often provided for a particular target group or market segments like school children pensioners and for non peak travel etc.

In other words, the fare structure for any undertaking may constitute a number of features which are determined by the overall policies adopted by the management, the form of network system, and the nature or physical characteristics of the area under consideration. To this end, any fare structure eventually adopted must aim at achieving four basic objectives. Namely; (i) It must provide the revenue required to satisfy whatever financial targets that are set by the bus operator, (ii) It should be comprehensive enough and all embracing to the bus users, (iii) It should facilitate smooth bus operations, simple, avoiding unnecessary delays and reducing opportunities for fraud and fare evasion, and (iv) It should be flexible to permit new innovations and market strategies to be introduced. Moreover, revenue, is very fundamental to public transport operation and it is one of the key elements focussed on by the concept of eternal triangle. The issue of revenue discussed in the eternal triangle, seems to be more related to the advances made in the discussions highlighted under the fare system. Because, the major concern of the operator of public transport is to minimise loss through adequate and reliable means of collecting revenue. This coincidentally is also the basic aspiration of the fare system. In essence, there are similarities in the goals of the two concepts. However, the discussions on fare system is more detailed and all embracing, because it did not focus only on revenue. But the views on revenue revealed by the concept of eternal triangle only concentrated on revenue derived through public transport operation and how to minimise loss but did not focus on how travel fare by public transport is or can be fixed.

4.3.6 Mechanics of bus operation: It has been established that there is a relationship between network density and service frequency (Addenbrooke, et al, 1981). Routes and combined bus service frequency and the journey time are used to form a time table for the services which bus can provide. In most cases, the service schedule running time is constant for any period of the day, week or year. However, in some areas, differential running times are applied and allow for differing traffic conditions especially at peak hours. (HMSO, 1973). There are two main elements in forming a time table on the road, namely; the vehicle and the bus crew.

The vehicle, is the number of vehicles that are required to operate a service, which is given as:

$$N = T / F$$

Where N = Number of vehicles required.

T = Total round trip time including layovers in minutes.

F = Service frequency in minutes.

The number of buses provided must be a whole number (not in fraction) and this may be achieved by adjusting the round trip time or the frequency of service or both.

The Bus Crew is the other element for providing a bus service. Bus may be operated by the crew___ bus driver and the conductor or increasingly nowadays in the developed countries driver only operated. Most bus operators in the developed world especially in Britain are in the process of converting all or majority of bus services to driver operated only to improve productivity and minimise cost of bus operation.

The arrangements for staffing buses are subject to management policy. These policies may include all or some of the followings listed below.

(a) Signing - on time.

(b) Maximum driving time before and between breaks.

(c) Length of breaks.

(d) Walking times or riding times between signing on point and relief point.

(e) Maximum driving time per day and week. and,

(f) Signing - off times.

When all these are examined along with the running times of the bus, frequencies of bus services, the limited number of relief points and meal break points on a route, a complex pattern of option emerges. From the above catalogue of complex interactions revealed in this discussion, the bus operator is still expected to produce an optimum schedule to meet the service level required by the passengers and the financial targets laid upon it. Despite the complexities, the use of computer programmes in simulations are being developed to assist the process of achieving better bus and crew scheduling (Black, 1981). To achieve the most efficient pattern of schedule, two important features are often considered. These are (i) Inter timing and (ii) inter working. For instance, inter-timing is achieved when two or more services along a common section of route are timed to give a combined even headway. A service may be inter timed with several different groups of services along different sections of its route. On the other hand, inter- working, is when two or more services are operated by the same vehicle or groups of vehicles. For instance, a vehicle may operate a journey on one service and then transfer to another different service. Thus more

efficient use can be made of the vehicles and crews and a better level of service can be provided. This may be achieved at the expense of reduced operational flexibility. (Kitchin, 1947). Finally, where services are inter timed or inter-worked, a relatively small change to one service may cause a chain of reactions, which may have an overall effect or repercussion over a wider area. Similarly, a significant delay at one location may affect service levels over a number of routes and not just the particular one that is directly affected by the delay.

Mechanics of bus operations focus on how facilities to be used for public transport can be deduced in order to reduce loss through ignorance and mistakes. Since it has been known generally that public transport operation is highly expensive to operate. The various issues that were revealed by the discussion on mechanics of bus operation equally represent the views of the costs aspect of the concept of eternal triangle.

As a conclusion to this section dealing with concepts relevant to public transport operation, is that the concepts reviewed and examined so far, could be used as a package for the provision and operation of an efficient and reliable public passenger transport system. Consequently, not a single concept discussed is capable of providing a complete understanding to the public transport system, or to the problems encountered in the process of providing public transport services. But, when used in conjuction with other concepts (as a package) they provide a better and wider scope for the understanding of the basic issues involved in public transport bus systems. Hence, in this study, the concepts are used as a package to mirror the reality of public bus transport system in Lagos metropolitan (Nigeria). In addition to this study non of the concepts discussed is more favoured than the other, this is more so when their advantages and disadvantages are taken into consideration before they were applied in this research study.

4.3.7 Relevance of the conceptual issues to this study: This research study, is about public transport provision and operation. It is exactly focussing on private operation of public bus services which is an aspect of urban public transport sytems. Specifically the major concerns of the thesis have been enumerated in chapter one. However, it is the intension of the study to examine the nature and organisation of private operation of bus services, to highlight the characteristic of private bus operation and the quality of service which the private sector bus system provide for passengers using their buses. One major problem facing this study is the inadequate and the general absence of data and concrete information about these issues to be examined by the study in the area which has been chosen as the case study. Because of the general absence of data

and information about these issues to be examined, there is need to derive means of achieving the objectives of this study. In order to simplify and facilitate the understanding of private operation of public bus service in the study area there is need to consider the manner in which this type of study has been carried out in other places of the world.This is why the concepts highlighted in this chapter were examined so as to consider there relevance to the study.

Taking into consideration the objective of this study and the various concepts discussed in this chapter, there is no doubt that there are strong relevances in the concepts raised to the subject matter which this study is to examine. For instance, some of the conceptual issues raised earlier, explains the major principles of bus operation and provisions of bus services, the fundamentals of fares systems. Further, the mechanics of bus operation, bus route planning, walking distance and the concept of journey time highlighted during the discussion on conceptual issues all assist in providing better insights into how public transport functions. On the other hand, the aims of this study include among other things, that of highlighting the operational characteristics of public bus service, how travel fares are determined and the quality of bus services. Hence, focussing attention on the objectives of the research and the conceptual issues raised, one might conclude that the concepts have strong relevance to the study which the concepts when used further help to simplify the enquiry.

For instance, the concept of eternal triangle provides an avenue for understanding the fundamentals of providing and operating public transport system and the complex issues involved in the process of doing so. As could be observed, one of the objectives of this study is to highlight the provision of public buses. This concept, will therefore assist the researcher in ordering data that are derived by conducting a primary survey for the study which in the first instance are not in any organised or arranged form. Again the elements of journey time allows us to understand the demand for public transport and it also gives an insight into service level which the public transport operators provide users of their services. As it could be recalled, one of the objectives of this study is to examine the quality of public bus services provided by private public bus operator in the study area. In other words using the concept of the elements of journey time enables the study to achieve this task. In essence, the conceptual issues raised have direct relevance to the study. However their relevance become fundamental when they are seen and used as a package. They are therefore going to be used in this study to mirror the reality of private

operation of public bus services in the study area that has been selected for this thesis.

4.4 PRELIMINARY CONSIDERATIONS AND DATA SOURCES.

Apart from the conceptual issues highlighted in the preceding section, some other preliminary considerations were taken into account for this study which are very fundamental to the research goals. These preliminary considerations provide the basis for the subsequent analytical approaches adopted by the study and how the data subsequently generated are analysed and interpreted. For instance an overview of methods of data collections that can be used in relation to the research objectives were taken into consideration. Moreover, there are scanty studies and few documented information about public transport in the city and more affected by lack of data is the private public bus operating system which is the focus of this research. Hence the the use of questionnaire survey was considered and subsequently adopted for the study in order to gather more information and generate empirical data through primary source of data collection method for the study, thereby trying to reduce the gap of information and raising the quality of existing knowledge about private public transport in the study area.

In the process of designing the questionnaire, guidelines suggested by some of the conceptual approaches reviewed earlier in this chapter and their propositions were used in structuring the questions which answers are required from respondents in the study area. Prior to the final structuring of the questionnaire administered for this study, a pilot survey was conducted in the study area. The essence of the pilot survey were two folds; (i) to have a feel of the public transport situation of the study area and planning a strategy for the subsequent administration of the questionnaire, and (ii) to assess the degree of simplicity or complexity (i.e. bus passenger understanding) of the questions already drawn for the study and possibly to redraft some of them where the interpretation of the questions raised from the pilot survey seems confusing, dualistic and or runs repetitive as well as having a feel of the kind of response to expect from respondents.

Varieties of data sources for this study were equally considered as well. These data sources are principally the conventional ones. They include primary and secondary data sources and some of the data generated for instance were used to determine how the quetionnaires are to be structured and administered, the number of questions to be drawn and the spatial distribution of the questionnaires into survey points. For example in choosing the survey points

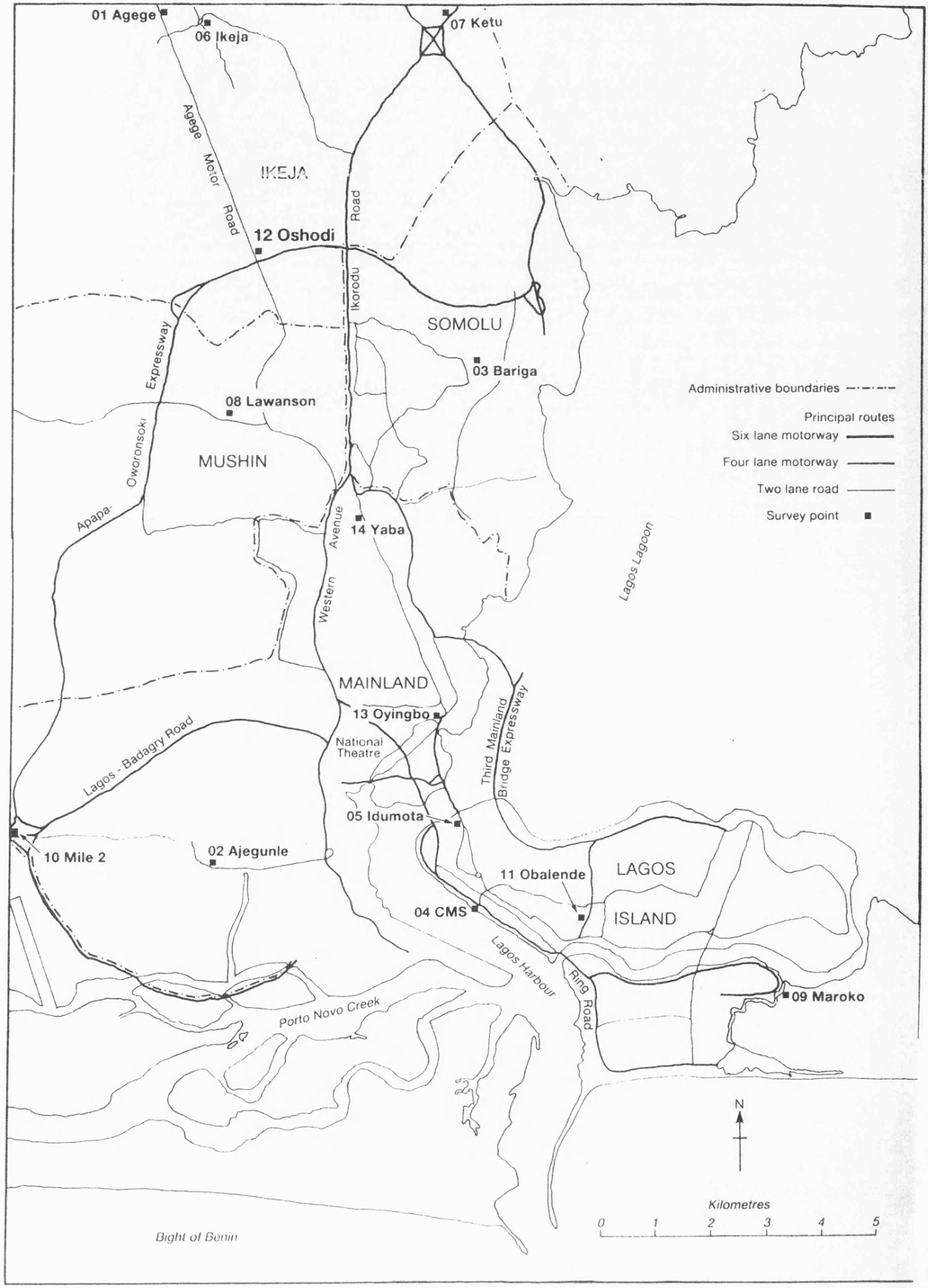
adopted for the administration of the questionnaires for the study, it was based on the fact that they serve as major interchanging points for operators and passengers as well as being convenient for the researcher and field assistants to administer their sets of questionnaire in these areas.

4.4.1 Data sources: This study relies on two major variety of data sources, namely; (i) primary and (ii) secondary data. These two sources of information were further complemented with observational methods and qualitative interviews conducted during the field work exercise, even though they can still be regarded as primary source of information. Also available for the study is the base map of the study area which can be regarded as secondary information and the use of cartographic methods for visual discription of results.

The primary data used for this study are derived from two sets of questionnaire survey that was conducted in Lagos metropolitan between the months of June and October, 1987. These two sets of questionnaire are (i) questionnaire survey on private public bus operators and (ii) questionnaire survey on bus passengers (users). (appendice 5 and 6). These two sets of questionnaire were administered in fourteen (14) survey points selected for its adminstration in metropolitan Lagos. The survey points were selected to cover the entire metropolitan city and these points coincide with the main interchanging points for public transport buses in the city especially for the private buses in operation. These survey points were selected on the basis of accessibility, coverage and the more important in conjuction with the principal traffic officer of the Central Licensing and Parking Authority (CLPA), the government agency responsible for planning, controlling and regulating the operational activities of private public bus operation in the city of Lagos. Figure 4.3.

Information resulting from the questionnaire administered during the survey include, vehicle ownership, vehicle registration requirements, vehicle costs and maintenance, bus type, bus age, and further information about fare determination, fare collection and charges and method of bus financing. Others include, duration of bus operation, and operational problems. (appendix 5). On the other hand, the questionnaire administered on passengers expect information to be derived to include socio-economic characteristics of bus users (passengers), such as income, age, sex, occupation, educational attainment, tribe etc. Other information generated by the survey include passenger's waiting time at the bus stop and walking time to the bus stop and public transport

Figure 4.3 Survey Points For Questionnaire Administration.



problems they encounter in the use of the private bus and to suggest possible means of improving public transport in the city. (appendix 6).

The main objective of these two sets of questionnaire being to provide and account for the operating characteristics of private public bus system, the quality of bus services which they operate and the demand characteristics of their users in the city of Lagos. As earlier discussed in chapter one, these are the main issues which this thesis set to achieve.

Furthermore, observational methods and qualitative interviews were used for this study. In the observational method used, they were of two categories; (i) participant observation which constitutes the researcher and the field assistants that were used for administering the questionnaire to respondents in each of the survey points. The essence of this is to reveal the spatial characteristic of each survey point, taking cognisance of their differences and also to observe how the bus operators operate their buses and passengers responding to their presence, e.g. watching how passengers are getting in and out of the bus, how travel fare are collected etc. In short it is to observe if some of what has been responded to in the questionnaire already administered to them is what is taking place in reality. (ii) While the second category of the observational method used is the non - participant observation. This is whereby some people were interviewed about their experience and views in the use of public private buses as means of passenger movement in the city of Lagos. The Lagos State Ministries of Works, Information, Local Government, Governor's office, Central Licensing and Parking Authority and The Lagos State Transport Corporation all belong to this category of non - participant observation.

The secondary data for this research study were obtained through consultation of official records in the various governmental agencies (statutory corporations) of the state and federal ministries that share closer relationship with the study and can as well provide adequate information for the study. Such governmental agencies that are very relevant to the study include the Lagos State Central Licensing and Parking Authority (CLPA), Ikeja, Lagos. Nigerian Police Force (NPF) especially the Motor Traffic Department, at Ikeja and Obalende Lagos, the Lagos State Transport Corporation (LSTC), Lagos State ministry of Works and Transport (Transport division), Local Government and Chieftaincy Affairs, Lagos State ministry of Information, the Governor's Office (Statistics division). At the federal level, the Federal Ministry of Transport (NTCD), Federal Office of Statistics (FOS), Federal Ministry of Works and Housing (Highways division). All these institutions are located in Lagos city. Others

include the University of Lagos,(particularly the Departments of Geography, Civil Engineering, Environmental Planning and The Consultancy Services of the University). The University of Ibadan, (particularly the Geography department and the Centre for Urban and Regional Planning). And finally the Nigerian Institute Of Social and Economic Research (NISER) Ibadan. Also included as secondary sources of information is the literature review of previous studies on public transport about the study area in particular. Some of these studies were commissioned by international organisations like the World Bank and The United Nations Organisation, and those carried out by eminent scholars consultants, researchers, transport planners, traffic engineers, and highway engineers in serach of relevant information that will help to improve the quality of this study by providing adequate findings. Published articles in learned journals and books belong to this group as well. The conceptual frameworks provided for the study for instance, are derived from the literature review. Information about vehicle registration, vehicle accidents, capital investment allocation in the Nigerian transport sector, bus operational regulations and various control measures, land use, population and their demographic nature are all drawn from the secondary data sources made available for the study.

These pieces of information derived from the questionnaire survey administered and the secondary data made available for the study provide the researcher with facts and figures that would be used along with observational inferences to highlight the entire private public bus system, their operational characteristics and problems in Lagos metropolitan. Finally, a base map of principal bus routes and land use patterns of the city obtained during the field exercise provide a means of understanding the landuse, transport network systems and their interactions in the study area.

4.5 SAMPLING PROCEDURE AND QUESTIONNAIRE ADMINISTRATION:

4.5.1 Sampling Procedure: In view of time, manpower resources and financial constraints, 280 questionnaires were administered in each set of the two questionnaire designed for the private public transport bus study of Lagos metropolitan. (appendice 5 and 6). This number of questionnaires to be adminstered was arrived at as discussed hereafter. The total number of private public transport buses in operation for 1986 has been derived from the annual registration records of private public transport buses provided for this study by the Central Licensing and Parking Authority (CLPA). (table 3.2). Using the 1986 registration records for private buses, 1,428 assorted types of buses registered to operate and provide public transport services in the city, out of

which 20% (approximately 280) of them were interviewed for this study. On the other hand, one passenger in every bus in which its operator is interviewed was also questioned for convenience, thus, the 280 questionnaires administered to passengers was also arrived at.

The 20% sample size of the private bus operators interviewed for this study could be said to be adequate for the study taking cognisance of the fact that all the buses registered for public transport services cannot all be said to be in operational condition at the same time. For while some will be off the road due to mechanical faults, accidents, maintenance, some may be due to the health condition of the bus crew and or the expiration of bus operational documents like vehicle insurance and road worthiness certificate. However, the researcher recognises the implications of new registration of buses for 1987 (between january and june) will have on the study especially by increasing the number of registered public buses operated in the city.

The year 1986, was chosen as a base for the sample size determination because it is the year with the most current complete annual figures about private public transport bus operation in the city and the year 1987 was half way through when the survey was conducted in the metropolitan Lagos. (the survey was carried out between the months of June and October, 1987). It would therefore be unreasonable to use 1987 registration figures as a base for the study because of the likely non representation of registration of new bus operators that would have taken place during and after the field exercise.

Meanwhile the random sampling procedure was used to select the private buses to be interviewed. This method of sampling procedure was favoured because of the manner which private bus operation takes place in the city. The operators do not have offices where they can be contacted for interview hence the researcher resulted into chasing then about along their operational routes. Secondly, the buses do not follow any particular regulated operational set up that can enable the researcher to adopt any other possible method of sampling procedure that could help to provide the kind of information needed for the study. For instance at the main terminals or interchanging points for buses in the city, it is possible to notice more than one bus calling for passengers at the same time, even though the operators follow the same route and are heading for the same destination. This kind of system which bus operate makes it more difficult to adopt systematic sampling procedure for the study. Again, the absence of data on the number of buses allocated to a particular bus route in the city further compounds the problem of how to distribute the questionnaires and also in the selection of the number of bus types to be

interviewed along these routes. Much care has been taken to avoid double counting of buses, i.e. administering more than one set of questionnaire to one bus operator throughout the survey period. This is achieved by recording the hackney number of the bus in a note book provided for the field survey which are crossed checked by the interviewers before commencing any interview. Finally, because of the unwillingness of some bus drivers to be stopped for any interview, random sampling is adequate to cope with this problem, which simply implies that any bus operator not willing to be interviewed was allowed to go only to stop the next willing bus driver for interview. This actually helped to improve and enhance the quality of responses from the questionnaire administered to them because the answers provided by the respondents for the study were not forced on them.

4.5.2 Questionnaire Administratrion: The administration of the two sets of questionnaires designed for the study was conducted by the researcher and with the aids of six field assistants. For the purpose of this study, fourteen survey points were selected, with the aids of the CLPA officials responsible for private public transport operation in the study area. (figure 4.3). Each of the survey points chosen correspond with the major passenger and private bus terminals or interghanging points used by the two parties in the city. The survey points cover the whole of Lagos metropolitan which in spatial term is the coverage of this research study. As highlighted in the preceding section, a total of 280 questionnaires were administered to bus operators and bus passengers (users) respectively. At each of the fourteen survey points, twenty questionnaires per set of questionnaire designed for the study were adminstered. Because of inadequate record from the CLPA about route allocation of buses, it was rather impossible to distribute the questionnaire to each survey point on the bases of bus route density. Hence the bus route capacity for the study area cannot be determined. Therefore equal number of questionnaires were administered at every survey point selected for the research.

The field assistants used for the survey were paired up as a team. Two field assistants constituting a team. While one of them is interviewing the bus operator, the other will concentrate on the passenger in the same bus where its operator is being interviewed. The researcher was mainly coordinating the activities of the field assistants by visiting them at the various survey points, sorting out any problem encountered and also conducting inspections on the activities of the interviewers. The researcher did not tell the field assistants when he will be visiting their survey points this is to keep them working all the time.

Before the real administration of the questionnaire survey began, series of pilot surveys, were initiated. Apart from assessing the complexity or otherwise of the questions drawn for the interview as earlier explained in this chapter, the time of the day that will be ideal for the interview is very important as well and this needs to be sorted out during the pilot study. For instance, during the pilot study, the morning peak period was observed to range between 0600 to 0900 hours. This is when most workers are on their ways to their respective places of work and many of them are anxious to report for duty punctually and on time. The outcome of this is that the available private public transport buses on the routes are not usually enough to cope with the demand for their service. Rowdy situations, overcrowding and bus overloading are therefore observed. This situation has some implications for the ease and efficiency of how the questionnaire is administered and the general cooperation expected from the respondents. The off- peak period of 0900 to 1500 hours and 1800 to 2200 hours most of the passengers during the first stretch of this period (0900 - 1500) hours are self employed and traders whose working hours are not regulated. Much of the rush during the early morning peak period usually ease off by this period. The other segment, (1800 - 2200) hours of the period is when most of the passengers are home bound i.e. either returning from places of work or shop. While the evenning peak period 1500- 1800 hours passengers generally make return journeys to their homes after closing from work. The rush at the bus stops resumes but at a reduced scale because the closing times are a bit staggered and varies. These observations are very important and fundamental to how the questionnaires are to be administered. Therefore arising from these observations as explained above and taking cognisance of their characteristics in terms of bus overloading, overcrowding at bus stops, exploiting the possibility of being attended to by respondents, as well as the safety of the interviewers, the following hours were eventually selected, in order to cover the whole daily operation of the bus operators who are known to operate shift system and the whole spectrum of bus passengers (commuters). Therefore 0700 - 0830 hours, 1130 - 1330 hours and 1600 - 1730 hours were selected for the early and late shifts respectively.

The real survey exercise started on the 15th of July, 1987 and lasted till 30th of August, 1987. Because of limited manpower resources, three survey points could be manned at the same time however only to proceed to another survey point on completion of the administration of the two sets of questionnaire in one survey point. Moreover due to the large extent of information required for the study, it took longer time to complete a

questionnaire. Therefore it is very often found the interviewer has to travel for a shorter distance with the bus operator in order to complete the questionnaire. This warrants in a situation when the questionnaire has not been completed before the bus departs from the survey point. Further a physical inspection of the survey points was conducted. This is to verify and assess the adequacy and the functional relationships of these facilities meant for public transport operation especially the passengers and bus operators in the city.

All the two sets of questionnaire designed were fully administered, answered and completed.This was possible because the questionnaires were not allowed to be taken away by respondents. The field assistants saw that every question was provided with an answer. Finally, the survey relied on the queue system of the buses at the survey points to select which of them is to be interviewed. At the survey points buses are observed to queue and take turns to pick up passengers while in the other bus stops (i.e. excluding the 14 survey points), they pick up passengers as they announce their destinations. The last bus on the queue when an interview has just been completed will be earmarked for the next interview. Such selection is entirely based on random choice.

4.6 DATA ANALYSIS AND TECHNIQUES USED.

Data collected during the field survey are analysed using descriptive inferences and relevant statistical techniques such as cross tabulations, tables, graphs, percentages, and frequency distribution. Shades of graphical methods are also used to show variations in the public transport operation and the use of photographs for practical emphasis. For instance, trends in public bus registration, motor vehicle registration statistics, accident trends etc. and their characteristics and types will be shown graphically in the study. An examination of bus terminals which constitute the main survey points was also undertaken in the study. This examination is based on site inspection and photographs. Base maps and that of principal bus routes of the study area also provide materials for analysis.

4.7 DATA LIMITATIONS AND PROBLEMS ENCOUNTERED.

Data limitation to be discussed in this section is grouped into two; (i) Limitation of concepts to the study; and (ii) limitations of empirical data.

(i) Limitation of the concepts to the study:- Transport concepts generally, are often very criticised for its conceptual poverty. This is more true in urban transportation modelling than in any other aspects of transport. (Ogunsanya, 1986. p.76). Virtually all the concepts used for urban transport modelling have no theoretical basis and explanation in transport. It is not surprising therefore, that this lack of uniform concept base creates enormous

conflicts in the applications and results of the model or concept. For instance, the concept of walking distance used in this research, applies to the movement between origin of trip and the designated stop where the commuter intends to join the bus. This could be measured both in physical distance and time and such measures ignores individual convenience and reason for making the trip etc. As observed by Black, (1981) the " rigorous caliberation of data involves testing of different functions and choosing the one that best fits the empirical shape of the survey trip length frequency". Such arbitrary error closure is contradictory to the prediction function of models which aims at scientific accuracy through objective procedures. Even the conventional chi - square technique which is widely used in descriptive statistics has various assumptions which are expected to be satified before it can be applied. (Kings, 1963) and Cohen and Holliday, 1981). Similarly, in conceptualising modal split, there is a hidden assumption that urban passengers have a choice of mode. But for a traveller who does not have a car in the developing country like Nigeria, the obvious alternative is public transport. This suggests that he does not have a choice of mode and this is largely so for most commuters in the cities of many developing countries.

Data requirements for transport concepts:- Conceptualisation requires an extensive amount of data. Such data needed before these concepts can be used or applied should be measurable, easy to derive accurately, reliable, and how the data are to be generated and used must take into consideration the procedures for the use of the concept under consideration. In other words meeting or satisfying the requirements of the concept. In urban transport for instance, some variables used are difficult and very complex to measure because they involve substantial elements of subjective decisions. Data required for the use of some concepts sometimes need unquantifiable variables like convinience, comfort, level of perception, social status etc... all of which influence intra - city travel behaviour. Whereas some variables are readily quantifiable such as household size, income or trip etc, but have definitional problems. For instance, how does a transport researcher categorise the trip made by man who while returning home from work, visited a friend and shopped at a market. Is it a single trip or three trips or another man, who left home, for work in his car, parked the car half way because of traffic restraint, took a bus, and then walked the remaining journey to work. Under what mode of transport will such classification fall ? Apart from these problems of assumptions, definitions, measurements and accuracy, in the use of some of the concepts as limitations to the study, the complexity of factors influencing human behaviour are very unstable therefore

results into distortions in early predicted future transport needs. This makes prediction unrealistic.

Finally, there are problems relating to data collection. For instance respondents reply to a question posed by an interviewer depends on the state of mind, attitude and personality of the respondent. Such variable feature of human nature raises very great doubts on the quality of data obtained and hence the reliability of the results arising from the use of such data can be questioned. In a country like Nigeria where accurate data are absent, or rather non- existence, a lot of studies depend on empirical derivations of data. This data problem has been emphasised in earlier studies in Nigeria. For instance the Stanford Research Institute's on Economic Coordination of transport development in Nigeria, explained that "... it is important that an effort be made to collect and maintain adequate data on all forms of transport in the country. Such data are an essential tool in the continuing analysis of trip problems which will be necessary in a fast developing country as Nigeria.... ". (Stanford Research Institute. 1963). About twenty years later, this problem of inadequate and lack of data was raised by Onakomaiya and Ekanem, (1981). "..... Nigeria is grossly defficient in data collection and storage and there is no sign of any corrected effort to improve the data situation in the transport sector".

All these problems and limitations raised above combined to have an overwhelming effect on the quality of data derived from field work and interviews conducted for this study, which again put limits to the extent of rigorous statistical analysis that the study can employ for the study .

(ii) Limitation of empirical data: The sample size of the two sets of questionnaire adminstered for this study are rather small when compared with the huge number of private public bus transport operators in the study area. Further, the total sample size of the questionnaire administered for bus passengers in public transport services provided by the private sector when compared with the total population relying on public transport by bus in the city is rather very small, even though there is no information showing the number of passengers relying on bus services operated by the private sector.

Apart from the sample size administered for the study, another limitation is the duration of the survey which is relatively short a duration for this kind of study, because a much longer period of time would have assisted in pointing out observed variations in private bus operation and passenger demand for their services. For instance, the survey took place during the months of june and october, 1987, which coincides with the period when schools in the study area were on holidays (vacations) and as such most journey to school is undermined

in the study which if the survey has taken place while schools are in session a new and different picture might emerge from the study.

Since the private bus operation is demand responsive, the selected periods of the day for interviewing and the duration of the survey itself, might not necessarily be representative of all daily bus operating characteristics and that of the whole year. Again private bus operation seems to respond to political and economic situation of the country whatever the situation is as at time of the interview will not be enough to justify entirely the characteristics revealed in the survey.

In any case, some of these limitations raised above have been noted in the informal and formal interviews conducted for the study and much care have been taken in interpreting the results of the survey. Again, inconsistencies are observed in some of the secondary data made available for the study, adequate care has been taken as well in their usage. Most of the inconsistencies are due to typographical errors from the issuing government agency or department and definitional problems. Furthermore, some of the secondary data available for this study were largely disaggregated and the researcher has to do a lot of compilations and computations of data manually from, annual reports and the various establishments records and files. Besides, some of the data used for the study, were not made available by the government officials for fear of using such information to discredit them or to the disadvantage of their establishments. This was particularly the case with the Lagos State Transport Corporation, where a public enquiry has just completed about its operational activities and financial malpractices revealed at the time of the survey and the Lagos State Population Bureau Office, which was busy gathering and preparing for the local government election for December 1987. The field work was conducted during the rainy season which was equally affected by slowing down in some instances the survey plan schedule. And this has its own claim in the problems encountered in the field exercise.

However, it must be put on record that the study would have achieved more better results if the research had enough resources (manpower, finance and time) at its disposal and many more field assistants to administer more questionnaires for the study. Another problem is that of transportation which affected the ease of moving from one point to the other by the researcher and the field assistants. The whole metropolitan Lagos (271.20 square kilometre) was studied without access to personal means of mobility. This was a great handicap for the study since it contributed to slowing down the schedule outlined for the survey on many occasions. Inspite of the problems encountered during the field

exercise, the data collection period and the fieldwork study, were very challenging and interesting. It has really provided a background experience for subsequent research projects which the researcher hopes to be involved in the very near future.

4.8 CONCLUSION.

This chapter deals with a very important part of the study. It highlights some of the various conceptual issues available to efficient public transport bus system and how each of them can be applied taking note of their shortcomings as well. Having examined the views of these concepts, and the possibilities of using them as a package in understanding public transport operation in metropolitan Lagos. The chapter further demonstrates how data generated or derived from the application of these concepts can be analysed and also improved upon after taking into consideration the sampling procedure, data analysis techniques and data limitations for this research.

CHAPTER FIVE.

PRIVATE BUS OPERATION.

5.1 INTRODUCTION.

The provision and operation of public passenger transport in metropolitan Lagos of Nigeria is a combined effort of the public and private sectors as already established in chapter three. Series of extensive studies have been carried out in the area of public sector involvement in passenger transport services of the city, with little focus on the private sector's activities. Such studies include that of Adeniji, (1981, 1982), Banjo, (1985, 1986) and Kotun, (1985). Some of the reasons why the private sector's contribution to passenger transport service of the city has been undermined for long has to do with the problems of data collection, data availability and reliability, and the poor organisational set- up of the public transport system which has made it very complex to investigate. As a result of these problems, little information is available about private public transport bus operation in the metropolitan city of Lagos. Hence, this study is an attempt to bridge the gap of information available about private public bus operation generally in the country and Lagos in particular as already explained in chapter one.

In another dimension, past studies on public passenger transport of the city have attributed the cause of transport problems partly to the private sector and therefore suggesting complete public acquisition. Such suggestions can be found in the studies carried out by Adeniji, (1982 p.20), Adenle, (1986 p.11). However, the proponents of public take over of the activities of the private sector in public transport provision of the city, seems not to clearly understand under what circumstances the private sector operates their transport services before any suggestion as to how to correct the present public passenger transport situation of the city is proposed. Because this research is not aware of any existing study specifically aimed and designed towards understanding private public transport bus operational activities in the city in particular and the country in general. One might then query the validity of the suggestions being provided in some quarters that public transport bus service operated by the private sector should be disallowed in the city of Lagos in particular and other Nigerian cities in general.

Recent studies, have come to show that the private sector's participation in public passenger transport operation is vital to the sustainance of the socio-economic and political lives of Lagos metropolitan, especially in satisfying

travel demands of the city dwellers which at the moment the government owned public transport buses cannot cater for now and in the near future. And more importantly, is the recent privatisation policy objective of the present military administration in charge of Lagos State, of which the transport sector is one of the areas where privatisation has been earmarked. (Government Technical paper, 1987. p.1). By privatisation, the government intends to hands off from participating in services that can best be administered and financed adequately by the private sector. However the government will still exercise power on issues concerning regulations and control over such service.

In the case of public transport systems operated by Lagos state government, the need to privatise them by the state, is as a result of the government's inability to finance adequately these systems, coupled with continuous decline in revenue and increasing cost of providing the public transport services. It is this example of public financed service that the state government can no longer finance adequately among other public transport systems of the city. Two inferences, could be drawn from the above discussion, which also suggests for the need to carry out a study of this type on public passenger bus operation by the private sector in Lagos. The first, is the issue of privatisation, whereby the government wants to encourage private enterprise and hands off in public passenger transport provision however, to concentrate mainly on regulatory, legislative and other control matters. (Government Technical Report Paper on Privatisation, 1987 p.1). While the second, is that latest studies have come to show that the private sector's public transport bus provision equally play a fundamental role in public passenger transport services in the city that which is complementary to its public sector counterpart.

In order to facilitate the privatisation policy objective of the government properly and adequately, it is necessary to understand the present manner which the private sector provide and operate their public passenger transport services in the city. This is important so that the government could perceive the extent of privatisation it could tolerate and also the necessary corrective measures to be initiated before the actual privatisation exercise is implemented. Furthemore, it has become glaring that the public sector only cannot single handedly provide for public passenger transport demand of the city. Probably, it is this inability on the part of the government to cater for public transport in the city that has encouraged the private sector to participate in public transport stage carriage business. In any case, it is the manner which the private sector participate in the provision of public passenger transport bus in the city that is very poor and therefore calls for an immediate and urgent corrective measures

that will help to ameliorate them. One of the means for improving the present level of service of the private sector participation in public passenger transport is by understanding and appraising how they operate and why they operate in like manner, before any meanningful solution can be initiated. In other words, this chapter will discuss the manner which public transport bus system, is provided and operated by the private sector in Lagos metropolitan.

5.2 STRUCTURE OF PUBLIC TRANSPORT BUS OPERATORS IN THE PRIVATE SECTOR.

In this section, the main structure of public transport operators in the private sector which were identified during the field work exercise conducted for this research will be examined.

5.2.1 Types of Bus Operators / Owners in the Private sector:

In chapter three, the organisation of public transport which was discussed, observed that the public transport operators , can be grouped categorically into two. These are the private and the public sector operators. However, the private sector, can further be classified into two. These two classifications are;

(i) The Individual Bus Owner or operator and

(ii) The Limited Liability Company type of bus Owner or operator.

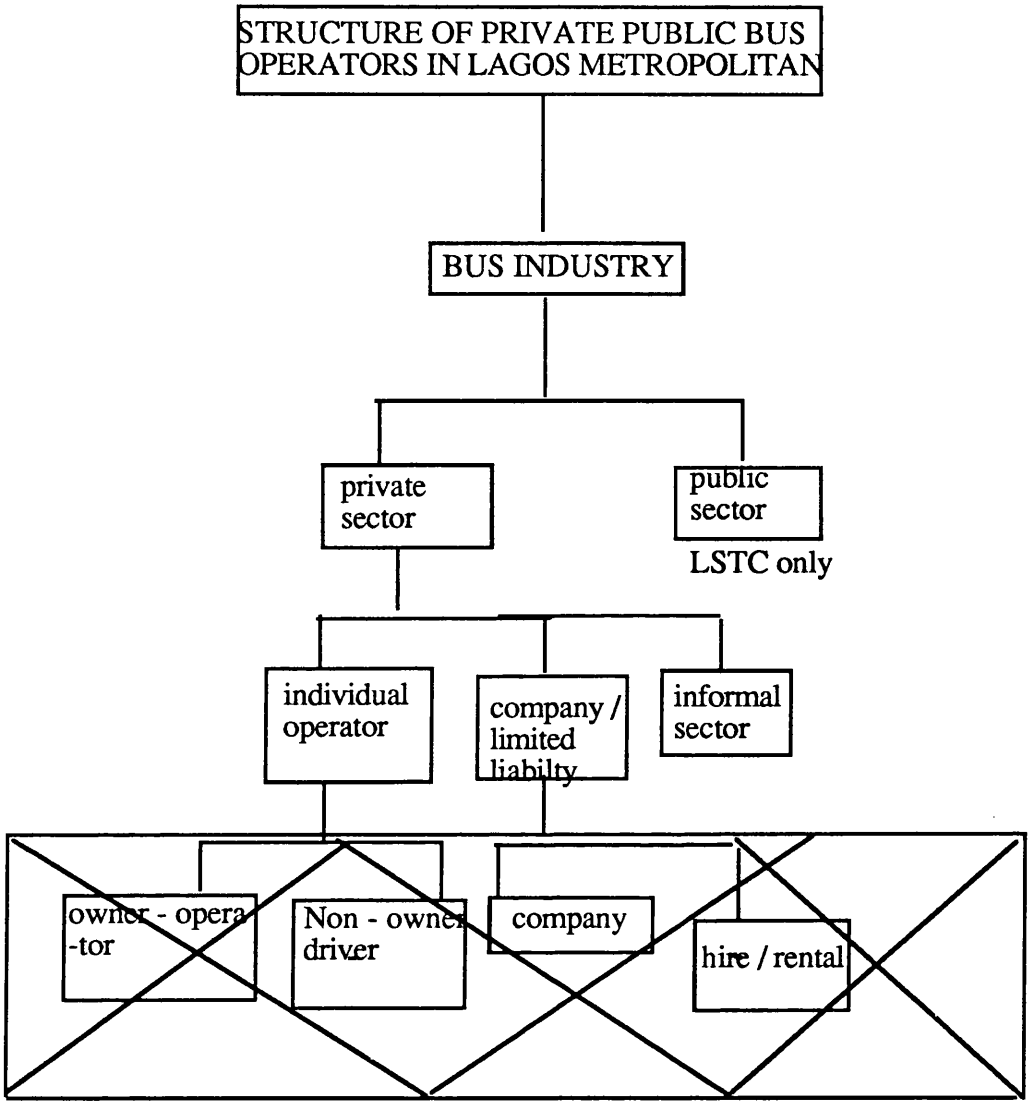
This study has identified additional category of operators in the private sector which has not been fully recognised by the CLPA. This additional structure of public bus operators identified by this study evolved through the manner which buses provided by the private sector are actually operated along the routes which they are licenced to run their services. (figure 5.1). This structure of public transport bus operators in the private sector as will be revealed later in this chapter, have effects over how public transport bus system is operated in the city of Lagos.

Using the two main structural forms of bus operators earlier identified in the private public bus operating system in Lagos metropolitan (i.e. the Individual operator or owner and the Limited liability company operator), the survey carried out for this research revealed the following forms of operators within the private sector public bus system. They are namely;

1. Under the individual form of private bus operator, the survey identified, (i) Owner- Operator (driver); and (ii) Owner - non operator (meaning that the driver of the bus is not the owner of the vehicle).

2. While in the case of the limited liability form of operator, the following were discovered, (i) The company, and (ii) The Hire or Rental type.

Figure 5.1



☒ These form of Operators were indentified from the field survey.

STRUCTURE OF PUBLIC TRANSPORT PROVISION

In the first category, the former implies that the owner of the bus is also the same person driving the bus and making use of it for public transport service in the city. While in the later, it is not the owner of the vehicle being operated for providing public transport services. In this case, the owner of the bus have only engaged the services of the bus crew to assist in the day to day running of the bus. The major distinction between these two forms of operators in the Individual category is that while the owner - operator does not engage the services of a driver to run the bus on its behalf, the owner - non operator does, but on agreed terms reached between the bus owner and the driver. Whereas in the case of the limited liability company, there is the company type of operator, who employ formally the services of a driver to work for the registered company. Despite the formality many of the operators in this sub category often behave like operators in the individual class. On the other hand, the hire or rental type of operator is an operator who is licenced to provide public transport services as a limited liability company only to end up providing rental services for drivers who comes to rent their buses for a given period.

Table 5.1, is a summary of public transport operators in the private sector identified for each of the categories of private operators observed during the field survey conducted for this thesis. From this table, it is noted that the owner - operator is made up of 77 operators out of 280 public transport bus operators in the private sector interviewed for this study. This figure, represents 28% of the total number of private bus owners or operators. (figure 5.2).

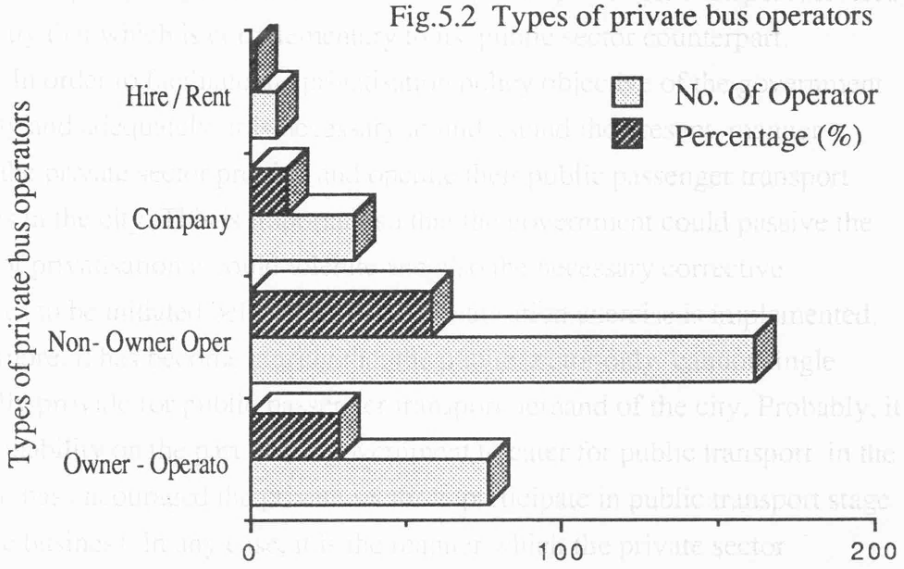
While the drivers (non owner - operators) whose services have been engaged or employed by the bus owner in the individual category consist of 162 operators out of 280 operators surveyed. This number, again represents 58% of the private bus operators interviewed for the study. Cummulatively, these figures suggest that 239 public transport operators interviewed for this study are in the individual category. Which again represents 86% of all operators in the private sector. In addition, all the operators operating under a limited liability company represent 41 or 14 % of the total bus operators interviewed for the study. This category of public transport operators is made up of the following sub group, which include, operators providing their services in the form which they have been licenced to operate (i.e as a Limited Liability Company). This group, represents 33 or 12 % of the total operators interviewed for the research. While the remaining 8 operators or 2% accounted for those providing public transport service on rental and hire bases. This finding shows that buses provided for public transport by bus operators in the private sector is dominated by the individual category of operators.

