

# **EVALUATION OF TRANSPORT INFRASTRUTURAL DEVELOPMENT IN NIGERIA AND ITS EFFECT ON THE NATIONAL ECONOMY [1981- 2004]**

**BY**

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## **CERTIFICATION**

This is to certify that this work was carried out by NJOKU, IKPECHUKWU (20054495068), in the Department of Transport Management Technology. It satisfies in part, the requirements for the award of an M.Sc degree of the Federal University of Technology, Owerri.

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## **DEDICATION**

To Mr. Asonye Njoku and Mrs. Cecilia Njoku: for being a source of inspiration and to Onyema, Chinedu, Ezioma and Christie for their unflinching support.

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## **TABLE OF CONTENTS**

	<b>Page</b>
Title	i
Certification	ii
Dedication	iii
Acknowledgement	iv
Abstract	v
<b>Table of Contents</b>	<b>vi</b>

### **Chapter One**

<b>1.0 Introduction</b>	<b>1</b>
1.1 Background of The Study	1
1.2 Statement of The Problem	5
1.3 Objectives of The Study	7
1.4 Statement of Research Hypothesis	8
1.5 Significance of The Study	9
1.6 The Scope And Limitation of The Study	9
1.7 Definition of Terms	10

## **Chapter Two**

<b>2.0 Review of Literature</b>	<b>13</b>
2.1 Transport as an Economic Facilitator	13
2.2 Historical Background of the Various Transport Modes in Nigeria	17
2.2.1 Rail Infrastructure	17
2.2.2 Maritime Transport (Sea)	19
2.2.3 Road Infrastructure	22
2.2.4 Inland Water Transport Infrastructure	28
2.2.5 Air Transport Infrastructure	32
2.3 Legal Framework of the Transport Industry in Nigeria	35
2.3.1 Carriage of Goods by Road	36
2.3.2 Air Modality	38
2.3.3 The CIM	39
2.3.4 Carriage of Good by Sea	40
2.4 The Principles and Objectives of the National Transport Policy	42
2.5 The Role of Transport in National Development	44

2.5.1 Employment Generation	44
2.5.2 Transfer of Technology	46
2.5.3 Revenue Generation	47
2.5.4 Promotion of Trade and Commerce	47
2.5.5 Industrial Growth and Development	48
2.5.6 The Impact of Inadequate Transport Infrastructure on Users and National Economy	49

## **Chapter Three**

<b>3.0 Research Methodology</b>	<b>62</b>
3.1 Introduction	62
3.2 Research Design	62
3.3 Sources of Data	63
3.4 Methods of Data Analysis	63

## **Chapter Four**

<b>4.0 Results and Discussion</b>	<b>68</b>
4.1 Test of Hypothesis I	68
4.2 Summary Output	69

4.3 Test of Hypothesis II	69
4.4 Reliability Analysis	70
4.5 Test of Hypothesis III	71
4.6 Regression Results	72
4.7 Fitting a Trend Line to the least square method	74
4.8 Further Analysis of Transport Infrastructural Development and its Effect on the Economy	77
4.9 Discussion of Finding	79

## **Chapter Five**

<b>5.0 Conclusion and Recommendations</b>	<b>80</b>
5.1 Conclusion	80
5.2 Recommendations	81
<b>Bibliography</b>	<b>82</b>



## **LIST OF TABLES**

	<b>Page</b>
Table 2.1: Railway Construction in Nigeria (1896-2007)	18
Table 2.2: Cost items of freight transport in Nigeria	51
Table 2.3: Transport sector's percentage contribution to GDP at 1999 factor cost from 1981 – 2005	54
Table 2.4: Federal Government Transport Sectoral Allocation (1991 - 1999) Rolling Plan Periods	56
Table 2.5: Modal Distribution of Public Planned Capital Investment in Transport (in percentage)	57
Table 2.6: Analysis of cargo delivered at the Nigerian ports by Modes of transport (tonnes)	59
Table 4.1: Data for Test of Hypothesis I	68
Table 4.2: Data for Test of Hypothesis II	70
Table 4.3: Correlation Coefficient	70
Table 4.4: Analysis of Variance	71
Table 4.5: Data for Test of Hypothesis III	72
Table 4.6: Model Summary	72
Table 4.7: ANOVA of the Regression	72
Table 4.8: Coefficients of the regression	73
Table 4.9: Residual Statistics	73
Table 4.10: Least Square Analysis Method	74

Table 4.11: Budgetary Allocation to the Transport Sector	78
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## **LIST OF FIGURES**

	<b>Page</b>
Figure 2.1: Analysis of Cargo Delivered at Nigerian Ports (1991 - 2002)	61
Figure 4.1: Scatter Diagram and Trend line	76

## ABSTRACT

Transport infrastructure is the fixed part of a transport system. Transport infrastructure development remains one of the major tools for achieving the much needed rapid economic growth in Nigeria. Hence, the study aims at investigating the effect of funding on transport infrastructure development and the implication of this to the economy. The scope of the study was confined within the time frame of 1981-2004. The researcher used GDP, Budgetary Allocation to Transport and the Contributions of Transport Modes to the GDP for the computation of estimates. Pearson Correlation Coefficient (r) was used in testing Hypothesis I. The result showed a positive r value of 0.63 which was statistically significance, hence,  $H_{A_1}$  was accepted to conclude that the contribution of the transport sector to the economy increases as investment in infrastructure increases. Hypothesis II was tested with Analysis of Variance. As a result of the test,  $H_{A_2}$  was accepted to conclude there was a difference between the contributions of the modes to the economy over time. In the case of hypothesis III, Analysis of Variance was used with Multiple Regression for testing. The output showed a significant R value of 0.98 and  $R^2$  of 0.97. Therefore,  $H_{A_3}$  was accepted to conclude that there was a significant contribution to the GDP by the transport sector. The researcher identified insufficient funding as the bane of growth of the sector. The study finally suggests that policymakers prioritize appropriate and adequate investment on transport infrastructure towards building a strong, sound and viable economy.

**Keywords:** *effect of transport infrastructural development on national economy*

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 BACKGROUND OF THE STUDY**

The term infrastructure collectively covers many areas that can be broken down into: (i) capital (building) facilities, housing, factories, and other structures which provide shelter; (ii) transportation of people, goods, and information; (iii) public services and utilities, power plants, water resources, waste removal, minimization and control; and (iv) environmental restoration (Miller, 2002). In other words, transport infrastructure is the fixed part of transport such as the road and rail, its environs, plus signs and signaling. It also includes transport terminals, depots and interchange, airports, seaports and canals (David, 2001).

Transportation is the cornerstone of civilization. As the society and economic organizations become complex, the relevance of transport grows. Also, the demand for transport is a derived one, because it depends on the demand for the commodities carried or the benefit of personal travel and each travel is unique in time and space. Hence, the demand for transport services increases with the

extension of the input – output relationships of an economy (Oni, 2004).

The elasticity of demand for transport depends on the elasticity of demand for the commodity being transported as well as on the proportion of transport costs in the value of the delivered product. Also, studies in Nigeria's economy suggest that transportation costs have a significant proportion of the final price of most goods – agricultural, manufactured and mining products. On the average, transport accounts for more than 30% of the value of the delivered product. The high cost is due to the inadequacy and inefficiency in Nigeria's transport infrastructure. Transport costs on the feeder roads to the trunk road or the railway to the port often cost as much as between 55 and 60 percent of the receipts from commodities (Olanrewaju and Falola, 1986). Also, price elasticity of demand for transport is very high in Nigeria's transport system. The more efficient the transportation network is, the lower the transport costs but presently, large production of the economically important movements are bulky, low value agricultural and mineral products (Olanrewaju and Falola, 1986).

In a modern economy, the role of transport is very strategic for it facilitates trade, enhances and improves the movement of goods, people, ideas, technology and services and furthermore, it permits the knitting of friendship and fraternal relations among people. In other words, transportation as a system of linkages brings about spatial interaction not only between people but also between geographical locations and sectors (Williams, 1992). It does not only influence our personal mobility and the prices that we pay for goods and services but it is also a determinant of where we choose to live and work (Owen, 1968).

Transportation could also be defined as that aspect of general business that deals with the movement of passengers and goods from point of origin to point of destination. It moves idle resources from point of low value to point of higher value and demand. Transportation therefore governs world trade, commerce and industry. It controls production or manufacturing. It is the pivot of any economy. It is the hub upon which the wheel of the economy revolves. In fact, the role of transport to development of any society cannot be over-emphasized. Therefore, let me assert that whenever the transport sector of an economy sneezes, other sectors catch

cold. Of course, if there is no movement for any single day, everything will be at a stand still.

The development of the mechanism of transportation has exerted a far reaching impact within the human environment and its implications are so wide that it cuts across virtually every facet of human endeavour. For example, its impact extends beyond offering expanded employment opportunities to altering individual's life style and aspiration. It raises the level of production and income as well as shaping the internal comparative advantage which in turn exerts significant influence on the structure of the global economy. Advancement in the mechanism of moving people and the delivery of information is now generally acclaimed as the bedrock of economic and social progress. The impact of the technology of the information super highway attests to this assertion. The modern transport systems are easier, cheaper, safer and more reliable but we are yet to attain to this height in Nigeria.

Thus, we can state without reservation that the very unique nature of transport; its potential to minimize the problem of social friction caused by physical distance, its role in the national defence,

unity, economic, social and political integration makes a very strong case for the transport sector to be designated as a strategic sector.

## **1.2 STATEMENT OF THE PROBLEM**

Let me also assert that any nation that is immobile is undeveloped. Hence, efficient transport facilities act as catalyst for development. There is therefore, cause for concern while considering the infrastructural base in Nigeria today, which is incomparable with those of many African nations, both in terms of quality and service coverage. In particular, the rural areas where the bulk of our populations reside are largely deprived of the basic transport infrastructure.

In Nigeria today, a considerable number of the populace live away from an all weather road. Neglect of road maintenance multiplies the cost of repair after every rainy season and increases cost to vehicle owners and shippers. The implication of this to manufactures and producers is grievous to say the least. It increases cost of production making goods and products made in



Nigeria less competitive in both domestic and international markets (Oni, 2004).

The effects of the inadequate maintenance and renewal of equipment and facilities are visible in all sub-sectors: inadequate condition of the roads and the need for their subsequent reconstruction; inadequate replacement and maintenance of vehicles, contributing to high social cost of atmospheric pollution, resulting in high operating costs. In turn, such excessive operating cost, by decreasing net operating revenues make timely replacement of vehicles difficult. In the case of railways, lack of necessary resources to keep track, rolling stock and maintenance facility in reasonable conditions produce a very serious deterioration of the railway system. Similar problems affect inland water ways, affecting their ability to perform useful functions (Oni, 2004).

According to Olomola (2003), inadequate provision of transport infrastructure and services provide basis for explaining the incidence of poverty across various Nigerian communities in both urban and rural areas. The categories of transport problems that can be identified are: bad roads, fuel problem (high fuel price, fuel shortage, supply and high transport cost), traffic congestion (long

waiting time, bad driving habits), inadequate high passenger capacity/mass transit vehicles and overloading, high cost and shortage of spare parts, poor vehicle maintenance and old vehicles. More so, port congestion and decaying facilities pose a serious threat to the growth of the economy. It is clearly established that inadequate transport facilities and services as well as the constraint imposed on the mobility and accessibility of people to facilities such as markets, hospitals and water resources have grave implications on deepening poverty levels. Thus, there is need for urgent policy measures to address the prevailing travel and transport problems.

### **1.3 OBJECTIVES OF THE STUDY**

Motivated by the strategic importance of mobility to the economy; this study is intended to achieve the following objectives:

1. Investigate the effect of the quality of transport infrastructure on economy.
2. Examine the trend of performance of transport industry with reference to the budgetary allocation made to it over time.

3. Identify the constraints affecting the development of Nigeria's transport industry.
4. Recommend solutions to the constraints.

#### **1.4 STATEMENT OF RESEARCH HYPOTHESES**

$H_{O_1}$ : The contribution of the transport sector to the economy does not increase as investment in infrastructure increases.

$H_{A_1}$ : The contribution of the transport sector to the economy increase as investment in infrastructure increases.

$H_{O_2}$ : There is no significant difference between the contributions of the transport modes to the GDP over time.

$H_{A_2}$ : There is a significant difference between the contributions of the transport modes to the GDP over time.

$H_{O_3}$ : The contribution of the transport sector to the GDP is not significant.

$H_{A_3}$ : The contribution of the transport sector to the GDP is significant.

## **1.5 SIGNIFICANCE OF THE STUDY**

The study will serve as a tool for policy makers to evolve suitable policies that will check the menace of immobility and hence lubricate the engine of growth of the economy. It will also serve as a basis for further research work especially for the transport industry and generally for other sectors of the economy where their impact could be felt.

## **1.6 THE SCOPE AND LIMITATION OF THE STUDY**

Given the pervasive nature of transport, this work could not cover all the aspects of transport. It only focused on the maritime transport mode, rail mode, aviation mode and road mode of transport.

Furthermore, in the course of this study, the researcher was constrained with time factor, given a lot of issues completing for time. A research of this nature ought to have received more time than was allocated to it. This in a way affected the quality of the work.

Distance was another constraint as the researcher had to travel to Lagos where the Headquarters of most of the organizations concerned are situated (e.g. NSC, NPA, NIMASA, NRC, etc). Finally, money was needed to make the trips and purchase books or photocopy the required materials. Despite these constraints, the objectives of the study were to a large extent achieved.

## **1.7 DEFINITION OF TERMS**

- ❖ **Cabotage:** - Inland trade along coastal waters. It is the navigation and movement of ships in coastal waters by a country to its own domestic traffic.
- ❖ **Transport:** - To carry or convey goods/people, etc. In this context, transport entails anything and everything that has to do with the operation of vehicles and movement of goods.
- ❖ **Multimodal Transport:** - This has been defined by the 'United Nations Convention on International Multimodal Transport of Goods' as "the carriage of goods by at least two different modes of transport, on the basis of a multimodal transport contract from a place situated in one country at which the goods have

been in charge by multimodal transport operation to a place designated for delivery situated in a different country” (Ilogu, 2007). Multimodal transport could also take place within a country.

- ❖ **Logistics:** - Total concept covering the planning and organizing of the supply and movement of materials/goods, etc from original source through stages of production, assembly, packing, storage, handling and distribution to final consumer. Distribution is but one element of whole logistics concept and transport, a single element only of physical distribution.
- ❖ **Economies of Scale:** - Economic theory which appears to dictate that big is economically better (i.e. bulk buying and/or carriage of goods) gives lower cost per unit.
- ❖ **FOB (Free On Board):** - Freight term whereby the exporter's liability for goods ceases once they are delivered to the carrier.
- ❖ **CIF (Cost, Insurance and Freight):** - Freight term whereby the exporter is responsible for arranging freighting and insurance over to the agreed destination.

- ❖ **Freight:** - A consignment of goods or the amount (i.e. charge) payable for the carriage of goods. An alternative term for transport of goods e.g. freight transport.
- ❖ **Infrastructure:** - The fixed part of a transport system such as the road and the rail, its environs plus signs and signaling. Also includes transport terminals, depots and interchange, airports, seaports and canals.

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

In this chapter, the study shall review existing literature on the linkages between transport and economic performance. Therefore, in line with this step, the chapter is divided into subtopics as shown below:

- a) Transport as an economic facilitator.
- b) Historical background of the various transport modes in Nigeria.
- c) Legal framework of the transport industry in Nigeria.
- d) The principles and objectives of the national transport policy.
- e) The role of transport in national development.

#### **2.1 TRANSPORT AS AN ECONOMIC FACILITATOR**

Transport helps an economy in two basic ways. First, it gives consumers access to places where they can engage on income-generating activities, consume other goods and services (including education and health care), or engage in leisure and social



activities. Second, transport enters the economy as an intermediate input into production, either directly or as a complement to other factors (for instance, security inputs or getting output to market). In the case of rural agricultural production, improving transport may lower input prices and hence production costs, improve access to credit, facilitate technological diffusion, increase the area of land under cultivation, or increase the availability of goods.

Balwinder (1986) reported the substantial costs to farmers due to inadequate transportation facilities connecting rural areas to market towns. On a national level, improved transport may increase trade and competition from imports, which in turn may lead to improved production efficiency, putting downward pressure on consumer prices and reducing seasonal fluctuation in price. In urban areas, the price and quality of transportation and other types of infrastructure significantly affect firms' decisions about where to locate and ultimately affect firms' output.

Transportation costs are a significant part of total costs, affecting the survival of small firms and the entry of new firms into an industry or market. National output can increase if inputs shift

to more productive uses. By attracting inputs from other regions, transport can help shift a region's production outward.

Having considered the ways transport can facilitate trade and development, this work further defined these terms as follows. Trade facilitation means any measure that eases a trade transaction and leads to time and cost reductions in the transaction cycle. Development in this context means economic development. And economic development is related to economic growth which is a rise in the level of output or an increase in the per capita income of a country in a given period of time. Nonetheless, economic development encompasses economic growth as it is an umbrella term which includes sustained economic growth as well as a noticeable improvement in the socio-political life and living standard of a nation over a long period of time (Soba, 2005).