Table 5.1
TYPES / FORMS OF PRIVATE PUBLIC BUS OPERATORS/ OWNERS

TYPES OF OWNERS	SUB CATEGORY OF OWNERS	OPERATORS (NUMBERS)	% BY SUB CATEGORY OF OWNERS	% BY OWNERS
INDIVIDUAL	OWNER OPERA-TOR	77	28	86
	NON- OWNER OPERATOR	162	58	
LIMITED LIABILITY COMPANY	COMPANY	33	12	14
	HIRE / RENT	08	02	
TOTAL		280	100	100

SOURCE: FIELD SURVEY, (BUS OPERATORS) 1987.

Fig.5.2 Types of private bus operators



This individual form of private bus owners collectively account for 86% of the private bus operators interviewed for the study. This type of bus owners or operators structure revealed about public transport operators in the private sector of Lagos, have great implications for reliable public bus provision and operation. The major implication of this type of bus ownership structure dominated by individual operator, is the vulnerability of the public transport sector to disruption and the general possible withdrawal of buses from the routes to which they are allocated or assigned without any early warning to passengers who depend on the services they provide. This view becomes more convincing when it is noted that there is no existing regulation that makes it official for any operator to inform the CLPA of their intention to terminate or withdraw their services along a particular route. The individual operator for instance, may decide to withdraw the bus from its route, thereby reducing the number of buses available to passengers on that route, this leads to longer delays at bus stops and passenger overcrowding on other buses in operation. On the other hand, in the individual category of bus operator especially among the non owner - operator and those providing hire or rental service to drivers, divert the bus to other routes, leading to scarcity of public transport buses along a particular route. In essence, any temporary or permanent withdrawal of buses by the private bus operator, creates excess demand and pressure on other existing vehicles in operation, since there is no regulatory measure or mechanism to ensure that vehicles are put on the road. Even when such regulatory mechanisms are available, it becomes more difficult to enforce or implement them because an overwhelming percentage of private bus operators has only one bus for public transport purpose in the city.

The results of the survey conducted for this study, shows that 12% of private bus operators interviewed registered to operate public passenger bus service as a limited liability company. However, there are substantial evidences to show that bus operators in this class, also behave similarly like the individual type of bus operator. For instance, all those interviewed belonging to this category (limited Liability company) have one bus in operation while other buses which they claim to have are already out of service. This further implies that it is only one bus that is hired or rented out.

5.2.2 Types of Buses used by Operators / Owners in the Private Sector.

It is very important to highlight the characteristics of buses used by private bus operators in Lagos metropolitan in order to understand the nature of private bus participation in public transoprt delivery of the city, as well as appreciating how the private operator is coping with the services it provides.

PLATE 4. A typical minibus locally known as 'Danfo' in Lagos.

PLATE 5. A typical big bus category locally called 'molue'.

PLATE 6. An example of Omnibus used by the private bus operators.

PLATE 7. A typical interior plan of a minibus. (seats without back rest, are adapted by operators to cater for overloading of passengers).

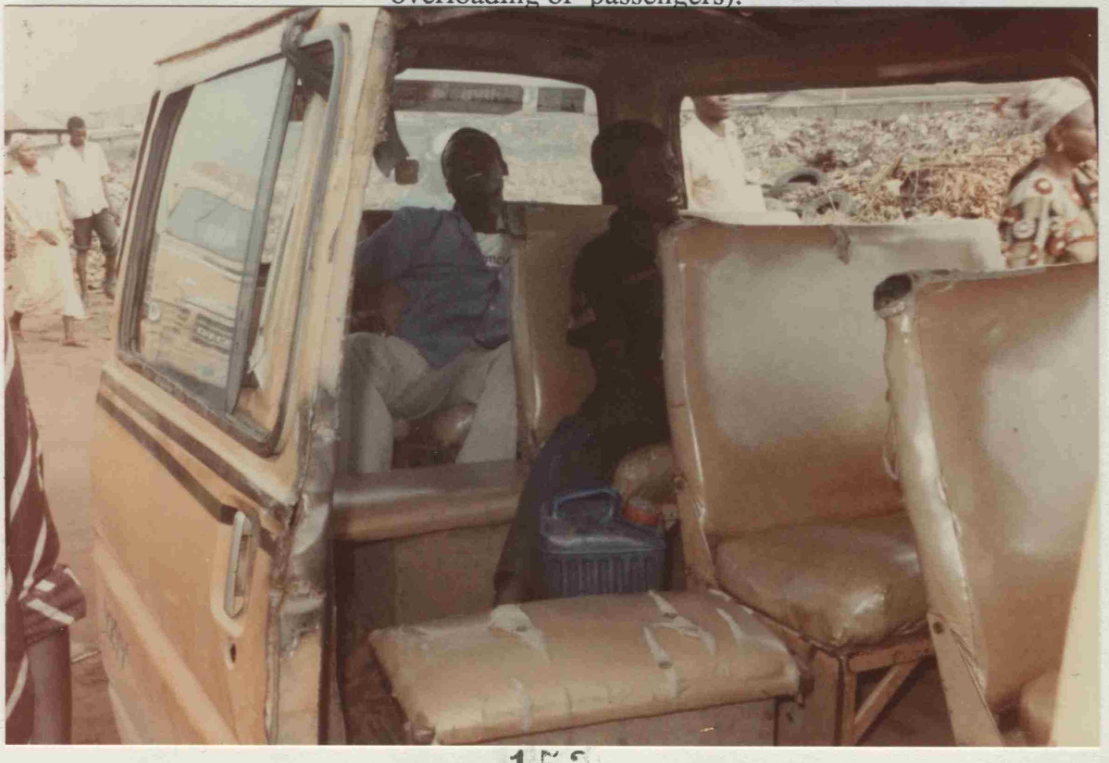


PLATE 8. An interior plan of a locally constructed omnibus.

PLATE 9. Driver's compartment in an omnibus.

Many factors can be used to highlight the types and characteristics of buses which the private operators use for public transport services in Lagos metropolitan. Such factors further distinguish the bus from other types of vehicles in the city. Such factors that could be used for characterising the bus generally include; bus type, bus age, bus usage, passenger capacity or size, colour of the bus/ body paint, the vehicle interior layout, weight and capacity. (Adeniji, 1981; Addenbrooke, et al, 1981; Hobbs, 1984).

In this study focus shall be on bus appearance, bus types, carrying capacity, bus age, internal layout of the various buses that are used by this sector, and the general maintenance of the bus. Implications of subsequent issues arising from the discussion for effective public transport operation shall be highlighted in this section.

Bus Type: The survey conducted in Lagos metropolitan about bus types, identifies four main types of buses that are used for public transport purpose by the private sector, with each type of bus having its own varying carrying passenger capacity and other attributes which are only peculiar to the bus type only. The four classes of buse has been identified during the field exercise and are as shown in table 5.2. However, these four types of buses can be grouped conventionally using the classification adopted by Addenbrooke et al, 1981 in their study of public transport planning in the United Kingdom. (Table 5.2). Belonging to the category of Mini bus in the city is the popular Volkswagen kombi bus popularly known locally as 'danfo'. The midi bus category include buses like the Toyota Civilian and Coaster bus. While in the big bus group is the locally called 'molue' bus. The big bus category is made up of adapted Bedford lorry and Austin vehicle. And finally the omnibus or large bus category. This is equally made up of adapted vehicles like Mercedes Benz 911 and Scania bus. (plates 4, 5, and 6). The interior of these categories of buses identified for this study has been greatly altered for public transport operation by local bus builders in order to cope with the excess passenger when public transport operation commences. (Plates 7 and 8). However, a critical examination of the types of buses in operation in Lagos city on the basis of form of bus ownership, shows that 85% of the big bus category identified by the survey belongs to individual form of bus operators or owners while the remaining 15% are owned by the limited liability company form of bus operators. Of particular attention is the locally called 'bolekaja' bus, which belongs to the same group of big bus. All the 'Bolekaja' buses identified for this study belong to the individual form of bus owner and no limited liability form of bus operator has any.

Table 5.2

BUS TYPES.

BUS TYPES		LENGTH OF BUSES (ft)	BUS PASSENGER CAPACITY.		
conventional	local		approved	unapproved	% of excess capacity
MINI BUS	danfo hiace	13' - 20'	11	16	45
MIDI BUS	toyota coaster civilian	20' - 26'	28	40	43
BIG BUS	molue bolekaja	30' - 36'	49 (33 seating 16 standing)	65	33
OMNI BUS	mercedes 911	36' - 50'	68 (49 seating 19 standing)	80 - 90	25

SOURCE: FIELD SURVEY (bus operators). 1987.

Reason for this, is attributed to the government policy, which is to phase out the use of this type of bus for public transport operation in the city by the year 1990 A.D. For this reason one can infer that the limited liability form of bus ownership has responded timely to the government directive. The 'Bolekaja' bus, is a particular type of bus built on vehicle chassis with wood and mainly used for the purpose of transporting goods and passengers collectively. (Table 5.3 and figure 5.3). The mini bus category is equally dominated by the individual form of bus owner or operator, accounting for 89% of buses in this class and the limited liabilty form of bus owner responsible for the remaining 11%. And finally the omnibus group is again dominated by the individual operator which accounts for 79% of the buses in this category.

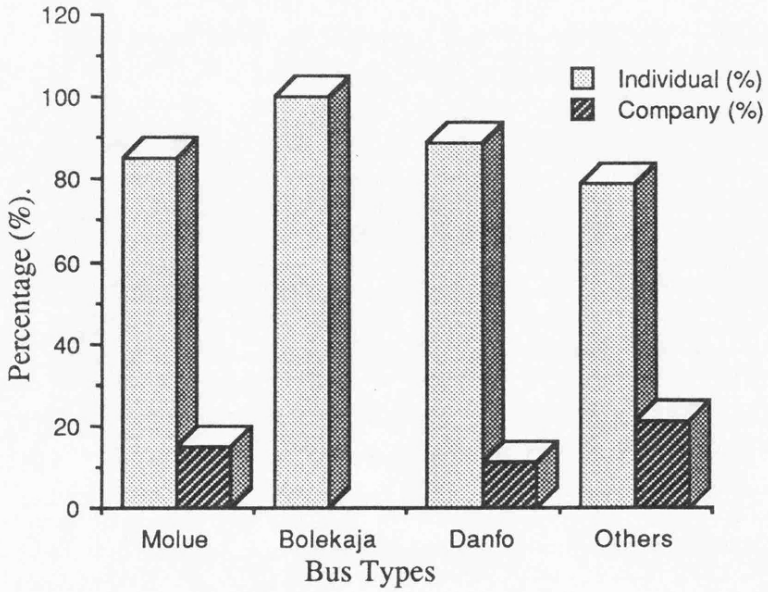
Table 5.3
TYPES OF BUS AND FORMS OF OWNERSHIP.

TYPES OF BUS (local classification)	FORMS OF BUS OWNERSHIP			PERCENTAGE (%)	
	INDIVIDUAL	COMPANY	TOTAL	INDIVIDUAL	COMPANY
MOLUE	150	27	177	85	15
BOLEKAJA	02	--	02	100	--
DANFO	64	08	72	89	11
OTHERS	23	06	29	79	21
TOTAL (all category)	239	41	280		

Total Operators: 280 operators
Source: Field survey, 1987.

One important finding of this section is that the bigger the size of the bus there is reduction in the percentage share of the bus used by the individual category of private bus operator. Whereas the bigger the size of the bus, the higher is the percentage share of its use by the limited liabilty form of bus operator. (figure 5.3). The reasons responsible for this is the cost of buying the bus, the cost of building the bus through local bus builders, the cost of maintenance and the inavailability of this type of omnibus in the market to buy. Since many of the buses belonging to the omnibus group for instance are imported into the country.

Fig.5.3 Bus Types by ownership structure (%)



On the other hand, examining the types or forms of bus operators on the basis of the type of buses which they use for public transport purpose, the survey shows that the buses used by the individual form of bus operator is dominated by the 'molue' (big bus) type of bus, which accounts for 64% of all the types of buses they use. Closely followed is the ('danfo') i.e. the conventional type of minibus category, which accounts for 27% of the buses used and the omnibus equally responsible for 9% of the types of buses used. Furthermore, looking at the limited liability company, the types of buses used for public transport is also dominated by the 'molue' category which accounts for 66% of all types of buses they use. The minibus type, shares a small percentage of 19% and the omnibus group accounts for 15% of these buses that are used for passenger transport purpose in the city. A comparative analysis between the two forms of bus operators / owners indentified in the city show great similarities in the choice of bus type that is used for public transport, but with varying degree in quantity. (figure 5.3).

Generally, each type of bus has its own varying layout, for example, some of the buses, are front or rear engined vehicle like the 'molue' and 'danfo' vehicles respectively, also the bus may be either front entrance - exit or front entrance - rear exit , or centre entrance - exit. Belonging to the former is the 'molue' type of bus and while the later is associated with the 'danfo' bus. Conventionally, the proportion of standing passengers, to total passenger capacity of the bus may vary from 5% to about 50%, but it is commonly in the range of 10- 20%. (Addenbrooke, et. al. 1981, p.21; Kitchin, 1947, p.128 -

138; Thomson, 1977, p.239). However, in the case of metropolitan Lagos, the relationship of excess passenger to the actual capacity is between 30 - 40% depending on the type and size of the bus. From observations made during the field work, it is observed that this ratio described in table 5.2, is extremely higher during the peak periods.

Bus Appearance: In Lagos, what distinguishes the bus used for public transport in the city from all other buses is the colour of the bus (i.e the conventional colour which the state government expect buses licenced for public transport service to be painted). It is this colour of the bus that further distingush the buses operated by operators in the private sector from the government owned (LSTC). The LSTC buses are painted in red with bold white line about nine inches thick running round the bus and it is painted white on the top. The white line carries the name of the LSTC at both sides of the bus. While the bus route is displayed in front of the bus at the top. Buses used for public transport purpose in the city by the private sector are painted with yellow colour with two black stripes at the sides of the bus. The two black stripes are positioned that they divide the bus into two equal parts at both sides. Additionally, two other black stripes run from the front of the bus right through the top to the rear of the bus to also divide the bus into two equal parts. Furthermore, the bus route number, bus route name, and licensing number are displayed below the two stripes at the side of the bus. Nonetheless, the study observed during the field survey that some bus operators displayed the routes of their buses at the rear side of the bus, some at the middle side of the bus, some at the front side of the bus and some at the front bonnet of the bus. Moreover most of these buses carry stickers and posters on them many which obscure the bus route displayed thus making it difficult for passengers to read. The bus conductors are often engaged to shout the destination of the bus which in some instances might not be the bus route displayed by the bus. Whether bus route is displayed by the private bus operator is not a serious problem at all to the commuters because the bus conductors do this by announcing the destination of the bus to the commuters at every bus stop they reach. Many of the buses are in complete state of disrepair, very untidy, dirty and unsafe. Some of the buses even do not have windows or door.

Vehicle Weight: Another bus characteristic that would have been very useful in this study is the vehicle weight. The weight of buses used for public transport operation in the city vary according to the type of vehicle, however, because most of the vehicles used by the private sector for public transport purposes in the city are adapted, (i.e. their exact conventional weights have been

considerably altered). Subsequently, their is no record or available information about the extent to which the bus weight is affected for this study, but using the conventional weights of the vehicle when manufactured for planning purpose in the city seems to be inadequate in this case. The importance or the general implication of vehicle weights has to do with the network design capacity or highway engineering purposes. When a considerable number of private buses altered their weights and operates their buses along these routes, it affects the strength of the network. (i.e. the weight / carrying capacity which the network system is designed to carry). This added weight imposed on the road system goes a long way in affecting the life span of the network system. Since this additional weights have not be taken into consideration by traffic or highway engineers. Invariably, so a well designed network no sooner starts to deteriorate because of the weight it carries are far more than the designed capacity of the road. Hence many roads are known to deteriorate fast in the city of Lagos because of inability to cope with the added weights to vehicles which have been re-enforced. This issue of added weights is more peculiar in the freight sector of the public transport system of the city which does not fall within the scope of this research. However, there are buses whose weights remain unaltered or unchanged, especially those belonging to the mini and midi bus categories. The operators declined access to their vehicle documents in order to record down the various weights of the buses in these two categories. Nonetheless the study recognises the importance of vehicle weights which depend on particular specification of the vehicle and form and content of the body structure itself. (Hobbs, 1974).

It is equally important to highlight the rationale behind the alteration of vehicle weights by the private public bus transport operator which is relevant to our discussion, and the reason being that buses are always overloaded with passengers. And because buses are overloaded all the time the bus operator has to increase the strength of the vehicle so as to cope with the additional increase in passengers which the bus will entertain as well as reducing passenger risk due to overloading of the bus during operation.

Another observation concerning bus weight is that the major aspect contributing to the affected weights of the private public bus is generally in the structural body of the vehicle which is re-enforced and the seating pattern rearranged. The engine capacity in most cases remain unchanged. This implies that the additional pressure exerted on the bus due to the alterered bus weight is on the engine capacity of the bus which has remain unaltered and the weight of the network on which they ply that will be affected considerably. The study is

PLATE 10. A big bus body building in progress. (it is only the body of the bus that is strengthened. The bus engine is untampered with).

PLATE 11. A vacant track of land (open space) at Ketu being used as a bus terminal.

further aware that these changes occuring in the alteration of weights of vehicles are not communicated or made known to the private bus operator by the vehicle builders which are regretably road side motor mechanics during such bus body building process. The implication of this additional weight on the bus for the engine is that the bus engine is subjected to undue stress and over burden. This possibly accounts for one of the reasons why buses have shorter life span, depreciate and deteriorate more quickly in Lagos.

In terms of bus performance, the typical maximum speed for conventional modern bus, is between 80 -100 kph (Addendrooke, et al, 1981, p.22, Hobbs, 1974). In the case of private bus operation in Lagos city this speed limits are exceeded regardless to any type of vehicle. The private bus driver is known to be in a hurry (even at bus stops), and reckless on the highways or routes which they ply (Banjo,1986). It is this general operational attitudes of the private public bus crew that exposes it to serious criticism and the call for its eradication in the city. (Adeniji, 1983). Because of their recklessness, the private bus operator equally contributes to the traffic problems of the city and this is partly responsible for the reasons why in some quarters the private sector involvement in public transport provision in the city is questionable and recommendations coming out from this quarter is about castigating them.

Furthermore in terms of the type of fuel used by the buses, 16% of the buses use diesel fuel while 84%, makes use of petrol fuel. The type of fuel used by buses vary with bus type and the engine capacity of bus. All the buses belonging to the mini and midi and very few in the big bus categories make use of petrol. The implication of this issue on public transport operation, as well as on the urban environment is highly important (Bus and Coach, 1981, p.8). The diesel fuel is cheaper than the petrol and therefore in terms of cost saving, the use of diesel fuel is most favoured but because of the low engine capacity of the buses in mini and midi categories the use of petrol is pronounced. Nonetheless, because of the cost - saving benefits that could be derived from the use of diesel rather than petrol, any means of discouraging the use of petrol should be pursued. For instance, the use of petrol is one of the major sources of urban air pollution and it has more damaging effect than the diesel on the environment and on human beings living in the city. It must be stated that the effect of petrol and diesel fuel on the general air quality of the urban environment of the city of Lagos has not been established. But else where like the United States of America and United Kingdom such establisments have been determined and their damaging effects to life and property have undeniably been documented.

Similarly, there is none of the private bus operators that could establish the cost of fuel and rate of fuel consumption of their buses. In the government owned public transport bus, (LSTC) fuel consumption takes about 28% of the costs and expenses incurred for operating the bus.(Banjo, 1986 and LSTC, 1987). (table 3.5).

Many factors are responsible for the form of bus ownership revealed in this chapter. For instance, road passenger transport in its various forms constitutes the prime means of moving people in the city of Lagos which by no means have encouraged the private sector to participate in urban public transport provision. Considering that very few number of buses are operated by the LSTC and with increasing demand for public transport, it becomes logical to allow the private sector to participate in bus provision in order to meet the demand for public transport and to equally reduce the hardship faced by passengers using public bus. In other words, the manner which they operate might not be considered very important by the CLPA other than to meet the quantitative needs of the city in terms of number of public buses needed to satisfy the demand side of passengers. The government agency (CLPA), has no regulation or policy towards the structure of ownership or operator needed in the public transport sector of the city. The absence of this, probably accounts for the proliferation of private bus operators in Lagos. Too many operators have adverse effect on monitoring and controlling of their activities in the city. Furthermore, many bus owner- operator for example have interest in the public bus business, because of the ease to meet the basic licensing requirements for public transport operation in the city and later operate such service in the manner they choose to. Again, responses gathered from the qualitative interview conducted for the study, reveals that bus owners who are not the drivers running the bus are engaged in other jobs. Such bus owners who are non-drivers, often await monetary returns from the bus crew on daily basis, at the end of each day's bus service. (This is discussed in detail later in this chapter).

It can be assumed that, the structure of bus owners or operators revealed by this study is partly to encourage the continuous involvement of the private sector in the bus business of the metropolitan. Hence, the issue is being undermined in Lagos. Nevertheless, the CLPA is not aware of the implications which these forms of ownership could have for an efficient public transport operation in the city. Furthermore, since this sector is not taken into consideration when dealing with matters affecting public transport in the city, precautionary measures adopted have often failed.

In any event, it is equally necessary to establish if there is any change in the pattern of public transport ownership or operators over time in Lagos. This information cannot be provided because there are no study preceding this that can be used to observe for such trend, should such information be available, it would have been possible to establish over time the changing pattern of public transport ownership structure. If such information has been available, it would have been possible to show for example if ownership pattern is towards mergers, fragmentation or proliferation and as well use such imformation to highlight for instance the private / public transport ownership split. By mergers, it implies that whether more operators are joining or teaming up and leading to a situation whereby operators are pulling their resources together. By fragmentation, it would have been possible to show if more operators are being licenced, and also if those licenced as limited liability company for example are declining or not.

5.2.3 Bus Acquisition:

In this section, the focus shall be on how the connection between the method of purchase, type of operator and the type of vehicle. Many reasons are responsible for this investigation, which shall be revealed later in this section. For instance, throughout the survey exercise conducted for this research, all the operators interviewed had one bus for providing public transport service. It then becomes more important to find out why is it that all the private bus operators interviewed for this study had one bus. The curiosity raised by this common response from the operators, further strenghtened the need to examine the method of bus purchase, in order to establish the difficulty or otherwise in procuring buses for public transport purposes and to relate this method of purchase to the type of ownership. This is to reveal how the operators cope with one bus for providing public transport service in Lagos.

The information gathered for this study on how buses are acquired or purchased for public transport by the private operator revealed two main sources. These two sources are through;

1. Second hand buses; which are made up of ; (i) buses that have been used for private purposes, (ii) buses that have been used as inter- state or inter-city public transport services, (iii) Second hand buses, (belonging to this category are vehicles sold by the government and companies, and

2. Newly purchased vehicles. i.e. vehicles that has not been used before.

Table 5.4, shows that 52% the vehicles that are used for public transport services by the private bus operator are new, This means that the

buses were purchased as new ones. while 48 % of the buses are second hand ones, adapted for public transport purpose. The inter-city or inter-state category is one of the three areas where private public transport operators purchase their second hand buses for providing public transport services.This source represents 19% of all the various sources where the private sector acquired buses for public transportation in Lagos. This category is made up of buses which can no longer serve or withstand long distant journeys, subsequently, such buses are often withdrawn from their former roles as inter- city\ state services and substituted for intra- city services. Reasons have been adduced for this change of role from operating inter- city service to intra city operation, which include continuous breakdown of the bus during inter city service, lack of adequate bus maintenance, involving in a major road accident thus making affected bus uncapable of operating long distant inter city journeys, and the voluntary withdrawal of the bus by the owner in order to monitor the activities of the bus more effectively.

Table 5.4.
MAIN SOURCES OF PUBLIC BUS ACQUISITION BY PRIVATE OPERATORS

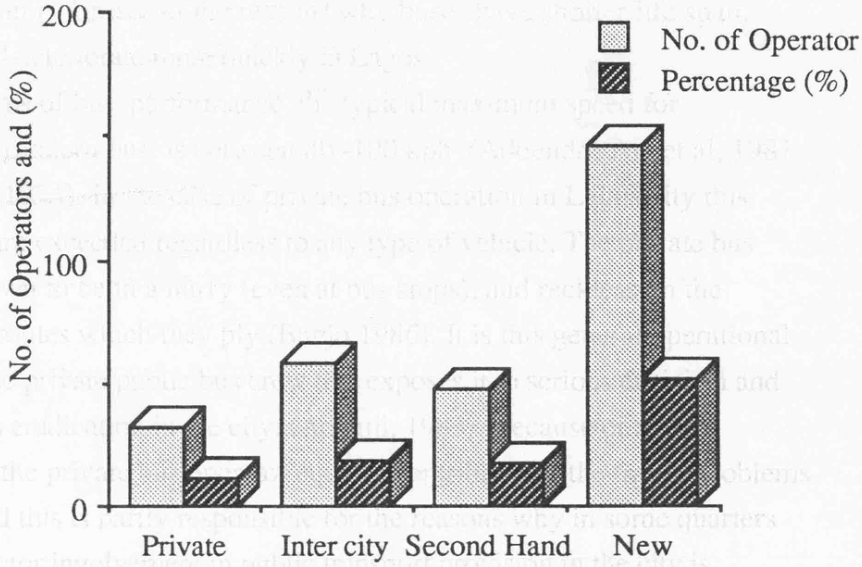
Sources of Bus acquisition.	main form of bus use before its acqusition for public transport	OPERA-TORS	%	%
SECOND HAND OR FAIRLY USED	Private	32	11	48
	Inter city or inter state	58	19	
	Second Hand*	48	18	
NEW BUS	New Chassis	146	52	52
TOTAL		280	100	100

* Examples are government vehicles, companies.
Source: Field Survey, 1987. (bus operators).

Equally vehicles used for private purposes accounts for 11% of the sources of vehicle acquisition by the bus operators. In this category many of the vehicles disposed of are those which their original owners can no longer maintain them

and those with more than one bus and as a result of buying a new vehicle. Buses of this category is dominated by the mini -bus type. Finally, the other second hand vehicles which have been acquired from the government and companies account for 18%. (figure 5.4).

Fig.5.4 Main Form of Bus Use Before Providing Public Transport Services



Main Form of Public transport Bus usage.

It is important to discuss what the second hand vehicles acquired for public transport services by the private operator have been used for as highlighted above because of their implications for reliable urban public passenger transport provision, especially to establish their subsequent durability for the new role, whether it is suitable for it or not is a very crucial point and the issue of bus safety is equally important. For instance, how safe is the bus for public transport operation? especially if a vehicle that has been involved in an accident is being converted into intra city public transport service because it can no longer undergo the strain of long distance journey. Such information, deserves closer examination and such information are not made available to the licensing authority before approval is given to operate as intra city public transport. The survey, further reveal similarities in the manner which the private individual and limited liability company behave in the process of purchasing a bus for public transport purpose. (Tables 5.5, 5.6 and figures 5.5 and 5.6).

Table 5.5.

BUS ACQUISITION BY FORM OF OWNERSHIP.

Bus Usage.	Individual Ownership	Company Ownership	Total
Bus has not been used for public transport before.	125 (52%)	21 (51%)	146 (52%)
Bus has been used for public transport.	114 (48%)	20 (49%)	134 (48%)
TOTAL	239 (100%)	41 (100%)	280

Source: Field Survey, (bus operators). 1987.

Fig. 5.5 Bus Acqusition by form of Ownership (%)

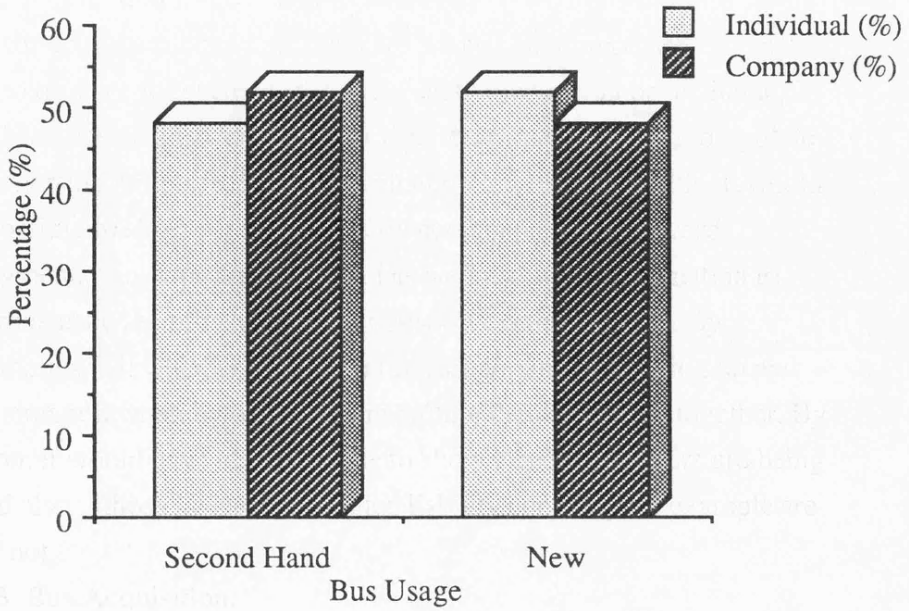


Table 5.6

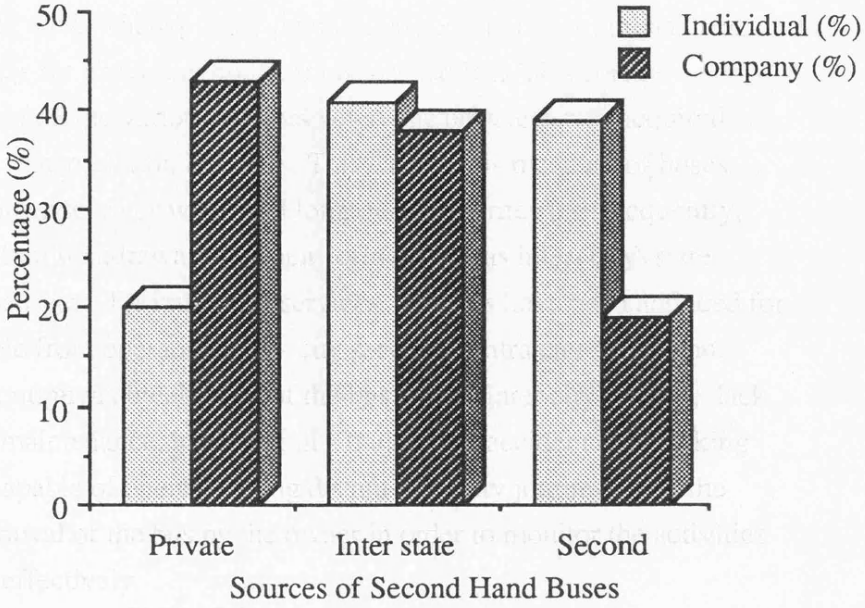
SOURCES OF SECOND HAND BUSES BY FORM OF OWNERSHIP.

FORM OF BUS OWNERS.	MAIN SOURCES OF SECOND HAND BUSES.			
	Private / personal use	Inter state/ inter city.	Second Hand*	TOTAL
INDIVIDUAL	23	46	43	112
%	20	41	39	100
COMPANY	9	8	4	21
%	43	38	19	100

* refer to table 5.3.

SOURCE: Field Survey, (bus Operators) 1987.

Figure 5.6 Sources of Second Hand Buses by form of Ownership



5.3 METHODS OF FINANCE.

In the acquisition of buses for public transport, finance, is one of the key fundamental issues involved, and because of the difficulty in capital formation in the country generally, most bus owners / operators are limited to one or two buses. The survey identified the following categories as the main sources of finance for the private bus operator; namely

(i) hire purchase agreement entered into by the bus owner ;

(ii) loans from friends and close relations;

(iii) personal savings;

(iv) loans from banks and other financial institutions; and

(v) Other sources like the various transport unions. (table 5.7).

Table 5.7, shows that all the private bus operators interviewed for the study, make use of multiple sources to provide money in the process of acquiring buses meant for public transport purposes. However, the principal source of finance is the hire purchase agreement, which consists of 97% of the repondents and closely followed by loans gathered from friends and relations which accounts for 80% of responses. The financial source through personal saving accounts for 78% from the respondents. While banks, other financial institutions account for 15% and transport unions provide for about 2%. One very important observation which this study succedes in revealing in relation to the life span of buses is that of finance. (table 5.7 and figure 5.7).

Table 5.7

METHOD OF FINANCE.

Sources of Finance	OPERATORS				METHOD OF FINANCE BY OWNERSHIP			
	YES	%	NO	TOTAL	Individual	%	Company	%
Loan from Bank	39	15	239	280	36	15	03	08
Hire Purchase	271	97	09	''	232	97	38	95
Loan from Relatives friends	226	80	54	''	191	80	34	85
Personal Savings	217	78	63	''	189	79	27	68
Others	05	02	275	''	04	02	01	03

YES: i.e Operators with access to the method of finance
NO: i.e Operators who do not have access to the method of finance

Total Operators: 280.

SOURCE: Field Survey, (bus operators). 1987.

Fig. 5.7 Method Of Finance by form of ownership (%)

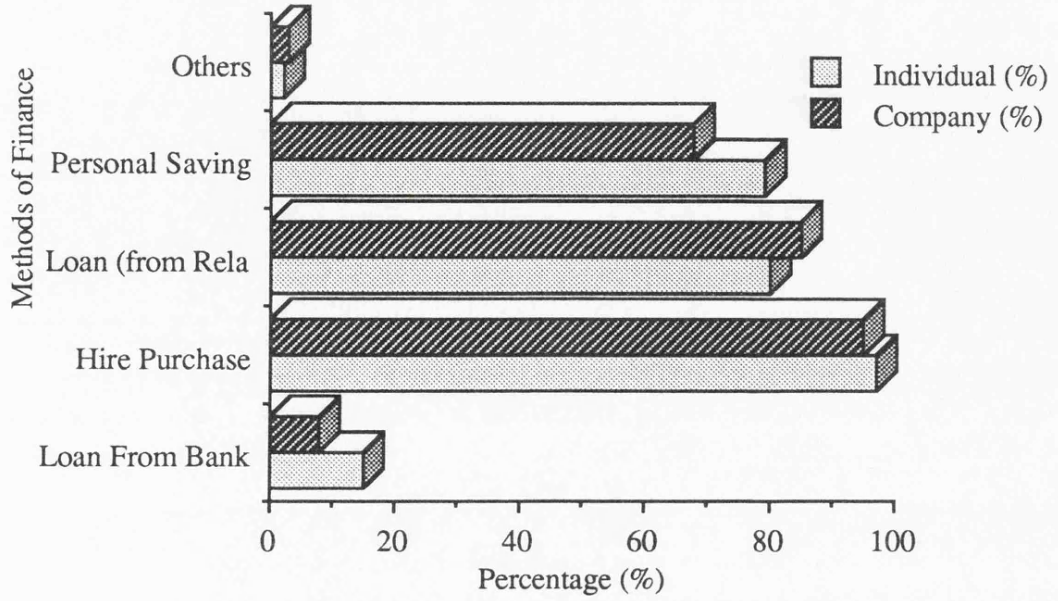


Table 5.8.

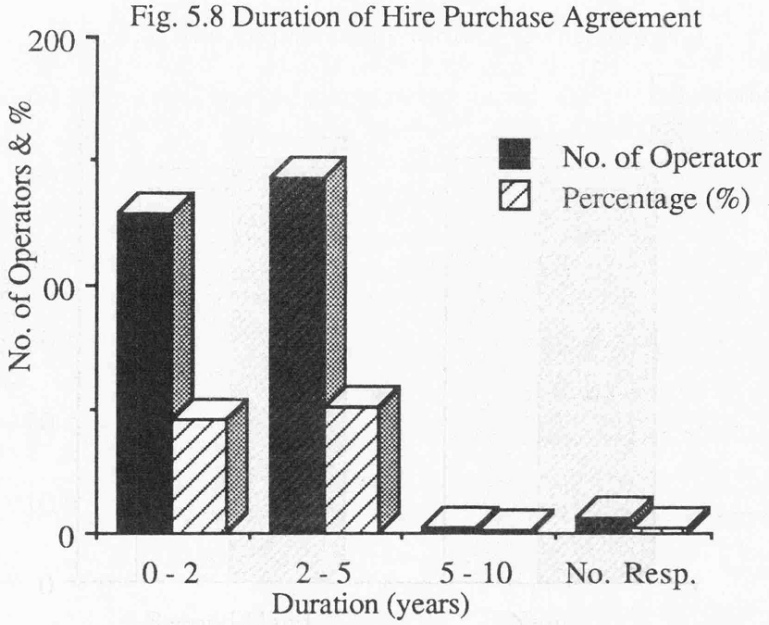
DURATION OF HIRE PURCHASE TERM / AGREEMENT (IN YEARS).

Duration (in years)	Operators	%
0 - 2	129	46
2 - 5	143	51
5 - 10	02	01
No response	06	02
TOTAL	280	100

Source: Field Survey, (bus operator), 1987.

And of all these sources of finance, the hire purchase agreement entered into by bus operators is the most common source of finance. Taking note of the terms of agreement, the most common period of time for hire purchase liquidity is between 0- 5 years these categories account for 97%. (Table 5.8 and figure 5.8).

Fig. 5.8 Duration of Hire Purchase Agreement



It is often quite common to find some bus operators still paying back the hire purchase term which they have entered into even when their vehicles have grounded. It is partly the need to meet the hire purchase term that most bus operators stretch their buses beyond all expectations and this is responsible for the higher depreciation rate of public transport buses observed in the study.

As revealed in table 5.7, the individual form of bus operators benefit more from loans through the bank and other financial institutions than the limited liability company. For instance, 15% of the individual bus operators get loans from banks while only 8% of the limited liability form of bus operators have access to loan facilities from banks. Reason for this can be attributed to the fact that the limited liabilty company behaves just like the individual operator in many respects as has been shown in many of the inferences made out of this study. Hence access to loan facility from bank depend on the provision of adequate collateral to meet the bank requirements. However, the limited liability company seems to secure more financial assistances from friends and relations than the individual operator. This form of finance accounts for 85% of the sources of finance of the limited liability company and 80% of the individual form of bus owners. This can be seen to be true because the limited liability company generally is made up of more than one owner i.e. two or more people have come together pooling up their resources to start bus business. This coming together have made them to be more accessible to many friends that could provide them with the much needed cash for bus procurement. Nonetheless, the higher purchase agreement is still the most important source of

finance for procuring bus by the private sector public transport bus operators. Most of the bus operators interviewed for this study, had only one bus in operation as at the time when the survey for this study was conducted. Some of the bus operators claim to have more than one bus before the economic collapse of the country and the subsequent devaluation of the national currency (NAIRA). This economic collapse made it more difficult for them to import vehicles as well as procuring spare parts due to higher cost of purchase. (one of the effects of naira devaluation).

Another interesting revelation of this study is an examination carried out between the two main forms of private bus owners and the ages of buses which they use for public transport services in the city. The cross - tabulations analysis of the survey data derived for this study, shows that the percentage share of the individual operator declines as the age of bus increases while the percentage share in the case of limited liability company increases with increasing age of the bus. (table 5.9 and figure 5.9).

Table 5.9.

BUS AGE BY FORM OF OWNERSHIP. (IN YEARS).

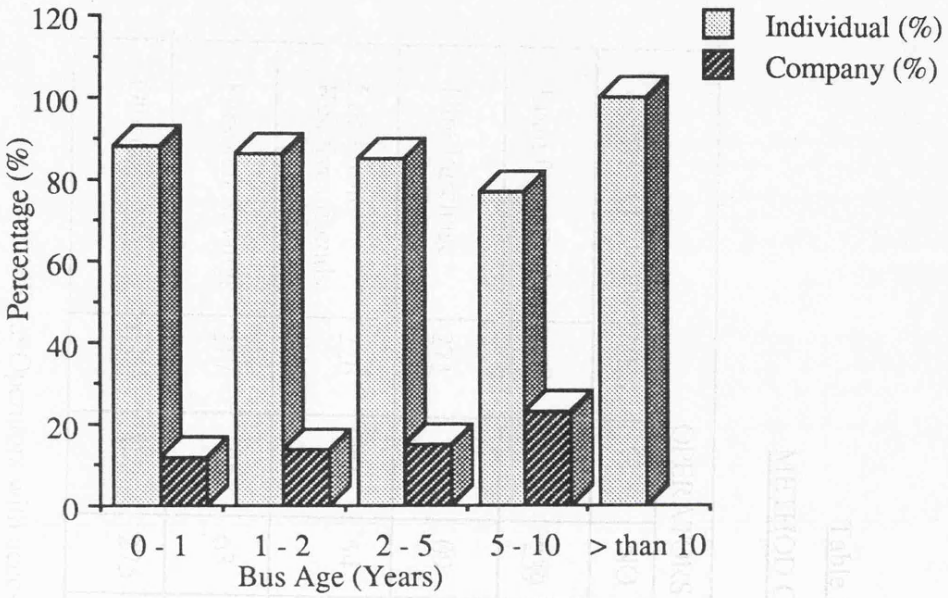
BUS AGE (years).	FORM OF BUS OWNERSHIP.				
	INDIVIDUAL	COMPANY	TOTAL	% Individual	% Company
0 - 1	15	02	17	88	12
1 - 2	59	10	69	86	14
2 - 5	134	23	157	85	15
5 - 10	20	06	26	77	23
> 10	11	--	11	100	--

SOURCE: Field Survey, (bus operators), 1987.

Despite this revelation, the individual private bus operator has overwhelming supremacy over the limited liability company in the ages of buses belonging to all the categories that are adopted for the study. For instance, of all the buses belonging to the 0 - 1 year group the individual type of bus owners accounts

for 88%, 86% and 85 % of the 1 -2 and 2 -5 years categories respectively. As earlier indicated there is a decline in the overall domination of the individual type of bus operator over bus age as the age of bus increases and for the other type of operator, there is a rise in percentage share in bus age with increase in bus age.

Fig. 5.9 Bus Age By form of Ownership Structure



5.3.1 Bus Age: It is important to note that the bus age adopted for this study is actually when the bus was first introduced as public transport purpose and not necessarily when the bus was bought. The study recognises the implication this operational adoption has on the general views that follow, such as not being exact about the age of the buses. However it was during the field survey that this view was arrived at. For instance, there are buses which were made redundant for two to three years before they were repaired and put into public transport use, and if the study was to have adopted when the bus was actually purchased it implies that some years which need not be addressed in the study have been accounted for. Moreover the distortions and inconsistencies in the responses derived from the survey have tend to support the view adopted by this study. For instance not all the second hand bus users could state precisely when the bus they are using for public transport purpose was first bought or the intensity of bus usage before it was acquired by them for public transport service. Table 5. 10, shows the bus age used by private bus operators in the city of Lagos.

Table 5.10

BUS TYPES BY AGE. (years).

BUS AGE (years)	BUS TYPES.					
	MOLUE	BOLEKAJA	DANFO	OTHERS	TOTAL	%
0 - 1	12	-	04	01	17	06
1 - 2	44	01	20	04	69	25
2 - 5	98	01	37	21	157	56
5 - 10	16	-	08	02	26	09
> 10	07	-	03	01	11	04
TOTAL	177	02	72	29	280	100

SOURCE: Field Survey, (Bus Operators). 1987.

Conventionally, public transport buses are known to have a life span ranging between 15- 20 years all over the world with the exemption of developing countries. Because of the general absence of information about the life span of buses used for public transport purposes in Nigeria and particularly in metropolitan Lagos, it is therefore more important to highlight that of the private public bus operator derived for this study during the field exercise so as to justify its implication for public transport operation generally. (Table 5.10). Buses for public transport are generally expensive to provide and they require constant and regular maintenance, therefore the buses are financially demanding. Under this kind of operation the bus being used for public transport need to provide substantial benefits to the operator in form of monetary reward which is in turn used for running the public transport business.