However, the current acceptable definition of economic development according to Todaro (1982) is the one which describes economic development in terms of "the reduction or elimination of poverty, inequality and unemployment within the context of a growing economy", while the World Bank Development Report (1992) identifies the essential components of economic development

as “raising standards of living, improving education, health and equality of opportunity”. Therefore, Nigeria is not economically developed because the country has so many features of underdevelopment which among others include:

Low literacy level, Poor state of infrastructure, Low income per head, Subsistent agricultural practices, Low industrial capacity, Low calorie intake, High rate of unemployment, Absence of stable policy, Presence of mono-product economy, High infant mortality rate, etc.

Transportation is not just an intermediate good between production and consumption, but a major variable in any government’s agenda for equitable economic growth. Indeed, transport is a key element for the movement of both people and goods and a necessary mechanism for people to lift themselves out of poverty. It is, therefore, a critical component of the infrastructural base that permits the development of business and wealth creation. However, the Nigerian situation is a case of poorly developed, maintained and coordinated transport infrastructure – a situation that is largely responsible for the low level of national development (Ibe, 2001).

This is a clear indication that the material development of Nigeria is dependent on transport. Therefore, for Nigeria to emerge as one of the top twenty economies of the world by the year 2020, she must address her transport infrastructural challenges in terms of development and availability. These challenges call for the need for radical transformation of the present national transport policy.

## **2.2 HISTORICAL BACKGROUND OF THE VARIOUS MODES OF TRANSPORT IN NIGERIA**

### **2.2.1 RAIL INFRASTRUCTURE**

The history of Nigeria's railway infrastructural development commenced in March 1896; when the Colonial Government initiated the construction of railway lines from Lagos (1896) to Ibadan by the Lagos Government. This covered a total of 193 kilometers of track length. The Northern Nigeria Government started the construction of the 37km track, Baro – Kano Railway line by 1907-1911. Port Harcourt was chosen as the Southern terminus and construction work began in 1913 and the line was extended to Udi - coal field in 1916. By the year 1926 the line was

linked up with the western lines at Kaduna junction after being suspended in 1920 as a result of the World War I. between 1936 and 1955 when the Nigerian Railway attained its corporate status, the railways' total kilometers stood at 3,062 (Ibe, 2003).

After the lull, railway construction picked up once more in 1961; increasing to 3,505km in 1964 with the extension of the railway line to Maiduguri. With the exception of the Warri – Ajaokuta Steel – Itakpe 275km standard gauge and the Lagos – Kano dual carriage standard gauge still under construction, the pace of development has not changed. It is worthy of special mention that all other tracks have been on the 3ft 6in gauge. Table 2.1 shows the picture of railway construction in Nigeria.

**Table 2.1: Railway Construction in Nigeria (1896-2007)**

<b>SECTION</b>	<b>LENGTH (in km)</b>	<b>PERIOD OF CONSTRUCTION</b>
Lagos -- Ibadan	193	1896 – 1904
Ibadan – Jebba	295	1901 – 1909
Baro – Kano	378	1903 – 1911
Jebba – Minna	255	1909 – 1915
Port Harcourt – Enugu	243	1913 – 1916
Enugu – Markudi	220	1920 – 1924
Kaduna Junction – Kafanchan	166	1918 – 1924
Kafanchan – Bauchi	236	1958 – 1961
Bauchi – Gombe	168	1961 – 1963
Gombe – Maiduguri	308	1963 – 1964
Warri – Ajaokuta – Itakpe	275	2001 – 2005
Port Harcourt – Onne	9	Under Construction
Lagos to Kano (Dual carriage)	3500	Under Construction

Source: NRC

In effect, the railway infrastructure in Nigeria consists basically of 3,505 route kilometers of two parallel lines from Port Harcourt to Maiduguri and Lagos to Kano.

### **2.2.2 MARITIME TRANSPORT (SEA)**

Here, the use of the sea as a means of transport dates back to the 15<sup>th</sup> century (1485) when the Portuguese sailed into Lagos with their vessels basically to trade in Benin City. In 1861 Lagos became a crown colony and by 1863, 58 British ships and 41 foreign ships entered Lagos harbours. The wharf, Iddo Wharf, was completed in 1906 while the “first steamer, 55 Abeokuta, and the first power tug entered Lagos harbours in 1912” (Otunba, 2004). It could be seen that from the pre-independent era till date the nation’s maritime industry has been characterized by the domination of foreign vessels and/or carriers from the developed market economies of Western Europe and America. As Aikhomu (1989) confirms, “until 1960, the Nigerian maritime transport was controlled by European entrepreneurs and ship owners”. In order to control the above scenario, a subsequent new development led to the opening of ports

at Apapa and Port Harcourt in Lagos and Rivers State respectively; hence the creation of Nigeria Ports Authority (NPA) by the provision of Ports Act of 1954 to load and discharge as well to maintain the ports.

The instance of these unfavourable and exploitative maritime relationships between the developed nations and Nigeria persisted for instance in the decade between 1977 and 1987, before the promulgation of the UNCTAD (1987) Code of 40:40:20 the Nigeria indigenous shipping lines accounted for only 11% of the total volume of the country's sea borne trade earning meager 9% in freight revenue put at 5.3 billion naira. Again between 1977 and 1980 of the average annual calls of 6081 vessels at the Nigerian port, indigenous share was under 10%. The situation is so crippling when weighed against the fact that Nigeria is not only responsible for over 60% of the total sea borne trade of West and Central Africa but also have more than 80% of her external trade processed through her ports. In the 1960s however, many African independent states realizing the strategic position of the shipping industry to their economic independence made sporadic and uncoordinated efforts at breaking the monopoly (Aikhomu, 1987).

This was responsible for the government initiative to establish the Nigeria Shippers' Council (NSC) in 1978, to protect the interest of the Nigerian shippers. Although to no avail as Nigeria up till date is still unable to meet up with her 40% share of her generated export. Afolabi (1989) emphasized that "the number of Nigerian real flag vessel is so few, therefore the UNCTAD Code cannot be effective, strict cargo sharing at this stage can only be anticipated and unrealistic". Another giant stride of the government came in 1987 with the promulgation of the National Shipping Policy Decree 10 of 1987 setting up the national maritime trade between Nigeria and developed maritime nations.

The nation also witnessed enormous growth and development in ports owing to the oil boom days of 1970s and 1980s. Some of the achievements were the construction of ultra-modern ports in Tin Can Island, Sapele, Warri and Calabar, bringing the number of ports to eight (8) with a total annual capacity of 25 metric tons. The construction of the Federal Ocean Terminals at Onne with a maximum draft of 13 meters to cater for subregional trans-shipment/transit trade and also the upgrading of the old Apapa Port to cater for more than general cargo trade are all



commendable. On ship building and repairs there is an improvement resulting from the creation of the National Shipyard, Continental Shipyard, Naval Docks, etc.

### **2.2.3 ROAD INFRASTRUCTURE**

Road infrastructure development in Nigeria predated the amalgamation of Northern and Southern Nigeria in 1914. Evidence of early road works in Nigeria started in 1903 and 1904 in Calabar and Zungeru (Onakomaiya, 1980). However, the first road in its modern sense was built in 1906 from the railway head in Ibadan to Oyo. Other roads during the period were Oshogbo to Ife, Ilesha and Ogbomosho, and from Ede to Iwo (Walker, 1995). By 1914, Nigeria had a total of 3,200 km of motor-able roads.

Road development in Nigeria slowed down due to the outbreak of the First World War in 1917. Evidence showed that by 1912, Lagos was linked with Ibadan and Ijebu Ode. In 1923, Ilesha was linked with Akure, Ondo, Benin and joined Benin – Onitsha – Enugu road (Onakomaiya, 1980). By 1926, there were 4,289km of road under the Public Works Departments in Lagos and more roads

built and maintained by the local authorities throughout the country. We should note that much of the roads were built without preliminary survey; they therefore followed traditional footpaths while others were built essentially to act as feeders to the railway lines. Road development in Nigeria got a boost in 1925 with the establishment of a Road Board. Consequently, in 1926, a skeletal trunk roads system was proposed to connect the major administrative centers in order to facilitate general administration and quicken the evacuation of export produce. The establishment of a Road Board was the first major attempt at a coordinated road system in the country. The establishment of a Road Board witnessed an ambitious programme of road construction, staff recruitment and the setting up of a bold target of 644 kilometers of new roads. The highway development expenditure which reached a peak of ₦538, 000 in 1930/31, however declined to only ₦200, 000 by 1933/34 following economic depression then. During this period, a remarkable progress was recorded in the Northern Province by the native authorities through new road construction and upgrading of the old ones to all-season standard roads.

According to Onakomaiya (1980), a trade of six main lines formed the skeleton of the National road grid. Two were from South to North:

- i. Lagos to Kano to Daura, on the border of Niger Republic and
- ii. From Port Harcourt to Jos to Nguru.

Four were West to East:

- i. Sokoto to Kano to Maiduguri;
- ii. Yelwa to Bida to Jos to Gombe to Biu to Yola;
- iii. Kichi to Ilorin to Lokoja to Jalingo to Yola; and
- iv. Shaki to Ibadan to Onitsha to Enugu to Manfe and Bamenda.

These roads were designated Trunk 'A' Roads and they form the nucleus of the future international highways in Africa. As observed by Adedeji (1960), the second class of main roads, known as Trunk 'B' Roads were to connect principal and regional capitals and other large towns with one another, with the railway, the seaports and with the Trunk 'A' Roads. Other roads classified as feeder roads were taken care of by the native authorities. The native authorities on the average were

responsible for the construction costs with only minor exceptions. The native authorities received grants for the maintenance of Trunk 'A' roads only on representation of the Chief Commissioner concerned, on an approved standard of maintenance work achieved and upon presentation of certificate issued by the Provincial Engineer.

The road network grew from 44,414km in 1951 to 71,871km in 1962 and 95,375km in 1972. By 1974, the total length of Federal roads called Trunk A Roads had reached 11,000km. By October 1974, the Federal Government of Nigeria took a major policy decision. The Federal Government took over 16,000km of selected Trunk B Roads from State in order facilitate easy connection among the states and increase Nigeria's interaction within neighbouring countries and to produce a well-integrated road network. The take-over of these roads from States enabled the States to take over more existing feeder-roads and to build new ones (Okoroafor, 2004).

At the inception of the Third Plan in April 1975, contracts covering the construction of 4,759km of roads valued at ₦1,188 million had been awarded. At the end of 1979, about 1

3,900km of roads were either under construction or were asphalted under contract valued at ₦13,800 million. During the Third Plan Period, the Federal Government, in keeping with the policy of developing a network of first class roads, capable of sustaining fast and economic movement of goods and people, embarked on the six (6) major North-South and East-West roads.

The 1970s appeared to have witnessed the highest number of kilometers of roads constructed in Nigeria. By 1980, the bituminous surfaced roads constituted only 24.84% of the total length of roads in Nigeria (Okoroafor, 2004). However, according to World Development Report (1994), Nigeria had only 15216km of paved roads in 1970; 30,021km in 1980 and 31,002km in 1990. This means that between 1980, the end of oil boom era, and 1990, only 981km of paved roads was added to the stock of networks. As at the end of the 1980, the share of the Federal roads network was about 30,000km, out of which about 1,700km were completed during the Third Plan Period (1975-80).

Over the last two decades, road infrastructure has re-emerged as a key policy issue in Nigeria. The country has increased her motorway network from 144,000km at the

beginning of 1988 to 194,394km by (World Fact Data). In spite of this, the stock of total road network is still inadequate when compared with the rest of Africa. For instance, the road to population ratio in Nigeria is 1:3 and 1:5 in 1985-1989 and 1990-2000 respectively; as against 9:8 and 11:6 for Botswana, 3:0 and 2:4 for Kenya, 5:5 and 6:3 for South Africa, 3:6 and 3:6 for Algeria and 3:6 and 2:5 for Tunisia, for the 1985-1989 and 1990-2000 periods respectively. Nigeria's case was even below the African average of 2:9 and 2:6 for the period.

The Federal Government spent a total of ₦145 billion on road building repair and rehabilitation in the first four years of this democratic dispensation. That is, between 1999 and 2003, a total of 62 projects had been completed, 94 projects were on-going, and a total cost of ₦52 billion worth of projects were under design. In 2003, a total of ₦55 billion was appropriated in the budget for the Federal Ministry of Works. Also, contracts for 56 highways projects totaling 2,343km at a cost of ₦42,364 billion and another 79 contracts consisting of 4554.7km at the cost of ₦189,162 billion were awarded by Federal Ministry of Works in 2002 (Federal Ministry of Works, 2003).

#### **2.2.4 INLAND WATER TRANSPORT INFRASTRUCTURE**

Nigeria has over 3000km of navigable inland and intra-coastal waterways channels which were not used before the colonial era but also gave access to the Western explorers and the British. Ominu and Onokerhoreye (1995) agree correctly that: “Before the advent of the railway era in Eastern Nigeria, the only communication line which was used for inter-regional movement was the Niger – Benue waterways or Cross River”. The inland waterways as the oldest form or mode of transport is constituted by the navigable channels mainly of Rivers Niger and Benue, their tributaries and intra-coastal waterway route in Niger Delta which are mostly provided naturally and dates back to the 17<sup>th</sup> century or before.

Historically, British explorers took the lead in the discovery and exploration of River Niger with Macgregor Iliad’s arrival in 1832 after the discovery of the mouth of the River by the Lander Brothers; arrangements were made for British Merchants to trade directly with tribes along the banks of Niger – Benue waterways. The Rivers were extensively used for the evacuation of agricultural produce such as groundnut, cotton, palm produce, beniseed, timber, etc (by expatriate trading companies in the colonial era

such as UAC, John Holt Limited, CFAO Limited, etc) from the hinterland via coastal ports to European markets. In return imported goods such as bicycles, sugar, salt, cement, kerosene etc were moved from European markets via coastal ports and railways up into the hinterland markets. Surprisingly though despite the great opportunity provided by this cheap transportation (the natural waterway) they have remained largely underdeveloped owing to some reasons.

Azonwu (2001), posit that “In Nigeria, the Niger/Benue valley corresponds to the little productive middle belt and because of the handling cost in moving the produce of the area further to the North by rail transport; the river is less economic than direct rail transport to the coast. Thus the considerable length of the inland waterways in the country remained relatively underdeveloped”. Again, during the Nigerian Civil War of 1967 – 1970, the inland transport was severely disrupted as the Lower Niger and inter-coastal routes in the Niger Delta were converted to war territory. The parties involved in the conflict used these waterways to press strategic military and economic advancement causing people to quit the waterways for road transport.



Despite the post civil war misfortune of inland waterways transport mode as it were, its role, relevance and importance in National Development Goals were never lost sight of by the Government. The government commissioned an Inland Waterway Improvement Programme in 1956 which was handled by Netherlands Engineering Consultants (NEDECO). Irrespective of the little gains of that programme, the government commissioned another River Niger Channel Development Programme by the French Group (LCHF & UMD) in 1980 and 1984 (Sub-Committee on NIWA, 2001).

The National Transport Policy, which was approved in 1993 by the National Council on Transport, recognized inland water transport as the cheapest and most efficient transport mode in the areas of mass bulk commodity movement over long distances. In 1993, Haskoning was appointed as a consultant to carry out studies on the development of the Inland Waterways Transport (IWT) in Nigeria. The findings and recommendations were that:

- i. The use of the Lower Niger and delta Creeks for IWT has stagnated during the last decade. IWT is presently not regarded as an attractive alternative to road and rail even for the

movement of goods for which it has inherent comparative advantages. Contributing significantly to this situation is the fact that navigation is restricted to the high water season thus requiring IWT users to find other means of transport during the rest of the year by putting IWT at a disadvantage.

- ii. To overcome this disadvantage and remove external cost it imposes on the economy, it is essential that all efforts are made towards developing a sustainable river transport system availability, i.e. a system that is able to attract cargoes throughout the year and to transport them cost effectively.
- iii. The investment and annual costs needed to sustain navigability throughout the year are significant and need to be economically justified. A comparison of total cost for both rail and water shows that developing the river system is more cost effective (Sub-Committee on NIWA, 2001).

The World Bank in 1994 study also confirmed the economic feasibility of dredging campaign to enhance sustainable navigable conditions on Rivers Niger and Benue.

NIWA metamorphosed from Inland Waterway Department (IWD) and was established by Decree No.13 of 1997 and commenced operation in 1998. The proposal submitted by the then IWD on development of waterways through the dredging of River Niger and the construction of river ports at suitable locations. Based on this submission, the Petroleum Trust Fund (PTF) in 1996 was directed by the Federal Executive Council (FEC) to fund the abortive Lower Niger Dredging. The PTF handed over the Lower Niger Dredging to the NIWA in November, 2000 and the Federal Government approved the appointment of Haskoning Engineering Consultants to the existing documents from PTF in order to recommend appropriate improvement works on the waterways in achieving efficient and cost effective inland waterways transport.