Five categories of bus ages has been adopted for this study and in these categories, 56% of all the buses are within the age of 2 and 5 years, followed by 25 % which is in the age of 1 and 2 years, with only 4% of the buses having to survive for more than 10 years. When the bus age presented in tables 5.9, and

5.10, are compared with the conventional standards often used to measure the life span of buses, it shows that buses generally in Lagos city have very lower and shorter life spans. The survey reveals that only 4% of the buses have life span of over 10 years, while 56% falls within the 2- 5 years bracket and 25 % belonging to the 1-2 years category. Therefore following the conventional view for the life span of public transport buses, one might conclude that buses depreciation rate is high and it is a very serious matter for public transport service, On the other hand, it would still imply that the bus population is on the increase even though at a very low rate in the city if 4 % of the bus population could survive for more than 10 years. Subsequently the issue of depriciation might be under emphasised. However the survey did reveal that some of the buses that are above 10 years old in public transport usage operate for fewer hours daily.

One major factor that accounts for buses having very low life span is the intensive usage of which the bus is subjected. And this problem is reflected in chapter three where the illustration of problems affecting the LSTC in operating their services was discussed. In other words it is the undue pressure which the bus is subjected to by the bus operator as the case is with LSTC, that accounts for the sole cause of vehicle depriciation and quick deterioration. Other factors contributing to fast depriciation of public transport buses include the condition of the bus route, deplorable road condition of some areas in the city and road accidents involving buses.

5.3.2 Transport (trade) Unions: At this stage it is relevant to introduce the role of trade unions in the operation of public transport in Lagos by the private sector . This issue of trade unionism further highlights the various distinction that exist among public transport operators in the private sector, as well as explaining the patterns of ownership already discussed. In the government owned public transport bus operator (LSTC), the employees of this corporation, belong to the civil service union. Their membership to the Civil service union is because their corporation is government owned and their wages are payed by the government. Whereas, in the case of the private sector, there are three trade unions in this sector. These are; (i) National Union of Road Transport Workers of Nigeria. (NURTWN) (Lagos Chapter); (ii) Road Transport Employers Association; (RTEA) and (iii) Road Transport Owners Association. (RTOA).

In the case of NURTWN, any person engaged in or working within the scope of road transport is expected to be a member of this union. It incorporates all bus owners, drivers, conductors and office clerks, as well as those in the

haulage and inter city transport business. In other words, this union embraces everybody in the road transport industry be it passenger or haulage. In any event, workers in the government owned public transport bus system are not members of this union. On the other hand, the RTEA is that union whose membership is drawn mainly from employers of road transport workers. To be a member of this union, the applicant must be an employer. This implies that the bus owner, who is not running the bus is a member, so also is the owner-operator form of public transport operator, and the Limited liability type too. The government owned public transport operator (LSTC), is not a member of any of these unions.Employers of workers in the passenger and haulage, inter and intra city business are members of this trade union. There is finally, the RTOA, which in a simple discription, is made up of a group of bus owners that could be described as the financiers. They purchase the buses which are used for public transport purpose. Whatever the complexity which this union exhibits, the government recognise their operations and functions. In fact they have been registered to function as trade unions which also draws recognition from the Nigerian Labour Congress. (NLC).

The discussion on trade unions within the public transport industry of Lagos, suggests that some public transport operators in the private sector belong to all the three unions at a time. Even though such operator may even not be physically involved in public transport operation for the city. For example, a bus owner who has engaged the service of a driver, only to await returns on agreed terms at the end of the day's operation will qualify for membership of the union.

5.4 OPERATIONAL CHARACTERISTICS OF PRIVATE BUS.

In examining the operating characteristics which private public transport bus in the city of Lagos exhibits, it is necessary to refer to some of the conceptual issues raised in chapter four for this study. Moreso, that these conceptual issues mentioned in chapter four have been used to gather the data used for highlighting the characteristics and structure of private public transport buses in Lagos.

In chapter four, the 'Concept of Eternal Triangle' which was discussed, raised three fundamental issues in public transport provision and operation. These are; (i) Costs; (ii) Revenue; and (iii) Service Level.

The main concerns of the issue of cost aspect mentioned in this concept as raised in chapter four concerns the entire expenditure which the public transport operator incur in the process of providing and operating public transport service, while the focus of the revenue aspect of the concept however,

covers mainly all the proceeds realised from operating public transport service which implies revenue derived from travel fare payed by passengers and service level, represents all the types and level of services which the operator provide for passengers.

Furthermore, the discussion on Fare system in the same chapter, also reveals the various issues that constitute public transport fare systems. The fundamental issues concerning how travel fare by public transport bus is fixed, structured, collected and the need to minimise loss of revenue, are very relevant to this study. The manner which issues on travel fare can be examined as suggested in chapter four, are used to highlight the fare system in the private sector public bus operation of Lagos.

Finally, the focus on the Elements of a Journey also highlighted in chapter four, will again be used to examine the bus route system, frequency of bus services, bus passenger capacity, bus crew system and the types of bus services.

In other words, the concept of eternal triangle, fare system, and elements of a journey, will be used hereafter to present a better picture of private sector bus sevices in Lagos and also use them to discuss the quality of services which they provide passengers. Therefore, discussions on characteristics of private public bus operation that follows in this chapter, will adopt the underlisted approach, bearing in mind the conceptual issues raised in chapter four.

These are namely:-

(i) operating requirements for private public bus operation,

(ii) fare system,

(iii) bus route operation

(iv) financial costing of operating a bus,

(v) the bus crew system and

(vi) problems of private bus operation.

5.4.1 Private Bus Operating Requirements: Some of the main requirements for licencing private public bus operation in the metropolitan city of Lagos have been discussed in chapter three. The basic requirements for licencing private sector public bus operation in Lagos are; (i) Residential address of the bus owner; which often must be within Lagos State. (The owner may be in the name of limited liability company); (ii) Valid insurance for the bus; (iii) Vehicle Licence for the bus; (iv) Road Worthiness certificate; (v) The type of bus; (e.g mini, midi, or omnibus) and (vi) Evidence of tax payment for three consecutive years of the bus owner.

When the bus has been licenced by the CLPA to provide public passenger transport services in the city, there are other requirements that are expected to be satisfied in order to make the bus operational. Sometimes it is these requirements that distinguish the private public transport vehicles from other private or personalised buses. These are; (i) Hackney permit, (ii) Colour permit for the bus; and, (iii) Route permit.

The following table 5.11, represents the various licences that are required for licencing a private bus operator in Lagos. The table shows that 91% of the private bus operators interviewed for this study are aware of the need for these licences in order to run public transport business undisturbed by the law enforcement in the city. The survey however, shows that the various operating requirements for public transport bus operation in the city are issued at different places by different agencies or establishments, and a summary of this is presented in table (5.11). The financial costs for the various licenses issued for public transport operation in the city to private operators is also provided in table 5.11. Some of these licences are issued annually like the hackney permit, some twice in a year, like the road worthiness certificate, and while some can be issued once or twice in a year depending on how convenient it is for the bus operator. A good example is the insurance certificate. (The costs provided in table 5.11 are determined on annual basis using the Nigerian currency as measure). The essence of this is to establish how much cost is incured by the private sector public bus operator in the process of licensing the bus for public passenger transport business in Lagos. Again, there are no records of permits or licences issued per year, for public transport bus operator in the private sector by the CLPA.

Evidence of current tax certificate for three years mentioned as one of the requirements for licencing private public bus in the city, simply means that the operator must show evidence that it has been paying tax to the government for the past three consecutive years. Reasons for introducing this measure is that the rate of tax evasion in the country is very high, especially in the private and informal sectors, whose income are hard to assertain. This is assume by the federal government will make many people to pay their tax. The evidence of tax payment, is not only peculiar to the private public bus sector. Other sectors of the entire economy are equally affected by this requirement. For instance if you want to register your child in a school, the parents need to produce this evidence of tax payment. Whereas, those employed in the public sectors are known to have paid their taxes through the PAYE system. In order to make the private sector to contribute to the government treasury the evidence of tax payment for

Table 5.11

OPERATIONAL REQUIREMENTS FOR PRIVATE PUBLIC PASSENGER BUS.

TYPES OF LICENCES	OPERATORS PERCEPTION OF LICENCES NEEDED.				WHERE LICENCES ARE ISSUED.					ISSUING COSTS (in Naira)				
	YES	NO	TOTAL	%	Insurance company	Local Gover-nment office.	CLPA	Transport Unions	Others	0 - 100	101 - 200	201 - 500	> than 500	No response
Vehicle Insurance	260	20	280	93	255	04	---	---	21	10	125	107	12	26
Vehicle Licence	260	20	280	93	---	252	07	---	21	138	97	19	01	25
Hackney Permit	260	20	280	93	---	02	257	---	21	39	190	25	---	26
Road Worthiness Certificate	256	24	280	91	---	02	253	---	25	254	01	--	---	25
Colour Permit	239	41	280	85	---	03	241	---	45	229	06	--	---	45
Bus Route Permit	236	44	280	84	---	03	227	---	51	226	03	--	---	51
Others	78	202	280	27	---	43	09	---	206	71	03	--	---	206

SOURCE: FIELD SURVEY (Bus Oparators), 1987.

three years is been required from the private bus operators. Nonetheless, tax certificate (evidence of tax payment) issued from any part of the country is acceptable for public bus registration in Lagos. Even though the evidence of tax payment measure have succeded in compeling the bus owner to pay tax, it has not been able to clamp down generally on the bus crew directly, like the bus driver and conductor. Taking into consideration all the requirements to operate public transport in the city, it is necessary to find out from the CLPA, how many applications have been turned down and the reasons for refusing such applications. Ironically, such information is not available for this study since the CLPA do not keep track of such record. This however raises the issue of "unlicenced public transport operators", which is not within the scope of this research study.

5.4.2 Fare System: The general concept of fare system has been discussed in chapter four. In this section however, focus shall be on how travel fare is determined and collected in Lagos metropolitan. A key factor in the demand for public passenger transport is the level of fares charged and the method by which it has benn charged and determined. As rightly explained by Kitchin, (1947, p.79) inter alia " bus fares present a picture of confusion, for there is no common basis or recognised standard of charging, yet if one took individual groups of services, or even the services run by the several operators in any particular area, it would seem that a substantial degree of coordination of fares had been achieved". Kitchin, (1947), went further by accounting for the reasons why there is absence of a common basis standard of fare charging. In doing this Kitchin went into distant past, that during the time of unregulated competition among various bus operators, fare - fixing was usually done on the basis of expediency and what the public was ready or prepared to pay. These views are relevant to the manner which the private bus system in Lagos city functions. In other words bus operators in the private sector are reacting on the basis of expediency and what the passengers are ready to pay. However, since the presentation of Kitchin's view in 1947, a lot of changes have taken place in United Kingdom, upon which his study was based. But the argu ments presented by Kitchin can be said to be true about the present public transport situation of Lagos and can therefore be equally used to explain the problem of fare charging in the city.

To the bus operator, fare determination implies that on a particular journey the fares are fixed in relation to the journey costs. In other words, the total revenue derived from bus operation must cover costs and provide reasonable profit for providing such services. Conventionally, fares are

expected to be determined primarily by the financial policy which the bus operator wants to adopt. In the case of the government owned public transport buses huge financial subsidization is involved because the LSTC buses ply along some uneconomic routes to cater for the government's social obligation and responsibility to the people of the city so do the private operators, which financial assistance are not offered for providing services along these routes.

Fare Determination: In Lagos metropolitan, the factors guiding how fares are determined are unclear, even to the bus operators themselves, nobody has been capable of providing the indices which are used for fixing travel fare in the city of Lagos. However, in an interview with a senior official member of the State ministry of Works and Transport during the field survey, suggests that the state government rely strongly on recommendations and suggestions often put forward by the Central Licensing and Parking Authority (CLPA) and Lagos State Transport Corporation (LSTC). The government also takes into consideration its own social responsibility to the people of Lagos city, along with the suggestions and recommendations provided by this two statutory agencies. Moreover these two establishments are owned, financed and adminstered by the state government as parastatals. In other words, the private public bus operator is not consulted, considered or involved in the course of bus travel fare determination in the city. The omission of the private sector bus operators have a lot of implications on how public transport bus system is operated in the city by the sector especially. The private bus operator has come to accept the travel fare determined by the state government because at the time of licensing their bus for public transport operation, one of the conditions the operator has to agree or abide with is to observe the fares fixed for the route they intend to ply. Hence, what the operator charges is not only imposed on them by the government it is as well in some instances uneconomical for them to be in business. Since the private bus operators derive no assistance of any type from the governments (state or local), they have devised their own means of making their bus operation profitable. This is by 'short turning' the bus journey. (Bus short turning is explained later in the chapter). Whereas their counterpart which constitute the government owned public transport operator (LSTC) is heavily subsidized and assisted by the government in many ways. Such assistance is what the private sector does not benefit from the government in any form. It might be right to accept or believe the assertions brought out during the interview with the official that the private bus operator is not involved in the course of travel fare determination in the city.

One could then appreciate why the National Union of Road Transport Workers of Nigeria (NURTWN) Lagos chapter and the Road Transport Employers Association (RTEA) are frequently agitating to have representations during such travel fare negotiations with the government. The NURTWN, as earlier described, is a trade union representing the interest of workers in the private public transport sector of the whole entire national economy. (This union does not exist in the public public transport sector), while the RTEA, is the trade union representing the interest of private public transport employers (many of them are bus owners), and operators . In this trade union (RTEA), it is possible to have a bus owner or operator belonging to the two trade unions listed above. For instance, a bus owner may also be the driver of the bus therefore by virtue of being the driver of the bus qualifies him to be a member of the NURTWN and also as the bus owner this same bus driver qualifies to be a member of the RTEA. It is this duality of membership in some cases that contributes to the constant trade union dispute in private public transport sector of the country generally and Lagos city in particular where their activities are more pronounced. One of the major problems facing private public transport in the city, is the travel fare which bus operators charge commuters regularly and arbitrarily. Recognising this problem and to find solutions to the perenial problem the present state military government in July 1987, set up a task force committee to examine how travel fares and other related public transport problems of the city can be resolved. This is the first time that a task force committee of this nature is set up by any government in the entire history of public transport in Lagos which incorporates the private sector in fare determination process. This task force set up by the Lagos state government , ironically coincided with the time when the survey for this study was carried out in Lagos and the research had the opportunity for first hand information as well as being able to follow the trends of the debates and negotiations generated after the inauguration of the Task Force.

The government selected two of the three transport unions in the city to represent the interest of the private sector in the Task Force Team. It is surprising that the basis for the selection of the two unions who represented the private sector by the government is unknown, suffice to speculate that their selection was suggested for the government by the CLPA and LSTC who are traditionally, the two principal advisers to the government on the issue of public transport operation in the city. As ealier revealed above, when the government was constituting the task force committee, two of the three transport unions in operation and equally recognised by the government (the government is

reponsible for granting the registration to function as a trade union) were selected. These trade unions are NURTWN and RTEA while the third which is the Road Transport Owners Association (RTOA) was not included in the composition of the task force committee membership. This omission or none inclusion of the RTOA in the task force raised a lot of dispute and rambling as to which of the unions is more qualified to represent the interest of the private public transport operator. The omitted trade union (RTOA) took the matter to court in an attempt to stop the committee from sitting until the issue was resolved, and this the RTOA lost. In a simple discription, the RTOA is a group of bus owners, these are the actual financiers of buses. They claim to be more qualified to be included in the task force because without the buses which they provide there cannot be either the NURTWN as well as RTEA. The NURTWN are people working in the private transport sector, they include bus drivers, conductors, mechanics and others such as workers in the unions' secretariats and others in the haulage/ freight business. While the RTEA represents those who employs transport workers. However according to Adeniyi (1987), It is apparent that from the foregoing that the fundamental problem of public transport operation, is yet to be addressed and this fundamental problem is on how to incorporate the private sector and organise them in providing a conventional type of public transport that can be said to be acceptable to the society that make use of their services.

Travel Cost / Fare: Travel fare or bus fare in Lagos metropolitan is determined by the state government and it ranges from 10 kobo to 50 kobo depending on the distance traversed by the commuter for using the bus. Table 5.12, shows the travel cost. However the varying cost of travel is due to the different route which the bus is licensed or approved to operate by the CLPA and the number of geographical zones crossed or traversed by the passenger will hence indicate the travel cost for the journey. The travel costs are normally designed to incorporate the origin and destination of the bus route. It must be stated here that the travel fare provided for this study are the approved travel fare for the routes which the bus is licensed to operate, not the illegal route which some private bus operators were found to be operating their buses during the field survey and also not the self imposed higher travel fare fixed by the private bus operator.The travel costs in the city is shown in table 5.12 and figure 5.10.

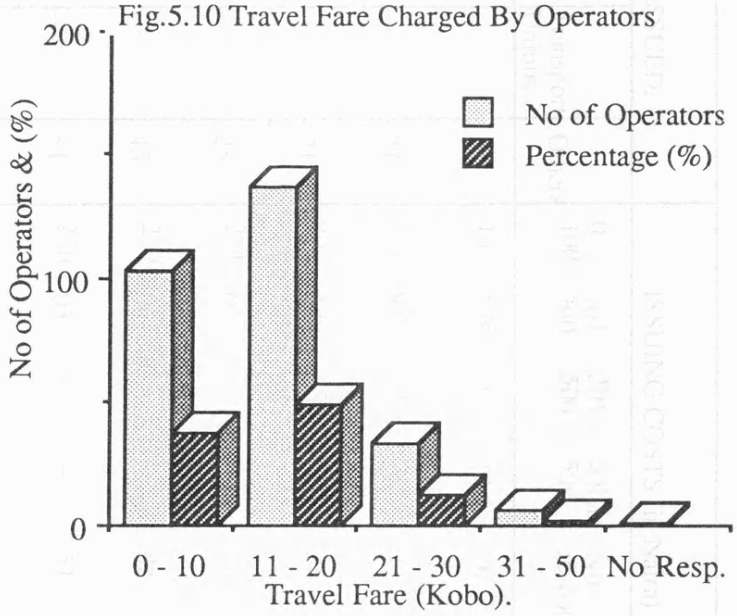
Table 5.12

TRAVEL / FARE COST (in kobo).

TRAVEL FARE	OPERATORS	PERCEN TAGE (%)
0 - 10	103	37
11 - 20	137	49
21 - 30	33	12
31 - 50	06	02
No response	01	--
TOTAL	280	100

SOURCE: Field Survey, (bus operators), 1987.

Fig.5.10 Travel Fare Charged By Operators



It must be put on record here that fewer buses are registered to operate longer trips and many operators prefer to run short trips. For example, the mini and midi types of buses are not registered to provide long trips in the city as the case

is with the big buses, and moreover there are places which mini buses cannot run their services in the city especially in Lagos Island. These accounts for the higher concentrations of low travel fare charge rate by public bus operators in the city.

Fare Charges: It has been observed in Lagos that the private bus operator imposes higher travel fare on bus passengers. Further the reasons for this has been established earlier. However, this section will attempt to find out how the bus operator determines when to charge higher fare and the factors that aids the operator in doing this. The survey findings show that the bus operator reacts spontaneously (55%) to charge higher travel fare along the route which the bus is running. There are also operators who raise travel fare during the peak hours only (26.4%). In other words, the increase in travel fare imposed by the operator, is as a reaction to the traffic situation which is deem bad. However the survey shows that only 1.5% of the bus operators in the private sector do not raise travel fare along their operating routes. The reason responsible for this, is that the bus operator not raising travel costs, operate their buses along short route where the traffic situation along the route is not as problematic to warrant any increase in travel fare.Table 5.13 and figure 5.11.

Table 5.13

FREQUENCY / RATE OF CHANGING TRAVEL FARE.

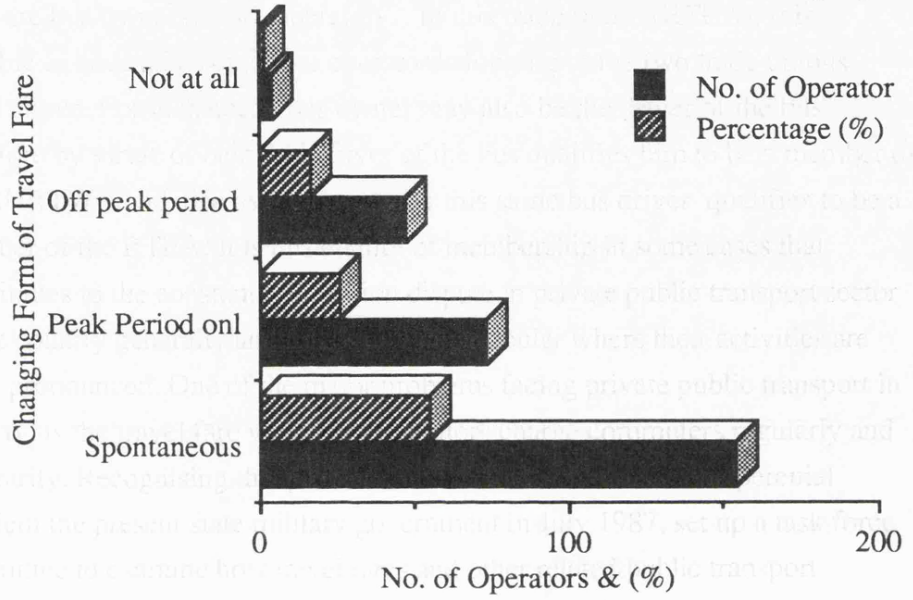
RATE / FREQUENCY	OPERATORS	PERCENTAGE (%)
Spontaneous	154	55
Daily (peak periods only).	74	26.4
Others (off peak period	48	17.1
Not At all (does not alter travel fare)	04	1.4
TOTAL	280	100

SOURCE: Field Survey, (Bus Operators), 1987.

Moreover, some operators hike travel fare to curb passenger demand at overcrowed bus stops. The increase in travel fare is temporary to some operators (61.8%) and permanent to other operators (36.4%). 36.4% of the bus operators confirms it as a permanent act because the traffic situtation along

their route is constantly chaotic and congested. Hence, it has become a routine which passengers are already accustomed. Furthermore, the traffic situation along the routes which bus operators are licensed to operate is not only determined by vehicular traffic congestion but also by passenger overcrowding at bus stops, Police checking points and other law enforcement agencies operating along these routes and the general scarcity of other public transport buses along the route.

Fig. 5. 11 Changing Form of Travel Fare Among Operators.



Fare Collection System: Whilst there are marked difference view among operators as to the merits of their respective methods of fare collection, the basic requirements are common to all. They should ensure that every passenger they carry pays the correct or exact fare and that the correct ammount is delivered to the operator.This is more easily said than done, for in reality, regards has to be paid to practical limitations of any method or approach that is adopted at the final end. Similarly, any method adopted must not be too expensive and at the same time too slow and complex to cause delays in bus operation. Or else it will defeat its main objective of simplicity. The aim of fare collection system has been to produce a system that will enable the operator maximum protection against loss of revenue, at minimum cost. Many bus operator have lost huge revenue in the process before realising the chosen method has been faulty and defective. The fancy of a good fare collection system is that of achieving simplicity, low cost, protection against fraud and fraud minimisation, reliability of the method and accountability. Accomplishing this objective is a very

complex issue as highlighted by Adeniji (1986), loss of revenue through poor collection and widespread fraud among the bus crew have made many bus operators to run out of business and bankrupt very early. Travel fare can be collected in many ways and in any form. It may be in the form of pre paid ticket such as the travel card commonly used in London, ticket issued when boarding a bus like the LSTC in Lagos and the exchange tokens that may be found in the private bus sector of Lagos and many other cities of developing countries like Kingston, Jamaica where a similar study on fare collection system has been conducted. (Anderson, 1987).

Generally in the developed communities like the United Kingdom, pre-paid is very popular, so also is the use of ticketing methods. However ticketing is often common in the government owned public transport of many developing countries but not in advanced nature comparable to those used in the developed countries. The tickets may be issued with the aid of machines operated by a bus conductor or tearing a leaflet from a bunch of tickets by the conductor manually. In the private sector public transport operation in metropolitan Lagos, the exchange token dominates the form of fare collections system, with the aid of bus conductor. Table 5.14 presents the forms of fare collection system predominant in the private bus business of Lagos. Recognising the weakness of their collecting methods and the need to reduce loss of revenue and fraud, the bus owners especially the 'absentee' bus owner, have engaged the service of a close family relation to participate in the bus business as a member of the bus crew especially as bus conductors. This family tie relationship is discussed later in this chapter. The weakness in the fare collection system have equally aggravated the need for owner operator system in the private public bus operation in the city. In Lagos city, travel fare takes the form of exchange token and this is collected with the aid of the bus conductor. (further discussion about the bus conductor is highlighted in another section dealing with the private bus crew system). As earlier revealed, all the bus operators interviewed for this study, make use of bus conductors. And the basic responsibility of the conductor is to oversee the adequate and efficient collection of travel fare promptly, efficiently and without delays. In the process of doing this, the bus conductor (depending on the type of bus) stretches his hand to collect money from the passengers or walks round in the bus by squeezing himself round the people in the already overloaded bus to collect fares. In essence, there is no way one could have determined the daily revenue collected by the conductor except that amount declared by him. Since it is virtually impossible to determine the number of passengers carried for operating the bus per trip or even on daily

bases. Similarly, it becomes more difficult if not impossible to know how much is realised for providing public bus service by the private bus operator and subsequently the operator (especially the bus owner who is not the bus driver), cannot estimate how much revenue is lost or establish the level of fraud among the bus crew.

Table 5.14

TRAVEL FARE COLLECTION SYSTEMS/ METHODS.

METHODS OF TRAVEL FARE COLLECTION	OPERATORS	PERCENTAGE (%)
Ticketing	08	03
By Hand / Conductor	272	97
TOTAL	280	100

SOURCE: Field Survey, (Bus Operators), 1987.

In order to cope with the above issue, the private bus operator have devised many means of reducing fraud in the process of collecting travel fare. Such measures include the choice of conductor, which might be a close family relation to form one of the bus crew. Another method is by rotating the bus operational hours between the bus driver and the bus conductor; and also by imposing the minimum amount of money the bus driver and the conductor must hand over to the bus owner on daily basis. Any shorfall in the amount expected to be handed in by the bus crew, leads to serious warning and persistent shortfalls of target revenue, leads to termination of service. This scheme is similar to the LSTC Contract policy discussed in chapter three.

5.4.3 Bus Route and Service Pattern: As already discussed in chapter four, there are different types of bus services which can be operated to meet specific needs for any particular movement. Further discusion in chapter three, showed that the route which a bus is licenced to operate is the choice proposed by the bus operator. In this chapter however, focus shall be on how the operator come about running the bus on the particular route it is approved, the nature of the bus stops and bus terminals along the route, duration of bus operation (operating hours of the bus), and factors responsible for the change of bus route. Furthermore, despite the fact that the private bus operator can choose the route which to run its service, there is a restriction on certain routes which some categories of private public transport buses cannot operate as revealed in

chapter three. The mini and midi buses for instance, are expected to provide bus services within Lagos mainland, to provide and to function along feeder routes. Which means that the mini and midi bus categories are only registered to provide services for a particular residential area or local centre in metropolitan Lagos. But in practise, the mini and midi bus operators do go beyond the level of services which they are registered to provide in Lagos mainland and some of them do not observe the route to which they are assigned. Whereas the big and the omni bus categories have no restriction to where they can be licenced to operate in the city, provided it is along the route to which it has been assigned to run such services. Their operational activities go beyond the local or feeder route type of service which the mini bus provides. Most of the big and omnibus categories, terminate their services in the city centre as well as providing inter - suburban links services to the city.

By virtue of its right to choose, the private bus operator is known to be quite familiar with the route it has chosen to operate its bus. Reasons for route selection by the private bus operator, include previous familiarity with the route, proximity to home of the bus operator or the bus owner who might want to exercise closer supervision over how the bus is being used or operated, and the belief (on the part of the bus operator) that the route is profitable and at least less dangerous to run. These views highlighted above are quite similar or related to the outcome of a study on mini bus ride carried out in Kingston, (Jamaica) Anderson. (1987; p. 32).

Table 5.15

BUS ROUTE CHOICE: SOURCE OF INFORMATION

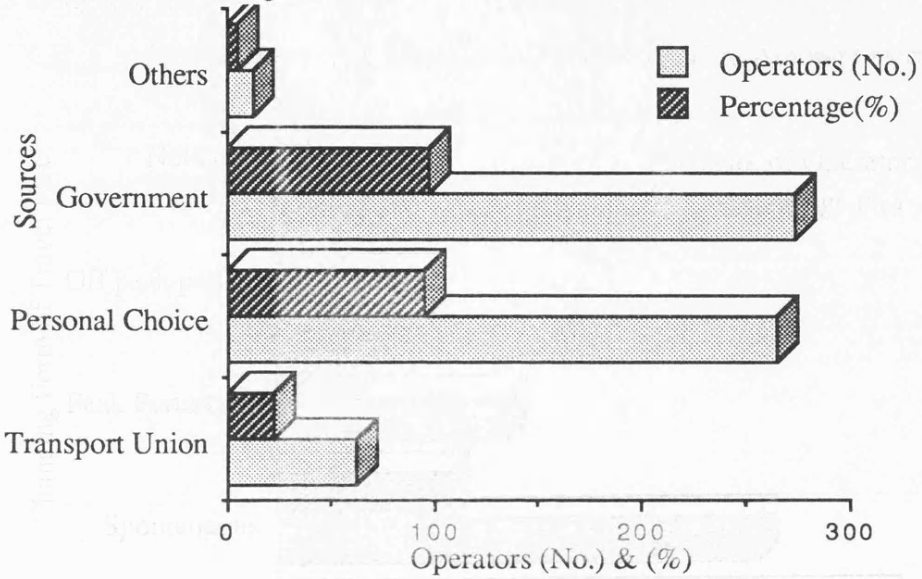
SOURCES OF INFORMATION	OPERATORS	PERCENTAGE (%)
Transport Unions	63	22.5
Personal Choice	265	95
Government	274	98
Others	13	05

SOURCE: Field Survey, (bus operators) 1987.

Results emanating from the field survey for this study shows that many of the private bus operators are aware of the need to be assigned to a particular bus route through which they can provide reliable public transport service

without being prosecuted. Further the survey reveals that even though the operators recognise the need to be assigned to a route to operate their buses, they get first hand information about the nature of the route they have chosen from various sources before the final allocation of route is sought for by them. These sources are provided in table 5.15 and figure 5.12.

Fig. 5.12 Sources of Information For Bus route choice



This table shows that 98% get their information from the government; while 95% is based on personal choice; also 22.5% gets their information about route situation from the transport unions; and 5% constituting the others. These sources of information about route is very important in route planning and therefore necessary for this study in order to examine how the private operator can be mobilised as well as educated on the importance of adherence to bus route to which they are assigned. By changing the optional attitude which the private bus operator has enjoyed before will go a long way in effective bus route planning system for the city. Such measure must exercise caution when implemented, since buses can be deployed to various routes on the bases of needs along the route and not according to the wish of the private bus operator. What this figure suggests is that if most operators gather information about routes and subsequently asked to be assigned to any of the routes, the government could not find it difficult to assign these operators to route. Moreover, the survey further shows that 68% of the bus operators interviewed for this study have not changed their operating routes while others have changed their bus routes for reasons discussed hereafter.

Table 5.16

CHANGING OF BUS ROUTES: FACTORS RESPONSIBLE.

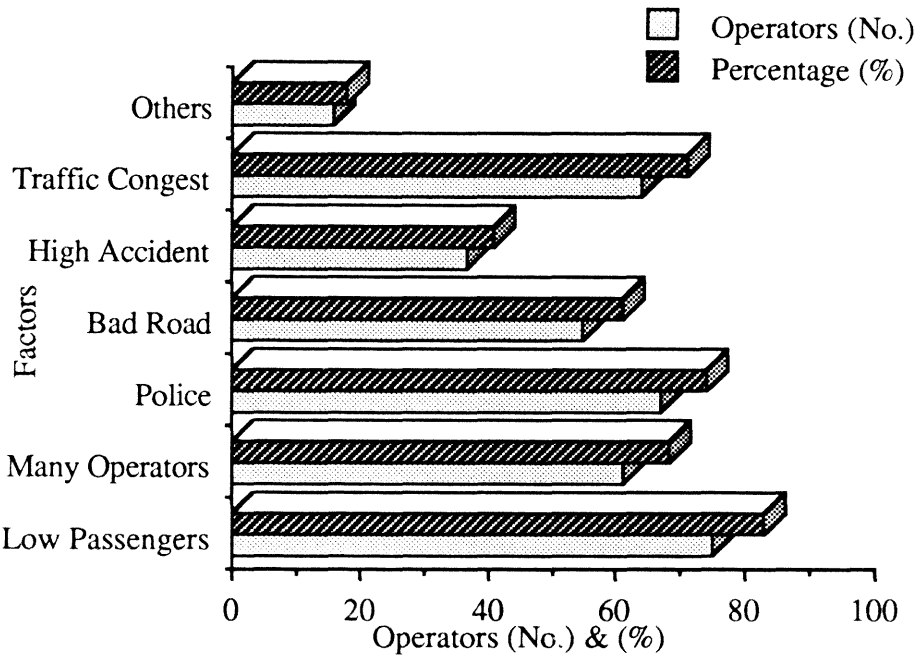
FACTORS.	OPERATORS	PERCENTAGE (%)
Low Passengers	75	83
Too many Operators along the route	61	68
Frequent police presence	67	74
Bad road	55	61
High accident Occurence	37	41
Traffic Congestion	64	71
Others	16	18

Number of operators: 90. representing 32% of survey population of bus operators.

SOURCE: Field Survey, (Bus operators), 1987.

If 68% of bus operators have not changed their routes officially, shows how reliable the soucre of their information dominated by the government source is. Factors responsible for the change in route as well as sticking to a particular route among the bus operators were established in this study as represented in tables 5.16 and 5.17. and figures 5.13 and 5.14.

Fig. 5.13 Factors Responsible For Why Operators Change Bus route



There are many reasons why private bus operators would like to change their routes. In figure 5.13, the bus operators change routes because of low passenger which accounts for 83% of the respondents, followed by frequent police checking on the route which slow down their speed of operation not necessarily because of lack of vehicle documents which most of the government officials claim to be the reason, this accounts for 74%; traffic congestion along the route affects their operation drastically and since they cannot operate in another route without being prosecuted by law enforcement agents, the honourable way out is to apply for a change of route this also accounts for 71%.

There are situations when applications for change of routes are turned down, what the bus operator does is to withdraw its service without any formal notice to the CLPA and re-apply as a new operator thus choosing the route it now wishes to run its bus. This has become possible because of the ease at which bus operators can enter and quit the bus business without any adverse effect on the part of the bus operator for doing so. Another way out, is to wait till the end of the year when the bus is due for renewal. This is so, because private sector bus operations are renewed annually. Since both new operators and old ones use the same application form, it makes it easy for the bus operator to change its route even without the knowledge of the CLPA. Hence, its application is treated as a new applicant.

Too many bus operators along a route also makes a route more uneconomical to run, this view represents 68% of the respondents interviewed for the study, and ranks fourth among the reasons for changing bus routes. The

problem with this is that at an initial stage, a bus route might seems to be very attractive to all operators and there is the tendency for every bus operator to fancy the route only to find out later that it has been saturated by other operators therefore making the route very competitive, uncontrollable and uneconomical to run for them. Surprisingly bad road condition ranks fifth with only 61% stating that bad road situation is responsible for changing their bus routes, however one might come to accept this view because the road situation of the city have been drastically improved upon in recent years, and how bad such road might be depend on routes and therefore this spatial variation in bus routes might be responsible for the lower ranking.

Table 5.17.

WHY OPERATORS DO NOT CHANGE BUS ROUTES.

FACTORS	OPERATORS	PERCENTAGE (%)
Too many passengers	180	95
Fewer bus operators	81	43
Absence of Police	82	43
Good Road	125	66
Low accident	104	55
Free flow of traffic	87	46
Others	62	33

Number of operators: 190. representing 68% of the survey population of bus operators.

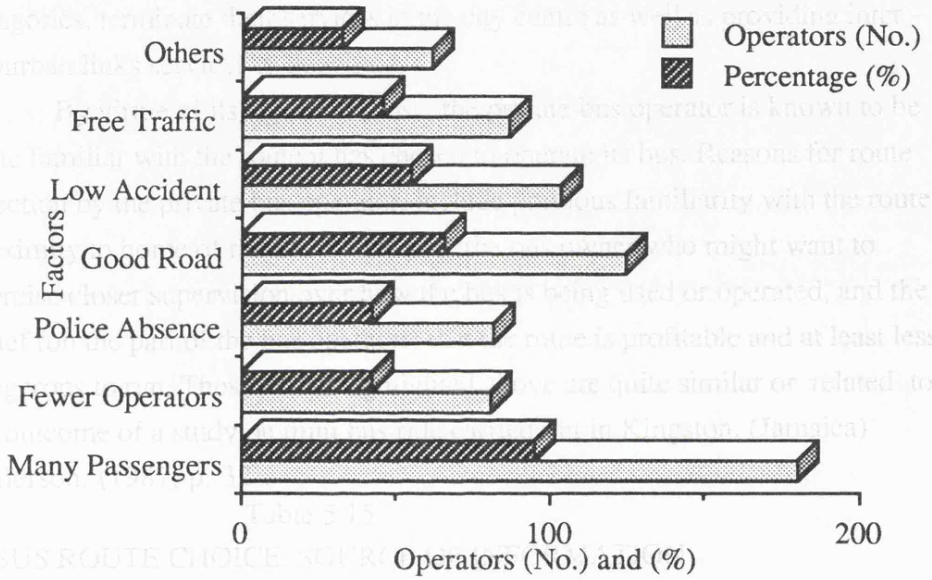
SOURCE: Field Survey, (bus operators), 1987.

Despite the low ranking of the road situation as a contributing factor to route changing, the percentage share (61%) is still quite high enough to attract some attention. Finally frequent accident rate along a particular bus route, is another attributeable factor accounting for 41%; and other rationale; such as the owner of the bus no longer interested in the route and also the need for effective monitoring of the bus activities might be responsible for changing the bus route. One important outcome of this highlight is the role of the law enforcement

agents who were ranked second with 74% as among the major problems leading to their changing of bus routes. (figure 5.13).

It is equally important for this study to establish why some bus operators have not changed their bus routes. Availability of such information will go a long way in understanding the operation of private bus owners and also aids future public transport planning of the city because it provides the basis for adherence to assigned bus routes therefore promotes effective route planning analysis in particular and for public transport improvement generally in the city. Table 5.17 and figure 5.14.

Fig.5.14 Why Some Operators Do not Change Bus route



68% or 190 of the total respondents of the private bus operators that have not changed their bus routes, provided reasons attributeable for this, which include, the presence of many passengers at all time of the day, for them to carry along the route they operate their buses representing 95% of the responses; also followed by good road or network system which represents 66%. Again, low rate of accident occurence along the route they run their buses is another rationale for sticking to the route which represents 55%; as well as free flow of vehicular traffic along the route which accounts for 46%; absence of police or other law enforcement agency accounts for 43.2% of the reasons why routes are not altered by private bus operators; and finally the presence of fewer buses is equally attributeable for not changing route and this accounts for 43%. (figure 5.14).

Arising from the above discussion is that the private bus operator in Lagos metropolitan might be said to be demand responsive; as claimed by so

many studies about public transport in the city. (Adeniji, 1983, Adefolalu, 1978). Meaning that, the bus operator is very aware of the need to run the bus along the routes where it is likely to pick up passengers at all time. But apart from being demand responsive the operator is equally conscious of the implication of delays along the route during bus operation and such delays might come in form of police or other law enforcement agencies and vehicular traffic congestion. Nonetheless, the bus operator is not very much concerned about safety of the bus during operation which is highly reflected in their responses from the survey. Arising from bus operators being demand responsive are the issues of route shifting and short turning which are discussed in more details later in this study.

Route shifting: Route shifting is another focus of the study, this is because buses operated by the private sector in Lagos often abandon their assigned routes to 'pirate' other routes which offer more business. This pattern of route shifting also occurs at night when some bus operators undertake inter-city services or journeys. Attitudes of operators towards route shifting varied throughout the system and according to the time and place. In the Lagos, short turning the bus can be seen to be more often common than route shifting. More discussion on route shifting among private bus operators is provided in chapter six.

Bus operating hours: The number of hours which the private sector operate their buses is another important indicator for understanding the bus operating system in metropolitan lagos. It is important because it enables the bus user to determine when and how to plan its journey, again it provides information about their services and period of operation generally, which are vital tools for effective public transportation planning.

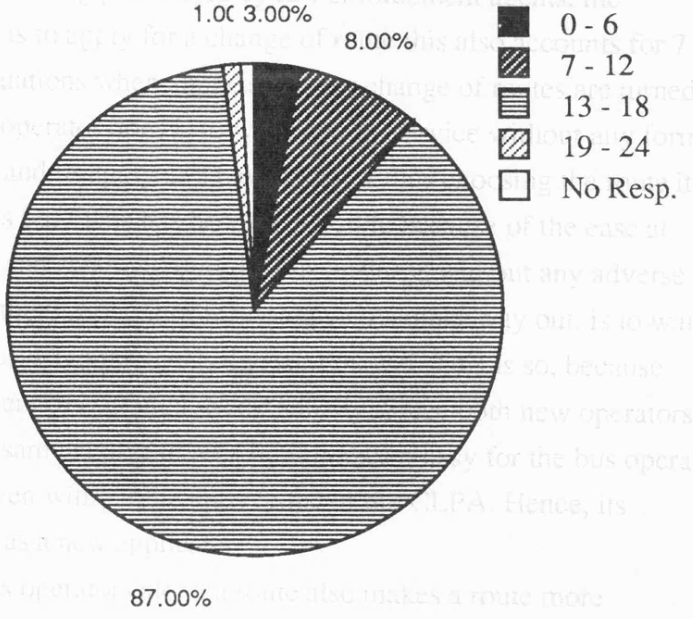
Table 5.18
DURATION OF BUS OPERATION (In hours).

DURATION	OPERATORS	PERCENTAGE (%)
0 - 6	08	2.9
7 - 12	23	8.2
13 - 18	244	87.1
19 - 24	03	1.1
No response	02	0.7
TOTAL	280	100

SOURCE: Field Survey, (bus operators), 1987.

There is no regulation in the city concerning the duration of bus operation, i.e. what time of the day the private bus operator should start operating its bus or when to stop running the bus on daily basis. However, the period of private bus operation in metropolitan Lagos is as provided in table 5.18 and figure 5.15, which were derived from survey data.

Fig. 5.15 Percentage Duration of Bus Operation (hours)



Most private bus operation in the city starts as early as 05.00 hours and ends at

23.00 hours. This starting and closing hours of bus operation vary from area to area in the city and therefore cannot be said to be the same in every part of the city. It also coincides with the time when people are making their journey for work as well as returning from work and social engagements. Furthermore, it also enable workers on shift duty to make use of bus services especially those workers on night shift. This is to say that the whole bus operating periods is planned around the entire economic and working system of the city. In order to provide information for bus operating period in the city, the period of operation was categorised into four. The classification shows that 87% of buses running in the city operates for between 13 - 18 hours per day while 8.2% runs for less than 12 hours but more than 7 hours per day. Only 2.9% provides bus service for less than 6 hours of the day. The period of operation revealed by this study may not seem to provide any serious matter, because buses are expected to be adequately equipped for such long periods of operation. Nonetheless, further questions raised during the survey about any deliberate attempt by the bus driver or the operator to allow the bus engine to cool down in order to reduce pressure on the bus engine during these hours of operation shows more or less a balance response from the private bus operators. For instance, 50.4% of the bus operators do allow the engine to cool down while 49.6% do not give room for the engine to cool down. (It must be pointed out that the survey did not accept those operators who claim that they do allow the bus to cool down when they are on the queue waiting for their turn to let in passengers).

Table 5.19

DURATION ALLOWED FOR BUS ENGINE TO COOL DOWN (in hours).

DURATION	OPERATORS	PERCENTAGE (%)
0 - 1	91	64
1 - 2	46	33
> than 3	04	03
TOTAL	141	100

SOURCE: Field Survey, (bus operators), 1987.