#### **2.2.5 AIR TRANSPORT INFRASTRUCTURE**

The first recorded flight into Nigeria occurred about June, 1925. It was a Royal Air Force Bristow fighter plane on reconnaissance flight from Cairo, Egypt via Khartoum, Sudan. The flight en-route Kano landed first at Maiduguri polo field. This development appeared to be incidental as the reconnaissance flight

was as a result of an imminent crisis in Kano and not one of deliberate introduction of aviation into Nigeria (Diepiriye and Onyiuke, 1997).

In May 1948, Lagos and Kano were connected by air routes, with the other three British West African countries (Ghana, Sierra Leone and the Gambia) under the auspices of the then British West African Air Corporation (BWAC). As the traffic along these routes developed, smaller air ports were developed and were linked with the airports of Lagos and Kano through feeder lines. Ominu *et al* (1995) rightly observed that by 1949 the domestic demand for air services in the country became so great that the international flight alone could not cope with these demands.

At independence the West African Airways Corporation became territorialized. This led to the emergence of the Nigeria Airways Limited as a joint venture between Nigerian Government, Elder Dempster Air Lines Limited and British Overseas Airways Corporation with shareholding of 51%,  $32\frac{2}{3}\%$  and  $16\frac{1}{3}\%$  respectively. When Nigeria became a Federal Republic in 1963, she bought out the other shares and hence it became solely owned by the Nigerian government.

Before 1964, the law governing the industry was the Way Navigation Orders made by the United Kingdom. Following the independence an indigenous law was promulgated as Civil Aviation Act 1964 (No.30) commencement Order and Regulation Order 1966. From the inception of the industry to early 1980s the National Carrier constituted the industry but from deregulation by the government, the number of the industry's participants grew with about 150 registered number of air lines. Between 1968 and 1983, the industry grew by 36%, given an average annual growth rate of 2.41%; from 451,861 passengers in 1968 to 1,704,803. From 1983 to date, the number of aircraft brought into the national air transport fleet and of course into the national aircraft registry has been enormous (Diepiriye and Onyiuke, 1997). The following are the domestic airlines as at 2008; ADC Airlines Plc, Albarka Air Services, Arik Air, Bellview Airlines, Chanchangi Airlines Nigeria Limited, Dana Airlines, EAS Airlines, OVERLAND, Sosoliso Airlines and Virgin Nigeria Airlines.

In the 1970s, the nation also witnessed a great achievement, as there was a massive airport development programme linking almost every state capital and a massive improvement of the

existing facilities. During the 1980s and 1990s two more airports (Abuja and Owerri) entered the aviation registry of the nation. In 2008, Katsina International Air Port was commissioned. Today, the air transport system is the most comfortable, most important and the fastest mode of transport in Nigeria.

### **2.3 LEGAL FRAMEWORK OF THE TRANSPORT INDUSTRY IN NIGERIA**

What constitutes a legal framework? A legal framework can be described as a body or set of agreed principles, provisions or rules contained in or collated into a document or instrument to govern or control activities in a particular area of human endeavour. Such principles or rules are usually given force of law either internationally in the comity of nations through conventions or treaties or through acts or laws of parliament or national assembly in a nation state.

It is pertinent to point out that every convention, treaty or act must be formulated in such terms and language that sufficiently capture the purpose, spirit and intent behind the body of agreed

principles. Where the document produced fails to meet the aspirations which informed the set of principles or rules, its effectiveness becomes marginalized or seriously eroded. It is therefore a cardinal principle in legislative or convention drafting to refer very closely to the travaux préparatoires or working/committee papers, which show how the conceptualization of the principles were at so as to realize and implement their true import and intent (Ilogu, 2007).

Now let us look at the legal framework holistically as it embodies international and national laws applicable to various modes of transport in Nigeria:

### **2.3.1 CARRIAGE OF GOODS BY ROAD**

The convention for the International Carriage of Goods by Road (C.M.R.) came into force in May 1956. The CMR mandatorily applies to contracts of carriage by road for a reward. This takes place when there is an international carriage of goods by road and one of the states must be a contracting state. It is sufficient for the application of the Convention, that one state only, whether the

place of origin or destination, be a party to the Convention. The vehicles used must be motor vehicles, trailers or other vehicles defined in the 1949 Geneva Convention on road traffic. The CMR does not mention the subject of carriage but excludes from its scope of application, the carriage of mail, funeral items and furniture but it includes carriage or any transportation performed by government institutions (Otunba, 2004).

CONVENTION A/P4/5/82 otherwise known as International State Road Transit (ISRT) is a convention applicable to the ECOWAS sub-region to assist in facilitating trade movement of cargo with little or no interferences by the border authority provided rules relating to sealing of approved containers or enclosed spaces are adhered to and the necessary deposit paid and utilized the Interstate Transit Declaration as the document of movement and control of sealed goods passing the various West African border posts. The ECOWAS Convention is useful in a hub and spoke operation where a vessel delivers cargo meant for say Niger, Mali or Chad at say the port of Lagos. The container which will be sealed by the Authority in Lagos after necessary declaration will then find its



way through the various borders to Mali with minimum interference (Egesi, 2007).

To further facilitate the movement of goods, operations are expected to guarantee a sum that shall cover at least duties and taxes payable on goods. This guarantee could be comprehensive or for a journey and it could be provided by a reputable institution affiliated to the West African Clearing House of member states (Egesi, 2007).

### **2.3.2 AIR MODALITY**

The Warsaw Convention of 1929 regulates carriage by air. Almost every country in the world has ratified it. It was amended at Hague in 1975 and by Protocol No.4 of Montreal 1975. It defines international carriage as one in which, “according to arrangement between the parties, the place of departure and the place of destination, whether or not there be a break in the carriage or are situated either within the territories of High Contracting Parties or within the territory of a single High contracting Party if there is an agreed stopping place within the territory of another state, even if

this state is not a High Contracting Party”. The document that accompanies the goods is the airways bill.

Like the Hamburg Rules, it has a fair balance between the liability of the carrier and the consignor/consignee even if the compensations paid in each case are different. In both conventions the culpability of the servants of the carrier are also that of the carrier particularly when the servants are on duty (Egesi, 2007).

### **2.3.3 THE CIM**

The International Convention concerning the carriage of goods by rail (CIM) had existed in some form since 1893. Using the consignment note, it permits under a code, the carriage of goods by rail. The COTIF/CIM Convention of 1985 is a revised version of the CIM.

The consignment note carries all the necessary information for handling and delivery of goods and it is prepared by the consignor or sender or by the railway upon information given to him. Liability for error of information is passed to the consignor. The COTIF/CIM convention, however, has not been domesticated by Nigeria since

her railway lines have not extended beyond her borders. The convention could only be enforced here when the West African Railway line becomes a reality or other form of international railway line.

#### **2.3.4 CARRIAGE OF GOODS BY SEA**

Three international conventions have been enacted to date regarding carriage of goods by sea. These include the Hague Rules, Hague – Visby and Hamburg Rules.

##### **(a) The Hague Rules:**

Agreed at the international convention at Brussels in 1924 were designed to apply to all exports from any nation which ratified the rule where they govern the condition of carriage in a bill of Lading. With The Hague Rules animals and cargo carried on the deck are not recognized as goods. Also the carrier or ship owner is not responsible for loss or damage arising from among other things; neglect or fault of the master mariner or the servant of the carrier. Limitation of liability is ₦20,000 or (£100) per package (Egesi, 2007).

**(b) Hague – Visby Rules:**

Also known as the Brussels Protocol was adopted in 1968. The Visby rules is designed to apply to all bills of lading where the port of shipment is in a ratifying nation or where the Bill of Lading contractually applies. The Hague – Visby rules liability for the carrier is limited to ₦1,800,000 or 10,000francs per package (Egesi, 2007).

**(c) Hamburg Rules:**

These came into force November 1, 1992. It is said to depart markedly from the earlier rules and presumably this may be the reason it has not been ratified by most developed nations. It expands the period of liability of the carrier. The period of the carrier's responsibility begins from when he takes charge of the goods at port of loading till delivery at port of discharge. The Hamburg rules have therefore been christened a port – to – port convention as opposed to The Hague – Visby that is a tackle – to – tackle convention.

## **2.4 THE PRINCIPLES AND OBJECTIVES OF THE NATIONAL TRANSPORT POLICY**

The document on the National Policy on Transport had this to say about the principles and objectives of our transport policy: in order to assure that available transport services fully meet the needs of the Nation and that the best is made of resources dedicated to the sector, Government had adopted the following policy principles and objectives for the Nation's transport sector. It should:

- a) Be adequate to support the existing and future needs to ensure efficient movement of people and goods;
- b) Be adequate to meet the requirements for social and economic development and be able to perform its proper role as an instrument of social and economic policies of the nation;
- c) Assure adequate and economic mobility of people and goods and efficient provision of public services, thereby acting as an instrument of national integration and unity;
- d) Improve competitiveness of Nigeria exports through its efficient operations;

- e) Transport costs should not be a barrier to having access to employment opportunities or to the delivery of essential social and public services;
- f) Transport facilities and services should use economic resources in the most efficient manner;
- g) Ensure that each transport mode is able to achieve its full economic potential and develop according to its comparative advantage;
- h) Free market force should, as far as possible, play the dominant role in assuring efficient allocation and the use of resources – Government interventions in the transport sector should promote efficiency, avoid creating economic distortions and assure protection of transport users;
- i) Government enterprises or parastatals should operate under conditions of commercial discipline, be assured managerial freedom and be fully accountable for their results;
- j) Public service obligations imposed on transport enterprise should be fully compensated and the methods of

compensation be such as to provide incentives for efficient use of resources;

- k) Effective measures should be taken to assure safety of transport operations and to reduce, as far as possible, accidents with resulting losses of life, injuries and damages; and
- l) Transport operations and development should avoid causing environmental damage – effective measures should be taken to reduce pollution (National Transport Policy, 2003).

## **2.5 THE ROLE OF TRANSPORT IN NATIONAL DEVELOPMENT**

### **2.5.1 EMPLOYMENT GENERATION**

The transport sector is one of the highest employers of labour and as such improves the standard of living of the citizens. The road transport mode employs hundreds of thousands of the teaming populations. The personnel employed here range from highly skilled (Directors and Managers) to a large number of semi-skilled such as drivers, conductors, cleaners, mechanics, panel-beaters, vulcanizers, welders, auto-electricians, spray painters and

battery chargers. Employment generating potential of road transport includes those of the road construction companies like the Julius Berger, Niger Cat, MCC, RCC, etc.

Other ancillary economic activities connected with the road transport industry include: operation of petrol station, petty trade in motor vehicles spare parts and insurance business. There is also the touts who earn their living by helping to load commercial vehicles at the various motor parks in return for certain fraction of the fares paid by passengers. Though, it might be difficult to get accurate statistics of those employed by the road transport subsector, the figure will definitely be large if ascertained. Other establishments in the industry employing large numbers of personnel include: the Nigerian Ports Authority, Inland Waterways Transport, Air Lines, Shipping Lines, Clearing and Forwarding Companies, NIMASA, Nigerian shippers' council, etc. The maritime sector alone is estimated to employ about 40, 000 people (Ominu and Onokerhoraye, 1995).



### **2.5.2 TRANSFER OF TECHNOLOGY**

Road transport subsector is gradually inducing the transfer of technology from the industrialized countries of the Western world into Nigeria particularly in the field of automobile manufacture and other allied industries. In this connection, some motor vehicle assembly plants have been established in Nigeria. These are Peugeot automobile (Nig.) limited at Kaduna, Mercedes Benz (Nig.) Limited at Enugu, etc. Many Nigerians employed there understudied the expatriate technicians and engineers who directed the affairs of these assembly plants in the past. Now these plants are manned by indigenous technicians, engineers and managers thereby aiding the conservation of the country's foreign exchange reserve. Ancillary industries associated with these assembly plants include manufacturers such as Michelin and Dunlop tyre factories and battery factories like Berez, Ibeto, etc.

The concenssioning of ports also results to transfer of technology. This is because the concenssionaires came in with their new technology and equipment to facilitate port operations. By the time this exercise has fully gained grounds, Nigerian employees there shall have acquired new skills.

### **2.5.3 REVENUE GENERATION**

The relevance of the transport industry is derived from its place in trade and commerce. A lot of foreign exchange is earned through transport operations. Huge revenue is generated through customs charges, port dues and charges, rates tariffs from rail transport, maritime, road licenses to mention a few. The 3% charged as mandatory on every vessel lifting crude oil from the country is deducted in foreign currency and contributes greatly to the government coffers. Others include registration of vessels, shipping companies, insurance increases to clearing and forwarding agencies and other operators.

### **2.5.4 PROMOTION OF TRADE AND COMMERCE**

The transport sector enables trade to flow between nations. Foreign exchange capabilities of our country have improved due to its existence. Importation and exportation is essential to enable even availability of raw materials, equipment, machineries and labour.

### **2.5.5 INDUSTRIAL GROWTH AND DEVELOPMENT**

Transportation enhances the establishment of industries, as raw materials need be transported from sources to the industries for production purposes. One of the major advantages of the maritime and the aviation industries is the economy of scales which confers on the overall national economic space. It has been observed that seaports attract activities closer and faster to where they are sited. For instance, the Apapa industrial area is built around Lagos port (Azonwu, 2002).

The rationale behind the growth of industries around the seaports tends to be cost/transport minimization through reduction in transport cost by manufacturers. The nation's economy is known to be import dependent and export-oriented. This implies that industries with major imports from overseas and others wishing to minimize transport cost to hinterland must as a matter of necessity and accessibility locate close to the ports. A closer look at the Nigerian industrial distribution nationwide shows that 70% of industrial activities of the country are sited around the port cities of Lagos, Warri, Port Harcourt and Calabar. In a nutshell, without the development of the nation's maritime and aviation sub-sectors, the

economic potentialities of the zones as well as the industrial affluence enjoyed by her inhabitants would have been impossible (Azonwu, 2002).

#### **2.5.6 THE IMPACT OF INADEQUATE TRANSPORT**

##### **INFRASTRUCTURE ON USERS AND NATIONAL ECONOMY**

Inadequate transport infrastructure has been observed to stifle local and direct investments initiative, more so, as it relates to small-scale enterprises (Brook and Irwin, 2003). Besides, the fact that poor transport infrastructure limits the size of industrial markets, it adds to the cost of production and discourages foreign direct investment thereby affecting the rate of industrial growth. The Nigerian case is worsened by inadequate road, rail and port infrastructure that is characterized by obsolescence and lack of maintenance culture. The situation has resulted in costly and unreliable services thus making our goods to be less competitive, besides the denial of access to varying opportunities. Specifically, the impact of inadequate transport infrastructure in Nigeria on users and the national economy are presented next.

### **(a)Impact on Industrial Users**

The major impacts include lost time and money. Inadequate provision of transport infrastructure tends to increase the journey time of goods delivery of both industrial raw materials and finished goods. This is so, because poor road condition and port inefficiency increase travel time and reduce the reliability of transport services.

The delays in the delivery of industrial goods could result in stoppage of the use of expensive machinery because the spare parts to be used arrived late, or have not arrived at all due to inefficient transport system. In order to avoid unplanned stoppage of production, occasioned by delayed deliveries of industrial raw materials, stocks piling of these raw materials are embarked upon thereby increasing handling and inventory cost, including warehousing. Delayed deliveries increase the cost of industrial production since goods held up during delayed delivery is capital held up. Travel time saved on the shipments of freight is observed to be more valuable in developing countries like Nigeria than in more advanced countries. Adler (1987), posit that freight tied up during transit due to poor road and rail condition is, in fact, capital tied down. This capital becomes particularly important in a country

like Nigeria where capital is in short supply. Again production is not complete until the goods reach the final consumer. Delivery time/transit time is no longer predictable due to poor road condition and port inefficiency and delay.

**Table 2.2: Cost Items of Road Freight Transport in Nigeria**

ROUTES	ITEMS	NATURE OF ROAD	
		GOOD	BAD/POOR
Lagos – Aba 650km	Fuel consumption (liters)	375	500
	Journey time (hours)	9	15
Lagos – Kaduna 825km	Fuel consumption (liters)	500	575
	Journey time (hours)	10	14
Lagos – Enugu 600km	Fuel consumption (liters)	325	375
	Journey time (hours)	8	12

Source: Dolf Madi Consulting (2005)

In addition to the increased journey time and cost of travel, there is also an increase in the cost of maintaining the vehicles. Indeed, maintenance cost of vehicles tends to be very high due to poor condition of roads. This includes the material cost, labour cost and down time cost of the vehicle. Vehicles parts most frequently affected include clutch and clutch plate related problems, braking system, gas-related problems, suspension system and engine. The

down time of vehicles in the workshop reduces availability and the utilization rate.