The reason for not accepting this view is that if the bus operator has got to this terminus or bus stop, when there was no other bus on the queue, it would have actually let in passengers and drives off without allowing the bus

engine to cool down. In other words the survey only accepted deliberate attempt to stop the bus and allow the bus engine to cool down. This might have accounted for the close margin in the response between these operators who allow their bus engine to cool down and those who do not. Furthermore, the cooling duration for the bus equally varies among the operators who allow their buses to cool down. Table 5.19 provides the information about the cooling duration of the bus engine. The table shows that 64% of the operators allows the bus engine to cool down for 1 hour; 33% for between one to three hours and 3% for more than three hours per day. Those falling within the category of one hour actually do this when it is time to change shift between the bus crew.

In a situation when the crew that is going to take over the shift is early or punctual, the bus may not cool down for up to one hour and also if it is a situation whereby the bus crew will only have to change responsibilities, the bus engine does not cool down at all eventually. By changing responsibilities, it implies that in a public bus, the driver of the early shift becomes the conductor in the late shift and vice - versa for the conductor. Again, most of the responses falling within this category (1hour) are mainly owner- operator who are only accountable to themselves and do not exert the bus for long operational hours. Furthermore, still belonging to this category are those bus crews especially the driver and conductor not on paid salaries, who have to earn their own living apart from the target revenue they have to hand over to the bus owner at the end of the day's activities.

Summarising this discussion about period of bus operation in Lagos city, it is possible to make an attempt at classifying the bus services revealed by the study in the conventional way of understanding period of bus operation generally, which is presented here after; (a) There is the basic all day time bus service, this is the regular bus service which is principally what all the buses are registered for to provide in the city; (b) Peak period only, which is essentially for peoples making their journey to work, markets, and schools. As observed that the city of Lagos has a prolonged peak period sometimes stretching between 06.30 - 10.00 hours and 15.00 - 18.30 hours. (Thomson, 1977, p. 239); (c) Night service, which is beyond normal day time period of operation, especially between the hours of 20.00 - 23.00 hours; (d) Limited time service which is connected with works often related to shift times and school journeys; and (e) Occasional operator which is used for specific purposes like market days.

A bus network nevertheless may comprise any or all of these categories highlighted above, dependent on the particular needs of the area which are

determined by the land use pattern and topograhy. It is equally of importance to highlight the nature or the characteristics of the bus route from origin of the bus to its destination. The bus origin is refered to in this study as where the bus started its service while the destination is the where the bus terminates its journey along the approved route. The finding relied mainly on observational method of analysis, as well as some responses derived from the sets of questionnaire administered for this investigation.

Bus terminals adopted for this discussion are those terminals where the bus operator is not harrassed by the law enforcement agencies, the local government officials and land owners on the one hand and on the other hand where the passengers are willing to wait for public bus to arrive. The adoption of this framework enables the study not to focus solely on the conventional public transport infrastructure but it allows the need to examine the nature and composition of the public transport infrastructural facilities for buses in the city.

Therefore using this framework for the subsequent discussion, 99.6% of the operators have bus terminals both at the origin and destination of their journeys as well as bus stops along the routes along which they are allocated to operate their buses. However if the study is to adopt the conventional type of bus stops and terminals, the figure presented above will fall drastically. Further the bus terminals vary in types. Four types of bus terminals were identified for this study as shown in table 5.20 and figure 5.16.

Table 5.20

TYPES OF BUS TERMINALS

TYPES	ORIGIN OF BUS ROUTE	%	AT DESTINATION OF BUS ROUTE	%
BUS STOPS	162	58	164	59
BUS GARAGE	73	26	86	31
PETROL FILLING STATION	11	04	07	02
OPEN SPACE	34	12	21	07
TOTAL	280	100	280	100

SOURCE: Field Survey, (bus operators), 1987.

PLATE 12. Mosafejo Market Oshodi, being used as a bus garage.

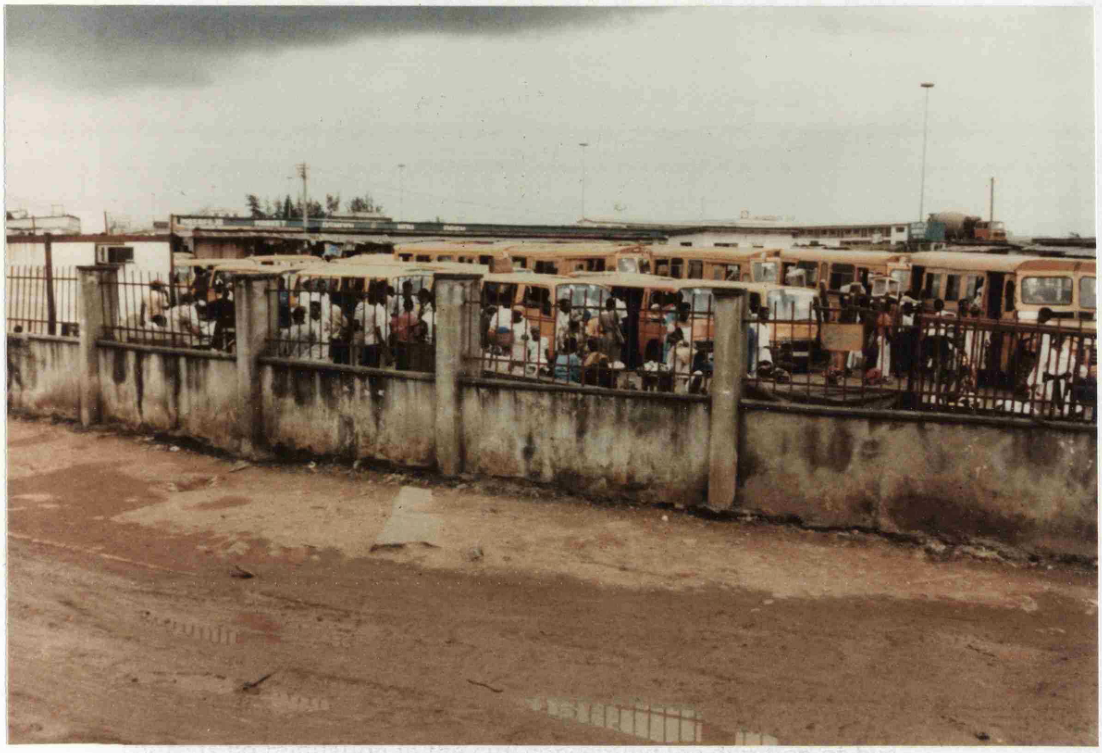
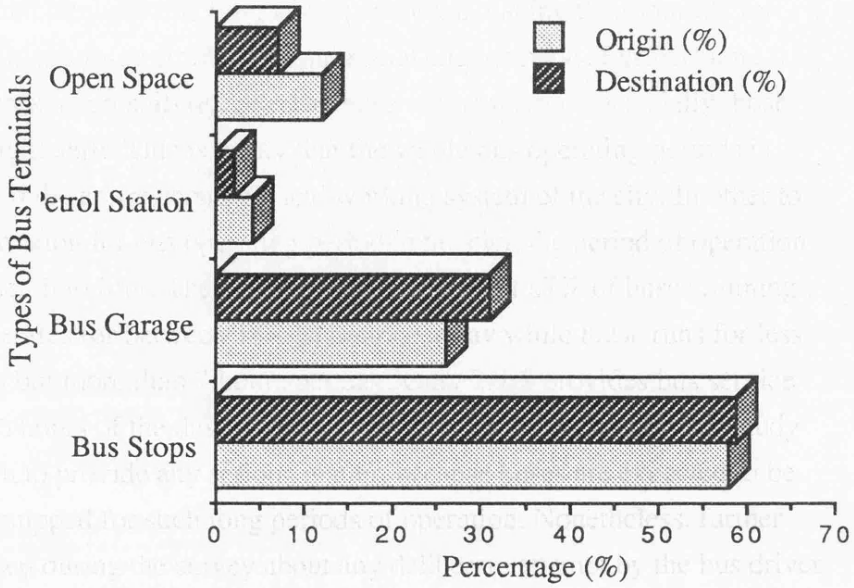


PLATE 13. An all purpose Terminus at CMS. (bus stop).

Fig. 5.16 Types of Bus Terminals (%)



At the origin of bus journeys, 57.9% of the respondents shows that the type of bus terminal which they use for terminating their journeys or as turn round point is actually a place designed for a bus stop. Such areas in the city include; Tinubu and idumota; Mile two; Oshodi bus stop; Obalende; Ajegunle; Ikeja and Maroko areas of the city. (plates 11, 12, and 13). Again 26.1% of the bus operators equally have bus garage as bus terminals, belonging to this group are places like Yaba; Oyingbo; Keffi; and Bariga. While 4% make use of petrol filling station as their terminus. This group is quite low but it is of a considerable interest to the study, because the owner of the petrol station have made it mandatory for the private public bus operator to purchase petrol from the filling station in order to allow the bus to unload or load its passenger in the filling station regularly at any time. The condition tied to the use of the petrol station as a terminal or bus stop for bus operators by the petrol dealer is to promote sales. This type of terminal can be found along Lawanson and Ojota areas of the metropolitan. Finally, 12% of the respondents make use of open places as bus terminals. This type of terminals are very common in the outskirt of the city like Ketu and Agege areas of Lagos. At the destinations of buses there is similar response on the types of terminals which the operators use for their journeys as reflected in table 5.20.

There are lots of implications which these types of bus terminals have for effective public bus system. It affects bus turn round and causes series of traffic hold up along the bus routes which affects the general performance of public transport operation in the city and reduces revenue that might be realised

through delays in the process of turn round. It also contributes to overall general traffic congestion in the city. As earlier revealed in chapter three, the bus stops are completely inadequate and ill- constructed for passengers and public buses in the city. Most of the terminals and bus stops are adapted since there are no means of expanding the road to accommodate the physical alteration of the road network without intruding into other people's properties. Neither are the terminals constructed to provide shades for commuters when it is too sunny or to provide temporary shelter during rain. The use of unconventional public transport infrastructure like petrol filling station, open space as bus stops and terminals, by bus operators is attributeable to the inability of the government to provide all the supporting facilities that could enhance efficient public transport delivery in the city. Which is equally due to inadequate finance, poor and or lack of effective city planning. (Udo, 1978 p.1; Thomson, 1977 p. 237- 239). There are benefits that could be derived from proper provision of public transport related facilities and infrastructure of this type in the city, which have not been adequately explored by government officials, city planners, highway engineers and policy makers responsible for the planning of the metropolitan.

Short Turning of Bus: One major method through which the private bus operator respond to the issue of travel fare determination in the city is by 'short turning' the bus. Short turning is a method whereby the bus operator divides a single journey into two or more by charging double the fare that it is suppose to have taken from the passengers for completing the bus route journey. Another type of short turning is whereby the bus does not actually reach the destination of the journey before turning back. In other words the bus did not reach the point where the journey is expected to have terminated before turning back to the starting point or the origin. Even though the passengers do not take kindly to this travel fare imposed on them by the operator they still pay the increased fare because they have limited choice of available alternative means for overcoming the journey. Rationale for bus short turning include traffic congestion on the route which the bus plies and if the bus operator has to abide with the conventional fare fixed for the route, it means that the bus operator will not be able to break even and make profit. In a situation whereby the level of traffic congestion is tolerable, the bus operator, breaks the journey into two or more so as to attract higher fare and make more revenue, which guarantee their services. The passengers most affected by this imposed higher travel fare are those whose journey traverse entirely from the origin of the bus to its destination on a given bus route. In other words those passengers who will have to use the bus all through for their journey are those adversely affected by the imposed higher

travel fare. However, passengers on short trip and are likely to terminate their journeys before the destination of the bus is reached, are least affected by the increased travel fare.

The issue of short turning can be illustrated with the practical example that follows, which is based on personal experiences of the field assistants and the researcher during the field work exercise carried out for this study. On one bus route extending from Ketu to Tinubu. The cost of travelling throughout this route is 20 kobo, but because of the traffic problems encountered along this route the bus operator now divides the route into two. The first half covers Ketu - Yaba and the second half Yaba - Tinubu. The travel cost remain 20 kobo from Ketu to Yaba and from Yaba to Tinubu is another 20 kobo. This illustration is based on the fact that the bus operator completed the route. On another ocassion, when the bus operator decided not to complete the route because the traffic hold-up was unbearable. At this stage passengers were informed immediately the bus crew changed their mind to turn back or shift route. This time around, the bus crew terminates the journey at any point along the bus route except at the destination of the bus route. In many cases such termination occur in areas where the bus crew are very likely to pick up passengers for their return journey. Another observation is that the short turning of the bus can take any direction. It may occur at the origin of the bus route or at its destination, depending on the direction of the bus when the traffic problem started or erupted.

Many reasons account for the relunctant acceptance by passengers of the imposed travel fare fixed by the bus crew. There is a general shortage of buses available for public transport purpose in the city and the passengers are aware of this. But they do not want to miss the bus because they are not sure when the next bus will arrive and if it does arrive on time, they are not sure if there will be space available for them in the bus. So every available bus to the passenger is seen as the last bus. Hence, it accounts for why there is rushing for bus at the bus stop. As a follow up, is the fact that there are many passengers than the available bus and many are willing to accept the travel fare terms of the private bus operator as long as they will get to their destination on time. In other words this is a situation that can be expressed in economic terms, whereby demand for public transport is far greater than available public transport buses (supply). The non- chalant and the non response approach of the government to the complaints made by the passengers to the public complaint bureau of the state shows or is an indicator that the government is incapable of arresting the situation, and this tends to support the view of Adeniji (1985), that the activities

of the private bus operators are very difficult to control and monitor in the city and that they defies any corrective measure introduced.

The general increase in the running of buses, (for instance, the cost of buying fuel has risen and there is no preferential consideration for the private bus operator when buying fuel, cost of bus spare parts have increased), the only way of making the public transport business profitable for them is to increase travel fare. The other alternative for the bus operator if unable to raise travel fare is to withdraw the bus from public transport business and eventually it is the passenger that will suffer more, since the government is handicapped.

5.4.4 Financial Aspect of Bus Operation: Even though it has been established worldwide that public transport is both capital and labour intensive, the private public bus operator in metropolitan Lagos has been able to control and manage operational costs thereby minimising their losses and maximising their returns. It is this that has made many of them to remain in the public transport bus business.

Methods of finance for effective public bus operation in the city have been discussed in the early part of this chapter (table 5.7). Prominent among these sources of finance, is the hire purchase agreement. Under this kind of agreement the bus operator or owner agrees to pay a certain amount of money to the bus dealer at the end of every month until the term of liquidity expires. The danger of this type of agreement between the bus operator and the bus dealer is that if the bus operator defaults for one month the bus dealer confisicates the bus from the operator and will not refund any amount already paid. Moreover this form of agreement is informal, in the sense that it does not involve documentation or seals. What the bus dealer does to assertain its authority over the vehicle in some cases, is to register the bus in the name of the operator but keep the main original documents of the vehicle. This method of bus procurement despite the danger involved by being too informal in its setup, have ironically prospered among many private bus operators in the city. This is often attributed to the socio - cultural trust built around the bus operators in the city. Furthermore, the hire purchase agreement might have an overwhelming effect on effective bus operation. For instance, in order to meet the repayment terms, the bus drivers become uncontrolable and lawless on the highway in an attempt to meet their payment terms. Equally some operational effects and implications might be drawn from this, such as encouraging long hours of bus running, untimely and inadequate bus maintenance schedule and the unavoidable overstretching of the operational hours of bus crew. Table 5.8 shows that about 97% of the duration for the liquidity of higher purchase

agreement entered into by bus operators fall within the range of 0 - 5 years. With 46% of such agreement falling within the range of 0 - 2 years, while 51% is between 2 - 5 years. Taking into consideration the cost of acquiring a new bus for public transport purpose, this term of duration for the liquidity of higher purchase agreement is rather very short and therefore not conducive for the provision of effective public transport services in the city.

Using a typical example provided by a minibus operator during the field survey as our illustration of how this higher purchase agreement does not help the bus operator is provided. It has been observed that a mini bus meant for public transport costs 40,000: 00 (Naira) to procure in Lagos (1987 estimate). The bus operator has secured a higher purchase agreement for 4 years to liquidate the loan. In other words, the bus operator has to pay back to the bus dealer a minimum deposit of 10,000: 00 naira per annum, or about 850:00 naira per month. The bus operator, expects a daily target return of 40.00 naira from the bus crew. In essence, the bus operator expects his total income at the end of the month to be 40:00 X 30 days = 1,200:00 naira. (The bus operator's monthly income presented here, has assumed that the bus in use has been in good condition throughout the period of operation. It has also not taken into consideration cost of maintenance and servicing of the bus, fuel, tyre replacement and days when the bus is not operated, due to mechanical failure during bus operation or due to bus crew being inadvently absent and the bus cannot be brought to provide public transport service on that day). Furthermore, the bus operator is expected to incur any general expenditure meant for the bus from revenue derived for operating the bus. If these factors that can cause the bus operator not to meet the target monthly income are costed and taken into consideration, one will conclude that the private bus operator is actually operating under a difficult situation right from the on set, which is to say that it is quite impossible for the bus operator to meet up the higher purchase agreement entered into.

The above discussion reveal the circumstances under which the private bus sector perform their public bus services in the city. These operational difficulties which they experience, also show why many of them do not operate more than one bus at a time. Even though some of these operators could afford to buy more buses. It also accounts for why many of the bus operators are operating their services in the manner which public transport services are seen to be run in the city. Especially by the way of raising travel fare, short turning the bus, shifting bus route and general impatience of bus crew while operating the bus. In essence, by the time the higher purchase term of agreement is liquidated,

the bus depreciation rate will be severe, which is due to long operational hours, inadequate maintenance and careless driving. This again probably accounts for why buses used as public transport in the city have short life span.

This type of short term higher purchase or loan agreement is generally unhealthy to efficient public transport provision. Probably it is the recognition of the general implications of short term loans on public transport performance in the city that the government owned public transport corporation is normally accorded with a long term loan agreement. For instance, the Lagos State Transport Corporation (LSTC), was granted a long term loan in 1986 which extends for 25 years and LSTC is also not expected to start paying back its loan until after the first five years. This type of long term repayment scheme is not available for the private public transport bus system in Lagos, which again accounts for why public transport operators in the private sector are limited to one bus and punitive hire purchase term. In any event , what seems to be the principal factors responsible for bus operators having one bus, has to do with the cost of buying buses as well as the difficulty of getting easy access to financial assistance towards buying a bus and the problem of vehicle maintenance. Table 5.21

Table 5.21
COST OF BUYING BUSES (In Naira).

COSTS	SECOND HAND BUSES	%	NEW BUS	%
0 - 10,000	10	04	----	---
10,001 - 20,000	125	45	01	---
20,001 - 40,000	135	48	59	21
40,001 - 60,000	08	03	29	10
60,001 - 100,000	---	---	175	63
> 100,000	---	---	14	05

Number of operators = 280

SOURCE: Field Survey, (Bus Operators), 1987.

All these problems have been ommitted by the LSTC and where they have been reflected upon, their effects on the private sector . . is not mentioned or documented. The cost of buying a bus for public transport purpose in Lagos city vary according to the type of bus and the capacity of the bus. If it is a second hand bus, circumstances behind or surrounding the sale of the bus are also considered, and as well as the source of finance available for the purchase. For instance, if the source of finance for buying a bus is through the hire purchase agreement described earlier in this section, the bus to be procured is more expensive than any other source of finance.

Table 5.21. All these problems have been ommitted by the LSTC and where they have been reflected upon, their effects on the private sector sector is not mentioned or documented. The cost of buying a bus for public transport purpose in Lagos city vary according to the type of bus and the capacity of the bus. If it is a second hand bus, circumstances behind or surrounding the sale of the bus are also considered, and as well as the source of finance available for the purchase. For instance, if the source of finance for buying a bus is through the hire purchase agreement described earlier in this section, the bus to be procured is more expensive than any other source of finance.

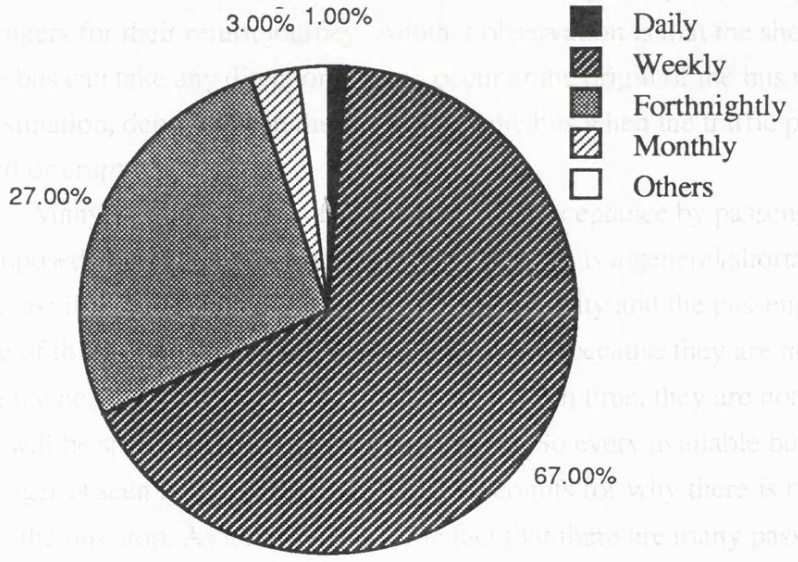
Bus maintenance: Apart from the general daily maintenance of the vehicle, routine servicing of vehicle is very important. It is because of the importance to bus maintenance that the bus owner has to take the vehicle to the Vehicle Inspection Unit of the Central Licencing and Parking Authority twice a year (every six months) for general inspection to ascertain whether the bus is still road worthy or not. The essence of this is to promote safety and reduce or minimise the danger of riding an ill- maintained bus by the passengers in the city of Lagos. The general routine bus service carried out by this study is presented in table 5.22 and figure 5.17, which shows that routine bus service is very frequent among bus operators. About 67% of the respondents conduct major routine bus service weekly and another 27% forthnightly. Bearing in mind the cost of routine maintenance and bus check up, the operator is unduly operating at a disadvantage situation.

Table 5.22
BUS MAINTENANCE ROUTINE.

ROUTINE	OPERATORS	%
Daily	03	01
Weekly	188	67
Forthnightly	76	27
Monthly	07	03
Others	06	02
TOTAL	280	100

SOURCE: Field Survey, (Bus Operators), 1987.

Fig.5.17 Bus Maintenance Routine (%)



In a crosstabulation by form of bus operators in relation to bus maintenance, the results shows that 62% of bus operators in the limited liability company category services their buses weekly as against 64% of the individual form of bus owners. Similarly 17% of the limited liabilty form of bus owners perform routine bus service forthnightly while in the case of the individual form of bus owners 29% perform theirs forthnightly. Even though there is no hard fact rule on when to perform routine bus servicing on a bus, however in a situation when

bus routine servicing is carried out weekly could not be said to be ideal for public transport operation generally. Some may probably see it as rather being maintenance conscious by the bus operators, rather it is the effect of quick bus depreciation, strains and stress which the bus is being subjected to by the two forms of bus operators that accounts for the frequent checks.

5.4.5 The Bus Crew System: Conventionally, there are four main issues generally embracing bus crew system these are; (i) The driver of the bus (who is also the owner of the bus); i.e. owner operator, (ii) the driver of the bus (who is not the bus owner); i.e crew driver, (iii) the bus conductor and (iv) the motor mechanic.

It is important to state here that discussion on the motor mechanic category of the bus crew system will be excluded in this study even though it will be mentioned where necessary in this discussion. The discussion on the bus mechanics is being ommitted because there is no private bus operator interviewed for this study that has its own bus garage which enables the bus owner to carry out repairs on the vehicle when and where necessary. What the bus operator does is to take the bus to any private garage for repairs when the need arise for it. In the case of the bus driver who is the owner of the bus, he determines the modality of bus operation; such as when to raise the travel fare, short turn the bus, and frequency of bus service, when to stop daily operation, and the number of passengers to carry at any point in time (carrying capacity). He also hires the bus conductor, who is expected to be paid on daily basis. Also on the other hand, if the bus driver is not the bus owner, he receives operational directives from the owner of the bus. Such operational directives mainly centres round monetary returns which the bus owner expects the driver to deliver at the end of the day's bus operation, routes which the bus should ply and general warning about careful driving and to avoid the law enforcement agents along the bus route. It is the bus driver that looks for the bus conductor to assist him in the process of fare collection. In some cases, bus owners have provided conductors for their drivers. While some of the bus owners have acted as bus conductors themselves. Major reason for this is to reduce loss in revenue and to monitor how effectively the bus is being used for public transport purpose in the city.

There is no formal type of employer / employee relationship existing in the private bus business in Lagos. Even the bus operator licenced as a limited liability company does not provide any formal employment for their bus crew, and because of the informality in employment relationship between, the bus crew and the bus owner, (conductors for instance have been dismissed without

prior knowledge or warning for any offence commited and on the part of the driver or conductor, deleberate damage being inflicted on the bus as a retaliatory measure to the bus owner). All the private buses sampled for this study and used for public transport business in the city, make use of bus conductors for public transport in Lagos metropolitan. The bus conductor's pre-occupation is to shout the destination of the bus and also to collect bus fare from passengers, efficiently and promptly. At times the conductor is the owner of the bus and under the capacity of the owner he directs the bus operation. As discussed in chapter three, because bus routes are not legible easily, bus conductors often shout the destination and route which the bus is operating. The private public bus in metropolitan Lagos operates long hours and in operating these long hours, it becomes difficult for one driver to run the bus throughout the day. Therefore a shift system has been evolved in the private bus operation system in order to cope with the long hours of bus operation in the city. An average daily shift system is eight hours. The first shift starting at 05.00 - 13.00 hours and the second, starting from 13.00 - 21.00 hours. The shift system operated in the city by bus operators can take various forms. Whatever the form of shift system adopted by any operator, the pressure is on the bus since it is still the only vehicle involved or used throughout the whole process of shift system. The driver and the conductor are expected to run one shift and hand over to the second shift crew team of the bus. During this period, the driver and the conductor of the first shift for example, are expected to have made enough revenue from travel fare for the bus owner, as well as for the driver and the conductor. Enough money to meet the amount agreed upon (between the bus crew and the owner) to be handed over to the bus owner at the end of the shift, also to make enough money to pay the bus conductor who collects its wages on daily pay and the bus driver himself. This has become so because the bus owner do not pay salaries to the bus crew and the bus crew are expected to have made enough bus trips to cater for their own salaries. (This also applies to the other shift).

In some cases the bus driver and the bus conductor changes position or responsibilities and thereby continues on the next shift. However, this is a situation whereby two drivers agrees to work together. (i.e. they swap seat and duties and the conductor of the morning shift, will become the bus driver of the late shift and vice- versa). In some other instances, a bus driver leaves one bus at the end of a shift only to resume almost immediately in another bus for the next shift. From this discussionabout the shift system and how it works in Lagos metropolitan, a lot of implications for public transport efficiency and

safety can be drawn. For instance, the bus is overused if it is the same bus that is used for the two shifts. The drivers and conductors might be worn out and tired especially if it is the same crew that operated the bus in the early shift that is still operating the bus in the late shift. (in other words, fatigue comes in which generally affects the level of judgement of the driver while operating the bus on the road).

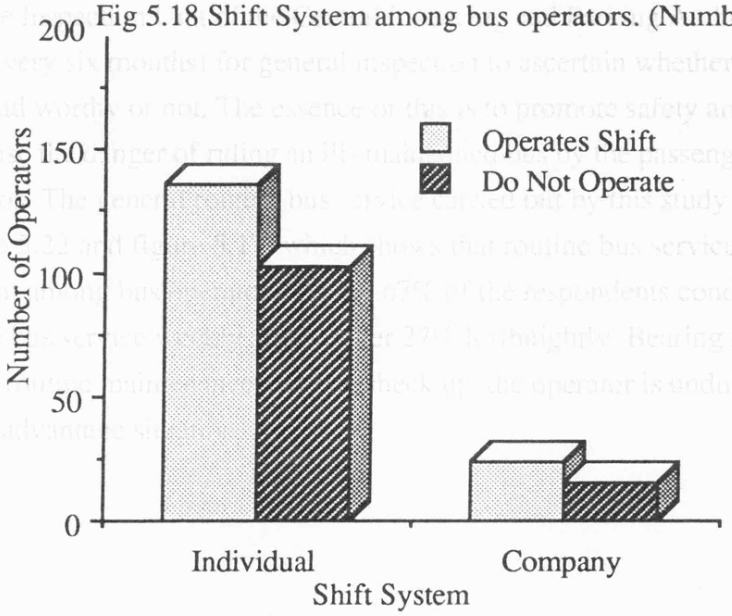
Table 5.23

SHIFT SYSTEM.

OPERATORS	YES	NO	TOTAL
Individual	136	103	239
%	57	43	100
Limited Liability Company	24	16	41
%	60	40	100

YES : Operate shift system
NO : Do not operate shift System
SOURCE: Field Survey, Bus Operators), 1987.

Fig 5.18 Shift System among bus operators. (Numbers)



This also leads to higher depreciation rate of the vehicle and higher cost of maintenance, and equally leads to accidents and bad driving resulting from stress and tiredness. A survey on the shift system conducted for this study,

reveals that 57% of the individual category of bus owners operates shift system with their buses and almost the same proportion of the limited liability company bus owners (60%). (Table 5.23 and figure 5.18). Some of the reasons provided by the bus owners for not operating shift system in Lagos include; an attempt at prolonging the life span of the vehicle by not over using the bus, some does not want any other person to drive the bus for fear of lack of care and for effective monitoring of the bus. Operators holding this view is dominated by the owner-operator in the individual category of bus owners. One wonders how an owner -operator work shifts. He does this simply by operating its bus when he feels like. Such as operating the bus during peak hours only or morning and later in the evening. The only difference between this type of shift is that the owner operator is still the main driver while in the case of the other forms of operators, it is another set of bus crew that operates the bus entirely during change in shift. Whereas, those operating the shift system is mainly dominated by the urge to make more money to pay off the hire purchase agreement which they have entered into, and also to earn more revenue from public transport business when it is still possible to do so. In any case, the entire private bus crew system in Lagos can best be described as an informal sector in terms of labour employment, and it is more important to examine how revenue generated from operating the bus are not stolen or taken away by the crew or a member of the bus crew, since finance is very vital to bus operation.

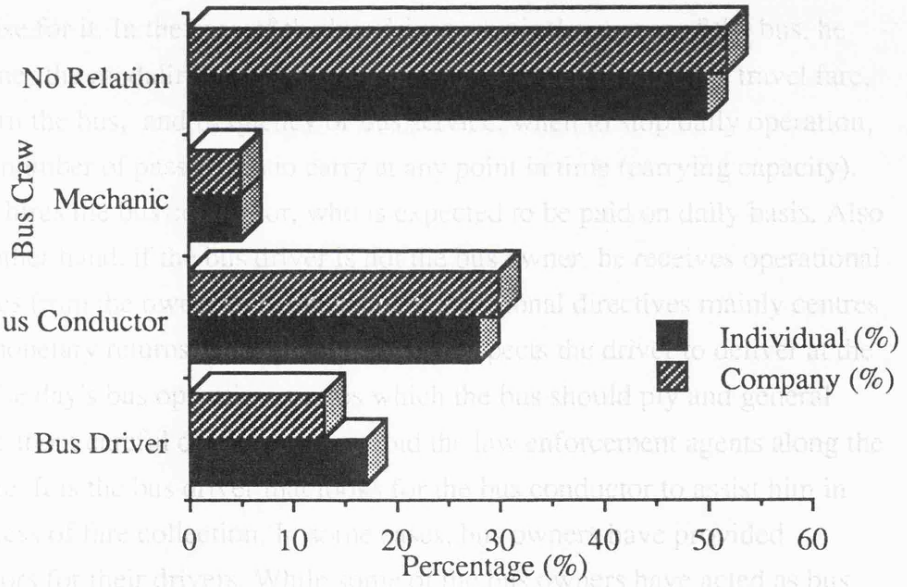
The survey, examined the relationship between the bus crew system and the bus owners in order to assertain the degree of relationship (family ties) between them. This enquiry is further necessary since many observers assume that a substantial number of bus crew have kinship relationship with the bus owner. Which is attributed to an attempt on the part of the bus owner to ensure that revenue are not lost. The following analysis arising from the examination, shows that 50% of the entire bus crew in the individual category of bus owners have family relationship with bus owners or operators, which is characterised by 17 % of the bus drivers, 28% of the bus conductors and 5% of the bus mechanic. While in the other category of bus owners (limited liability company), 48% of the bus crew in the category have family relationship with the owners of the vehicles. This comprises of 13% bus drivers, 30% bus conductors, and 5% motor mechanic having family ties with the owners of buses. In other words, 52% and 50% of the crew do not have family ties with the bus owners in the limited liability category and the individual category of bus owners respectively. Table 5.24 and figure 5.19.

Table 5.24
BUS CREW KIN SHIP (RELATIONSHIP)

BUS CREW	INDIVIDUAL	%	COMPANY	%
Bus Driver	41	17	O5	13
Bus Conductor	66	28	12	30
Mechanic	12	05	02	05
No relationship	117	50	21	52
TOTAL	239	100	40	100

SOURCE: Field Survey, (Bus Operators), 1987.

Fig. 5.19 Bus Crew Relationship with Owners



Even though the study reveals that 50% and 52% of individual and limited liability company forms of bus owners respectively do not have closer family relationship with bus crew, further examination of the survey shows that some of them have been introduced to the bus owner by a trusted friend or by a member of the owner's family.

The study have subsequently come to suggest that there is more socio-cultural dimension in the use, and recruitment of bus crew by the bus owners in this sector. This form of informal organisation of labour employment is based

on mutual trust and socio- cultural intricases which have come to support the growth of the private sector in public transport provision in Lagos city over time.

Method of Bus Crew Payment: The bus crew are not paid by any formal method of earning wages, hence, they are employed and expected to earn their wages through informal means. The bus driver and the bus conductor are expected to earn their wages from operating the bus for the bus owner. They do not earn any fixed amount of wages. When the bus crew starts operating a shift, they are expected to run the bus in order to make more revenue from travel fares which they charge passengers using their bus. The revenue derived is expected to meet three requirements; namely, (a) the bus owner's expected monetary return, (b) the bus conductor's daily wages (per shift), and (c) the take home of the bus driver. (d) and fuel consumption.

Relatively, the bus conductor's daily pay is determined and fixed at the start of the bus business. However, the conductor have some additional monetary rewards for over loading the bus and in a situation whereby the driver is not vigilant enough, the bus conductors are known to have defrauded extensively. On the other hand the bus driver have no fixed salary. What the driver gets is determined by the excess of money left after deducting the wages of the conductor and the bus owner. This might account for why the bus drivers are very impatient and reckless on the road and a pointer to bad driving habit.

5.4.6 Problems of Private Bus Operation: The problems discussed hereafter, are those problems provided by the private bus operators in Lagos as affecting how they operate. They may share similarities with some of the problems that generally affects public transportation in Lagos as discussed in chapter three. But they are in no way repeating those issues earlier raised.

The bus operators agree in principles that the public transport services which they provide is very poor (i.e. private bus operator's ratings of bus provision in Lagos city) because it is unconventional. That their services are poor, is supported by 64% and 63% of the individual and limited liability category bus owners respectively. The operators believe that they are doing their best under the kind of situation which they have found themselves to be

operating public transport system in Lagos metropolitan. (Table 5.25).

Table 5.25

OPERATORS RATING OF PUBLIC BUS SERVICE.

RATINGS	INDIVIDUAL	%	COMPANY	%
Poor	153	64	25	63
Fair	67	28	08	20
Fairly Good	01	0.5	---	---
Good	01	0.5	---	---
Others	17	07	07	17
TOTAL	239	100	40	100

SOURCE: Field Survey, (Bus Operator), 1987.

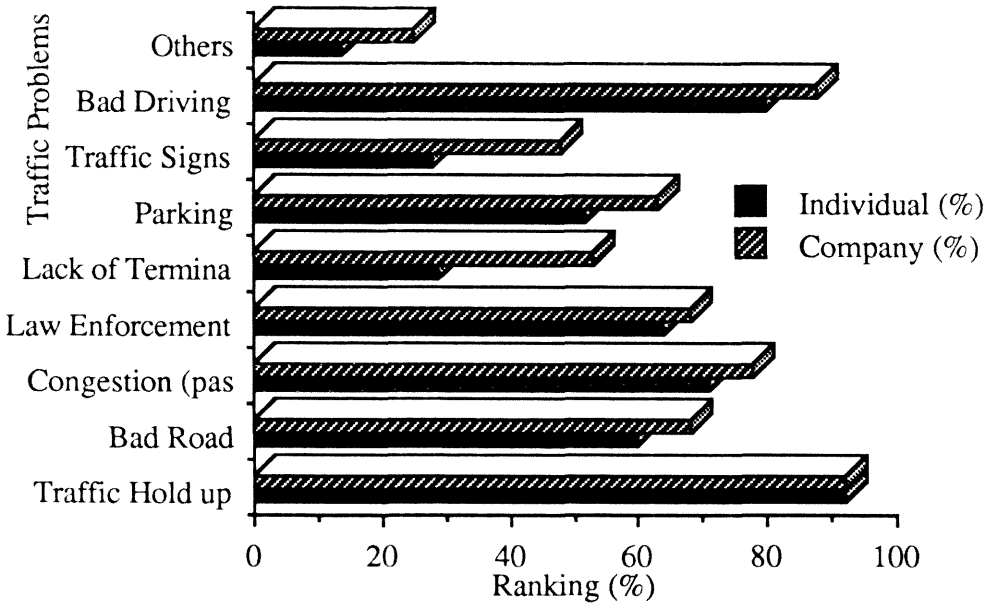
One particular bus operator discussed extensively how the government have never assisted them in the course of operating the bus service even in midst of harsh economic situation. However this is quite regretable that despite the important role which bus operators in the private sector play in the economic sustenance of the city little has been done to help them. However in order to establish the problems which the operators encounter in providing public transport services in Lagos, the survey conducted for this study provided operators to be interviewed with some major traffic problems observed in the city and were asked to rate them as they may affect their public transport operation and service delivery. 90% of the respondents experience one form of traffic problem in the city, and out of this 90%, experiencing one form of problem, traffic hold-up is the main dominating problem. This problem of traffic hold-up represents 99%, which is closely followed by bad driving 87%, overcrowding in the bus as well as at the bus terminals or bus stops accounts for 77%, law enforcement agencies equally takes a share of 70% of the respondents traffic problems. There are some differences in the pattern of response between the two forms of bus operators or owners in their perception of the traffic problems experienced in the city of Lagos as shown in table 5.26 and figure 5.20.

Table 5.26
TRAFFIC PROBLEMS EXPERIENCED BY PRIVATE BUS OPERATORS.

TRAFFIC PROBLEMS	FORM OF BUS OPERATORS			
	INDIVI-DUAL	%	COMP-ANY	%
Traffic Hold-up	219	92	37	92
Bad Road	143	60	27	68
Passenger Congestion/ Overloading/ overcrowding	169	71	31	78
Law Enforcement.	153	64	27	68
Lack of Bus Stops/ terminals	69	29	21	53
Parking	124	52	25	63
Traffic Signs	68	28	19	48
Bad Driving	191	80	35	88
Others	33	14	10	25

SOURCE: Field Survey, (Bus Operators), 1987.

Fig. 5.20 Ranking of Traffic Problems Among bus Operators (%)



Apart from the similarity in their experiences with the problem of traffic hold-up, a lot of variations begin to show up in the other traffic problems encountered by the two forms of private bus operators in the metropolitan. (figure 5.20). The private bus operators also provided some suggestions and measures that could be taken to improve their participation in public transport operation of the city. The measures provided for this study by them are based on their personal experience in running their buses for public transport business. Some of the measures suggested are in line with effective conventional public transport operation. These suggestions provided by the private bus operators will be examined in chapter seven of this study.

5.5 CONCLUSION.

This chapter has revealed a complex system of private public bus operation in the city of Lagos, which shows that the present level of private bus operation and performance in the public transport system of the city of Lagos cannot be said to be ideal. One important revelation of this chapter is that it can be improved or corrected since the basic reasons why operators in this sector operate their services in the manner are revealed in this chapter. Positive government intervention is needed especially in the manner which the bus crew are employed in this sector and the avenue which they are expected to earn their wages as well, methods of bus financing is also punitive and harsh on the operators. It is this short term required for hire purchase liquidity that accounts for much about the manner which operators in this sector perform. Again, this chapter in particular and this study in general have so far succeeded in providing

and applying some of the basic tools that are necessary to initiate drives towards achieving an improved private bus performance in public transport operation of the city of Lagos and show they can be applied. Finally, it is through the basic understanding of how the private bus system or the private sector public transport bus system operates in the city that their poor performances can be ameliorated.

"The Nigerians, habitually struggle for space in a public bus, even when such a mad rush is uncalled for, because he is not used to having things in the easy way".

Chiji Emuchay. (NAPETCOR, Vol. 8 No. 2, 1987. p. 14).

CHAPTER SIX

QUALITY OF PUBLIC BUS SERVICE.

6.1 INTRODUCTION.

Understanding the quality of bus service provided by public transport operators in the private sector will be grossly inadequate and incomplete, if not unreliable without considering the users of services which they provide. In examining the quality of bus service offered to the public transport passenger, by the private sector in metropolitan Lagos, the following specific issues will be focussed at in this chapter; (i) The socio - economic and demographic characteristics of passengers using bus services provided by the private sector in the city. Such emphasis will be on age distribution, income levels, occupation, tribes / ethnics, and level of education. (ii) The elements of a journey which was discussed in chapter four of this thesis will be used to measure the quality of service which the bus users enjoy in Lagos. Hence, issues to be highlighted by using this concept will include bus time tabling schedule, access time, waiting time at bus stops, travelling time on the bus and access time at the destination of the bus passenger will be discussed. Furthermore, the use of designated bus stops and terminals, route completion or truncated journey and frequency of private bus services will be raised in this chapter. (iii) The fare system which the private sector operators adopt and the manner all the issues of fare has been resolved in the city by them will be examined. In other words, discussion will include matters relating to how fares are charged, and collected from passengers. (iv) Finally, the public transport problems which the bus passengers encounter in the use of private public transport bus, will be discussed as well. In order to discuss the above issues raised, the study conducted a questionnaire survey on the bus users. (appendix 6). The manner which the questionnaire was administered to the passengers has been discussed in chapter four, and the series of questions for which answers have been provided will be used to assess the quality of private public bus service in the city of Lagos.

It is very important to explain what is meant by the term 'Quality' and how it will be used in this chapter. Generally, the term quality as used in the case of bus service in this thesis, implies the attributes and characteristics that are common to public transport services operated by the private sector in Lagos, which again exhibits, the degree of excellence which their public transport bus possesses. There

are conventional ways through which the quality of bus services can be measured. These measures will be used to examine the quality of bus service operated by the private sector in Lagos. Some of these indices, have again been discussed in chapter four where the conceptual issues adopted for the study were reviewed.

6.2. SOCIO-ECONOMIC CHARACTERISTICS OF BUS PASSENGERS.

The demand for transport derives from the needs of people to travel from one place to another to carry out the activities of their daily lives. Many studies as indicated in chapter one have been carried out to show how demand for movement can be affected. Some of the most significant factors in the socio - economic and demographic category which affect the use of public transport are the characteristics of households making the journeys, income level, car ownership, family size and structure, density of residential development and the location of work place. Although these factors can be discussed in isolation as highlighted hereafter, in practice they are highly interrelated in the influence which they have on the use of public transport and modal choice. The essence of this section therefore is to bring into light the demographic and socio - economic aspects of private public bus passengers in the study area as well as using the socio - economic characteristics of the bus passengers to explain certain issues that emanate from the survey findings. More important is that, highlighting the socio - economic dimensions of bus passengers in the study area helps to substantiate how public transport generally and public bus transport in particular of the city has been affected by the manner which their services are operated.