Poor road conditions in Nigeria impact negatively on users by increasing the cost of consumer goods since cost per ton of goods transported increases. Apparently, an average of ₦8 per ton/km is charged to transport goods in Nigeria by road (Okoroafor, 2004). The incidence of this is passed on to the final consumers since the industrial establishments must pass the incidence of high cost to the final consumers. In effect, unit cost is observed to increase thereby helping to sustain the high inflationary trend in the cost of goods produced in the country. There is also the case of increasing rate of accidents due to the deteriorating states of roads. For the industrial users, accidents rate can be viewed as a resource cost. In this way, accidents impact negatively on industrial users through loss of items of human and material resources (Okoroafor, 2004).

In case of the port system, inadequate and obsolete infrastructure has negative impacts on the users through loss of time, money and stress. The delay in clearing goods and the resultant demurrage result in diversion of freight traffic to the

neighbouring ports. The diversion implies an additional cost to the users.

### **(b) Impact on National Economy**

In Nigeria, transport's contribution to the GDP is relatively low. For example, in developed countries, transportation's contribution varies between 11 and 12% of the GDP whereas in Nigeria it varies between 3 and 6%. The contribution of the transport sector to the economy of Nigeria if considered via the GDP tends to stagnate or decline at about 3% of GDP (Table 2.3). Indeed, the sector's real contribution to GDP increased from 5.98% in 1981 to 6.71% in 1982. Thereafter, it declined to 4.12% in 1984 before it continuously declined to its lowest of 3.12% in 1991. It, however, increased marginally to 3.59% in 1996 and 3.9% in 2000. Specifically, road sub-sector's contribution declined from 5.17% in 1981 to 2.78% in 1991 and 2.15% in 2000. The rail sub-sector declined from 0.15% in 1981 to 0.02% in 1990. In 1991, it increased to 0.03% and declined further to 0.02% for 1992, 1993, and 1994 respectively. Its contribution for 2000 was 0.13%.



**Table 2.3: Transport Sector's Percentage Contribution to GDP  
at 1999 Factor Cost from 1981 – 2005**

YEAR	ROAD	RAIL	OCEAN	AIR	TOTAL
1981	5.17	0.15	0.46	0.20	5.98
1982	5.93	0.17	0.38	0.23	6.71
1983	3.26	0.16	0.61	0.26	4.29
1984	3.31	0.11	0.43	0.27	4.12
1985	3.38	0.12	0.34	0.25	4.09
1986	3.34	0.11	0.24	0.21	3.90
1987	3.39	0.08	0.23	0.21	3.91
1988	3.12	0.06	0.23	0.18	3.59
1989	2.97	0.04	0.18	0.16	3.35
1990	2.80	0.02	0.17	0.15	3.14
1991	2.97	0.03	0.17	0.14	3.12
1992	2.80	0.02	0.16	0.14	3.16
1993	2.93	0.02	0.15	0.11	3.21
1994	3.94	0.02	0.14	0.10	3.20
1995	2.91	0.03	0.14	0.10	3.18
1996	2.99	0.04	0.35	0.21	3.59
1997	3.30	0.12	0.236	0.23	4.01
1998	3.30	0.07	0.28	0.27	3.72
1999	2.92	0.05	0.22	0.17	3.36
2000	2.15	0.13	0.38	0.26	3.92
2001	2.77	0.001	0.19	0.04	3.08
2002	2.97	0.001	0.21	0.05	3.31
2003	2.96	0.001	0.24	0.04	3.23
2004	4.08	0.001	0.26	0.04	4.33
2005	5.29	0.001	0.20	0.05	5.54

Source: Federal Office of Statistics

Presently, the cost of shipping is doubled due to inadequate transport infrastructure. This situation increases cost and reduces travelling activities by some 25% and impact negatively on the GDP by some 0.5% reduction.

Another negative impact of the inadequate transport infrastructure on the economy is loss of life and property through road accidents. The lack of provision of rail transport led to the

collapse of an integrated transport system and a shift of traffic to the road, thereby over-stretching the road network (causing traffic congestion). This situation resulted in the increasing rate of road transport accidents that have claimed large chunks of both human and material resources. Most of the people involved in road traffic accidents were those within the active population range, hence, their contributions to the economy are stopped prematurely. The loss to the economy through road traffic accidents between 1981 and 1997 has been estimated to be ₦106, 217 billion (Okoroafor, 2004).

In addition, there is also the case of loss of man-hours due to poor road network. Again, this has a serious impact on the economy. A total of 370.35 hours were estimated to have been lost in 2003 while travelling due to the poor state of roads in Nigeria. This estimate was based on only 53, 250km out of 194, 000km of roads that have an average daily traffic (ADP) of more than 30 vehicles. In putting values to the man-hours lost using the marginal productivity of factor based on the then Federal Government, a total of ₦9,462, 620, 544 billion was lost in 2003 due to poor/inadequate road infrastructure provision (Ibe and Uzogara 2004).

Another impact of inadequate provision of transport infrastructure on the economy is the issue of low level of competitiveness of our goods and the consequent high cost of transportation. The unreliable and erratic transportation situation results in high cost of goods in Nigeria thereby making it difficult for Nigerian goods to be competitive both in the domestic and international markets.

Although planned investment in the transport sector witnessed a slight shift of emphasis to water and air transport in the Rolling Plans of 1991 – 1993, and 1994 – 1995, the road sub-sector still accounted for over half of the total investment (Table 2.4).

**Table 2.4: Federal Government Transport Sectoral Allocation  
(1991 - 1999) Rolling Plan Periods**

PLAN PERIOD	ROAD (%)	RAIL (%)	WATER (%)	AIR (%)	TOTAL (MILLIONS)
1990-1992	70.14	14.03	7.24	8.60	2,210,000
1991-1993	52.42	12.95	19.41	15.22	2,695,428
1993-1994	59.65	6.23	15.91	18.21	8,379,446
1994-1995	56.67	1.33	22.92	19.09	6,017,250
1996-1997	40.23	42.16	15.98	1.62	28,491,420
1998-1999	32.03	32.93	26.19	8.86	52,310,162
<b>AVERAGE</b>	51.86	18.27	17.94	11.93	-

Source: extracted from Rolling Plans (1990 - 1999)

**Table 2.5: Modal Distribution of Public Planned Capital  
Investment in Transport (in percentage)**

PLAN PERIOD	ROAD	RAIL	AIR	WATER
1962-1968	54	14	7	25
1970-1974	59	17	11	13
1975-1980	72	11	8	9
1981-1985	70	15	6	9
1992-1994	50	12	18	20
1994-1996	57	10	19	23

Source: Percentage calculated from the various plans (1962-1996)

The importance attached to the road subsector is reflected in Government's resource allocation to it in the last four decades. The road subsector, which accounted for 54% of the Federal Government's total public sector planned capital investment in transport in the 1962 – 1968 First National Development Plan, received more than 70% of the allocations during the Third (1975 - 1980) and Fourth (1981 - 1985) Development Plan periods.

Tables 2.4 and 2.5, show plan allocations and actual expenditure on transport sector. The fact still remains that there has been a disproportionate share between the modes. The greatest allocation was given to the road mode and in terms of the actual expenditure; the results of the huge differentials in the intermodal

shares of total transport investment over the four National Development Plan Periods show that:

- a) While railway *kilometerage* had remained more or less static since 1965 or so, the road network has more than doubled.
- b) The railways had been treated with neglect as far as improvement and modernization of its infrastructural facilities are concerned.
- c) The nation has been made to pay very high social costs arising from more wasteful use of energy by road transport and huge maintenance cost due to heavy trucks engaged in road haulage over long distances (Oni, 2004).

Although, the primary objective of public policy in the transport sector is to meet the demands of an efficient transport service at minimum cost to the economy, the pattern of investment seems to have inhibited the achievement of inter-sectoral efficiency and equilibrium. The pre-eminent position of railway within the context of transport coordination is obvious and it is really strange that urban and regional planners in Nigeria had been flat-footed

when allocating development resources to the railway in the transport sector (Oni, 2004).