6.2.1 Age Distribution: Table 6.1 indicates the age distribution of bus users in Lagos metropolitan, and the information revealed by the table shows that 173 or 62% of the passengers interviewed, are within the 15 - 25 age group. This age group, represents the class with the highest representative of bus passengers using buses operated by the private sector in the metropolitan city. This age group which is followed by the 26 - 40 age cohort, represents 73 or 26% of the bus passegers interviewed. (figure 6.1). However, this table, suggests that users of public transport bus operated by the private sector is more youthful. Since the number of users fall considerably with increasing age. There is a considerable variation between the age distribution of the different categories of bus users interviewed for this study. As the bus users are more predominantly young group of people. The pattern of age distribution exhibits here, is suggestive that some kind of selectivity is occuring on the part of bus passengers. For example, the low percentage rate of the 5 - 14 and 41 - 60 age cohort suggests that they lack the energy (in terms of physical strength) needed to struggle for bus at bus stops or

terminals and unwillingness to rush for bus in order not to get hurt in the process. And in contrast, a greater percentage of the private public transport bus passengers fall into the 15 - 25 age group which is generally assumed to be part of the active working class category of the city. It is this group of (15 - 25 years) that dominates the demographic characteristic of the city. Hence, the survey results are similar to the age structure of the city.

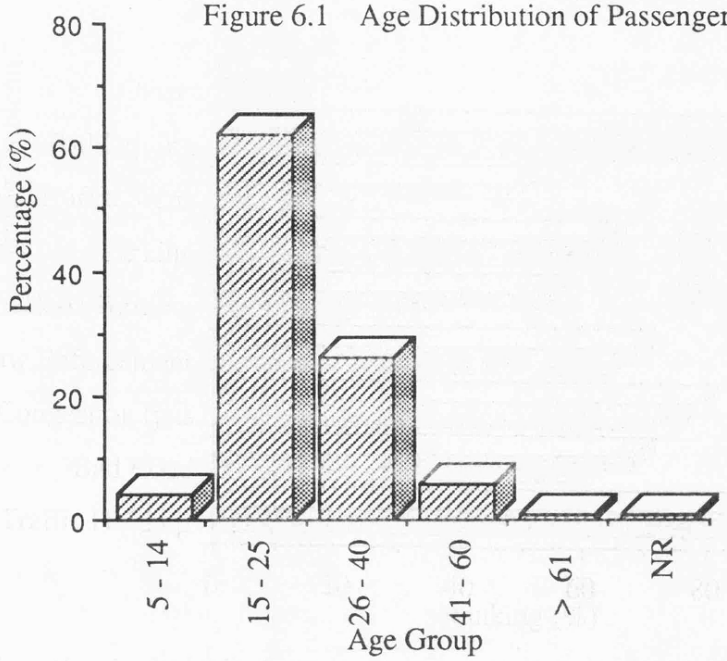
Table 6.1

AGE DISTRIBUTION OF BUS PASSENGERS (Years).

AGE GROUP	PASSENGERS	%
5 -14	11	04
15 - 25	173	62
26 - 40	73	26
41 - 60	18	06
61+	03	01
No Response.	02	01
TOTAL	280	100

SOURCE: Field Survey, (Bus Passengers), 1987.

Figure 6.1 Age Distribution of Passengers



6.2.2 Income Level: Generally, what people earn have tremendous effects on the mode of transport they use. It also raise the issues of travel costs and affordability. Furthermore, the level of income again affects the number, frequency, and mode of trips made by bus passengers as established in chapter one. Table 6.2, shows the income distribution among passengers using public transport bus operated by the private sector in Lagos. In this table 6.2, 127 or 45% of the bus passengers interviewed earn less than 1000 naira per year. While, 70 or 25% of them earn between 1,000 and 2,000 naira per annum. (figure 6.2). In other words, about 70% of the passengers interviewed for the study earn less than 2,000 naira in a year (in Nigerian currency). This table (6.2), further suggests that the higher the income, the higher the tendency for people not to make use of private public transport buses. Because as it has been revealed in figure 6.2 that the number of respondents belonging to each income category adopted for this study declines as the income level of each category rises. The findings revealed by table 6.2 and figure 6.2 are similar to earlier studies carried out in Lagos by the Master Plan Research Unit of the Lagos State government in 1976. Which is suggestive that the trends has not yet changed. For instance, the Lagos Metropolitan Master Plan survey of 1976, shows that in 1976, 33.8% of those employed in the informal sector of the economy are earning less than 510.00 naira per annum. Another study, more recent than the Master Plan survey of Lagos carried out by the Federal Capital Development Authority, in 1978, gives an annual earning of around 1,764.00 naira in the public or formal sector and the modern private enterprises of the city's commerce and industry. On the other hand, 50% of them earn less than

1200 .00 naira per annum. Another factor may be due to the fact that little has been done that can cause any change in trend over the years

Table 6.2

INCOME DISTRIBUTION OF BUS PASSENGERS.
(in Naira).

INCOME LEVEL	PASSENGERS	%
0 - 1,000	127	45.3
1,001 - 2,000	70	25.0
2,001 - 5,000	64	23.0
5,001 - 10,000	18	06.4
> than 10,001	01	0.30
TOTAL	280	100

SOURCE: Field Survey, (Bus Passengers), 1987

One important indicator or factor that might help to explain the continuous patronage of the private bus services in the city is because the income of the bus passengers which they carry is very low. (many of the passengers earn below the national average as discussed in chapter two). Taking into consideration the low level of income earned by the respondents to this study, coupled with sharing the income among other various needs, one could begin to appreciate its implications for bus patronage or why they keep on using the private bus despite the manner which the private bus operators provide their bus services. However the ability to pay for a journey by public bus affects the number of trips, and the mode of transport to be used in the journey. It is observed that in Nigeria, there is a national policy on minimum wage which an employer must pay its employees. In the public sector, this amount is 1,500 naira per annum and in most cases it is much more higher in the private sector.

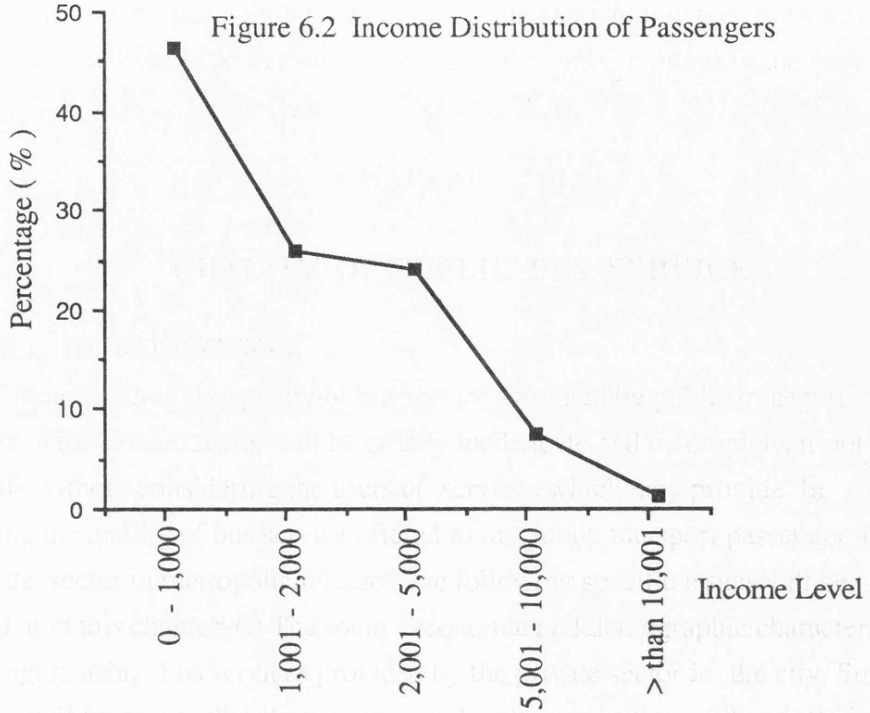


Figure 6.2 Income Distribution of Passengers

However, table 6.2 for example reveals that more than two-thirds of the passengers interviewed earn less than the national minimum wage, but the presence of students in this survey respondents have some effects in exaggerating some of the findings, but nonetheless, from the qualitative interview conducted for this study, it was found out that the degree of distortion cannot be that much especially the income level of passengers using private public transport buses.

6.2.3 Tribe / Ethnic: This section, focuses on the level of bus usage within each ethnic group in the city. The three major Nigerian tribes are used to highlight the level of bus usage within each tribe in the city and the result of the survey is shown in table 6.3 and figure 6.3. Nigeria is a multi- lingua nation with so many ethnic languages. However, English language, stands clear as the standard national language. There are three principal Nigerian languages namely the Hausa speaking tribe found in the northern part of the country, the Ibo speaking tribe located in the eastern part and the Yoruba tribe also found in the south - west part of the country. Lagos City, is located in the south west of the country which therefore places the city spatially in where the Yoruba speaking tribe is

predominantly found.

Table 6.3

LEVEL OF BUS USAGE WITHIN THE MAJOR ETHNIC GROUP

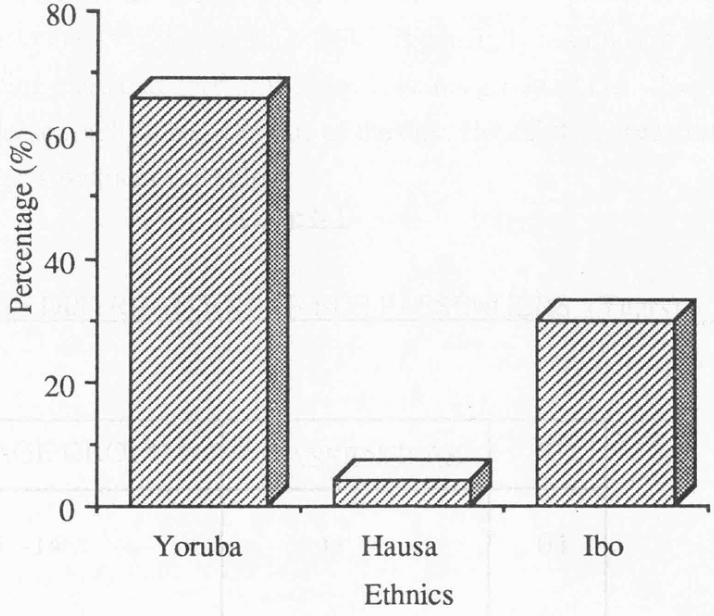
ETHNIC	PASSENGERS	%
Yoruba	186	66
Hausa	12	04
Ibo	82	30
TOTAL	280	100

SOURCE: Field Survey, (Bus Passengers), 1987.

In Lagos city, the presence of ethnic groups in it, can be viewed from the use of public transport bus by ethnicity, even though it is not a strong indicator for highligthing the degree of their presence in the city. Table 6.3 reveals that the presence of the Hausa speaking tribe using private public transport bus is the least in the city, which is represented by 12 or 4.3% of those interviewed. It suggests that the hausa group, do not use public transport services operated by the private sector. On the other hand, it also indicates that the hausa speaking tribe in the city probably have there own means of personal movement.

On the whole the general attitude of the Hausa group as derived from qualitative interviews carried out for this study, is that very often this ethnic group live together as a small community group in an area within the city known locally as 'sabo' in Nigeria. In this community, the hausa people seeks to have their works and homes around the community which they have set up in the city. Such places where they are predominantly located in communities in Lagos include, Sabo at Yaba, Agege, Obalende and Ijora. In these places listed with the exemption of Agege and Obalende, do not fall in the area where the surveys were conducted. Again many of the hausa present in Lagos are petty traders with their stalls found along bus stops and besides many major office complexes. This probably accounts for why many of them might have been missed out during data collection for this study.

Figure 6.3 Bus Usage among the Major Ethnic Groups



On the other hand, the Ibo speaking tribe using public transport services operated by the private sector, in Lagos represents 82 or 30% of the passengers interviewed for this study. The major factor responsible for the greater patronage of bus services operated by the private sector among this ethnic group seems to be the general attitude of the Ibo group towards trade and commercial businesses which compel them to use public transport all of the time.

The Yoruba speaking tribe dominates bus usage in the city. It accounts for 186 or 66% of passengers interviewed for the study. This is probably responsible for why the bus operators often communicate with passengers using their buses in Yoruba language. This is not to say that all the public transport operators in the private sector are of the Yoruba ethnic group, or even to suggest that the use of the Yoruba language to communicate with passengers is as a result of general level of education, which according to this suggests that it might be very low and poor. However, the use of Yoruba Language by bus operators to communicate with passengers in Lagos, is because this ethnic group is the dominant one. By Communicating with passengers in this dominant local language make a greater number of passengers to be aware of the intricases of bus operation, such as travel cost, when a passenger wants to stop and the destination of the bus, just to mention few examples. However, it is the use of this local Yoruba language that aided by improving the quality of data derived for this study from the survey.

6.2.4 Occupation: In this discussion, the private sector is distinguished from the self employed as provided in the questionnaire administered for this study

(appendix 6). The group being refered to in the survey as private sector are the modern private sector economy made up of limited liability companies such as Lever Brothers Limited, Kingsway Stores limited and the P. Z. limited. While the self employed can be categoried as the informal sector where the size of the activities which they perform is extremely low. Such examples are the petty traders, the road side motor mechanics and casual workers.

An analysis of the occupation of public transport passengers using buses operated by the private sector in Lagos highlights that over a quarter of bus passengers work in the public sector or for the government, while 19% of them work in the private sector. (Table 6.4 and figure 6.4). In table 6.4, it is shown that 77 or 28% of bus passengers work in the public sector while 54 or 19% of the passengers interviewed for this study work in the private sector. The percentage share of bus passenger engaged in self employed job is 10% or 39. This is to say that the number of self employed passengers using the bus are low when compared with the private or public sectors counterpart. However, one facinating result is the high response emanating from the 'others' category found in the classification adopted by this study for highlighting the occupational structure of bus passengers, which shows that 81 or 29% of the respondents are in 'others' category. The reason for this is that some of the respondents interviewed for this study are students. This is why the category dominates. Nevertheless, it is necessary to examine the reliability of results presented in this table 6.4. The number of bus passengers working in the public sector, as revealed by the study can be said to be low because of the timing of the survey. Which implies that some of the passengers who work in this sector have been missed out. They have been missed out because some of them would have resumed work before the survey actually commenced. Again, the category representing the bus passengers working in the private category, equally seems to be low because some employers in this category often provide staff buses for their employees, which invariably reduces the number of passengers or users from this group. The low representation of the retired category (table 6.4) in passengers using public bus operated by the private sector which is 3 or 1%, can be related to the view presented earlier in this chapter that there seems to be some selectivity in age and in the use of public buses. Hence, passengers who are old do not often use private bus services because of the energy and strength it requires to enter a bus in Lagos and this they lack. The fact that over 28% of bus passengers work in the public sector and 19% are in the private sector is not an overall reflection of all these trends in Lagos pattern of employment. It also co-exists side by side with shortage of skilled and trained manpower in the city.

Whereas about 8.5% of bus passengers are unemployed and also quite a large

Table 6.4

OCCUPATIONAL STRUCTURE OF BUS PASSENGERS

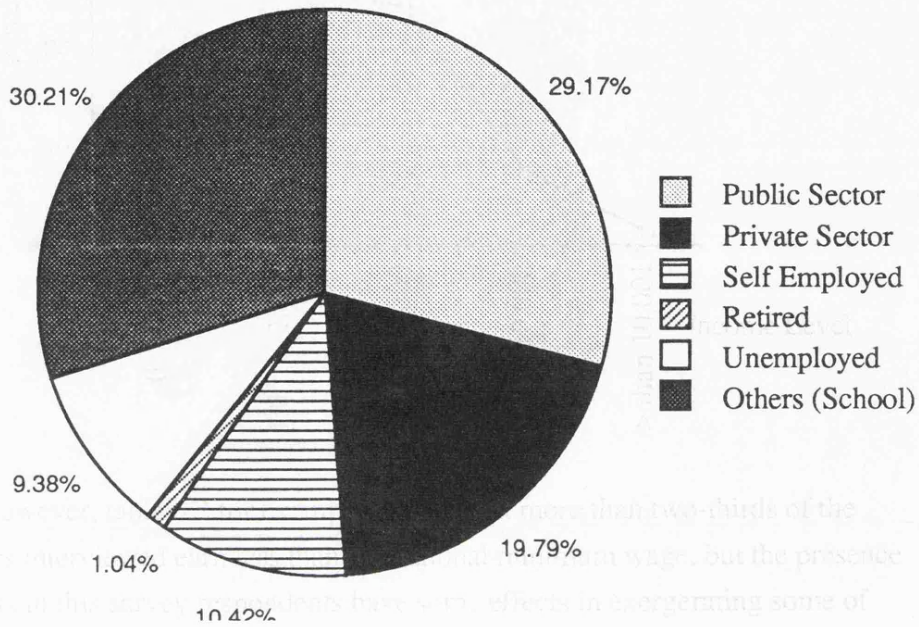
OCCUPATION (SECTOR)	PASSENGERS	%
Public Sector	77	28
Private Sector	54	19
Self Employed	39	10
Retired	03	01
Unemployed	24	09
Others (school children)	81	29
TOTAL	280	100

SOURCE: Field Survey, (Bus Passengers), 1987.

fraction are unemployable because they are still in school. One thing that could be said to be common among bus passengers in the city is the low level of income which they all earn and taking into consideration their income level, reflects the probable ideal or appropriate mode of travel which they can afford is the public bus which is the cheapest mode of public transport travel that is readily available for them in the city. It is necessary for this study to point out that recently and probably because of the mobility hardship experienced by their employees, some government establishments and parastatals like the Federal Ministry of Information, The Nigerian Ports Authority, The Central Bank of Nigeria Limited, Nigerian National Petroleum Corporation and the private modern sector such as Union Bank Nigerian limited, Lever Brothers Limited, Cadbury Nigerian Limited, and University of Lagos Staff Bus have provided staff buses to transport their staff or workers from home to work place and return. This again suggests for the varying effect in the occupational distribution of bus passengers shown in table 6.4. Also the self employed category must be viewed with caution because during the field survey, the timing of the survey may not have provided for a proper representation

of this category since many of them have to wait until the office rushing hour period is over which infact does not coincide fully with the timing of the survey. The various time of the day when this survey took place has been enumerated in chapter four.

Figure 6.4 Occupational Structure of Passengers (%)



6.2.5 Education: The level of education attained by bus passengers using public transport buses operated by the private sector is presented in table 6.5 and figure 6.5. This table shows that 162 or 58% of passengers using public buses operated by the private sector are educated up to ordinary level standard. Furthermore, it suggests that over two thirds of bus passengers are not educated beyond secondary school level. This further supports the results revealed by the income which the passengers earns. Since the passengers have low level of education, the wages they can get from the jobs they are employed, is limited to the level of their education which they have attained. However, bus passengers with more than ordinary level standard of education are declining with higher level of academic attainment. Hence, bus passengers with ordinary national diploma are 53 or 19% , while those with degrees are 29 or 10%. In other words, the level of education of bus passengers seems to be an important indicator for measuring the use of public transport bus service operated by the private sector in Lagos.

The general impression, revealed here by the table is that the higher the level of education attained, the tendency is for such people not to make use of public transport bus especially those buses operated by the private sector. This is further supported by the fact that holders of Higher National Diploma (HND) and

Universities accredited degrees (eg B.Sc equivalent and higher degrees) are given car loan as incentive by their employers to buy their own personal car. (This has recently become very unrealistic since the economic situation of the country after 1986 does not make it possible). Even though the policy providing for car loan as an incentive still persists in the country, the cost of buying a car at the moment is very expensive and no establishment (be it in the public or private sector) can afford to fulfil its car loan obligation to their employees. Probably, their inability to meet this obligation is responsible for the growing importance of staff bus provision in Lagos metropolitan.

Table 6.5

LEVEL OF EDUCATION OF BUS PASSENGERS.

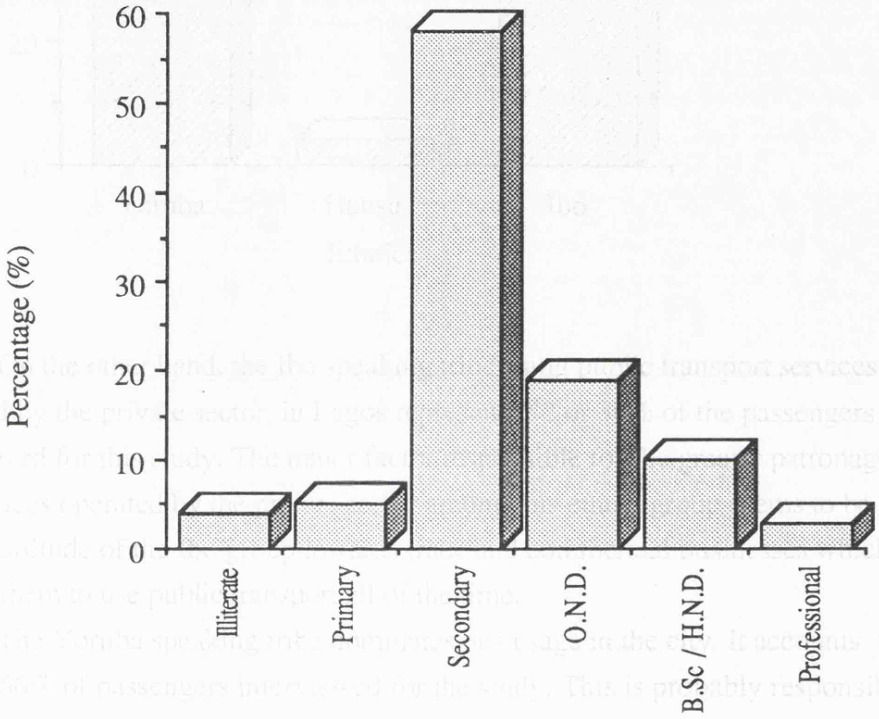
LEVEL	PASSENGERS	%
Illiterate	12	04
Primary	14	05
Secondary	162	58
O.N.D.	53	19
Unversity Degree/ HND	29	10
Professional	10	03
TOTAL	280	100

SOURCE: Field Survey, (Bus Passengers), 1987.

Lagos state, is one of the most educationally disadvantaged states of the country (Lagos State Master Plan, Vol.1, 1980), and the educational attainment of bus passengers provided in table 6.5 seem to have further justified the assertion even though comparisms cannot be carried out in this study about the situation in other Nigerian states. The view presented above can be supported by the fact that over 67% of the bus passengers interviewed have less than ordinary level equivalent and 4% are illiterates. The passengers regarded as illiterate are those that cannot read and write in English language. However, the percentage of illiterates (4%) revealed by the survey findings show that illiterates are under represented among bus passengers. There are reasons to say that it should be higher than what

the survey finding has demonstrated here. In Lagos, the age group of the illiterates tend to be older and need to travel less. For instance, many of the illiterates are over 60 years old in the city. Unfortunately, this age band is underrepresented among the bus passengers interviewed for this study. In other words, this age group defficiency have accounted for the low percentage of bus passengers who are illiterates as provided by the survey. Moreso, when the national average puts the percentage level of Nigerian illiterates far more higher (19%). (The 3rd National Development Plan 1975 - 1980).

Figure 6.5 Level of Education of Passengers



The low level of education among bus passengers is attributeable to the characteristics of Nigerian rural - urban migration (Fapohunda, 1977, Afolayan, 1978 and Orubuloye, 1982), whereby many migrants flood the city in search for job opportunities. Many of these new comers to the city life have low level of educational qualification, such as ordinary level qualification which makes it more complex and difficult for them to get adequate job and as such ends up being unemployed or learning trades in the informal sector of the city's economy. (Ayeni, 1983). Moreover taking into consideration the low level income of bus commuters in the city, it suggests that the level of educational attainment cannot be anything but a low one. In Nigeria, level of education is a function of income that can be earned as well as the choice of public transport mode that can be used. Hence, the level of education of bus commuters is generally low in the city with

fewer exemptions. In essence, it is possible to postulate that the higher the level of education in Lagos city, the higher the possibility in reducing the number of bus passengers because of the fact that as soon as people qualify with higher degrees the benefits of a car loan facility and car allowance pay tend to encourage people to acquire their own personal or private vehicle. This view is greatly supported by the decline in the number of people using private bus with increasing level of educational attainment in the survey. But other factors such as migration will still make the demand for public transport bus services in the city very keen and higher, hence reducing the impact which people with higher qualification have exerted for opting out of public transport patronage.

6.2.6 Household Size: One of many very vital information that are required for effective and reliable public transport planning is the household size and its characteristics. It is important because it enables us to know for example, the number of people in a household, and how they commute. Table 6.6 and figure 6.6 show the household distribution of passengers using bus services operated by the private sector. It shows that 138 or 50% of bus passengers come from household sizes that range between 5 - 8 persons. Followed by household size with less tha 4 persons.

Table 6.6

HOUSEHOLD SIZES OF BUS PASSENGERS. (persons)

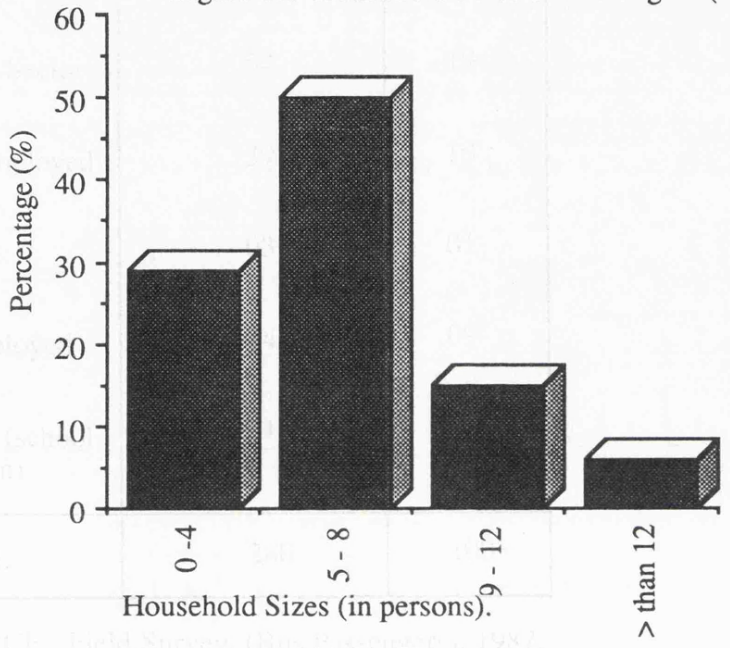
HOUSEHOLD SIZE. (persons)	PASSENGERS	%
0 - 4	82	29
5 - 8	138	50
9 - 12	41	15
> than 12	17	06
TOTAL	280	100

SOURCE: Field Survey, (Bus Passengers), 1987.

This represents 82 or 29% of the respondents. However, in table 6.6, bus passengers whose household size is between 9 - 12 persons is 15%. The household size, is expected to have effects on the use of public transport by raising the demand

for it. Since the general norm is that passengers with higher household sizes tend to rely on public transport. This is particularly true among the 5 - 8 household band where 50% of the bus passengers come from. The general observation revealed in figure 6.6 about household sizes of 9 - 12 and greater than 12 categories, has to do with the fact that fewer families have more than eight persons in their household in Lagos. (Fapounda, 1978).

Figure 6.6 Household Sizes of Passengers (%)



Household family circumstances are considered to impose constraints on travel behaviour. Heggie, (1978), argues that in attempting to describe travel behaviour, it is important to take into account of the stage in the family life cycle reached by the household. The basis of taking into account of the stage in the family life cycle is that each stage exhibits distinct travel characteristics which defer markedly between groups and are consistent within groups. The characteristics of the household are therefore highly considered to be important determinants in travel behaviour. Heggie, (1978). This does not necessarily imply public transport. Hence, the average household is extremely adaptable in responding to changes in public transport circumstances which should be taken into consideration in any transportation planning analysis.

6.3 ELEMENTS OF A JOURNEY.

The more important issue of this survey, is to understand the demand for public transport . One such way of doing this is to analyse the elements of a journey; which is determined by :- (i) origin of journey e.g. from home office, shop etc; (ii) Walking time and mode of reaching the bus stop (from origin of journey to

the bus stop); (iii) waiting time at the bus stop; (iv) Waiting time in getting another bus if the journey has been truncated; and (v) the final destination of the journey.

All these (i - v) highlighted above, combined together to form the bus passenger's journey time of reaching its final destination. It is this that people with personal car use as comparism in order to determine whether to use their personal car or not when making decisions over a proposed journey. As earlier discussed in chapter four, the concept of element of a journey which can be used to highlight some of the quality of bus services provided by public transport bus operators is introduced hereafter for highlighting the quality of bus services that are provided for bus passengers in Lagos metropolitan by bus operators in the private sector. In Lagos metropolitan, there is no quality control mechanism for measuring quality of bus service that is currently being provided or that can be provided by private bus operators in Lagos.

6.3.1 Origin and Destination of Journey: It is important to highlight the origin of journey of bus users in Lagos city, and the classification of the origin of journey has adopted seven categories. To achieve this, the survey data generated for this discussion shows that 99 or 35% of the respondent's journey originates from homes, 61 or 22% from workplace. (Table 6. 7).

The results of the survey are similar to studies carried out by Ayeni, (1976) and Olayemi (1972) in Lagos concerning origin and destination of journeys in the city. But the only difference is that their studies concentrated on the entire Lagos population, whereas, this one only focused on the population of public private bus users in Lagos. it must be emphasised at this stage that the results of this discussion that follows, will be slightly affected by the time of the day when the survey was conducted. This is so because some of the categories adopted for examining the origin of journey, seems to predominate. Whereas should the survey have taken place during a different time of the day such occurence in the affected categories would have shown slight changes. An example, is the journey to work and school which predominate during the morning survey and the journey to home or social which again dominate the afternoon interview. Another factor that may affect the results of this discussion has to do with the geographical location of the survey points selected for interviewing bus passengers. Because at such locations some particular type of movement seems to be the commonest. Very often, origin of journey cannot be discussed in isolation of their destination. The destination of passengers journey is discussed hereafter.

Table 6.7

ORIGIN OF PASSENGER JOURNEY

ORIGIN	PASSENGERS	%
Home	99	35
Work	61	22
Education	44	16
Shop	34	12
Hospital	07	2.5
Social	24	8.5
Others	11	04
TOTAL	280	100

SOURCE: Field Survey, (Bus Passenger), 1987.

The destination of journey made by passengers falls within the same categories adopted for the origin of their journeys discussed above, which is represented by table 6.8. The destination of bus passenger journey is dominated by the home ward journey, accounting for 132 or 48% and to work 49 or 17.5% of bus passengers. Just as the origin of their journeys is predominantly categoried under home (35%) and Work (22%).

Table 6.8

DESTINATION OF PASSENGER JOURNEY.

DESTINATIONS	PASSENGERS	%
Home	132	48
Work	49	18
Education	27	10
Shop	33	12
Hospital	09	03
Social	21	08
Others	05	02
TOTAL	276	100

SOURCE: Field Survey, (Bus Passengers), 1987.

Table 6.9 and figure 6.7 shows spatial representation of origin and destination of bus passengers as they traverse over the survey points used for this study. There are also very marginal variations in the other categories of destinations derived for this study when compared with the origin of journeys which bus passengers make in the city. (Appendix 7).

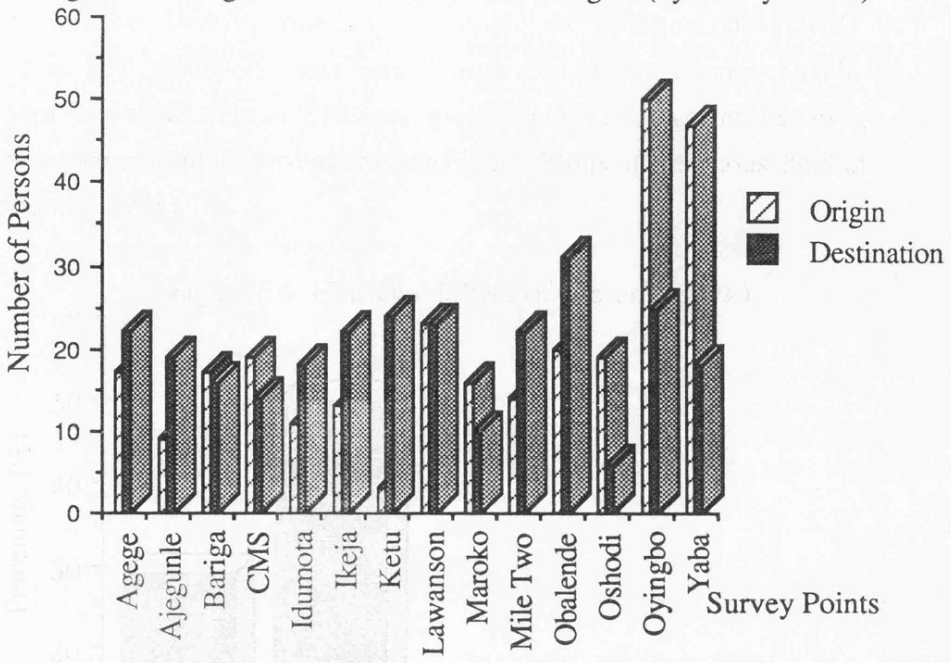
Table 6.9

ORIGIN / DESTINATION OF PASSENGERS
(BY SURVEY POINTS)

	ORIGIN	DESTINATION
Agege	17	22
Ajegunle	09	19
Bariga	17	16
CMS	19	14
Idumota	11	18
Ikeja	13	22
Ketu	03	24
Lawanson	23	23
Maroko	16	10
Mile two	14	22
Obalende	20	31
Oshodi	19	06
Oyingbo	50	35
Yaba	47	18

Source: Field Survey, (Bus Passengers) 1987.

Figure 6.7 Origin and Destination of Passengers (by survey Points)



6.3.2 Modal Access and Walking Time / Distance: The survey identified four main forms of modal access to the bus stop used by bus passengers in Lagos metropolitan. Walking dominates this group accounting for 64% at origin and 73% at the destination of the respondents. In other words between 36% at origin and 27% at destination of public bus passengers do not walk to any bus stop before they can have a bus ride. Further enquiries revealed that 29% use bus to gain access to the bus stop at the origin of their journeys, while 7% is by taxi to their destination. (Table 6.10 and figure 6.8).

The obvious reason being that the passenger is not in a hurry to get home.This very respondent spends about an average of two naira and fifty kobo per day on journey made from home to work and cummulatively fifty naira per month on travel between his home and work place this monthly expenditure on public transport by the respondent represents about 10% of his monthly salary. Whereas, for those relying on the use of private or personal cars do so as part of a household with access to a car. They have come down at the bus stop to join the bus because this is where their journeys begins to separate. (i.e the member of the household and the car owner).

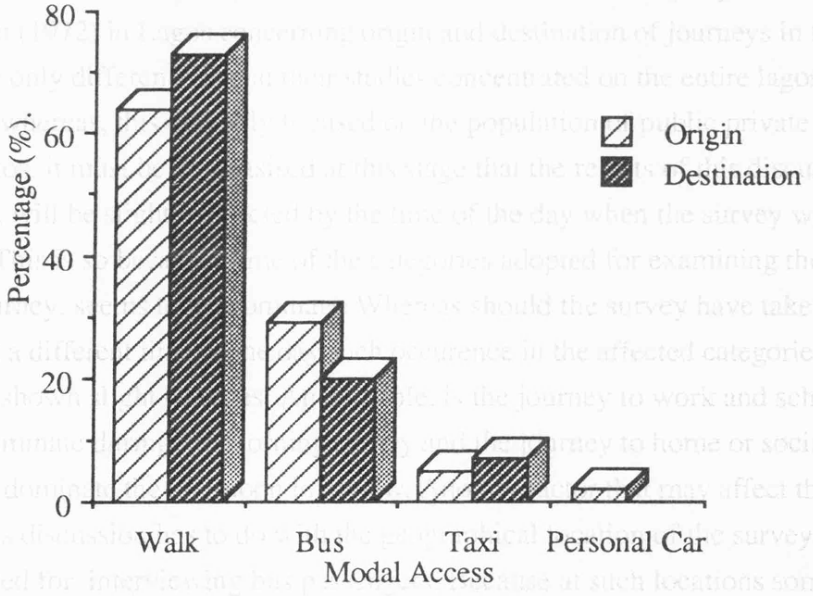
Table 6.10

MODAL ACCESS TO BUS STOPS.

MODAL ACCESS.	ORIGIN		DESTINATION	
	PASSENGERS	%	PASSENGERS	%
Walk	180	64	204	73
Bus	80	29	57	20
Taxi	15	05	18	07
Personal Car	05	02	---	---
TOTAL	280	100	279	100

SOURCE: Field Survey, (Bus Passengers), 1987.

Figure 6.8 Modal Access of Passengers to Bus stops.



What can be deduced is that the use of taxi as a modal access is unpopular among bus users and this can be attributed to the low income earned by many bus passengers. Again, the very low number of bus commuters using the taxi do so because of their higher income wage advantage which can afford them the use of a taxi. Also the low percentage share of modal access to the bus stop by the use of personal car is as a result of substantial absence of vehicle in many household. And

for those who rely on walking from the origin of their journeys to the bus stop as their main modal access, the survey investigates further about the duration of walking (measured in minutes). One major observation during the survey is that quite a large number of respondents could not estimate the actual physical distance they traverse, but could visualised the number of minutes it takes then to walk from their origin to the bus stop.

Again, care must be taken in accepting and using the time estimates provided by respondents in this study. Even though their timing seems to be fairly reliable, the fact remains that many of the bus passengers indicated that they walk along the bus route and when they see an approaching bus they wave it down. If the bus is not yet full up, it stops for them to hop in. This might account for why the walking time provided by many of the bus commuters interviewed to be shorter in some cases. (Table 6.11).

In the survey, five classes have been adopted for classifying the walking time. The longest walking time being above 20 minutes, representing 3% of the bus commuters (table 6.11).

Table 6.11

WALKING TIME TO BUS STOP.
(in minutes).

Walking time	ORIGIN		DESTINATION	
	Passengers	%	Passengers	%
0 - 2	11	06	05	02
2 - 5	67	37	67	33
5 - 10	70	39	92	45
11 - 20	26	14	35	17
> than 20	06	03	06	03
TOTAL	182	100	205	100

Source: Field Survey, (Bus Passengers). 1987.

This is a serious matter for public transport which implies that some people have to walk for over twenty minutes at any point in time to get to a bus stop. This puts a big question on the concept of accessibility often justified by the state government in infrastructural provision in Lagos. At the destination of their journey, (where the passenger alights from the bus) the study reveals that the modal access is again absolutely dominated by walking, this is not to expect a

correlation between origin and destinations in aggregate forms because this is impossible. The percentage share of getting to the destination by bus and taxi have fallen when compared with its counterpart at the origin of journey. One observation is that the use of car as a final access to the destination has completely faded out of the modal access at the destination of journey by bus. Even though the percentage representation is small, the use of car as a modal access was observed at the origin of journey. This study is aware of the effect which the time of the day when such journey was made will have on the results and discussions highlighted above.

The general view arising from this highlight about the destination of bus passenger's journey is to reduce walking distance at the destination or move closer as much as it is physically possible for them to their final destination before opting out of the bus except probably where they have to take another bus in order to continue the journey. (Table 6.10). The survey also considered the walking time of getting to the final destination from the point of opting out of the bus at the final destination. The survey shows that majority of the bus commuters have to walk for between 5 - 10 minutes before reaching their eventual destination. Taking into consideration the difficulty of walking in Lagos, one might suggest that the duration of walking time between the bus stop and the final destination is not too long for the bus passenger to overcome in the city. (Table 6.11). One important finding which is demonstrated by journey by bus in Lagos metropolitan is the number of changes which commuters have to experience. The implication of this for public transport planning is great. It showns the complete absence and lack of bus route planning or inadequacy in bus operation planning. It equally highlights the absence of effective coordination of public transport activities in the city, because many passengers (25%) have changed buses in order to reach their destination

6.3.3 Waiting Time: It has been established that one of the major ordeals faced by public transport passengers generally is the waiting time, which implies how long is the bus passenger expected to wait at the bus stop in anticipation of using the bus. (Fouracre, 1978). In Lagos metropolitan, two types of waiting time can be identified (i) the single waiting time, which indicates that the passenger only has one waiting time from the origin to the destination of its journey. Such waiting time is at the bus stop where the commuter enters the bus for its journey; and (ii) The multiple waiting time. This is made up of a journey where the bus commuter has to break its journey in order to take another bus before getting to its final destination. This type of waiting time is often much longer than the single waiting time. In the case of Lagos city multiple waiting time is highly frustrating and inconvenient. In the survey gathered for this study, the waiting time at bus stops ranges between 0 - 25 minutes, with 35% within the 0 - 5 minutes range, 50%

accounting for the 6- 15 minutes category. However about 4% of the respondents have to wait for more than 25 minutes in order to get a bus for their journey. (Table 6.12).

Furthermore, for the bus passenger who has to change into another bus in order to get to its destination (truncated journey) experiencies another ordeal of waiting for the bus to arrive. Respondents belonging to this group seems to know the right place to opt out of the bus along the route so they can quickly catch a bus going to their destination on time. This is reflected in table 6.12, where less than 2% of passengers wait for up to twenty five minutes to get another bus. For instance about 59% of then wait for 6 - 15 minutes which is higher than the percentage of waiting time of the category at the beginning of the journey which was 47%. (Table 6.12).

Table 6.12

WAITING TIME AT BUS STOPS. (In minutes).

WAITING TIME (In minutes)	PASSEN-GERS	%	Waiting Time for Journeys involving Interchanges	
			PASSENGERS	%
0 - 5	98	35	29	30
6 - 15	140	50	57	59
16 - 25	30	11	10	10
>than 25	12	04	01	01
TOTAL	280	100	97	100

SOURCE: Field Survey, (Bus Passengers), 1987.

Some implications can be drawn from this discussion, firstly it suggests that the demand for public bus in the city of Lagos is greater than the available number of buses. Secondly due to passenger overloading of buses, seats and spaces in buses may not be available for passengers found in-between bus routes where there are two major bus terminals very close. An example is Oyingbo and Yaba or Tinubu / Idumota and Obalende terminals. Another implication is that because of the problem of getting access to a bus easily. It accounts for the regular scene at bus stops which is that of rushing and struggling for entry into the bus. (Emuchay, 1987 p.14).

6.3.4 Travelling Time: The study recognises the importance of the bus travelling time on the entire or whole elements of a journey. It is the time connecting the origin with the destination of passenger journey by bus. This can be described as the actual time spent by the commuter in using the bus, however, this study will not be focusing on the issue of travelling time because during the field work exercise, it was observed that none of the bus commuters could state categorically or precisely how long it takes them to traverse their journey. The most important aspect that seems to be more relevant to the commuters is getting a bus at the right time. But what really seems to emerge, is that most travel time by bus are longer and this is reflected in the arbitrary nature by which the bus operators raise the travel fare in order to cushion up a bit the financial loss they incur from the delay experienced along the bus route. Also, it is the short turning and route shifting common among bus operators which does not allow for this study to focus at it.

One of the major factors responsible for the inability of the passengers to estimate travel time is the unpredictable nature of vehicular traffic on Lagos roads as well as that of the bus operator. For instance, a bus operator may decide to short turn or shift route, all these irrational and unpredictable reactions makes it difficult for passengers to accurately respond their travel time. Constant minor accidents due to disregard for other road users and bad driving habit, road blocks and vehicle checking mounted by law enforcement agents to track down defaulters of vehicle registration documents, have made it difficult for bus commuters to estimate travel time. Furthermore, bus operators are irrational in the way their decisions are made, they may decide not complete the bus route etc without prior warning to the passengers. The study observes that passengers moving counter to the general pattern of traffic (traffic from opposite direction) have shorter travelling time on the bus. The general pattern of traffic movement in the city of Lagos is towards the Lagos island which is connected to the mainland by three main bridges as revealed in chapter three. The physical landscape of the city further contributes to the traffic problems because it limits the extent to which the land can be utilised to improve traffic movement in the city centre. Despite all these, the study recognise the importance of travel time as an integral part of the element of a journey and therefore vital to vehicular traffic and route planning. With all these issues surrounding the elements of a journey in the Lagos metropolitan, the study further attempts to examine the quality of services provided by the private public bus operator to bus commuters in Lagos, which is discussed later in this chapter.

6.4 FARE SYSTEMS.

One fundamental factor in the demand for public transport is the fare system that is adopted by the bus operators which include the manner by which travel fares are charged and determined by them and as earlier established in previous chapters, fare is a fundamental factor in the use of public transport and it has also been a source of major dissatisfaction for passengers using their services. In Lagos metropolitan, travel cost for using private public bus is not only unpredictable but also unreliable and therefore a passenger travelling by this mode does not know the actual travel cost of the journey until he enters the bus. For instance, in the survey gathered for this study respondents were asked whether the travel fare levied by the operator is in line with the official tariff, but their response show that most bus passengers are not aware how travel fare is determined and fixed in the first instance. Moreover, there is a general assumption among them that what they pay as travel fare for the journey is fixed by the bus operator. Some bus passengers emphasisied during the qualitative discussion with them, that even if they are aware of the approved travel fare there is little they can do to bring down the imposed travel fare since there are many other passengers ready to use the bus even at higher fares.

Nonetheless, 71% of the passengers travelling by private bus claim that the travel fare which they pay for the journey is the established or approved fare. But 28% of the respondents claim that the travel fare which they pay for bus services is not the approved travel fare therefore they are being compelled to pay additional fare by the bus operator. (Table 6.13).

Table 6.13

TRAVEL FARE

	PASSENGERS	%
OFFICIAL RATE	200	71
UNOFFICIAL RATE	80	29
TOTAL	280	100

SOURCE: Field Survey, (Bus Passengers), 1987.

Furthermore, findings derived through observational ride in some of the buses operated by the private sector, shows that bus drivers charge excessive fares on longer trips.Which means that passengers on longer trips are more likely to perceive the fares they pay to be excessive. This further suggests that passengers on

shorter trips do not often experience increase in travel fare. This is so because the bus operators often do not raise travel fare for shorter trips made by bus passengers. Moreover, passengers on routes where traffic jam is hardly felt do not experience any raise in travel fare. What this suggests is that the traffic situation is another factor leading to why operators do raise travel fare.

The study further attempted to find out by how much does the bus operator raises the travel fare above the approved fare for the journey, and according to results of the survey many operators do so for between 10 - 30 kobo above the normal approved fare depending on the bus route, the traffic situation and the distance traversed by the bus passenger using their services. Many of the additional fare are mainly 100% increase i.e. double the established fare. The bus operators see this additional increase as very little if they compare it with the cost of operating the bus. (Table 6.14).

Table 6.14

UNOFFICIAL TRAVEL RATE VARIATON. (In Kobo)

AMMOUNT (in kobo)	PASSENGERS	%
10	45	56
20	27	34
30	05	06
50	01	01
100	02	03
TOTAL	80	100

SOURCE: Field Survey, (Bus Passengers), 1987

It is quite necessary to establish why public bus operators in the city raise travel fare above the approved tariff. The bus operators do raise travel fare for the following reasons, many of which are known to the bus passengers. Almost all the respondents (94%) were prepared to attribute high fares to increasing maintenance costs experienced by bus operators. While about two thirds or (64%) of the passengers put the blame on petrol price increase. Again, 44% of the respondents

put the blame on shortages of buses, which enables bus operators to hike up travel fare. (table 6. 15 and figure 6.9).

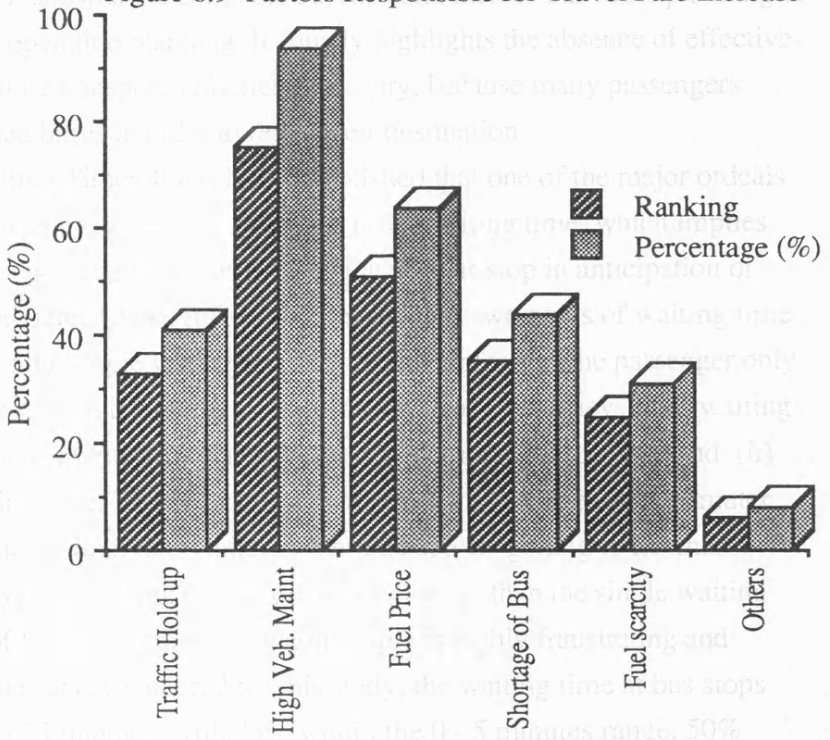
Table 6.15

FACTORS RESPONSIBLE FOR TRAVEL FARE INCREASE.

FACTORS	RANKING	%
Traffic Hold up	33	41
High Vehicle maintenance cost	75	94
Fuel Price	51	64
Shortage of Buses	35	44
Fuel scarcity	25	31
Others	06	08

SOURCE: Field Survey, (Bus Passengers), 1987.

Figure 6.9 Factors Responsible for Travel Fare Increase



Nevertheless, the bus operators have often claim that apart from the above reasons

for increasing travel fare, it is also used as a strategy for curbing demand for their services especially at bus stops where huge crowd awaits the bus to arrive.

6.5 ACCESS TO OTHER MEANS OF TRAVEL.

In chapter three, the issue of public transport provision in metropolitan Lagos was raised and discussed, which specifically emphasised the importance of public passenger transport by bus in the city. During an early discussion in this chapter, it was revealed that apart from the private bus operation, there are two other means of public passenger transport supply in the city, (i.e the government owned public bus service and taxi). Taking into consideration the general level of income distribution in the city among the city's population and using the income level of the bus passengers gathered for this study, it suggests that many bus passengers who earn low income cannot own their personal vehicle or use the taxi without feeling the crunch.

The bus passengers do make use of the government owned bus if one is available for them along their route since the LSTC does not provide local or feeder services makes many residential areas in the city cut off the main operating route of the LSTC buses, with the exemption of Victoria Island and Ikoyi island. To further confirm the hardship which passengers face, the survey revealed that quite a substantial number of the bus passengers interviewed do not have their own personal car or have access to one. For instance over 80% of the respondents do not have access to a car at all. This further confirms the earlier claim by Banjo (1986 p.9), that many of the people of the city rely on public transport service for commuting purposes. By this finding it suggests that many people of the city rely on the use of public transport service for making their journeys and therefore needs serious consideration in government attempts to easing transport hardship. This view becomes more acceptable when it is noted as mentioned in chapter three that the use of bicycle and motor cycle in the city is very dangerous and unpopular.

For those bus passengers with their own personal car but are unable to use it for this journey were further asked why the vehicle is not being utilised. Many reasons were provided by the commuters in this group and such reasons are enumerated in table 6.16 and figure 6.10.

The major rationale for not using the car being traffic jam along the route to their destination. This is not to say that using the bus will make the journey faster rather it makes it longer for them but they enjoy the pleasure of being driven and saved the psychological stress they would have undergone if they have driven in their car. Another reason is that some of them cannot drive (42%) and since their driver has failed to show up, the alternative for the journey is the use of public transport service of which the private bus is the most accessible to them for the

journey. The other equally important reason is fear of the car not to be stolen at the destination because the passenger knows that he cannot find a more secured place to park the car at the destination and as such cannot risk chances of taking the car to such a place.

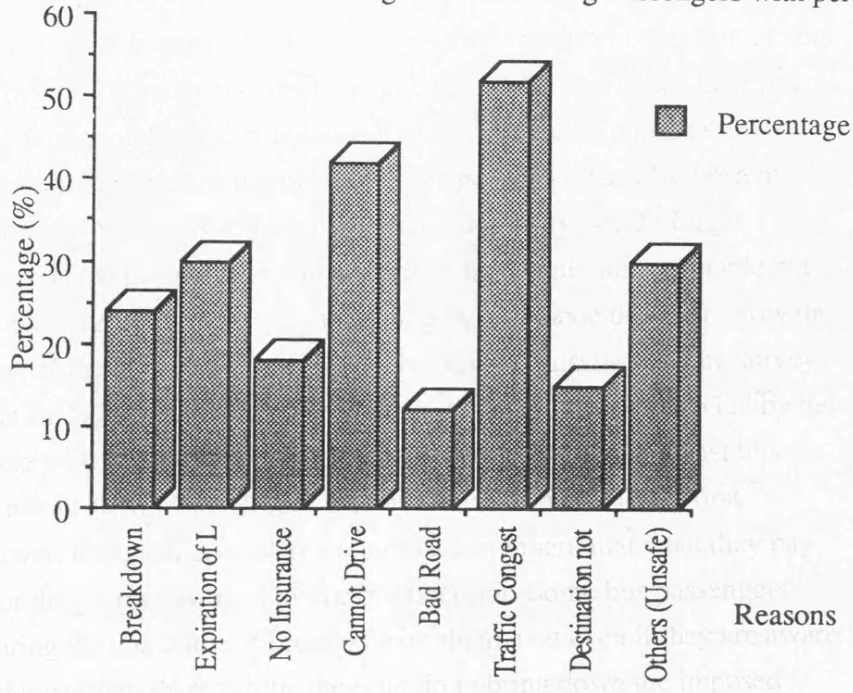
Table 6.16

REASONS FOR NOT USING THE CAR AMONG PASSENGERS WITH THEIR OWN CAR.

REASONS	RANKING	%
Breakdown	08	24
Expiration of licence	10	30
No Insurance	06	18
Cannot Drive	14	42
Bad Road	04	12
Traffic Congestion	17	52
Destination not accessible by car	05	15
Others (unsafe).	10	30

SOURCE: Field Survey, (Bus Passengers), 1987.

Figure 6.10 Reasons For Not Using The Car among Passengers with personal c



6.6 ASSESSING THE QUALITY OF BUS SERVICE.

There are several ways through which the quality of bus services can be assessed and in this section the assessment of the quality of bus service will be derived from the survey conducted for the study. Using the elements of a journey concept, the following assessment of service quality can be provided.

6.6.1 Time Tabling: There is no private bus operator in the city of Lagos providing a scheduled bus service and therefore there is complete disregard for or absence of time tabling in private bus operation in the city. Subsequently what operates as an alternative to scheduled bus service is that if a bus had just left the terminus or any major interchanging point, the next bus would have to wait for about 10 - 15 minutes before taking off. But if the competition is keen and there are many passengers along the bus route which is often the case, while the buses keep running along these routes chasing each other and trying to outrun the other bus along the bus route. This type of bus operation makes driving in the city more dangerous and risky, which leads to bad driving habit.

The essence of time tabling schedule for bus services is to reduce waiting time at bus stops as much as possible and to improve the quality of bus service that can be provided for bus passengers. But the survey derived for this study shows that the waiting time experiencied in the city by bus commuters seems not too long a duration to justify the need for such concerns in the city and can as well provide for the reason why many bus passengers are not aware of the need or implications of bus time tabling schedule and its associated benefits. The manner which the

private bus operation system functions in the city can well be expressed using the words of a bus passenger presented hereafter; "Every bus operator does their own thing, no regulation and if they exist it is only on paper, no monitoring of their activities except when the law enforcement agents are "broke" (i.e runs out of money). The bus driver stops anywhere along the route to pick up passengers, they abuse bus passengers, and they start bus operation when they like and stops operation when they want". In the absence of a time table schedule for bus operation in the city, an informal understanding seems to have emerged between bus operators and passengers that buses will leave a terminus or bus stop with their passengers when they are full or about to full and the bus driver is expected to be topping up more passengers as it gets to a bus stop along the route. When this is not done it implies that the bus crew are waiting for more passengers to enter the bus or the bus conductor has not given the bus driver the go ahead signal before commencing or continuing the journey. The major implications of adequate bus service scheduling has to do with the following issues, namely;

(i) Determining the frequency of bus service operation, which enables passengers living along the bus route to know when the bus will arrive and how long they have got to wait before another bus arrives.

(ii) Planning movement schedule: It is a common scene in the city of Lagos to observe bus passengers walking along bus routes. This is because the passenger is not sure when the bus will arrive. The absence of a movement schedule makes it difficult for passengers to plan their trip properly. Hence journey by bus in the city is dominated by speculations and hopes. Subsequently, a lot of time that could have been used for other pressing and profitable matters are wasted at bus stops. This again eventually, put a lot of pressure on time, which the passenger would have spent on other things which is now being spent at the bus stop in waiting for the bus to arrive. The absence of a bus time tabling scheme, further confirms the findings of Thomson, (1978) that people are seen to walking 2-3 hours before they reach their offices.

(iii) Speed of bus running: If bus passengers are aware of the time table of the buses in operation, it is believed that such passengers relying on bus service can determine how long the journey will take them assuming all other things remain normal. Hence, more time can be saved for other useful activities.

(iv) Reducing waiting time at the bus stops and terminals: If bus passengers are aware of the bus operational time table, they can plan their journeys well and also help to reduce their waiting time at bus stops. Because they will have to leave their homes when they know they are going to pick up a bus at a fixed time or there about. In the case of Lagos metropolitan where there are inadequate infrastructural

facilities for urban public transport, it therefore help to reduce risks and hazards on the roads, stress, tiredness and fatigue through long waiting time at bus stops and general protection for the hot sunny and often rainy weather conditions of the city.

(v) Duration of bus operation: Since there is no time table for the bus to operate and how to operate, there is the general breakdown in communications between the bus users and the operators. Because the bus operators are known to have withdrawn their bus from operation without prior notice and this shortfall has a lot of effect on the demand for public transport in the city. On the whole, the general purpose of time tabling in bus operation is to minimise unnecessary loss of time, reduce bus operational costs and reduce financial loss through inadequate bus system scheduling, hence, prolonging the life span of their fleets and also enhancing public patronage which help to sustain their public transport operations in a wider sence promotes economy of scale for the entire city.

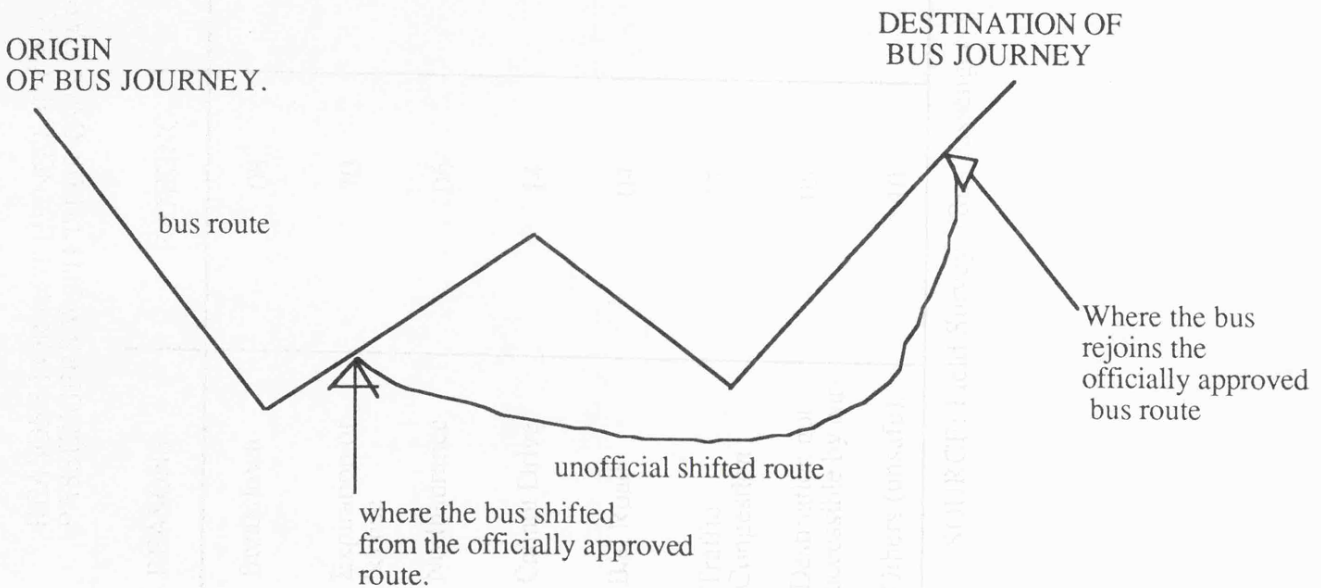
6.6.2 Route incompletion or truncating bus journey: The term route incompletion or truncating bus journey implies a situation whereby a bus operator decides not to reach the destination of its approved bus route. For example, a bus operator may be licenced to provide its public transport service, from Obalende to Yaba. When such operator decides not to reach Yaba when departing from Obalende, turning back the bus can be regarded as route incompletion or truncating bus journey. Route incompletion or truncating bus journey by operators in the city appears to be uncommon in the city of Lagos.The survey on bus passengers in the city reveals that only 5% of the respondents have experienced this problem. This is due to the fact that many approved bus routes in the city are characterised of short distances that does not support or encourage the need to do so. Again, the nature of the network system in many parts of the city equally contributes to the difficulty of truncating bus journey by bus crews. For instance, there are many one way systems in the city, and where one systems are defficient, the central verge (road divides) separating the main traffic from opposite directions are not only too wide for the bus to cross over but they are equally very high. Thus making it more difficult for the bus crew to turn back the bus once on this route. Instead of not completing the journey along the approved bus route, the bus crew have deviced their own method of bus operation to enable them to complete the approved bus route. The essence of route incompletion is to quicken up the bus operation especially its turn round to enable it make as many as possible turn rounds therefore gaining more revenue. The need for bus route incompletion is similarly due to deplorable traffic situation along the bus route which in turn slows down bus operation with subsequent effects on the overall revenue gains that can be accummulated for providing public transport service. What the bus operators or the

bus crew have devised to cope with the problem of traffic jam and reducing route incompletion is to raise the travel fare above the approved bus fare for the journey. As an illustration, the travel fare for the bus route between Ojota and Oyingbo for instance would have cost a bus commuter 30 kobo but because of the traffic situation which is bad along the route the bus crew will now raise the bus fare to 50 kobo in order to complete the journey. If this supplementatry fare is not acceptable to the bus passengers, the driver will announce to them that the bus is not going anywhere again and they should look for alternative means. Very often their requests to raise travel fare is not turned down. In other words, the bus operator raises the travel fare above the approved fare for the journey in order to complete the route rather than short turning the bus which ironically the city network system does not easily allow or permit. However, if the bus driver eventually decides to turn back the bus, and there are some passengers who have paid the additional fare to continue, what the driver does is to refund this additional fare to the passengers by paying them off.

Route Shifting: One fundamental outcome of the survey is the general practise of bus route shifting by operators. Route shifting is very common in private bus operation system of Lagos metropolitan in the city. Route shifting by private bus operator implies the complete abandonment of the approved bus route by the bus operator for another unapproved bus route. What the bus operator does is to follow a quicker route that might leads it to the destination of the bus from its origin. This means that the approved bus route which the bus is expected to follow from its origin to its destination is not observed throughout the bus journey. What the bus operator will do in this case is to inform bus commuters of any quicker route it intends to follow and passengers whose destination is not within this route are expected to come down from the bus. What the bus crew does is to try not to carry passengers whose destination falls within the cut off point along the bus route. (the cut off point along the bus route is where the bus route was diverted away from the approved route and where it re- enters the approved bus route again), which is diagramatically illustrated in figure 6.11.

Many bus passengers tend to support this system of private bus operation especially during traffic jam because it quickens up their journey time. To the bus passengers this is an added advantage of private bus operation for those of them who rely on its services in the city. Since the government owned public bus do not indulge in this habit of route shifting. Finally, the route shifting method used by private bus operators in the city, is common during the peak periods between the hours of 07:00 and 09:00 hours and 15:00 and 18:00 hours, and these periods

Figure 6.11



AN ILLUSTRATION OF BUS ROUTE SHIFTING.

coincide with when there are many vehicles on the city's network systems and the traffic situation is very bad.

6.6.3 In - Bus Travel: Travelling by public bus in the city of Lagos deserves closer assessment. The first major observation, is the alteration in the seating pattern of the bus. Instead of five passengers per row in a 'molue' bus (i.e big buses) for example, the general seating pattern in operation is six passengers. There is also the menace of the bus salesman, who has entered the bus for the purpose of selling his products to the passengers, also there is serious overcrowding of passengers in the bus and the general appalling bus crew / passenger relationship are some of the observations made during the field exercise for in bus travel.

The Bus Salesman; his manners are glib, gesticulation tailored, and his mouth is the ware. It does not realy matter what he is urging you to buy. It may be a new bar soap, a love po tion, or a book on family planning. It may well be a multivitamin syrup for babies, 'ogun isoye' a Yoruba medicinal preparation to make your child bright at school or 'ajidewe' a life renewal herbal concoction. The sales always begin in the same way, imagine having to travel by bus from Tafawa Balewa square to Oshodi. After paying your travel fares, you settle down to what you hope will be a quiet journey. You could have hardly settled down when you suddenly hear a dry cough and a loud clearing of the throat somewhere in the front of the bus. Very often they are well dressed. He does not carry any bag in his hands so as not to put any of his potential customers off. However his bag of wares is well tucked under his seat. The salesman always wear smiles and apologises. Words roll out of his mouth as if they have been tape recorded and for the first five minutes, he does not mention anything concerning his wares. By doing this he is intimating himself with the bus passengers as well as trying to attract their attentions to his side. The responses derived for this study about the bus salesman from the passengers can be classified into three groups. The first category, are those passengers frowning and grumbling in low tones to register their displeasure at the disturbance. This group of people will rather have a nap than listen to the salesman. Often belonging to this class are the highly educated bus commuters, this group easily sees through the man's many lies and false claims concerning his product. The second group are those who regard the salesman antics as an amusing distraction. Though they see through the man's lies and false claims they end up not buying his products. The third group are those who are always on the look out for such salesman in order to get a cure to one imagined ailment or the other. Among this group are those who will go to the extent of seeking the address of the salesman and further requests for specific herbal concoctions relating to their jobs

or problems. Further attempts was made by the study to examine the reactions of commuters to the activities of the salesman in the bus. One woman was one of those who quickly responded to buy a JANO soap (a brand of soap marketed in the bus). This woman insisted that she was in no way carried away by the polished sales talk of the salesman. According to her, she remembered that she has no soap at home to use and buying it in the bus will save her the trouble of going to look for soap in the market later. Another male commuter usually buy things in the bus because the goods which they sell are cheaper than those sold in the market. Another man said he has bought the soap in order to test the claim of the salesman that it could be used as a substitute for shaving powder. However, a young man in a suit dress looked obviously displeased at the scramble for the salesman products. "Does the bus salesman realised that he is nuisance to many bus passengers". The bus salemen do not see themselves as this because some of the passengers are pleased with them and they equally know that some passengers are readily against their activities. For example some bus crew operators who oppose to them do not allow them to enter their buses for the purpose of advertising their products. In other words, the presence of the bus saleman have both negative and positive effects on the bus commuters. However, in a well organised transport system such activity should be dissociated from and moreover in a conventional manner which public transport system is expected to be provided such activity should not be allowed to take place in a public bus in the first instance.

6.6.4 Bus Appearance: This is not a strong indicator for measuring the quality of bus service that is provided by bus operators to the passengers. However when the issues of bus safety, risks and hazards are considered then the bus appearance becomes a paramount indicator for examining the quality of services that are provided. Many of the buses used for public transport by the private bus operators in the city of Lagos are dilapidated vehicles. These vehicles have broken windows, and these windows leak during any rainfall, making the bus commuters to be wet in such occurence. Many of the buses also have their doors not functioning or damaged and as a result such affected doors cannot be closed, this enables some bus passengers to hang on the bus entrance.

6.6.5 The use of bus stops: Using data obtained on observation rides with the bus operators, it is obvious that stopping and using the designated stopping points is very common in the city's public bus service system, as well as in the use of undesignated stops. The buses stop at any point along the bus route to allow passenger especially those without heavy luggage to enter the bus, but more often equally allows them to come down on request by the bus commuter. This is the practise in all the routes where the observational study took place during the survey.

The idea of allowing the bus commuter to alight from the bus depend largely on the ability of the bus passenger to communicate with the bus crew using the appropriate language.

Allowing bus passengers in or out of the bus by the bus crew at undesignated bus stops indicate the magnitude of the competitiveness that exist among private bus operators for passengers in the city. It is a situation whereby one operator wants to out run the other bus operator. For instance between Ojota and Yaba bus route that contains ten official bus stops, the bus crew made seven unofficial stops using undesignated bus stops to allow passengers in and out of the bus. Four of these unofficial stops were to allow passengers out and three for passengers to enter the bus. (It must again be mentioned that the LSTC bus does not participate in this types of unofficial stops in operating their bus services).

However it most be made clear that the bus did not completely stop for the passengers to come down or enter the bus it only slowed down giving the passengers the choice to decide between whether to drop or enter depending on the agility of the bus user. During the use of these seven unofficial stops along the route chosen for this illustration only one female dropped out of the bus and none entered. This is because of the risk of jumping in or out of the bus in motion.

The bus commuters equally testified to the general willingness of the bus operator to allow them in or out of the bus any time along the bus route. But in some cases the bus conductor needs to be persuaded or informed in order to enable the bus commuter out of the bus at undesignated stops along the route. The bus conductor will in turn inform the bus driver by shouting 'owa' meaning there is someone about to come in or out of the bus. All the bus commuters attested to the general willingness of the bus crew to stop for them which one cannot enjoy from the use of the government owned public bus system unless the designated bus stop along the route is reached. Again, the frequency in the use of undesignated stops by the private bus operators in the city seems to vary with the time of the day. It is very common to see the bus crew allowing passengers to come in at any point during the off peak period and also willing to allow passengers to get out of the bus during peak hours operation. Despite the time variation observed in the practise it all depends on whether the law enforcement agents particularly the police are operating along the route. When such occasion occurs that the law enforcement are around the bus crews do not indulge themselves in the act of using undesignated stops. This is because it slows down their operation and meaning they will have to loose a lot of revenue and time through delays which have effects on revenue that can be derived. At times,they loose passengers especially, when the delay is becoming very unbearable for the bus passenger.

6.6.6 Fares: Ticketing methods of any type, do not exist in the private bus service in Lagos metropolitan. The main method of fare collection is by exchanged token. Again there is no preferential treatment or concessional treatment for elderly or school children in the fare charged for using the bus by private bus operators in the city as well. From the perspective of the private bus operator, in they are to provide these services highlighted above in the city they will incur series of additional operating costs which will have to be spread over the travel fare which as at now is controversial. For instance if they have to print tickets, passengers will be relunctant to pay additional fare to cater for this. Secondly, charging lower fare rate for school children and the elderly means they will be operating at a loss. Moreover since they do not derive any type of assistance from the governments there is no need for them to provide services that will be uneconomical for them. By doing this will run them out of business which will invariably make travelling in the city more difficult and problematic for passengers. Moreover, it is only in the LSTC that school children are given some elements of concessional treatment by charging lower fare and this is only when they appear in school uniform. So the bus operator believe that if they operate or provide concessional treament to school children some of their potential bus passengers especially those still falling within the school age can put on school uniform claiming to be students. In the case of LSTC the elderly are not even accorded any preferential treatment for the journey they make by using the bus, so why should the private bus operator. As regards the uncertainty surrounding whether the bus operator will reach the destination of the bus passenger, what many of the bus passenger do is to withhold the travel fare until the destination is reached or about to be reached. The rationale for this, rests on whether the bus operator will reach its destination or not.

6.6.7 Commuters rating of private bus service: The failure of the private bus service system to provide adequate level of bus services to passengers who rely on their operation leads to considerable dissatisfaction on the part of the public bus commuter. Over 95% of bus users are not satisfied with the services provided for them by the private bus operator. (Table 6.17). Using table 6.18, 84% indicates that the services which the bus operator provides for them are extremely poor while 14% could judge the service as fair and 2% as fairly good. Passengers stating that the services provided by the private bus operator as satisfactory (satisfied with the performance of the bus system) pointed to the availablity of their operation as a blessing because of its complementary role which it plays to the LSTC services. The opinion held by these group of respondents satisfied with the services of the private bus service draws us back to one fundamental question which is beyond the scope of this study 'what would have been the traffic situation of the city of Lagos

PLATE 14. An overcrowded Bus stop.

PLATE 15. An overloaded omnibus.

if the private sectors were not allowed to participate in public bus services in the city'.

Table 6.17

USER SATISFACTION.

	PASSEN-GERS	TOTAL (%)
SATISFACTORY	10	04
VERY UNSATISFACTORY	270	96
TOTAL	280	100

N = 280

SOURCE: Field Survey, (Bus Passengers) , 1987.

On the other hand those bus commuters not satisfied with the bus system emphasised the problem of overloading the bus with passengers, therefore making it unsafe for them, as well as the general behaviour of the bus crew particularly the bus conductor to the passengers, which is very unruly and rude. (plates 14 and 15). The bus passengers however were asked during the survey to indicate their major problems in the use of the private public bus system in the city, the following ranking results emerged as represented in table 6. 19 and figure 6.12. The passengers claim that the road is too busy and you come across many buses operating at the same time therefore demonstrating a time of high bus frequency and another time of low bus frequency. The buses are inadequately designed and constructed for the passengers they carry, but the inadequacy in the number of buses for public transport purpose in the city encourages overloading of passengers. Hence raising the risk in the use of the public private bus and overcrowding at bus stops. It is a situation whereby demand for public transport service is far greater than the supply of public buses needed to meet the demand.

Table 6.18

PERFORMANCE RATING OF BUS OPERATION.

RATINGS	PASSENGERS	%
POOR	228	84
FAIR	38	14
FAIRLY GOOD	06	02
GOOD	--	--
TOTAL	272	100

Source: Field Survey, (bus Passengers), 1987.

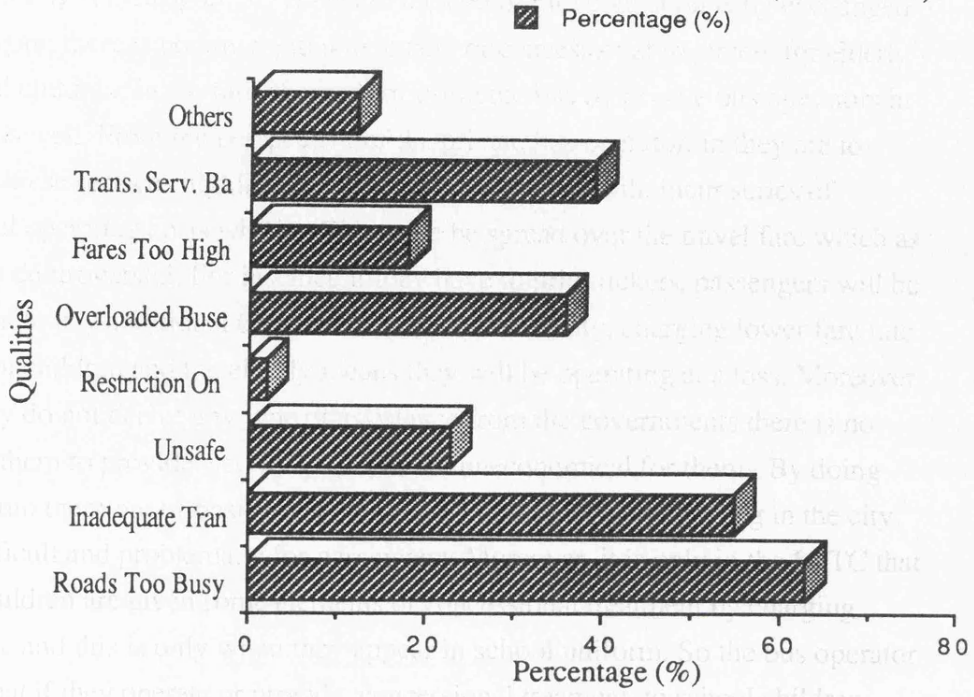
Table 6.19

QUALITY OF BUS SERVICE (USERS VIEW).

QUALITIES	RANKING	%
Roads too busy	175	63
Inadequate Transport facilities.	154	55
Unsafe.	63	23
Restriction on selected buses.	05	02
Overloaded buses.	173	36
Fares too high.	51	18
Transport services badly run	109	39
Others	34	12

SOURCE: Field Survey, (Bus passengers), 1987.

Figure 6.12 Quality of Bus Services. (user's View)



6.7 CONCLUSION.

There is a great necessity for instilling order into the present level of private bus service system in the city of Lagos. 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 private public passenger bus transport service 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 the socio - economic conditions of bus commuters in particular and the general economic conditions of the city which is deteriorating and becoming very poorer. For instance, many of the bus passengers earn very low income which does not permit them the use of other means of movement available in the city, even though such alternative services may be grossly inadequate and unreliable because they are expensive. Secondly, the quality of bus services provided by the bus operators is appalling and at the same time exploitative. However, this study recognises under what operational difficulties the bus operators undergo in order to provide a viable public transport service. On the other hand, the study sympathises with the captive bus passengers who has no alternative modal choice other than to accept the conditions imposed on them by the bus operator. Despite this pathetic situation, there is still room to strike a balance between the supplier and users of public transport buses in Lagos metropolitan. Again many of the bus operators

provide their services in an unconventional manner which public transport is not to be run. Such as not following an approved bus route, inflated travel fare, overloading of the bus with passengers, and adopting unschedule bus operating system.

Invariably, this chapter has revealed a catalogue of problems encountered by the bus passengers for using the private public passenger bus in Lagos. Such problems include; the general absence of time table which is surpose to ascertain when the bus is expected to arrive or depart, bus route shifting and incompletion of bus route, coupled with arbitrary imposition of higher travel fare on bus commuters by the operator. Further problems include, the negligence and non observation of the use of bus stops and low rating enjoyed within the circle of bus commuters, are all evident in this chapter and are pointers to low quality of bus services and the need for drastic and radical overhauling of the entire private public bus transport system in the city of Lagos is unquestionable.

" A healthy body needs a healthy circulation system and a healthy society requires a healthy transportation system, that is a transportation system which provides access for all".

Scheaffer, K. and Sclar, E. (Access for All. New York. 1980. p.7).

CHAPTER SEVEN.

DISCUSSION AND CONCLUSIONS.

7.1 INTRODUCTION.

The main purpose of this study has been to improve our understanding about how the private sector operate public transport bus services in Lagos Metropolitan. It is hoped that the findings and experience gained during the research may also be of great reference value to related studies. This chapter has two major emphases; The first is to summarise the findings of the thesis and to provide some recommendations and secondly to suggest the main direction where further research is needed.

7.2 RESEARCH FINDINGS / SUMMARY.

As revealed in chapters one to three of this thesis, studies on public transport in Nigeria and Lagos in particular are dominated by the activities of public transport operators in the public sector, with little focus on the private sector. This study has instead concentrated on public transport operations in the private sector, to bridge the gap of information between public and private transport operators in the city in particular and the country in general. We further discussed the quality of services which operators in the private sector provide for passengers relying on their buses.

For easy clarifications and brevity of the discussions that follows in this section, the research findings are categorised into four sub - headings as shown below.

(i) The situation of public transport in Lagos;

(ii) Organisation, regulation and control of public transport;

(iii) Operational characteristics of private sector public bus system;

(iv) The quality of private public bus service.

7.2.1 The situation of public transport buses in the city: The observation arising from this study is that public transport operation in Lagos metropolitan area will be dominated by buses in the city of Lagos for many years to come. This view is upheld because other modes of public transport have yet to be developed in the city. Furthermore, the economic situation of

the country and that of local government in particular, does not support any concrete investment in public transport because of inadequacy or absence of finance. Again, the physical characteristics of the city as revealed in chapter two, suggest that the city is not yet ripe for the development of alternative modes of public transport. For example, the city's underground water level is less than 15 feet from the ground level, which means that underground metro cannot be developed since it will be too expensive for the city to build. There are also problems with the lack of technology and manpower as well as an erratic power supply. As we all know, the energy supply for a metro operation should remain uninterrrupted, manpower for regular servicing of plants and equipment must be available, and also adequate finance from time to time for effective running of the metro. Since all these cannot be guaranted now, the bus mode will continue to dominate the public transport system of the city.

On the other hand, ferry services, serve small areas in the city only. The contribution of the ferry services towards reducing passenger hardship is further constrained, because most of the coastal adjoining land has been acquired and already developed. Hence, if the government wants to develop ferry services fully, these properties need to be demolished and the owners compensated. The cost for paying compensation alone will be too huge for the government to bear. Likewise, one would still want to explore the possibility of rail development, but the cost for destroying homes and paying compensation will again be great, given the accommondation problem in the city, so to demolish more homes for rail development would render more people homeless.

Another finding from the existing situation of public transport in the city concerns the demand for public transport, which in Lagosis linked with the unabated rural -urban migration. It is the rate of migration into the city that has further raised the problem of demand for public transport, in other words, the demand for public transport will continue to increase until stability is attained in the migration trend. Hence, we found the overcrowding and overloading of public transport buses particularly, when other modes of transport do not meet adequately the demand of these passengers and other modes are not developed. All this suggest, that public transport by bus will remain very popular and important in the city for quite a long time to come. Hence, there is all the more reason why it should be adequately planned for in the city. The study revealed that registration of vehicles for public transport operation in the private sector is nevertheless on the decline. Nevertheless,

the view emanating from the situation of buses used by the private sector for public transport services in Lagos is that there is a general decline in the number of buses registered.

The continuous dominance of the minibus (among all forms of buses used by the private sector) is attributed to the characteristics of the city's network system. Most of the inherited colonial network systems are very narrow for large buses to manouver and this promotes the popularity of the minibus. (refer to figure 3.2).

The trend highlighted above has implications for the use of public transport in the city, which are highlighted hereafter. Two fundamental issues emanate from the public transport bus situation shown above. These are :- (i) overcrowding of passengers at bus stops waiting to get a bus, and (ii) overloading of buses by private public bus operators in Lagos.

We have already seen, that the size and capacity of buses used for public transport in Lagos are declining, since the demand for the use of bus is greater and the number of buses in operation are declining, more people are waiting longer at bus stops. As a result of bus shortages and low carrying capacity of vehicles, overcrowding of passengers at bus stops occurs.

Overloading of passengers by private bus operators is a result of two circumstances which both the operators and the passengers have found for themselves, i.e. operators overload their buses because they need to make as much revenue as they can from operating the bus to meet hire purchase agreements, as well as the wages of the bus crew and the owner in return as well. On the other hand, the passengers using these services provided by the private public bus operator, need adequate and good public transport bus service, however because they are not sure how long the next bus will take to arrive or how soon they can get another bus to transport them to their destination often results in overcrowding on these buses. In other words, overloading of buses by the private bus operator, does, of course help to boost revenues for them when the bus is operated in this manner while making the journey for the passenger faster but very uncomfortable. The extent of overloading of buses operated by the private sector in the city of Lagos has been highlighted in the thesis, which revealed that the rate of overloading is higher in the smaller buses than in the bigger ones, because the smaller buses (minibus) have provided illegal additional seats in their buses to accomo .date the extra passengers along its operating route.

We also found that the travel fare is often raised by private bus operators because of the situation of high public transport demand. Some of

the private bus operators gave the reason for doing this as to "price out" some passengers and to reduce overloading.

The thesis noted that the problems identified by the state government as inhibiting effective public transport operation as well as their causes in the city, are those made available by the government owned public transport operator. (i.e. LSTC). This is not to say that the identified problems are peculiar only to the government owned operator and therefore have no relevance to those problems affecting the efficient operation of bus service in the private sector. It is the dimension by which these problems affect bus operators in the private sector and how their causes differ from the LSTC that are omitted. It is these problems and their causes as they affect the private sector bus operator that have been ignored and as such many measures initiated by the government to ameliorate public transport problems of the city have failed. They have failed because the problems affecting operators in the private sector are not taken into consideration or integrated fully to the corrective proposals introduced.

Public transport finance method in the private sector is dominated by hire purchase agreements. This term of agreement reached between the bus operator and the bus dealer, contributes to make public transport operation by the private sector more difficult and unsafe. Because the bus operator has a short time to liquidate his hire purchase agreement, he is less concerned with the quality of services which he provides to passengers and moreover, "short turning" the bus and bus "route shifting" are measures designed by the bus operator to derive more revenue which invariably contribute immensely to offsetting hire purchase costs. The hire purchase term has again affected the manner which labour employment in the sector is organised. For example, bus operators making use of bus crews for running their public transport services in the city do not pay the bus crew wages. The bus crew members are expected to earn their wages from operating the bus. In other words, it reinforces the high informality that dominates its labour sector.

Again, it has been observed that the vehicles used for public transport are falling and declining in number as well type in Lagos, which, according to the LSTC suggestion, is attributed to the increasing mileage which the bus is subjected to, leading to an early depreciation of public transport vehicles.The other reason provided by LSTC is the cost of buying or purchasing public transport vehicle in the city which is generally high and expensive. A view which has been largely ignored when considering vehicle decline, is why do public bus operators, especially the private operators, still

subject their buses to increasing mileage knowing it will affect their operation in the long run and render their buses obsolete? The hire purchase agreement reached by bus operators in the private sector seems to be the reason for this and has effects on public transport operation.

7.2.2 Organisation, Regulations and Control of public transport: This study discussed some of the various governmental institutions and administrative bodies responsible for the efficient operation of public transport systems especially that of the public transport bus in Lagos metropolitan. The roles of these governmental representatives in regulating and controlling public transport operation in metropolitan Lagos have also been examined. However, the success of the activities of these agencies depend on how public transport problems are minimised in Lagos. It is to this end that doubts abound about the activities and competence of these agencies in solving the public transport problems associated with the city, especially those problems affecting the public bus operator in the private sector and the passengers using the services provided by them. The principal governmental agencies regulating and controlling the activities of public transport operator in the private sector has failed to provide an exit control mechanism for operators in the private sector who want to opt out of operating public transport services in the city. The main consequence for this is the inability to monitor the number of buses of the private sector that are actually in operation in the city.

In public transport regulation, four main areas are generally focussed upon, (i) control of entry and exit, (ii) control of quality and capacity of vehicles, (iii) regulation of operating and safety conditions as they usually relate to the setting of minimum service level, and (iv) control over pricing behaviour. In the case of metropolitan Lagos, these four issues are regarded as inadequate, complex and confusing in how they are implemented and enforced, with the exemption of the entry requirement which is shown in appendix two. There is no exit control mechanisn for public transport operator in the city, hence, any public transport operator in the private sector can withdraw its bus without informing the CLPA. The implications of this sudden withdrawal of bus by the operator have tremendous effects on passenger demand especillaly along the bus route where the service has been withdrawn.

This study identified the structure of public bus ownership. We distinguished; (i) the owner - operator, (ii) the non - owner operator (driver). As well as these two forms of individual ownership, the other

category of operators is the Limited Liability Company, (i) hire and rental and (ii) company. We found some great similarity in the manner which the operators/ owners respond to certain decisions about how the sector operates. For example, in the method of public bus finance, hire purchase ranks highest among these operators. In their method of bus acqusition, the buses used for inter city services dominate. This near similarity in the operator's reaction can be attributed to the uniformity in the nature of information that traverse in this market segment.

Another finding of this study is the complete isolation of activities between public transport bus operators in the private and public sectors. This thesis have shown that public transport by bus in the city of lagos is very separated between the private and the public sector. This again shows that the government has been protective on the part of the public sector, to the extent that the problems affecting the operations of the public sector are being used to solve problems affecting the entire public transport operation of the city. What this implies is that public transport operation by the private sector is not complementary. Since there is little or no attempt at organising the two sectors to provide complementary services they see each other as a strong competitor.

In another dimension and because of the general absence of understanding of how public transport should be operated and provided in the city, is the lack of standard or quality of service which the public transport operators must provide for passengers who rely on their services. Such quality of service for example, must cover schedule service, speed regulation, passenger capacity, the use of allocated route, bus appearance, and the use of bus stops etc. Even though the regulations for effective public transport service exist, the enforcement mechanisms do not. For example, there is no regulation controlling public transport operators who cease to operate public transport services in the city. What this implies is that a private public bus operator can cease to run public transport service without the knowledge of the CLPA that registered it in the first instance to provide public transport service in the city. The exit of an operator in like manner i.e without prior notice to the institutional body that registered it to provide public transport, has a lot of effects on route capacity planning and creates undue problems for passengers relying on its service.This further highlights the vulnerability of the private public bus operation to disruption without a pre- knowledge of it by the passenger who will be waiting for a bus that will never appear.

Therefore, it is the duty of the government to protect the interest of the passengers using public transport services operated by the private sector in the city. This can better be achieved when the manner which they operate and why they so operate their services is well perceived and understood. This is discussed hereafter.

7.2.3 Operational Characteristics of private public bus system: Apart from the structure of private bus operation identified by this study, there are other fundamental issues that are peculiar to public transport bus services operated by this sector. For instance, the study revealed that the structure of private public bus operators is dominated by the individual category (86%) and 14% in the limited liability group. Under the individual category, 28% are made up of owner - operators while 58% are non - owners who are mainly drivers of public bus services. This 58% are employed by the bus owner to operate the vehicle on their behalf. In the limited liability company category, 12% of them are actually registered in the name of a company and 2% are rented out. This structure of private public bus ownership provides a clue to the vulnerability of private public transport service in the city as well as to the general decline in the number of public transport fleets in Lagos.

There are principally two main sources by which buses meant for public transport are acquired by private bus operators . The buses are either purchased as new ones or as second hand vehicles. It has been shown that new buses account for 52% and second hand buses 48%. We further examined the use which the second hand buses are put before they are licenced. 11% out of the 48% have been used as private or personal vehicles, 19% as inter state or inter city services, and 18% as governmental and company vehicles, before they were purchased and converted into public transport service in the metropolitan by private bus operators.

Apart from indicating the type of use which second hand buses are put into before licenced to operate as public transport, the study further disclosed the ownership pattern of the buses. For instance, results from this study on the basis of ownership pattern, shows that 52% of all the buses used by individuals are new, while 48% are second hand. In the case of the limited liability company, new buses accounts for 51% and 49% as second hand. This shows a closer similar pattern among operators in the private sector in the process of acquiring buses for public transport purpose. Nonetheless, there are dissimilarities between them in their main sources of second hand buses. For example, 43% of second hand buses used by the limited liability company for public transport in Lagos, have been used as

private or personal purpose, 38% as inter state / inter - city service and 19% as government or company buses. In the case of the individual form of bus owner, 20% of their second hand buses have been used as private or personal purpose, 41% as inter state or inter city service and 39% as governmental or company buses. (see figure 5.6). This implies that individual bus owners have more access to buses used by the government / company and as inter state or inter city purposes than the limited liability company form of private public bus owners. Whereas, the limited liability company have more access to buses used as personal or private purpose for public transport operation than the individual bus operator in the city.

Apart from revealing the general pattern of the sources of finance available and common to private public transport sector, the study also highlighted the variation in the sources of finance identified among the various bus operators in the private sector. The study revealed a close similarity in the use of the various sources of finance among the operators. For example, the hire purchase accounts for 97% and 95% of individual and company forms of operators respectively in the ranking of the various sources of finance and closely followed by loans and borrowings from friends and relations which accounted for 80% of individual owners and 85% of company's sources of finance. On the whole, loan facilities from the banking institutions are very unattractive. This is shown by the low ranking attributed to this form of bus financing among the operators, in other words accessibility to loan facilities from banks by the private public bus operators is very low in the city. This is due to operator's inability to provide the necessary collateral or requirements for banking loan, while high interest rate on loans from banks does not encourage operators in the private public transport sector.

One of the most controversial issues in private public bus service in Lagos and as already discussed in the early chapters of this thesis is the fare system that is adopted in the city. A fare system implies the way travel fare by bus is determined, what the travel cost or fare should be along a particular bus route, and how fares are to be charged and collected. We have found no uniform system in Lagos. The implications of the general absence of any framework or uniform system in Lagos for travel fare determination, collection, and charge, are numerous. It leads to delay, for instance, argument may erupt between the bus crew and the passenger over bus fare, inability to determine the exact revenue collected from operating public transport. This inability to determine the revenue derived from operating

public bus service leads to early winding up of bus operators, some are unable to expand their fleet and often unable to meet the hire purchase term or agreement.

Other issues emanating from the bus route operation, are that of route shifting and short turning. The description of route shifting and short turning are provided in chapter five. We established that the main reason for route shifting and short turning is not purely to avoid traffic congestion, but is rather due to the fact that the bus crew are not on paid salary and have been employed by the bus owner to run the bus, deliver to him at the end of the day's operation an agreed fixed revenue and above all, the bus driver and earn their own pay as well. In other words, the insecurity of job and variable earning by the bus crew also accounts for route shifting and short turning coupled with the traffic situation along the bus route. Some passengers do complain about this when the bus crew shifts the route, but they are rather uncompromising when it short turns the bus. By short turning the bus it implies they have to wait for another bus, which the passengers are not sure when it will be available for them to use. It often leads to a prolonged waiting time and longer journey time as already established in the study.

There is no rule on how the bus is to be run and the hours which the private public bus operator is expected to operate its service, that is to say that private bus operators run their services at will. Even though this study has been able to observe that many private bus operators provide services for up to twelve hours a day, there is no regulation restricting them for less or more than the observed hours indicated above. There is no night service operated by any public transport operator in the city.

Part of the nature of a bus route, is the facilities available for public transport use, especially bus stops and bus terminals. The study revealed four types of bus terminals which bus operators are expected to use along a given route. Of these types of terminals, (at the origin or the destination) a bus stop has the highest ranking as a terminal, followed by a bus garage, petrol station and open spaces. These terminals available for public transport purposes have implications for traffic flow along the route by slowing it down. For instance, private public transport buses who use bus stops as their terminals spill over on to the main road which affects the free flow of traffic, (since it is this side of the road where the bus operators have parked their buses). The use of petrol station on the other hand as bus terminal is risky and dangerous. While the open space is a temporary site, because the moment a use is found for the place, the private bus users would have to look

for an alternative place which may not be available around the open space site which they are accustomed to. The ultimate problem for this is that the passenger suffers the more because they have to incur additional burden to reach the new site chosen as a bus terminal.

We found from our survey that a shift system does exist in the private bus operation, but the dimension of the shifting system has not been established. This study has been able to highlight the existence of shift operation. It shows that 57% of individual operators and 60% of operators of limited liability company operate shift systems. Those who do not operate a shift system either operate their buses for short hours or run the bus for up to twelve hours. Long hours of driving often lead to bad driving through fatigue and tideness. Whilst short hour of operation leads to absence of buses on routes where such buses are expected to be present along their allocated routes.

7.2.4 Quality of private public bus Service: One of the objectives of the thesis is to examine the quality of bus service which is provided for passengers using private public buses in Lagos. Where a regulation states or indicates the level of service that should be provided, anything short of this can be regarded as poor and anything above could be regarded as fair or good. It is sad to say that the quality of public transport service that is expected to be provided by the private public bus operator in Lagos is nowhere specified. There is no uniform rule controlling public transport operation in the city or regulation stating the level of service which private public bus operators must provide. The general absence of regulation to standardise the quality of public transport operation contributes to the deplorable situation of public transport and the manner which it is operated in the city. There are some conventional indices that can be used to measure the quality of bus services. These indices were discussed in chapters four and their applications to this study in chapter six.The general view after the examination of the quality of private public bus service in Lagos is that quality of service has been sacrificed by the operators in order to achieve their own financial obligations. As illustrated below in table 7.1 the relationship between the structure of private operation of public bus and the quality of service shows that the private bus operator provide bus services only to its own advantage without taking into consideration the adverse effects of such operation on the passengers using their services.

The performance rating of private bus operation used in this thesis put 84% of bus operation by the private operator as poor, while14% as fair.

TABLE 7.1.

RELATIONSHIP BETWEEN THE STRUCTURE OF PRIVATE OPERATION OF PUBLIC BUS AND THE QUALITY OF SERVICE.

OPERATIONAL FEATURES	QUALITY OF SERVICE.
Registration Requirements	Irregular bus services. Poor services
Structure of Bus operators / ownership	Leads to competition among bus operators, unreliable and unpredictable bus service. Poor work relationship.
Method of Bus acquisition / procedure	Makes services unreliable, high cost of running and early depreciation.
Bus Characteristics / Appearance	Physically deplorable, unsafe and overloaded.
Bus Route and Service pattern	Bus destination more often unknown, overcrowded, bus Route shifting and Short turning. Irregular use of bus stop, variability in hours of operation, overcrowded route and variable services.
Method of Finance	Dominated by hire purchase. It leads to bad driving, encourages competition and poor services.
Nature of labour employment	Encourages bad driving, poor passenger /operator's relationship. Unreliable bus service
Bus Crew	Unsafe driving habit, competes for passengers, Indisciplined.
Fare System	Delays in collecting fares, travel fares are unpredictable. Often leads to disruption of services as a result of dispute over fares.

Futhermore, the overall level of satisfaction shows that over 96% of bus passengers are very dissatisfied with the bus service which they use. Furthermore, a close look at the socio- economic dimension of the passengers using public transport services operated by the private sector shows that many of them earn below the national minimum wage (low income), which makes it more difficult for the operators to improve their services by increasing travel fares.

7.3 POLICY AND PLANNING IMPLICATIONS.

This study has both policy and planning implications for government's approach towards public transportation and city planning. The first policy implication of this study for the government is to recognise that public transport operation by this sector should not be regarded as supplementary but rather as complementary to other modes of public transport in the city. The operational problems of LSTC are only a small part of the overall public transport problems of the city of Lagos. This study have shown that the continuous use of the problems of LSTC for correcting public transport problems of the city of Lagos is completely inadequate. Again, the general isolation of the private sector operators on matters affecting public transport in Lagos is a policy that need to be altered. In other words, the government should recognise the need for a total reorganisation and restructuring of the city's public transport system rather than favouring the public sector and protecting it.

In essence, the government should attempt to examine in a wider sense its policy implications on the effects on neighbourhood or local transport, investment on public transport infrastructure, traffic congestion, overloading and overcrowding of passengers. Furthermore, the government should examine the relationship between public and private sector in public transport bus system and promote co- existence rather than competition. Again, this is very important when the accident rate of the LSTC is taken into consideration. In other words, what stand should the government maintain towards issues like providing assistance to operators in the private sector, travel fare, standards, safety requirements, operation, quality of service etc.. All these are some of the policy issues that have been revealed by this study that need to be clearly re examined.

The fact that bus operators in the private sector are allocated to their routes according to their requests means that some areas in the city are over provided, while others are under allocated with bus operators. Such areas have been denied access to public transport bus, because the operator does

not want to run services there. Passengers in the city mostly affected by bus shortages are the passengers living along the urban fringes of the city like Agege, Maroko and Ojota. Their walking distance to the bus stop is often very long.

There are other problems of service variations due to public control. For example, minibuses are not allowed in Lagos Island, but the big buses are. The big buses only run their services along major outlets of the Island where the roads are wider. The local routes in Lagos island are not serviced by public transport buses. This is because the roads are too narrow for the large buses to use. However, the smaller buses that can use these networks have been banned. This ban means that passengers living along these narrow roads of the city island have to trek to the major road system to use the bus. The rationale for banning minibus in this area of the city is to reduce traffic congestion. The continuous ban of the minibus should be reviewed in midst of decreasing number of buses particuarly that of the big buses who are expected to cater for them.

Finally, the landuse system of the city is changing, so to incorporate future public transport system in such changing situation call for serious planning. It must also be said that some of the problems revealed by this study are caused by the planning strategy adopted by the agencies currently responsible for public transport in Lagos.

7.4 RECOMMENDATIONS.

The first major assignment for improving public passenger transport in Lagos is to recognise that only the bus system cannot cope with the demand for public transport. Hence, the development of other modes of public transport like the railway and ferry services should be further intensified in the city as a long term strategy. However such development should take into consideration the need to plan all the modes of urban movement in the city together. None of these modes of urban public transport should be planned or developed in isolation of the other. This recommendation is paramount to the outcome of the study, which shows that Lagos has a population of about 6 million. The city's population is expected to reach 12 million within the next ten years. A city with such a high population concentration cannot be expected to be catered for by only one mode of urban public transport movement, especially when such a mode is made up of the bus.

However, public transport movement in the city will be dominated by bus mode for quite a long time and the activities in the sector will again be

dominated by the private sector, there is need for the government to assist the operators in the private sector. This is necessary in order to improve their services. Such assistance from the government should include the method of finance which is currently heavily dependent upon hire purchase. As already emphasised in this study it hinders the operational efficiency and the quality of services provided by the public transport operators in the private sector. Also to be examined is the labour or nature of employment in the public transport services of the private sector bus operators, and how the bus crew are expected to earn their living from operating the bus. The manner which employment is organised in this sector as revealed by this study is not conducive for proper public transport operation. This can be corrected with careful intervention by the government and assurances provided to operators. Furthermore, it is important to examine the nature of employment in the private public transport sector because, what has been revealed by this study on bus operators, may be applicable to other modes of public transport services provided by this sector. In other words, the aggregation of the nature of employment among all the other modes of public transport in the city like ferry and taxi services operated by the private sector, may be partly responsible for the problems of urban movement in the city. The outcome of such examination will further help to improve the public transport problems of the city which had proved difficult to ameliorate.

Thirdly, the existing structure of bus ownership of private operators of urban public transport in Lagos should be regulated by restructuring it. Collective or Cooperative private- public transport operation would be more beneficial to both passengers and operators; unlike the immense problems posed by the numerous owner- operator and non- owner driver operators presently found in Lagos. Collective or cooperative private public transport operators suggests for the coming together (an aggregation) of operators in the private sector to form a group. This coming together assist them to pull more buses together and use the buses adequately according to agreed terms.Such terms will cover the rights of bus owners, management and control, finance and the amount of money each bus owner should expect and when. Further, such collective group help to guarantee the presence of buses along allocated routes. It may also make loan facilities from the bank more accessible, thereby reducing the punitive hire purchase agreement often imposed on operators by the bus dealer.

The formation of a collective or cooperative group further facilitates access to the government and the government should recognise their roles

more effectively. In any case the government would benefit more financially. It is a known fact in the city that those employed in the private sector do not often pay tax and they are very difficult to track down for evading tax. Hence, the formation of bus operators into a collective group would enable them to keep adequate records which could be audited and assessed by the government officials to determine the amount they have to pay as tax. This time it is the collective group that is being taxed. This is not only time saving for the government it is also cost minimising. In another dimension, a collective group enables monitoring and coordinating of their operational activities easier, than the manner which they now function in the city. Such easy monitoring of their activities allows for good public transport provision and operation. The formation of collective group will again facilitate the recognition of the services operated by this sector by policy makers and thereby accord it the status enjoyed by their counterpart in the public sector. It will help to reduce the proliferation of bus operators in the private sector in particular and in the city in general.

Fourthly, there is need for the establishment of Lagos State Transport Authority (LSTA). This authority will incorporate LSTC, ferry services, metro and private bus operators and some of the other activities of the CLPA like parking. The main assignment of this authority is to serve as the main regulatory body for public transportation in Lagos as well as to coordinate both intra and inter modal public transport activities in the city. This is very necessary now, because it will correct the existing competition between all the modes of public transport in the city, and unite all the modes of public transport in Lagos by removing the accusation often levied against it that it lacks coordination. Lack of coordination of activities among the public transport modes, is often given as the reason why public transport in the city is inadequate and bad. When such administrative body is established, it will reduce excessive cost and wastage. Again such an administrative body will promote healthy urban public transport system. Moreover, the establishment of LSTA is expected to incorporate bus operators in the private sector. Such incorporation of the activities of the bus operators in the private sector into the LSTA will be enhanced when the number of such operators in the private sector are reduced by the formation of cooperative or collective groups.

Finally, a major conclusion of this study is that carefully planned regulations of the private sector's activities in public transport and the enforcement of such rules within the Lagos metropolitan area, could yield substantial returns, provided that the private sector is fully involved in such

search for a reconciliatory solution. Without such regulations and enforcement, even major expenditures of money on easing traffic congestion, overcrowding and overloading, road expansion and improvement may not significantly improve the traffic and passenger transport problem of Lagos. We should recall that there is a general change all over the world especially in the developed communities about how public transport in the urban areas should be structured. In Britain the tradition has been that public transport is the primary responsibility of local government and the private sector is excluded from providing public transport services. This policy has been changed. This is not to say that because the developed communities are changing then a developing society like Nigeria should also change its policy. It is very important for Nigeria and Lagos in particular to change towards privatisation. This is a situation whereby the government should keep its hands off public transport activities that can be adequately provided by the private sector. It enables the private sector to partake in the growing economy of the city and not laying everything at the door step of the government. And on the part of the government, it can concentrate more on those activities which clearly cannot be provided by the private sector. This is more necessary because the government is financially poor, her economic situation bad and the era of 'oil boom' is over.

As a summary of the whole thesis, this study has revealed that public transport is inadequate in Lagos, that the demand for the use of public transport is far greater than supply or the transport provided, and the level of bus services in operation is poor. There exist irregular, highly unpredictable and unreliable bus services. Nonetheless, the activities of the private sector in public transport operation of Lagos, have provided complementary services where conventional public transport buses are inadequate or have failed. Again, its use in conjunction with conventional public transport especially in the many areas of the city like Ikeja, Oshodi, Mile two, and Lawanson, where demand for the use of public transport is great shows that it has a contributory role in the city. The benefits of the activities provided by the private sector bus operators can be achieved adequately if the policy makers and planners assist this sector properly. This study has revealed the situation of public transport bus in the private sector. The research findings suggest how bus operation in this sector can be corrected and show that the sector is not a 'jungle'.

APPENDIX 1

LSTC: ROAD ACCIDENTS STATISTICS*

[VEHICLES]

YEAR / MONTH	1980	1981	1982	1983	1984	1985	1986	1987
JANUARY	71	26	14	19	04	08	07	35
FEBRUARY	59	31	16	08	08	09	04	26
MARCH	52	46	29	14	06	14	11	29
APRIL	45	24	39	16	06	08	14	19
MAY	60	08	17	11	06	08	08	08
JUNE	38	25	21	21	08	05	52	15
JULY	33	16	25	13	05	14	52	---
AUGUST	38	16	41	11	13	12	50	---
SEPTEMBER	33	08	47	11	09	07	33	---
OCTOBER	30	19	39	12	08	08	30	---
NOVEMBER	29	09	27	10	07	05	22	---
DECEMBER	10	17	24	05	09	05	28	---
TOTAL	498	245	339	151	89	103	311	132
MONTHLY AVERAGE	42	21	28	13	08	09	26	22

SOURCE: COMPLIED FROM VARIOUS LSTC ANNUAL REPORTS

*This table includes information about fatal accidents involving life, serious accidents and minor accidents between vehicles [all added together].

APPENDIX TWO.

LAGOS STATE GOVERNMENT

CENTRAL LICENSING AUTHORITY

FORM OF APPLICATION FOR RENEWAL

HACKNEY AND STAGE CARRIAGE LICENCES

Delete whichever is not applicable

1. Full Name of Applicant.....
2. Occupation.....
3. Usual Residence of Owner.....

.....

4. Postal Address.....
5. Particulars of Vehicle Using Hackney or Stage Carriage Licence:

   (*i*) Make and Model of Vehicle.....

   (*ii*) Engine Number.....

   (*iii*) Chassis Number.....

   (*iv*) Date of Purchase.....

   (*v*) Registration Number.....

   (*vi*) Particulars of Previous Owner (If any).....

   .....
6. State Purpose for which it is to be used.....

   .....
7. Registered freight or load vehicle is constructed to carry.....
8. Number of persons that it is proposed to carry (including driver).....
9. Route or Routes on which it is proposed to ply.....

   .....
10. Vehicle Licence Number.....Expiry Date.....
11. Hackney/Stage Carriage Permit Number.....

    Expiry Date.....
12. *IMPORTANT:* Attach the following Documents:
    (1) Tax Receipts (for current year)
    (2) Road Worthiness Certificate (for Current year)
    (3) Insurance Certificate (not cover note) (for current year)
    (4) Vehicle Licence (for current year)
13. *DECLARATION*

I declare that the foregoing application for the renewal of Hackney or Stage Carriage Licence contains a full and true account of the particulars which the law requires me to state.

DATED this.....day of.....19.....

Signed.....

Applicant

The foregoing having been explained to the declarant in.....

.....language by me

.....when he seemed

perfectly to understand the content to be true and correct before affixing his or her thumb impression thereto in my presence.

SWORN TO AT.....

this.....day of.....19.....

.....

Commissioner for Oaths/Notary Public/Magistrate/Justice of Peace.

FOR OFFICE USE

Date.....

Approved/Rejected.....

Renewal.....

Withdrawal.....

Suspension.....

Revocation.....

APPROVED CAR HIRE SERVICE

Number.....

Approved Route(s) and Base.....

L.I.L.G.P. 012/186/60,000

APPENDIX THREE.

LAGOS STATE TRANSPORT CORPORATION

OLOWU DEPOT ROUTE

S/NO	ROUTE NO	ROUTE NAME	BUSES
1.	01	Alli Balogun-Ikorodu	2
2.	02	Alli Balogun-Epe	2
3.	03	C.S.S-Ajegunle	3
4.	04	Odunlami-Keffi Via R/Course	3
5.	05	Race Course-Costain-Oshodi	5
6.	06	Obalende-Kingsway-Maroko	3
7.	07	Ogunlana-Akerele-Eledu	1
8.	08	Yaba-Aguda via Express Oshodi	2
9.	09	R/Course-C.S.S-B/Beach-Maroko	4
10.	10	R/Course-Law School-Maroko	4
11	11	7UP-Orile via Tinubu-Idunmota	4
12.	12	R/Course-Yaba via Oyingbo	3
13.	13	R/Course-Yaba via 3rd Mainlandd	3
14.	14	R/Course-Ijora-Costain-Ojuelegba	1
15.	15	Orile-Oshodi	5
16.	16	Oyingbo-Wharf/Ajegunle	3
17.	17	R/Course-C.S.S-Orile-Festac	4
18.	18	R/Course-Oyingbo-Abule Ijesha	1
19.	19	Oshodi-Isolo	2
			55

OLOWU DEPOT WEEKEND SERVICE ROUTE

1.	001	Alli Balogun-Ikorodu	2
2.	002	Alli Balogun-Epe	2
3.	06	Obalende-Maroko	1
4.	04	Odunlami-Obalende-Keffi via R/Course	1
5.	09	R/Course-B/Beach-Maroko	7
6.	10	R/Course-Law School/Maroko	5
7.	20	Ijora-Orile-Mile 2	4
8.	12	R/Course-Oyingbo-Yaba	3
9.	14	R/Course-Costain-Ojuelegba	1
10.	16	Oyingbo-Wharf/Ajegunle	2
11.	17	R/Course-CSS-Orile-Festac	4
12.	18.	R/Course-Abule Ijesha via Oyingbo	1
13.	21	Keffi via Idumota-Yaba	1
			34

LAGOS STATE TRANSPORT CORPORATION

ILUPEJU DEPOT 'A' ROUTES (WEEKEND SERVICES)

S/NO	ROUTE NO	ROUTE NAME	NO OF BUSES
1.	50	Ikeja-Ogbavia Coca Cola	2
2.	51	Ikeja-Isheri-Ogba	2
3.	33	Oshodi-Mile 2-Festac	2
4.	52	Oshodi-Ifako	3
5.	53	Yaba-Oyingbo	2
6.	54	Yaba-Lawanson	2
7.	55	Mile 2-Ijanikin	1
8.	58	Ikeja-Secretariat-Alausa	3
9.	59	Ketu-Alausa-Ikeja	1
10	60	Ojota-Orẹgun	1
11.	62	Ikorodu-Ijede	1
12.	63	Oshodi-Ipaja R/A	1
13.	65	Ojuelegba-Costain	1
14.	66	Maroko-Ilasan	1
15.	15	Oshodi-Orile	2
16.	67	Local-International Airport	2
17.	68	Oshodi-Ketu	2
18.	69	Oyingbo-Apapa Road	1
19.	70	Ikorodu-Odogunyan-Ikorodu	1
20	71	Ikorodu-Imota	1
21.	72	Akowonjo-Shasha	1
22.	73	Isolo Low Cost Housing Estate-Iyana Isolo	1
23.	74	Ascon Badagry	1
24.	75	Iworo-Ajido-Badagry	1
25.	77	Abesan-Iyana Ipaja	1
26.	80	Fadeyi-Onipanu-Ikeja	1
27.	81	Yaba-Ikeja	1
28.	82	Circle Line (Epe)	2
29.	83	Oshodi-Orilowo-Isolo	1
30	84	Ogundu-Ojota	1
31.	85	Oyingbo-Orile	1
32.	86	Abesan Housing Estate-Round About (Garage)	1
33.	19	Oshodi-Isolo	3
34.	87	Dulphin Housing Estate	1
35.	88	Ojuelegba-Obalende-High Court	1
			48

LAGOS STATE TRANSPORT CORPORATION

ILUPEJU DEPOT 'B'

AFTER PEAK PERIOD

S/NO	ROUTE NO	ROUTE NAME	NO OF BUSES
1.	52	Oshodi-Ifako	5
2.	111	Alli Balogun-Ikorodu	3
3.	63	Oshodi-Ipaja Round About	3
4.	33	Mile 2-Festac	2
5.	94	Obalende-Fed. Secretariat	2
6.	95	Ojuelegba-Ijora	2
7.	54	Yaba-Lawanson	3*
8.	32	Oshodi-Sango Otta	3
9.	16	Oyingbo-Wharf	3
10.	97	Itire-Lawanson	2
11.	102.	Mile 2-Badagry	2
12.	15	Oshodi-Orile	3
13.	36	Oshodi-Ikeja	2
14.	19	Oshodi-Isolo	1
15.	51	Ikeja-Ogba	2
16.	60	Ikeja-Ojota-Oregun	3
17.	98	Bariga-Oyingbo	2
18.	99	Ketu-Oyingbo	4
19.	100	Oshodi-Yaba	3
20	103	Maryland-Yaba	3
21.	104	Itire-Cappa	2
22.			55

ILUPEJU DEPOT 'B' WEEKEND SERVICES

1.			
1.	102	Mile 2- Badagry	3
2.	111	Alli Balogun-Ikorodu	4
3.	802	Oshodi-Race Course	4
4.	806	Oshodi-Orile	4
5.	807	Oshodi-Ikeja	1
			16

LAGOS STATE TRANSPORT CORPORATION

PEAK PERIOD EXPRESS SERVICE ROUTE

S/NO	ROUTE NO	ROUTE NAME	NO OF BUSES
1.	001	Yaba-Race Course	3
2.	002	Yaba-C.M.S	3
3.	003	Yaba-Federal Secretariat	2
4.	331	Ogunlana-C.M.S.	2
5.	332	Ogunlana-Race Course	2
6.	301	Lawanson-Federal Secretariat	2
7.	302	Lawanson-C.M.S	4
8.	303	Lawanson-Race Course	4
9.	221	Ojuelegba-Federal Secretariat	2
10.	222	Ojuelegba-C.M.S	2
11.	223	Ojuelegba-Race Course	2
12.	224	Ojuelegba-Wharf	2
13.	601	Mile 2-Federal Secretariat	1
14.	602	Mile 2-Race Course	1
15.	603	Mile 2-C.M.S	2
16.	901	Festac-Federal Secretariat	1
17.	902	Festac-C.M.S	2
18.	903	Festac-Race Course	1
19.	904	Festac-Kofo Abayomi	1
repeated 20.	~~101~~	~~Mile 2-Federal Secretariat~~	~~1~~
21.	111	Alli Balogun-Ikorodu	1
22.	201	Satelite-Race Course	1
23.	401	Cappa-Race Course	1
24.	402	Cappa-Wharf	1
25.	403	Cappa-C.M.S	1
26.	801	Oshodi-Wharf	1
27.	802	Oshodi-Race Course	1
28.	803	Oshodi-C.M.S	1
29.	441	Palmgrove-Race Course	1
30	442	Palmgrove-Federal Secretariat	1
31.	443	Palmgrove-C.M.S	1
32.	701	Ikeja-Federal Secretariat	1
33.	702	Ikeja-Race Course	1
34.	703	Ikeja-C.M.S	1
35.	551	Ketu-Race Course	1
36.	501	Ogba-Race Course	1
37.	333	Nnobi-Race Course	1
38.	334	Shell Club-Race Course	1
39.	704	Maryland-Race Course	2
40.	335	Games Village-R/Course	1
41.	502	Dopemu-Race Course	1
42.	503	Agege-Race Course	1
43.	444	Bariga/Abule Ijesha-Race Course	2
44.2	804	Isolo-Race Course	3
45.	805	Cappa via Mushin-Race Course	2
46. 46.	504	Iyana Ipaja-Race Course	1
46.	102	Mile 2-Badagry	1
			70
47.	000	OSHODI - ALAUSA	1
48.	080	APAPA RD - ALAUSA	1
49.	808	OSHODI - SANGO OTTA	2
			74

LAGOS STATE TRANSPORT CORPORATION

OSHODI DEPOT ROUTES AND BUSES ALLOCATED

S/NO	ROUTES NO	ROUTE NAME	NO OF BUSES
1.	27	Mile 2-Badagry	2
2.	28	Mile 2-Wharf	3
3.	15	Oshodi-Orile	2
4.	29	Oshodi-Mile 2-Wharf	3
5.	30	Oshodi-Costain-Ijora	2
6.	31	Costain-Ijora-Wharf	2
7.	32	Oshodi-Sango Otta	3
8.	33	Oshodi-Mile 2-Festac	3
9.	34	Oshodi-Iyana Ipaja	2
10.	35	Oshodi-Abule Egba	2
11.	36	Oshodi-Ikeja	5
12.	37	Oshodi-Ikorodu	2
13.	38	Oshodi-P/Grove-Yaba	2
14.	39	Oshodi-Mushin-Yaba	2
15.	40	Oshodi-Western Avenue-Ijora	2
16.	16.	Yaba - Oyingbo - Wharf	37
17.	19.	Oshodi - Isolo.	

OSHODI DEPOT WEEKEND SERVICES

1.	27	Mile 2-Badagry	2
2.	28	Mile 2-Wharf.	4
3.	15	Oshodi-Orile	4
4.	32	Oshodi-Sango Otta	4
5.	33	Oshodi-Mile 2-Festac	3
6.	34	Oshodi-Iyana-Ipaja	2
7.	35	Oshodi-Abule Egba	1
8.	36	Oshodi-Ikeja	3
9.	38	Yaba-P/Grove-Oshodi	1
10.	41	Oyingbo-Wharf	1
11.	42	Idumota-Ikorodu	2
12.	43	Oshodi-Yaba-Oyingbo	2
13.	44	Oshodi-Mushin-Oyingbo	2
			32

APPENDIX FOUR.

ROUTES PLIED BY PASSENGER BUSES IN METROPOLITAN LAGOS

Serial No.	Route
1.	KETU - PALM GROVE/ONIPANU
2.	PALM GROVE - YABA
3.	YABA - OYINGBO
4.	YABA - LAGOS
5.	YABA - OBALENDE/KEFFI
6.	OYINGBO - LAGOS (C.M.S.)
7.	OYINGBO - WHARF
8.	C.M.S. - MAROKO
9.	C.M.S. - WHARF
10.	C.M.S. - BAR BEACH
11.	C.M.S. - ORILE IGANMU
12.	C.M.S. - KEFFI/OBALENDE
13.	C.M.S. - AJEGUNLE
14.	AGEGE - OSHODI
15.	OSHODI - MUSHIN

16. MUSHIN - YABA

17 MUSHIN - EKO (EXPRESS)

18. ALAGBADO - IYANA IPAJA

19. OYINGBO - APAPA ROAD

20. OYINGBO - ORILE IGANMU

21. OYINGBO - IWAYA

22. OSHODI - MILE 2 (EXPRESS)

23. OSHODI - IYANA ISOLO/MILE 2

24. OSHODI - BARIGA (ABULE)

25. OSHODI - APAPA WHARF

26. OSHODI - DOPEMU

27. OSHODI - ITIRE GARAGE

28. OSHODI (BROWN STREET) - MAFOLUKU (OJA)

29. OSHODI - MAFOLUKU (GARAGE)

30 OSHODI - OJOTA/KETU

31 OSHODI - OWORONSOKI

32. OSHODI - IYANA IPAJA

33 MUSHIN - IJORA

34. MUSHIN - ITIRE

35. AGEGE - ORILE AGEGE

36. IKEJA - AGEGE

37. IKEJA - OGBA

38 IKEJA - OJOTA

39. IKEJA - ISHERI

40 IKEJA - OPEBI

41 IKEJA - ALAUSA (SECRETARIAT)

42. AGEGE - IYANA IPAJA

43. ORILE AGEGE - IYANA IPAJA

44. AGEGE - ISHERI

45. AGEGE - IFAKO

46. AGEGE - ALAGBADO

47. AGEGE - IJU GATE

48 AGEGE - OGBA

Serial No.	Route
49.	IYANA IPAJA - IPAJA
50	IYANA IPAJA - IKOTUN
51.	IYANA IPAJA - DOPEMU
52.	DOPEMU - AGEGE
53.	DOPEMU - IDI MANGORO
54.	KETU - ALAPERE
55.	KETU - IYANA OWORONSOKI
56.	BARIGA - OWORONSOKI
57.	BARIGA - SAWMILL
58.	BARIGA - OYINGBO
59.	ONIPANU - BAJULAIYE
60.	PALM GROVE - LADILAK
61.	LADILAK - BARIGA
62.	LAWANSON - IJESHATEDO
63.	ITIRE - LAWANSON
64.	LAWANSON - C.M.S.
65	LAWANSON - WHARF
66.	ISOLO - MUSHIN
67.	ISOLO - EMIGBO
68.	ISOLO - EGBE
69.	ITIRE - ODO ERAN
70	ILASAMAJA - IDI ARABA
71.	LADIPO - TOYOTA (R.T. BRISCOE)
72.	DOPEMU - SHASHA
73.	DOPEMU - PAPA ASHAFA
74.	YABA - IDI ARABA
75.	YABA - AGUDA
76.	YABA - ABULE IJESHA
77.	YABA - IKEJA (EXPRESS)
78	YABA - IWAYA
79.	AGUDA - IJESHATEDO
80.	OYINGBO - MAKOKO

Serial No.	Route
81.	MILE 2 - OKOKOMAIKO
82.	AJEGUNLE - KIRIKIRI
83.	MILE 2 - KIRIKIRI
84.	MILE 2 - FESTAC TOWN
85.	MILE 2 - SATELLITE TOWN
86.	ORILE IGANMU - MILE 2
87.	MUSHIN - ILASAMAJA
88.	OGBA - IFAKO (AGEGE)
89.	LAGOS - IKORODU
90.	LAGOS - EPE
91.	LAGOS - BADAGRI

APPENDIX FIVE.

LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE
(UNIVERSITY OF LONDON)
DEPARTMENT OF REGIONAL AND URBAN PLANNING STUDIES

QUESTIONNAIRE SURVEY ON BUS OPERATORS

This questionnaire survey, is designed to collect information on Private bus operators in Lagos Metropolitan. You are kindly requested to answer the questions set out below.

The information supplied will be used purely for academic research purposes and will be treated as highly confidential.

Please, kindly cooperate with the interviewer in the completion of the questionnaire.

SURVEY ZONE _____

1. Where did you register your bus for commercial operation? (Be specific)

2. Vehicle Ownership:

- Owner operator ☐
- Private Individual ☐
- Commercial/Company ☐
- Rent/Hire/Contract ☐ spec
- Private Institution ☐
- Government ☐ (specify) ——
- Others ☐ spec

3. Address of Vehicle Owner:

Street _____
Area _____
State _____

4. Vehicle type:

- Molue ☐
- Bolekaja ☐
- Danfo/Volkswagen Kombi ☐
- Others ☐ (specify) ——

5. How many bus (es) do you have?

	No.
Volue	—
Bolekaja	—
Danfo	—
Others	—
Total	—

6. How old is this bus (vehicle)?

- 0 - 1 year ☐
- 1 - 2 years ☐
- 2 - 5 years ☐
- 5 - 10 years ☐
- 10 - Above years ☐

..../2

7. Was this bus used for Urban Passenger transportation services when first bought — YES / NO

8. If No, what was the bus used for?

Private purpose	
Inter-State/Inter-City service	
Government owned	
Second Hand Purchase	
Others	specify

9. Do you obtain a license to operate this bus. YES / NO

10. If Yes, what are the licenses to operate this bu

Insurance permit	
Vehicle license	
Hackney	
Colour permit	
Road Worthyness	
Route Permit	
Others	specify Unions

11. Where are the licenses being issued.

	LOCAL GOVERNMENT	CENTRAL LICENSING AND PARKING AUTHO	INSURANCE COMPANY	TRANSPORT UNION	OTHER (SPECI
Insurance Permit					
Vehicle license					
Hackney					
Colour Permit					
Roadworthyness					
Route Permit					
Others (specify)					

12. How much does it cost you to obtain these licenses (Please quote annual co

Insurance Permit	0 - 100	101 - 200	201 - 500	501
Vehicle license	0 - 100	101 - 200	201 - 500	501
Hackney	0 - 100	101 - 200	201 - 500	500
Colour Permit	0 - 100	101 - 200	201 - 500	500
Roadworthyness	0 - 100	101 - 200	201 - 500	500
Route Permit	0 - 100	101 - 200	201 - 500	500
Others (specify)	0 - 100	101 - 200	201 - 500	500

.../3

13. Do you need to renew any of the licenses you have obtained (annually)

Insurance	YES	NO
Vehicle License	YES	NO
Hackney	YES	NO
Colour Permit	YES	NO
Road Worthyness	YES	NO
Route Permit	YES	NO
Others (specify)	YES	NO

14. How often do you need to renew any of the licenses in a year.

Insurance Permit	Once	Twice	Thrice
Vehicle license	Once	Twice	Thrice
Hackney	Once	Twice	Thrice
Colour Permit	Once	Twice	Thrice
Road Worthyness	Once	Twice	Thrice
Route Permit	Once	Twice	Thrice
Others (specify)	Once	Twice	Thrice

15. How much does it cost to buy a bus (of this type)?

FAIRLY USED/OLD/2ND HAND IN (₦)	NEW IN (₦)
0 - 10,000	0 - 20,000
10001 - 20,000	20,001 - 40,000
20,001 - 40,000	40,001 - 60,000
40,001 - 60,000	60,001 - 100,000
60,001 - above	100,001 - Above

16. How do you meet the cost of buying a bus of this type?

- Loan from bank
- Hire Purchase
- Loan/Borrowing from Friends/Relations
- Personal Savings
- Others (specify) Union

17. If by Hire Purchase arrangement, how long does it take to pay back all financial commitment

- 0 - 2 years
- 2 - 5 years
- 5 - 10 years
- 10 - Above years

18. How often do you maintain/service this bus?

- Daily
- Weekly
- Forthnightly
- Monthly
- Others (Specify) ---

..../4

19. Do you pay wages/salaries to

Bus Driver	YES	NO
Bus Conductor	YES	NO
Mechanic	YES	NO
Others (specify)	YES	NO

20. If No, how do you pay for job done.

BUS DRIVER	BUS CONDUCTOR	MECHANIC	OTHERS (specify)

21. Do you set aside any allowance as Depriciation Rate for this bus

YES NO

22. If No, why?

Do not think it is necessary
Do not understand what Depriciation is
Others (specify)

23. What type of petrol does this bus use.

Diesel
Fuel

24. Do you know the number of passengers moved daily YES NO

25. How do you collect bus fare from Passengers (users)

Ticketing system
Conductor/by hand
Receipts
Others (specify) -----

26. What is the bus fare rate for this route.

0 - 10 kobo
11 - 20 kobo
21 - 30 kobo
31 - 50 kobo

27. Is this the Established bus fare rate? YES NO

28. Are bus fare rates graduated on the basis of distance- YES NO

29. How are fare rates determined? (elaborate)

.../5

30. Who determines the bus fare

Bus Operator	☐
Transport Union	☐ (Specify) ----
Government(s)	☐ (specify) Federal State and L/G.
Others	☐ (specify)

31. How often do you alter change the bus fare rate?

Daily (Peak period only)	☐
Daily (Off Peak Period)	☐
Weekly	☐
Monthly	☐
On Public Holidays	☐
Spontaneously	☐
Others (specify)	☐

32. When such changes in bus fare rate do occur is it

Permanent ☐ Temporarily ☐

33. How did your driver come about driving this bus

Employed	☐
Through Friends	☐
Through Relations	☐
Through Union Members	☐
Others	☐ (specify) ----

34. Do you have any close family relationship with the underlisted.

Driver	YES ☐	NO ☐
Conductor	YES ☐	NO ☐
Mechanic	YES ☐	NO ☐

35. Do you have a bus route which you must operate YES ☐ NO ☐

36. If Yes, How did you come about operating on the route.

Transport Union	☐
Personal/Self request or choice	☐
Governmental Regulation	☐ eg. CL & PA.
Others	☐ specify ----

37. If No, how did you come about operating on this route (Please specify)

Personal Choice	☐
Exemption	☐ what type ----
Others	☐ (specify) -----

38. Along this bus route, do you have approved bus terminals at

Origin	YES ☐	NO ☐
Destination	YES ☐	NO ☐

..../6

39. If Yes, what type of bus terminals are they?

Origin		Destination	
Bus Stop	☐	Bus Stop	☐
Bus Garage	☐	Bus Garage	☐
Petrol Station	☐	Petrol Station	☐
Open Space	☐	Open Space	☐
Others (specify)	☐	Others (specify)	☐

40. If No, how do you get passengers without being harrassed?

41. Can you operate on another route apart from the one you are allocated?

YES ☐ NO ☐

42. If No, what is your view about this?

43. How long have you been operating on this route?

0 - 6 months	☐
6 - 12 months	☐
12 - 24 months	☐
24 - Above months	☐

44. Have you ever changed your bus operating route YES ☐ NO ☐

45. If Yes, why?

Few Passengers on the Route	☐
Too many bus operators	☐
Frequent Police checking	☐
Deplorable road condition	☐
High Accident Occurence	☐
Constant traffic hold up	☐
Others	☐ (specify)

46. If No, why?

Many passengers on the route	☐
Few other bus operators	☐
Absence of Police checking	☐
Good road condition	☐
Very low accident occurence	☐
Uninterrupted free flow of traffic	☐
Others	☐ (specify ...

.../7

47. Do you use bus conductor to operate this bus. YES NO

48. What is the operating hours of this bus (daily)

0 - 6 hours
7 - 12 hours
13 - 18 hours
19 - 24 hours

49. During this operating hours, is there any deliberate period for the bus engine to cool down YES NO

50. If Yes, How long? (do not accept the time of waiting on the queue)

0 - 1 hour
1 - 2 hours
2 - above hours

51. Do you operate shift system on this bus YES NO

52. How many passengers can this bus carry (approved carrying capacity)

0 - 10
11 - 20
21 - 30
31 - 50
51 - Above

53. Do you exceed this capacity YES NO

54. Has the bus been involved in any type of accident (since when started operating as Intra-City) YES NO

55. What type of accident MINOR MAJOR FATAL

56. Do you encounter traffic problems on your route YES NO

57. If Yes, what traffic problems do you encounter

Traffic hold ups
Deplorable road condition
Passenger Congestion/Overcrowding
Law enforcement Agents (specify ——
Lack of Bus Stops
Parking
No traffic signs
Others (eg. accidents) (specify) ——
Bad driving habit

58. What problems do you experience with the undelicted

(i) Government (Federal, State and Local Government)

.../8

(ii) Law Enforcement Agencies (Traffic Police, Road Safety Corps)

(iii) Central Licensing and Parking Authority

(v) Transport Unions (N.R.T.U.N, RTOA etc).

(v) Bus Users (Passengers)

(vi) Others (specify)

59. What is your general impression/opinion about passenger transportation in Lagos Metropolitan (state in details)

60. Suggest ways of improving the present passenger transportation situation of Lagos Metropolitan.

Many thanks for your cooperation and patience.

B.I.D. B. DEJC.

APPENDIX SIX.

LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

UNIVERSITY OF LONDON

DEPARTMENT OF REGIONAL AND URBAN PLANNING STUDIES

QUESTIONNAIRE SURVEY ON BUS PASSENGERS (USERS).

This questionnaire survey is designed to collect information on Bus Passengers (users) in Lagos Metropolitan. You are kindly requested to answer the questions set out below.

The information supplied will be used purely for academic research purposes and will be treated as highly confidential.

Please, kindly cooperate with the interviewer in the completion of the questionnaire.

SURVEY ZONE POINT X

1. SEX [M] [F]

2. AGE:
   - 5 - 14 YEARS
   - 15 - 24 YEARS
   - 25 - 40 YEARS
   - 41 - 60 YEARS
   - 61 - ABOVE YEARS

3. INCOME LEVEL:
   - ₦0 - ₦1000 (Per Annum)
   - ₦1001 - ₦2000 (Per Annum)
   - ₦2001 - ₦5000 "
   - ₦5001 - ₦10,000 "
   - ₦10,000-Above "

4. TRIBE (Specify) [ ]

5. OCCUPATION:
   - Public/Civil Servant
   - Private Employed
   - Unemployed
   - Retired
   - Self Employed
   - Others (Specify) -----

6. EDUCATIONAL STATUS:
   - Illiterate
   - Primary School
   - Secondary/Modern School
   - G.C.E/WACE/GRD II
   - HND/B.SC
   - Professional
   - Others (Specify) -----

.../2

7. MARITAL STATUS:

Married	☐
SINGLE	☐
Widowed	☐
Divorced	☐

8. How long have you been living in Lagos?

0 - 2 years	☐
2 - 5 "	☐
5 - 10 "	☐
10 - Above	☐

9. Where were you before you caught this bus?

Home	☐	
Work	☐	
Educational/Institution	☐	eg College, School
Market/Shop	☐	
Health/Hospital	☐	
Social	☐	
Others (specify)	☐	----

10. How long did you waited to catch the bus?

0 - 5 minutes	☐
6 -15 minutes	☐
16 -25 minutes	☐
26 - Above minutes	☐

11. Please describe the area/street where you are coming from.

Street ----------

Area ----------

12. How did you get to the bus stop for this bus.

Walk	☐	Answer Q. 13
Bus	☐	Answer Q. 14
Taxi	☐	
Private Car	☐	
Train	☐	
Water /Ferry	☐	
Others (specify)	☐	

13. If you walked to the bus stop, how many minutes did you have to walk to reach this place.

0 - 2 minutes	☐
2 - 5 minutes	☐
5 - 10 minutes	☐
11 - 20 minutes	☐
20 & Above minutes	☐

.../3

14. If by bus, why did you alighted to take another bus?

Cheaper	☐
Bus terminus	☐
No direct connection by the bus destination	☐
Short Turning by bus	☐
Others (Specify)	☐ ---- eg breakdown of vehicle

15. How long do you have to wait to get another bus?

0 - 5 minutes	☐
6 - 15 minutes	☐
16 - 25 minutes	☐
26 - Above minutes	☐

16. What is your final destination?

Home	☐
Work	☐
Educational/Institution	☐ e.g. College, School
Market/Shop	☐
Health/Hospital	☐
Social	☐
Others (specify)	☐ -------

17. What is the address of the area/street of your destination.

Street ----------

Area ----------

18. How will you get to your destination when you get off this bus.

Walk	☐	answer Q. 19
Bus	☐	answer Q. 20
Taxi	☐	
Private Car	☐	
Train	☐	
Water/Ferry	☐	
Others (specify)	☐	-------

19. If by walking, how many minutes will you walk when you get off this bus.

0 - 2 minutes	☐
2 - 5 minutes	☐
5 - 10 minutes	☐
10 - 20 minutes	☐
20 - Above minutes	☐

20. If by bus, why?

Cheaper	☐
Bus Terminus	☐
Short turning by bus	☐
No direct connection by bus	☐
Others (specify)	☐

.../L

21. What is the transport fare for this journey (per bus usage).

22. Is this the established fare for using the bus? YES NO

23. If NO, what is the established fare? (per bus usage)

24. What is the bus operator's reason for increasing the fare?

- Traffic hold-up
- Increase in cost of bus operation/ Maintenance
- Increase in price of fuel
- Shortage of other buses
- Fuel scarcity
- Others (specify)

25. Do you have a car available (at your disposal) for this journey?

YES NO

26. If Yes, why did you decide to travel by bus?

- Lack of Road Worthiness e.g. no extra tyre
- Expiration of Vehicle license
- Expiration of Insurance Permit
- No driver/cannot drive
- Deplorable road condition
- Traffic hold-up/congestion
- Inaccessibility of Road (Not motorable)
- Others (specify)

27. If No, is there someone in your household who owns or has use of a car?

YES NO

28. How many are you in your household.

- 0 - 4 Persons
- 5 - 8 persons
- 9 - 12 persons
- Above 12 persons

29. What transport problems do you encounter in the use of this bus?

- Overloading/Over crowding of Buses
- Inadequate/irregular bus services
- Traffic holdups/congestion
- High fare rate/charges
- Frequent bus breakdown
- Safety
- Short turning
- Delays
- Others (specify)

..../5

30. What transport problems do you encounter in Metropolitan Lagos? (Please discuss in detail).

31. Are you satisfied with the present level of bus services provided by bus operators [YES] [NO]

32. Do you think the bus operators could improve even with the present fare rate that they operate. [YES] [NO]

33. Are you willing to pay more fare to improve the present bus service level [YES] [NO]

34. Suggest how the present level of bus services could be improved.

35. What is your general opinion about passenger transportation in Lagos Metropolitan.

36. Suggest ways of improving passenger transportation in Lagos Metropolitan

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Many thanks for your cooperation and patience.

BAMIDELE BADEJO.

APPENDIX 7

ORIGIN DESTINATION MATRIX OF PASSENGERS

	Agege	Ajegunle	Bariga	CMS	Idumota	Ikeja	Ketu	Lawanson	Maroko	Mile Two	Obalende	Oshodi	Oyingbo	Yaba
Agege	6	-	1	1	1	4	1	-	-	-	1	1	-	1
Ajegunle	1	2	-	-	-	-	-	-	-	1	-	-	4	1
Bariga	-	-	7	-	1	1	-	2	-	1	-	1	2	2
CMS	2	-	3	1	-	-	-	1	4	-	3	1	3	1
Idumota	-	-	1	-	-	-	1	-	1	1	2	-	1	4
Ikeja	2	-	-	1	2	3	1	-	-	-	1	1	1	1
Ketu	-	1	-	-	-	-	-	-	1	-	-	-	-	1
Lawanson	1	-	-	1	-	2	-	9	-	2	3	-	4	1
Maroko	-	-	-	4	4	-	-	1	-	1	3	-	3	-
Mile Two	-	1	-	-	-	2	2	1	-	4	-	1	3	-
Obalende	1	-	1	1	1	-	-	-	2	2	2	-	7	3
Oshodi	4	-	-	1	3	1	-	-	-	5	1	-	4	-
Oyingbo	-	15	1	3	4	1	-	5	2	5	11	-	-	3
Yaba	5	-	2	1	2	7	19	4	-	-	3	1	3	-
TOTAL	22	19	16	14	18	22	24	23	10	22	30	6	35	18

SOURCE: Field Survey, (Bus Passengers), 1987

BIBLIOGRAPHY.

Abegunde, M.A.A. (1978) "Environmental Management: Coastal Land Reclamation in Lagos". In Urbanisation Processes and Problems in Nigeria. (ed.) by Sada, P. O. and Oguntoyinbo, J. S. (1978). Ibadan University Press. p.161 - 168.

Ackoff, R. F. Et al, (1962) Scientific Method: Optimizing Applied Research Decisions. Wiley ans Sons.

Adams, John (1981) Transport Planning: Vision and Practice. Routledge and Kegan Paul. London. 1981.

Addenbrooke, P. Et al, (1981) Urban Planning And Design for Road Public Transport. Bus and Coach. London.

Adebayo, A.G. (1987) "Lagos: The Choice and Position of a Federal Capital". In History of The Peoples of Lagos State. (Ed) by Adefuye, A, Et al (1987). Lantern Books, Ikeja. Lagos. Chapter 20, p.306 - 320.

Adefolalu, A.A. (1978) "Traffic Congestion in the City of Lagos".Nigerian Journal of Economic and Social Science, Volume 19, p.123 - 143.

Adefuye, A. et al (Ed) (1987) History of the peoples of Lagos. Lantern Books.

Adeniji, Kunle (1982) "Solving Nigeria's Transportation Problems With Particular Reference to Intra - Urban Transport." Lecture Delivered at The Polytechnic Ibadan. May 12th, 1982. 25 Pages.

Adeniji, Kunle (1983) "Nigerian Municipal Bus Operations" Transportation Quarterly, Vol. 37 No.1, January 1983. p.135 - 143.

Adeniji, Kunle (1983) "Urban Development and Public Transport In Nigeria". Third World Planning Review, Vol.5 No.4 Nov. 1983 p.383 - 394.

Adeniji, Kunle. (1983) "Improved Urban Transportation Systems and The Rapidly Growing Towns and Cities in Nigeria: A Time for Action". Being A Paper Presented at the National Conference on Development and Environment. Nigerian Institute Of Social and Economic Research. Ibadan. January 17 - 19, 1983.

Adeniji, Kunle. (1986) "The Role of Public Transport In Urban Development in Nigeria". KIDMA.---- Israel Journal of Environment. Vol.9, Nos. 2/3 1986 p.30 - 34.

Adeniji, Kunle. (1986) "Urban Travel Statistics: An Examination of Travel Pattern and Methods in Ibadan". Benin Journal of Social Sciences. Vol. 1 No.2 June, 1986. p.46 - 56.

Adeniji, Kunle (1986) "Bus Operators in Nigeria: Planning, Operation and Management Constraints". Being a Paper Presented at The U.I.T.P. Conference on Public Transport in Africa. Fes, Morrocco. 2 - 5 Dec. 1986.

Adeniji, Kunle (1986) Public Transportation and Basic Needs in Nigeria. Final Research Report. Nigerian Institute of Social and Economic Research. Ibadan. June, 1986. p.1 - 50.

Adeniyi, E.O. (1975) " Institutional Framework for Planning Urban and Regional Development in Nigeria". Occassional Paper No.2 Nigerian Institute of Social and Economic Research. Ibadan.

Adeniyi, E.O. (1987) "On the Road To Crisis: Nigeria's Mass Transit System is Going Awry". Thisweek Magazine. August 24, 1987. p.26 - 32.

Adenle, J.A. (1984) "An Opinion Paper on Lagos Metroline". Presented to The Special Technical Review Project. Governor's Office. Lagos. Feb. 1984.

Adesina, Lam. (1987) "Before The Civil Rule" Nigerian Tribune. Saturday, 5th September, 1987. p.4.

Akintola - Arikawe, J.O. (1987) "The Rise of Industrialisation In Lagos Area". In Adefuye. A. Et al, (ed) History of The Peoples of Lagos State. Lantern Books. Chapter 8. p.104 - 127.

Anderson, P. (1987) Mini Bus Ride: A Journey Through The Informal Sector Of Kingston's Mass Transportation System. Institute of Social and Economic Research (ISER), University of West Indies, Mona, Kingston. Jamaica. 1987.

Apostles, L. (1961) "Towards The Formal Study of Models in The Non-Formal Sciences". In The Concept and Role of The Model in Mathematics and Natural Sciences. Synthese. Library. Dordrecht.

Ayeni, M.A.O. (1976). "Spatial and Sectoral Changes in The Structure of Manufacturing Activities in Lagos, 1965 - 1972". Nigerian Journal of Quantitative Economics. Vol. 2 No.2 (1976), p.27 - 46.

Ayeni, M.A.O. (1977). "Living Conditions of The Poor In Lagos". Ekistics, Vol. 43, No. 255 (1977) p.77 - 80.

Ayeni, Bola (1981). "Lagos Metropolitan" In Pacioni, M. (ed) Cities In Developing Countries: Problems and Planning. Croom Helm. Chapter 4. p.127 - 155.

Bandi, F. et al (1974) "Length of Walking Distances and Distances Between Stops: Their Influence on the Attractiveness of Public Transport". U.I.T.P. Revue, Vol.23, No.3 1974. p. 175 - 181.

Banjo, G.A. (1984) "Towards a New Framework for Urban Transport Planning in the Third World". The 12th. Australian Road Research Board Conference. Hobart, Tasmania. 27th. - 31st. Aug. 1984. Vol.12, Part 1 1984. p. 69 - 82.

Banjo, George (1985) "New Directions in Transport Actions". The Guardian Newspaper, October 18, 1985. p.9.

Banjo, G.A. (1986) "Public Transport Services in Lagos: Existing Situation and Future Prospects". Mimeograph. University of Lagos, Civil Engineering Department. Lagos. Nigeria.

Banjo, G.A. (1986) "Urban Transport Actions in Lagos State: From Muddling Through to Scientific Rationality". Seminar Paper by Plan Programmes and Budget Department (PPBD), Office of the Military Governor, Lagos State Government. Lagos. 3rd July, 1986. 12pp.

Banjo, G.A. (1987) "Planning and Coordination of Federal and State Transport Systems in Nigeria". Being a paper presented at Kano Seminar on National Transport Policy for Nigeria, Federal Ministry of Transport and Aviation. 1987. 19pp.

Barbour, K.M, Et al. (ed) (1982). Nigeria in Maps. Hodder and Stoughton. London.

Baron, Paul, (1985) "Urban Mass Transport : Momentum Towards Automated Systems Growing". In Transport, Journal of the Chartered Institute of Transport, London. December, 1985. p. 21 - 22.

Bayliss, Brain. (1981) Planning and Control in The Transport Sector. Gower Publishing Co. Hants. 202 pp.

Bayliss, D. (1969) "The Use of Information From Transport Studies in Developing Parking Policies". PTRC Proceedings. 1969. p.21 - 26. PTRC London.

Bayliss, David. (1985) "A Transport Strategy for Cities". A paper presented at the London Transport Golden Jubilee Conference on Urban Public Transport Towards 2000. 1985.

Bell, G. Et al. (1983) The Economics and Planning of Transport. Heinemann. London.

Bendixson, Terence. (1974) Instead of Cars. Temple Smith. London.

Black, J. (1981) Urban Transport Planning. Croom Helm Limited. London.

Blunden, W.R. and Black, J.A. (1984) The Landuse / Transport System. 2nd. Edition. Pergamon Press. London.

Breese, Gerald (ed) (1972) "The Cities in Newly Developing Countries". In Readings on Urbanism and Urbanisation. Prentice-Hall Inc. Englewood Cliffs. N.J. Chapter 32.

Brown-West, Orikawe. G. (1984) "A Comparative Analysis of Traffic Management Performance in Developing Countries". In Transportation Quarterly. Vol. 38, No.3, July 1984. p. 459- 469.

Bruton, M.J. (1970) Introduction to Transportation Planning. Hutchinson.

Buchanan, Colin (1963) Traffic In Towns. Shortened Edition of the Buchanan Report. Penguin.

Bus and Coach Council, (1984) The Bus: The Key to Urban Mobility. Bus And Coach Council. London.

Chorley, R.J. and Haggett, P. (1969). Models in Geography. Methuen. London.

Cohen, Louis and Holliday, M. (1982) Statistics for Social Scientists. Harper and Row Publishers. London. Chapter 8.

Daniels, C.J. (1979). "Transport Pricing Policy in Bangladesh". PTRC Summer Annual Meeting. University of Warwick, England. 1979. p.46.

Davies, E.M. (ed) (1984) Public Transport : Assessing the Demand and Related Topics. Institute Of Local Government Studies. University of Birmingham. 105pp.

Dear, M. and Scott, Allen. J. (1981) Urbanisation and Urban Planning In Capitalist Society. Methuen. London.

Department of Environment, (1973) Bus Operations In Residential and Industrial Areas. Circular 82 / 73.

Department of Transport. (HMSO) (1985). Know Your Traffic Signs. London. HMSO.

Diandas, John. (1989) "Buses: Global Versatility" JCIT. Vol.10 No.8, 1989. p.287 - 289.

Diejomaoh, V.P. (1982) Social Science Research Priorities for National Development. Research for Development. Vol.2, No.1 1982.p.11.

Dodgson, J.S. and Topham. N. (9188). Bus Deregulation and Privatisation : An International Perspective. Gower. Aldershot. 223p.

Doxiadis Associates International. (1977). Regional Plan for Lagos State: Existing Conditions. Lagos, Nigeria. 1977.

Duff, J.T. (1965) "Traffic Engineering Techniques". In Conference Preceedings on Transportation Engineering. Institution of Civil Engineers. London. 1965. p.10.

Ekanem, N.F. (1977) "Transport Systems in High Density Cities: Proposals to relieve Nigerian Traffic Congestion". In Urbanisation and Nigerian Economic Development. Proceedings of The 1977 Annual Conference of the Nigerian Economic Society. p. 221 - 229.

Ekong, B.U. (1977). "Urbanisation and Transportation Problems: A Case Study of Nigeria". In Urbanisation and Nigerian Economic Development. Proceedings of the 1977 Annual Conference of The Nigerian Economic Society. p. 207 - 220.

Elliot - Hurst. (Ed.) Transportation Geography: Comments and Readings. McGraw. Hill.

European Conference of Ministers of Transport. (1973). Promotion of Public Transport. Paris. OECD.1973.

Falola, Toyin and Olanrewaju, S.A. (Ed) (1986). Transport Systems in Nigeria. Syracuse University. N.Y. USA.

Falvey, R.E. Et al. (1986) "Fuel Economy Standards and Automobile Prices". In Journal of Transport Economics and Policy. Vol.20. No. 1 P.31 - 45.

Fawcett, Paul. (1989). Minibus Services --- A Practical Operators Guide. Croner Publications. Kingston Upon Thames. 113pp.

Federal Office Of Statistics. (FOS). Annual Abstracts of Statistics. Lagos Nigeria. (Various Issues from 1970 - 1986).

Federal Republic of Nigeria. (1965) "Statement Of Policy On Transport". Sessional paper No.1 of 1965. Federal Ministry of Information, Lagos. Nigeria.

Federal Republic of Nigeria, (1970). Second National Development Plan, (1970 - 74). Federal Ministry of Information, Printing Division. Lagos. Nigeria.

Federal Republic of Nigeria. (1975). Third National Development Plan, (1975 - 80). The Central Planning Office, Federal Ministry of Economic Development. Lagos. Nigeria.

Federal Republic of Nigeria. (1980). Lagos Metropolitan Master Plan For The Year 2000 AD. (World Bank Project.). Urban and Regional Planning Division, Federal Ministry of Works and Housing, Lagos. Nigeria. Volumes 1 and 2.

Federal Republic of Nigeria. (1980). Outline of the Fourth National Development Plan (1981 - 85). Federal Ministry of National Planning. Lagos. Nigeria.

Federal Republic of Nigeria. (1981) Fourth National Development Plan, (1981 - 85). National Planning Office, Federal Ministry of National Planning, Lagos. Nigeria. Vol.1.

Federal Republic of Nigeria. (1988). "Nigeria on Threshold of New Economic Era". Guardian Newspaper. Tuesday, January 5, 1988. p.13.

Fenelon, K.G. (1925) The Economics of Road Transport. George Allen and Unwin Limited. London. 256pp.

Filani, M.O. and Osayinwese, Iz. (1974). "The Organization of Transport Planning in Nigeria". The Nigerian Journal of Economic and Social Studies; Vol.16, No.3. p.387 - 402.

Filani, M.O. and Osayinwese, Iz (1979) "Intra - City Traffic Flow Problems in Nigeria: The Case of Ibadan Metropolitan Area". In Nigerian Geographical Journal; Vol.22, No.1, 1979. p.17 - 31.

Filani, M.O. and Onakomaiya, S.O. (1980) "Nigerian Transportation in Perspectives". Mimeograph. University of Ibadan. Ibadan. Nigeria. 12pp.

Filani, M.O. and Onyemelukwe, J.O.C. (1983). Economic Geography of West Africa. Longmans.

Filani, M.O. (1985). "Infrastructure and The Nigerian Development Process: A Review". Being a paper presented at the Training Programme for Development Planners for the Fifth National Development Plan. 1986 - 1990. At The Nigerian Institute of Social and Economic Research (NISER). Ibadan. Feb.10 - March 9, 1985.

Filani, M.O. (1986). "How Do We Get There From Here: A Transportation Dilemma". 1986 Alumni Lecture, University of Ife, Ile- Ife. May 17, 1986. 40pp.

Foulkes, M. and Robertson, J.R. (1986) Transport In Europe: Background Data and Sources. Urban Transport Advisers London. (UTAL).

Fouracre, P.R. and Maunder, D.A.C. (1977) "Intermediate Public Transport in Developing Countries". TRRL, Laboratory Report, 772.

Fouracre, P.R. and Maunder, D.A.C. (1978). "Public Transport in Surabaya, Indonesia". Crowthorne. TRRL. Supplementary Report 370, 1978.

Fouracre, P.R. et al (1981) "Public Transport Supply in Indian Cities" TRRL, Laboratory Report, 1018.

Fouracre, P.R. et al, (1981) " Studies of Bus Operations in Delhi, India". TRRL, Supplementary Report, 710.

Fouracre, P.R. and Maunder, D.A.C (1987) "Travel Demand Characteristics in Three Medium Sized Indian Cities". TRRL, Research Report, 121.

Golan, T. (1975) "From Abidjan to Lagos". West African Magazine. 5th May, 1975. p.505 -507.

Greater London Council. (GLC). (1982) London Industrial Strategy. (LIS): Freight and Roads. GLC. 1982.

Glaister, Stephen. (1986). "Bus Deregulation, Competition and Vehicle Size". Journal of Transport Economics and Policy. May, 1986. p.217 - 244.

Green, L. and Milone,V. (1972) "Urbanization in Nigeria: A Planning Commentary". Ford Foundation, New York. 1972.

Gugler, Josef. and Flanagan, W.G. (1979) Urbanization and Social Change in West Africa. Cambridge University Press. Cambridge. London.

Habitat. (1982). "The Mutatu Mode of Public Transport In Metropolitan Nairobi. Manzingira Institute, 1982.

Habitat, (1984). Transportation Strategies for Human Settlements in Developing Countries. UNCHS. HS / 36 / 84 / E. 1984.

Hall, Peter. (1982) Urban and Regional Planning. 2nd Edition. George Allen and Unwin Limited. London.

Hargreaves, John. (1988) A New Way to Sell Public Transport. Transport Journal of The Chartered Institute of Transport, London. JCIT; Vol.9, No.3. 1988. p.119.

Harvey, D. (1969). Explanations in Geography. Edward Arnold.

Hay, Alan. (1968). "The Geography of Nigerian Road Transport". Unpublished Ph.D. Thesis, Cambridge University. 1968.

Hay, Alan. (1969). The Importance of Passenger Transport in Nigeria". The Journal of Social and Economic Studies. Vol.2, No.1. 1969.

Heraty, M.J. (9179). "Minibuses in Kingston, Jamaica". PTRC Summer Annual Meeting, University of Warwick, England.1979. p.183.

Heraty, M.J. (1980) "Public Transport In Kingston, Jamaica, and Its Relevance to Low income Households". TRRL Supplementary Report 546, 1980.

Heymann, Hans. Jr. (1965). "The Objectives of Transportation". In Gary Fromm (ed) Transport Investment and Economic Development. The Brookings Institution. Washington. D.C. 1965. p. 18 - 33.

Hibbs, J. (1985). Regulation ---- An International Study of Bus and Coach Licensing. London.

Hibbs, J. (1989) The History of British Bus Services. 2nd Edition. David and Charles Publishers. London.

Hillman, M; Henderson, I; and Whalley, A. (1976). Transport Realities and Planning Policy: Studies of Friction and Freedom in Daily Travel. Political and Economic Planning. London. No. 567.

HMSO. (1966) Roads in Urban Areas; Ministry of Transport, 1966. Her Majesty Stationery Office.

HMSO. (1973). Bus Operation in Residential and Industrial Areas. Circular 83 / 73 DoE and 155 / 73 Welsh Office, Britain.

HMSO. (1985) The highway Code. Deparment of Transport and The Central Office of Information. Hmso.

Hobbs, F.D. (1979) Traffic Planning and Engineering. Pergamon Press. London.

Hoinville, Gerard, Et al. (1977) Survey Research Practice. Heinemann Educational Books.

Hoyle, B.S. (1973). Transport and Development. Macmillan. London.

Iyahen, V.E. (1977). "Urban Transportation: The Needs to Experiment". In Urbanization and Nigerian Economic Development. Proceedings of the 1977 Annual Conference of The Nigeria Economic Society. p.231 - 235.

Jacobs, G.D. Fouracre, P.R. and Maunder, D.A.C. (1982) "Public Transport in The Third World Cities". The Highway Engineer. March, 1982.

Khan, Ata. A. (1985) "Towards The Development of Innovative Models of Inter - City Travel Demand". In Transportation Quarterly. Vol.39, No.2, April, 1985. p. 297 - 316.

King, Leslie. J. (1969) Statistical Analysis in Geography. Prentice - Hall Inc. Englewood Cliffs. N.J.

Kitchin, L.D. (1947) Bus Operation: Principles and Practice For The Transport Student. Ilife and Sons Limited.

Koenigsberger, O. Et al (1964) Metropolitan Lagos. Report Prepared for The Government of Nigeria Under The United Nations Programme of Technical Assistance. (Lagos, 1964).

Kolawole, Tunde. (1985) "Can The Metro Die" In Sunday Tribune, February 17, 1985. p.7 - 9.

Kotun, F.A.A. (1985) "Provision of Urban Mass Transportation: A Case Study of Lagos State Transport Corporation". Unpublished Master of Urban and Regional Planning Thesis. Centre For Urban and Regional Planning, University of Ibadan. Ibadan. 1985. 140pp.

Lagos State Government. (1977) Lagos State Transport Corporation Edict. Edict No.10 of 1977. Gazette No.26, Vol.10 of 13th June, 1977. p.31.

Lagos State Government. (1980) Central Licensing and Parking Authority (CLPA) Edict. Edict No.28 of 1980. Gazette No.77 Vol.13 of 30th, December, 1980. p.171.

Lagos State Government. (1980) Lagos State Works Management Board Edict. Edict No.2 of 1980. Gazette No.14 Vol.13 of 25th, February, 1980. p.53.

Lagos State Government. (1981) Lagos State Regional Plan (1980 - 2000). Ministry of Economic and Land Matters, Urban and Regional Planning Division. Lagos State Secretariat. Ikeja. 1981.

Lagos State Government. (1986) Traffic Survey of Bus Routes in Metropolitan Lagos. January - April, 1986. Statistics Division, Lagos State Ministry of Finance.Ikeja, Lagos.

Lagos State Government. (1986). "Mass Transit Systems in Lagos State". Meeting of the Honourable Federal Minister of Transport and Aviation and The Lagos State Commissioner for Transportation Matters. Federal Ministry of Transport and Aviation. FMOTA / 86 / 5b. 8pp.

Lagos State Population Bureau. (1986). Population Projection of Lagos Metropolitan. 1986.

Lagos State Transport Corporation. (1987) Annual Reports. (1980 - 1986).

Lameris, John, Warmolt. (1985). "The Environmental Controls On Commercial Vehicle Operating Centres Administered By Planning and Licensing Authorities". Thesis Submitted to The Chartered Institute of Transport, London.

Linn, J.F. (1983) Cities In The Developing World.Oxford University Press.

Mabogunje, A.L. (1961) "Lagos, A Study in Urban Geography". Ph.D Thesis, University of London. London.

Mabogunje, A.L. (1964). "The Evolution and Analysis of The Retail Structure of Lagos, Nigeria". Economic Geography, Vol.40, No.4 (1964). p.304 - 323.

Mabogunje, A.L. (1974) Cities and Social Order. An Inaugural Lecture. Delivered At The University Of Ibadan. Ibadan Univeristy Press.

Mabogunje, A.L. (1975) "Towards An Urban Policy In Nigeria". In Onibokun, Poju. (ed) Housing in Nigeria. Nigerian Institute Of Social and Economic Research. (NISER). Ibadan.

Mabogunje, Akin. L. (1975) "Prolegomenon to Urban Poverty in Nigeria". In Poverty in Nigeria. Annual Conference Proceedings of the Economic Society of Nigeria. 1975. p.69 - 91.

Mabogunje, A.L. (1976) Cities and African Development. Studies in the Development of African Resources. Series 3. Oxford University Press. Ibadan.

Mabogunje, A.L. (1977) "Issues in Nigerian Urbanization". In Urbanization and Nigerian Economic Development. Proceedings of the 1977 Annual Conference of the Nigerian Economic Society. Ibadan. p.39 - 56.

Mabogunje, A.L. (1978) "Towards an Urban Policy in Nigeria". In Sada,P.O. and Oguntoyinbo, J.S. (ed) Urbanisation Processes and Problems in Nigeria. Ibadan University Press. 1978. p. 21 - 30.

Mabogunje, A.L. (1981) The Development Process: A Spatial Perspective. Hutchinson and Co Publishers. London.

Mackay, Jamieson and Partners. (1981) "The Minibuses and the Public Transport System of Kuala Lumpur". TRRL Supplementary Report 678. 1981.

Maltby, D. and White, H.P. (1982) Transport in The United Kingdom. Macmillan. London.

Maunder, D.A.C. Et al (1981) Household and Travel Characteristics in Two Residential Areas of Delhi, India.1979. Transport and Road Research Laboratory. (TRRL) Supplementary Report 673.

Maunder, D.A.C. (1981) "Characteristics of Public Transport Demand in India Cities". TRRL Supplementary Report 709.

Maunder, D.A.C. (1984). "Trip Rates and Travel Patterns in Delhi, India." Transport and Raod Research Laboratory (TRRL) Research Report 1.

Mckay, David. H. and Cox, Andrew. W. (1979) The Politics of Urban Change. Croom Helm. London.

Midgley, P.G. (1982). World Bank Involvement In The Urban Transport Sector. Washington D.C. World Bank, 1982.

Moser, C. and Calton, G. (1971) Survey Methods In Social Investigation. Heinemann Educational Books. 2nd Edition.

Nkambwe, Musisi (1985) "Routes Development Versus Planning in The Traditional Urban Areas of South Western Nigeria. Third World Planning Review, Vol.7 No.5. 1985. p. 323 - 338.

Nkambwe, Musisi. S.A. (1986) "Urban Transportation: Features and Problems". In Falola, Toyin and Olanrewaju, S.A. (ed) Transport Systems in Nigeria. Syracuse University. U.S.A. P.139 - 154.

Nash, C.A. (1976) Public versus Private Transport. Macmillan Press Limited. London. 96pp.

Nash, C.A. (1982) Economics of Public Transport. Longmans.

Nigerian Economic Society. (1975) Poverty In Nigeria. Proceedings of the 1975 Annual Conference of the Nigerian Economic Society.The Department Of Economics, University of Ibadan. Ibadan. Nigeria.

Nigerian Economic Society. (1977) Urbanization and Nigerian Economic Development. 1977 Annual Conference Proceedings of the Nigerian Economic Society. Department of Economics, University of Ibadan. Ibadan. Nigeria.

O'Flaherty, C.A. (1969) Passenger Transport ; Present and Future. An Inuagural Lecture, Leeds University Press. 79pp.

O'Flaherty, C.A. (1974) Highways and Traffic. Volumes 1 and 2. Arnold.

Ogunsanya, A.A. (1982) "Spatial Pattern of Urban Freight Transport in Lagos Metropolis". Transportation Research Journal, Vol.16A No.4 p.289 - 300.

Ogunsanya, A.A. (1986) "Some Remarks on The Use of The Conventional Modelling for Transportation Planning in Developing Countries". In Journal Of The Nigerian Institue of Town Planners. JNITP. Vols. 6 and 7, Dec, 1986. p.71 - 85.

Okpala, D.C.I. (1977) "Strenghtening Urban Local Governments for Development Planning: The Critical Need for Urban Chief Executives". In Urbanization and Nigerian Economic Development. Proceedings of the 1977 annual Conference of the Economic Society of Nigeria. p.151 - 171.

Olanrewaju, S.A. (1977) "The Role Of Transport In African Economic Development". African Development Studies 1. (July 2, 1977).

Olanrewaju, S.A. (1986) "Transportation In Nigeria's Economic Setting". In Falola, Toyin and Olanrewaju, S.A. (ed). Transport Systems in Nigeria. Syracuse University, NY. USA.

Olanrewaju, S.A. (1986) "Road Transport Systems". In Falola, Toyin and Olanrewaju, S.A. (ed) Transport Systems In Nigeria. Syracuse University. NY. USA.

Olayemi, Olusegun, Ade. (1977) "Intra- city Person Travel in Metropolitan Lagos: Study of Commuting in The Fast Growing Capital of a Developing country". Geoforum, Vol.8. p.19 - 27.

Ologunde, Funso. (1984) "Need to Review our Traffic Laws". In Sunday Times. Dec. 16, 1984. p.7.

Oluduro, Olukayode. (1987) "Lagos Traffic Jam". Daily Times. Thursday 27th, 1987. p.9.

Olugbemi, S.O. (1987) "The Administration of Lagos State 1967 - 1979". In Adefuye, A. Agiri, B. and Osuntokun, J. (ed) History of The Peoples of Lagos State. Lantern Books. Ikeja, Lagos. p. 321 - 337.

Oluko- Olokun, Ayo (1987) "Getting to Know Local Transport Traditions". Business Concord. Friday, Oct.16, 1987. p.9.

Onakomaiya, S.O. (1977a) Highway Development in Nigeria: A Review of Policies and Programmes; 1900- 1980. NISER. Ibadan.

Onakomaiya, S.O. (1978) "Towards an Efficient Transportation Service for Metropolitan Lagos". In Sada, P.O. and Oguntoyinbo, J.S. (ed) Urbanisation Processes and Problems in Nigeria. Ibadan University Press. p.57 - 62.

Onakomaiya, S.O. and Ekanem, N.F. (ed) (1981) Transportation In Nigerian National Development. Proceedings of a National Conference. Held at The University of Ibadan. Ibadan. By The Nigerian Institute Of Social and Economic Research. NISER. Ibadan.

Onakomaiya, S.O. (1983). "Road Transportation and Environmental Degradation in Nigeria". Being A Paper Presented at The National Conference on Development and The Environment. Organised By NISER. Jan, 17 - 19, 1983. 14pp.

Onibokun, Poju. (1975) "Urbanisation in The Emerging Nations : A Challenge for Pragmatic Comprehensive Regional Planning". In Onibokun, Poju (ed) Housing in Nigeria. Nigerian Institute of Social and Economic Reseach (NISER). Ibadan. p.5 -17.

Onibokun, Poju. (1985). Housing In Nigeria: A Book of Readings. Nigerian Institute of Social and Economic Research (NISER), Ibadan.

Onokerhoraye, A.G. (1982) Public Services In Nigerian Urban Areas: A Case Study of Ilorin. Nigerian Institute of Social and Economic Research (NISER), Ibadan.

Osayimwese, Iz. (1979) "Intra-City Traffic Flow Problems In Nigeria: The Case of Ibadan Metropolitan Area". In Nigerian Geographical Journal. Vol.22, No.1, 1977.

O'Sullivan, Patrick. (1980) Transport Policy: An Interdisciplinary Approach. Batsford Academic and Educational Limited. London.

Osunbote, Oladele. (1982) "Transporting The Masses". In Daily Sketch, Sept. 16, 1982. p.7.

Osuntokun, Jide. (1987) "Lagos and Political Awareness in Nigeria. (1880 - 1930)". In Adefuye, A. Et al (ed) (1987). History of the Peoples of Lagos State. Lantern Books. Ikeja. Lagos. Chapter 17. p.256 - 278.

Owen, Wilfred. (1966) Metropolitan Transportation Problems. Brookings Institution. Washington D.C.

Owen, Wilfred. (1972) The Accessible City. The Brookings Institution. Washington D.C.

Owen, Wilfred. (1985) "Transportation and World Development". In Transportation Quarterly, Vol.39, No.3. July, 1985. p.365 - 374.

Owen, Wilfred. (9188) "Moving In The Metroplis: The Demand Side". In Global Mobility. Center For Advanced Research In Transportation. Arizona University. Tempe. Arizona. September, 1988.

Parley, L.L. and Robinson, R. (1982). The TRRL Road Investment Model for Developing Countries. (RTIM2). TRRL, Laboratory Report 1057.

Pendakur, V.S. and Pyplacz, Bonita. (1984) "Urban Traffic Noise Abatement". In Transportation Quarterly, Vol.38, No.3. July, 1984. p.471 - 486.

Phillip, Alan Butt, (1989). "Socialising Driver Hours" JCIT, Vol.10 No.5 1989. p. 200.

Plowden, S. (1985) Transport Reform: Changing The Rules. Policy Studies Institute, No.642. London.

Podoski, J. (1978) "Planning and Operating Urban Transport in African Towns". Paper Presented at the International Union of Public Transport. (UITP). First African Symposium. Abidjan. 12 - 15 November, 1978. 9pp.

Pope, J. (1986) Minibuses in Kuala Lumpur, Malaysia. Department of Shipping and Transport, Plymouth Polytechnic. Working Paper No.10. June, 1986.

Pratsch, Lew.W. (1986) "Reducing Commuter Traffic Congestion". In Transportation Quarterly, Vol.40, No.4. p. 591 - 600.

Presstwood - Smith, P. (1981) "Theory and Practice: The London Experience". In Bannister and Hall (ed) Transport and Public Planning. Mansell Limited.

Preston, Barbara. (1954) Focus On Road Accidents. Public Affairs News Service. (PANS). London. 79pp.

Retzki, H.G. (1976) "Urban Transportation Research Policies, Planning and Asasessments of Technology". Paper Presented to The Second United Nations ECE Seminar on The Role of Transportation in Urban Planning, Development and Environment. Washington D.C. June, 1976.

Robinson, D. (1989) "Bus Industry Special Report: Where will it all end"? JCIT, Volume 10 No.5 1989. p.197 - 200.

Robinson, H. and Bamford, C.G. (1978) Geography of Transport. Macdonald and Evans.

Sada, P.O. (1970) "Political Policies and The Development of Transportation in Metropolitan Lagos". Nigerian Geographical Journal, Vol.13, No.2. p.185 - 199.

Sada, P.O. (1975) "Urban Poverty: The Case Of Lagos, Nigeria". In Poverty in Nigeria. Proceedings of the 1975 Annual Conference of the Nigerian Economic Society. p.93 - 110.

Sada, P.O. and Oguntoyinbo, J.S. (ed) (1978) Urbanisation Processes and Problems in Nigeria. Ibadan University Press. Ibadan.

Schonfeld, P.M. and Chadda, H.S. (1985) "An Assessment of Urban Travel Reduction Options". In Transportation Quarterly, Vol.39, No.3 July, 1985. p.391 - 406.

Self, P. (1981) "The Future Of Urban Planning". The Royal Society for The Encouragement of Arts Manufacturers and Commerce Journal. December 1981 Issue.

Self, Peter. (1982) Planning The Urban Region: A Comparative Study of Policies and Organisations. George Allen and Unwin.

Shalom, Reichman. (1973) "Transportation and Urban Development in West Africa: A Review". In Hoyle, B.S. (ed) (1973) Transport and Development. Macmillan. p.190 - 207.

SELNEC Pte (1973) Public Transport Plan for the Future. The South East Lancashire and Northe East Cheshire Passenger Transport Authority. (SELNEC Pta). 1973.

Sharp, C.H. (1973) Transport Economics. Macmillan Studies in Economics.

Silcock, D.T. (1979) "Paratransit ---- The Answer". In Journal of The Chartered Institute of Transport, No.Vol.38 No.13. (1979).

Sofretu, Ratp. (1973) The Greater Cairo Transportation Planning Study. Ministry of Transport , Arab Republic of Egypt. May, 1973.

Sokunbi, Wale. (1987) "The Menace of Bus Salesmen". National Concord Newspaper, Friday, August 21, 1987. p.9.

Stanford Research Institute. (1961) The Economic Coordination of Transport Development in Nigeria. (Menlo Park, California). Prepared for The Joint Planning Committee, National Economic Council, The Federation Of Nigeria. 1961.

Starkie, D.N.M. (1967) Traffic and Industry: A Study of The Traffic Generation and Spatial Interaction. London School of Economics and Political Science. Geographical Papers No.3. 1967.

Steele, John. (1986) "EEC: Transport Policy and The European Court:. In Transport. Journal of The Chartered Institute Of Transport, London. April, 1986. p.77 - 79.

Steiner, H.M. (1978) Conflict In Urban Transportation. Lexington Books. Massachussetts. USA.

Stubbs, P.C. Et al. (1980) Transport Economics. George Allen and Unwin. London.

Stuckey, B. (1973) "Transportation and African Development. The Landlocked Countries". IDEP. Seminar. Ibadan. 1973.

Suchorzewski, Wojciech. (1986) "Transport Investment In The Third World". In Transport, Journal of The Chartered Institute of Transport. London. February, 1986. p.23 - 24.

Taaffe, E. and Gauthier, H. (1973) Geography of Transportation. Prentice-Hall Inc. USA.

THISWEEK Magazine. (1987) "On The Road To Crisis: Nigeria's Mass Transit System is Going Awry". A Special Report in August 24, 1987 Thisweek. Issue. p.26 - 32.

Thomson, Michael, J. (1977) Great Cities and Their Traffic. Penguin Books. 248pp.

Thomson, M.J. (1978) "Some Issues Concerning Traffic Limitations In Developing Countries". PTRC Annual Summer Seminar Meeting. July, 1978. London.

Thomson, M.J. (1983) Towards Better Urban Transport Planning in Developing Countries. World Bank Staff Working Paper No.600. Washington D.C., 1983.

Tolley, R.S. (ed) (1988) Transport Technology and Spatial Change. Transport Study Group. Institute of British Geographers. London.

Transpoconsult (1976) Lagos Metropolitan Area Transportation Study. Prepared for The Federal Ministry of Transport, Lagos Nigeria.

Transpoconsult. (1977) Lagos Metropolitan Transport Sudy. Final Report, Lagos. Nigeria. 1977.

Udo, R.K. (1980) Land Policy For Effective Mangement of The National Economy. An Inaugural Lecture Delivered at The University of Ibadan. Ibadan. 10th. March, 1977. Ibadan University Press.

Ullman, E.L. (1973) Geography as a Spatial Interaction: Studies in Regional Development, Cities and Transportation. University of Washington Press. 1973.

UITP (1986) Public Transport In Africa. International Union Of Public Transport. Conference on Public Transport In Africa. Fes. 86. Maroc. 2-5 Dec., 1986.

UNCHS ---- Habitat. (1982) Transportation For Urban and Rural Areas; With Emphasis On Groups With Limited Resources. United Nations Centre For Human Settlements. Nairobi. HS / OP / 82 --11.

UNCHS ----- Habitat. (1984) Transportation Strategies For Human Settlements in Developing Countries. United Nations Centre For Human Settlements. Nairobi. 1984. HS / 36 / 84 / E.

United Nations (1970) Transport Modes and Techniques For Development. United Nations Department of Economics and Social Affairs. New York. 1970.

Urquhart, A. (1977) Planned Urban Landscapes of Northern Nigeria. Ahmadu Bello University Press. Zaria. 1977.

Uyanga, Joseph. (1982) Towards A Nigerian National Urban Policy. Ibadan University Press.

Vagale, L.R. (1973) "Impact of Traffic and Transportation on Urban Environment: Focus on Nigeria". Being a Paper Presented on a Symposium on Better Environment. Western State Ministry of Lands and Housing. Ibadan. Nov. 1973. 16pp.

Visser, Evert.J. (ed) (1977) Transport Decisions In An Age Of Uncertainty. Proceedings of The Third World Conference on Transport Research. Rotterdam. 26 - 28 April, 1977.

Voight, F. (1967) The Importance of Transport System For Economic Development Process. United Nations Economic Commission for Africa. Addis Ababa. E / CN.14 / CAP / 39.

Walters, A.A. (1979) Costs and Scale of Bus Services.World Bank Staff Working Paper No.325. Washington D.C. 1979.

Webster, F.V. (1986) "Transport In Towns: Some Of The Options ". In Journal of Transport Economics and Policy. Vol.20, No.2 May, 1986. p. 129 - 152.

White, H.P. and Senior, M.L. (1985) Transport Geography. Longman. London.

White, P.R. (1976) Planning For Public Transport. Hutchinson. London.

White, P.R. (1981) "The Benefits of Minibuses --- A Comment". Journal of Transport Economics and Policy. September, 1981.

White, Peter. (1986) Public Transport: Its Planning, Management and Operation. (2nd. edition). Hutchinson. London.

Whol, M. (1965) The Urban Transportation Problems. Cambridge. Harvard University Press. 1965.

Willard, D.Weiss. (1974) Manual On Highway Project Appraissal In Developing Countries. Prepared for Economic Development Institute. International Bank For Reconstruction and Development (IBRD) Washington D.C.

Wilson, A.G. (1973) Urban and Regional Models In Geography. Wiley and Sons Limited.

Wistrich, Enid. (1983) The Politics Of Transport. Longman. London.

World Bank. (1972) Urbanisation. World Bank Sector Working Paper. Washington D.C.

World Bank. (1975) Urban Transport. World Bank Sector Policy Paper. Washington D.C.

Zahavi, Y. (1976) Travel Characteristics in Cities Of Developing and Developed Countries. The World Bank Staff Working Paper N0.230. Washington D.C. 1976.