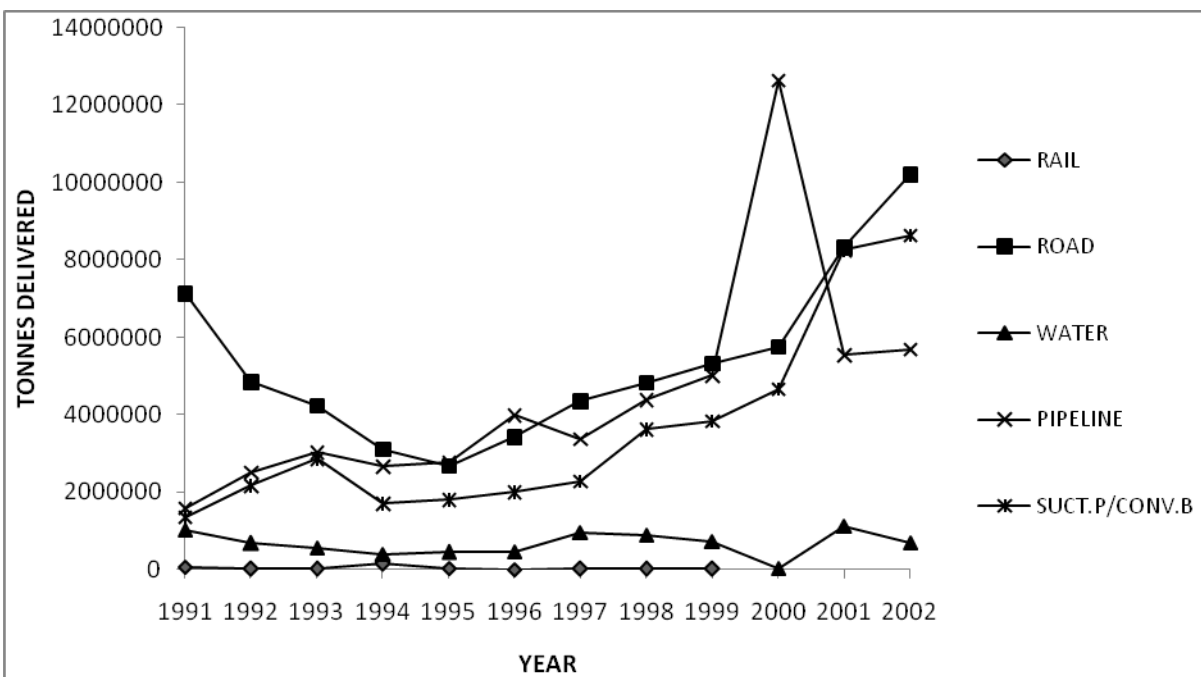
The various transport modes by which goods were conveyed from inland depots and warehouses to the seaports for shipment abroad are rail, road and water. Available statistics revealed that the road transport mode was used predominantly for the evacuation of goods to the seaports between 1970 and 1990 and it still accounts for a very significant proportion to date (Oni, 2004).

**Table 2.6: Analysis of Cargo Delivered at the Nigerian Ports by Various Modes of Transport (tons)**

YEAR	RAIL	ROAD	WATER	PIPELINE	SUCTION PIPE AND CONVEYOR BELT	TOTAL
1991	63677	7133728	1020875	1575526	1355756	11149562
1992	8789	4841225	679717	2515080	2169674	10214485
1993	6206	4238377	551143	3028308	2859557	10683591
1994	145611	3107664	390687	2660351	1702608	8006921
1995	30754	2676273	442536	2758826	1799939	7708328
1996	1246	3427161	450344	3985918	2002637	9867306
1997	8550	4355007	951639	3381847	2273361	10970404
1998	6259	4832596	895410	4385039	3628382	13747686
1999	5088	5323620	729788	5013869	3830602	14902967
2000	-	5749331	21974	12653417	4672375	23097097
2001	-	8321285	1124953	5541901	8253004	23241143
2002	-	10207821	693163	5687739	8634646	25223369
TOTAL	276180	64214088	7952229	53187821	43182541	168812868

Source: NPA (2002)

From 1970 to 1986, road transportation accounted for 83.3% of goods conveyed to the seaports, while water transportation accounted for only 5%. The balance was accounted for by rail transportation. By the 1970s, the participation of the rail transport system in the conveyance of goods to the seaports had been relegated to the second place after the road transport. A decline ensued till the end of the 1990s when the use of the rail transport fell to insignificant zero. With the introduction of pipelines, conveyor belts and suction pipes since 1987, this mode has taken preeminence, accounting for 62.1% of total goods conveyed to the seaports between 1987 and 1999 (Nigerian Statistical Association, 2000). As shown in Table 2.6 and Figure 2.1, in 2000, road transport delivered the largest tonnage of cargo (10,207,821 tonnes) at Nigerian ports, followed by suction pipes/conveyor belts (8,634,646 tonnes). Then, 5,687,739 tonnes were delivered by pipeline while water delivered on 693,163 tonnes.



**Figure 2.1: Analysis of Cargo Delivered at Nigerian Ports (1991 - 2002)**



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

The aim of this chapter is to describe the research methodology and design used in the study. The discussions on methodology are centered on the following subheadings:

- i. The research design
- ii. Sources of data
- iii. Methods of data analysis

#### **3.2 RESEARCH DESIGN**

This is the framework used as guide in collecting and analyzing data. It could be seen as the tripod on which the study is balanced, since it provides the framework. According to Abdellah and Levin (1979), research design deals with “how the study subjects will be brought into the scope of the required data”. Nachimas (1981) posited that a research design is a framework or

plan that is used as a guide in collecting and analyzing data for study.

### 3.3 SOURCES OF DATA

Only secondary data were used in the course of this research work. They were sourced from the internet, journals, textbooks, dissertations, magazines and periodicals.

### 3.4 METHODS OF DATA ANALYSIS

For hypothesis I, the tool used in the analysis of the research data is **Pearson Product Moment Correlation Coefficient**.

It is designated as:

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{(\sum x^2 - (\sum x)^2)(\sum y^2 - (\sum y)^2)} \dots\dots\dots(3.1)$$

Where      n = number of pair sample x, y

But  $(-1 \leq r \leq 1)$

#### Decision Rule

❖ Accept  $H_0$  if  $t_{cal} \leq t_{0.05}(n-2)$

❖ otherwise accept  $H_A$

In testing hypothesis II, data collected were analyzed using **Analysis of Variance**. This is a technique of partitioning the total variation of our data into useful component which provides means of measuring different sources of variation. In order to use the analysis of variance for our test, we shall make the following assumptions:

- i. The modal contributions of the transport sector are normally distributed.
- ii. The standard deviation ( $\sigma$ ) of all the distribution of the modal contribution are equal, i.e.,  $\sigma_1 = \sigma_2 = \sigma_3 = \sigma_4$

With these assumptions, we may regard the four modes of transport of four different populations with identical standard deviation.

Consequently, if the  $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$  is true, we can regard random among  $x_1, x_2, x_3$  and  $x_4$  and the variation within the four samples as having occurred by chance. The following calculations were carried out:

- SST = Sum of Squares of Total
- SSB = Sum of Squares between modes

➤ SSE = Sum of Squares of Error.

**Decision Rule:**

- ❖ Reject  $H_0$  if the F-ratio computed is greater than the table value i.e.,  $F_{cal} > F_{\alpha}(1-k, N-k)$
- ❖ Accept  $H_0$  if the F-ratio computed is less than the table value.

In the test of Hypothesis III, **Multiple Regression Statistic** was used in analyzing the data. The equation of the model is expressed as:

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e \dots \dots \dots (3.2)$$

**Decision Rule:**

- ❖ Reject  $H_0$  if F-ratio computed is greater than the table value i.e.,  $F_{cal} > F_{1-\alpha}(k, n-k-1)$

In furtherance of our investigation, the **Trend Analysis** was used in explaining hypothesis III. The trend of a time series is the smooth upward or downward movement of a time series over a long

period. The trend gives a picture of the general tendency in the development of a process.

**Fitting the Trend Line:** The task of estimating the trend of a time series starts with plotting the time series data on a graph. The resulting scatter diagram suggests the appropriate trend line to fit the data. If the points follow closely a straight line, a straight-line trend has to be fitted to the data. The following are the methods of finding the straight-line trend:

- i. The freehand method
- ii. The method of least squares
- iii. The method of moving averages.

But, for the purpose of this work, only the method of least squares was used. The method is similarly applied in fitting a trend line to a time series. The equation of the trend line is defined as:

$$y_t = a + bt \dots \dots \dots (3.3)$$

Where

*$y_t$  = the estimated trend value for a given time period*

$a$  = the trend line value when  $t = 0$

$b$  = the slope of the trend line, i.e., the change in  $y_t$  per unit time or  $\frac{\Delta y_t}{\Delta t}$

$t$  = the time unit (where  $x = t$ )

But  $b = \frac{n \sum ty - (\sum t)(\sum y)}{n \sum t^2 - (\sum t)^2} \dots \dots \dots (3.4)$

$$a = \bar{y} - b\bar{t} \dots \dots \dots (3.5)$$

Once this is accomplished and the line  $y_t = a + bt$  is obtained, we may substitute values of  $t$  into Equation (3.3).

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.1 TEST OF HYPOTHESIS I

$H_{01}$ : The contribution of the transport sector to the economy does not increase as investment in infrastructure increases.

$H_{A1}$ : The contribution of the transport sector to the economy increases as investment in infrastructure increases.

The following set of data (Table 4.1) was used in testing the hypothesis.

**Table 4.1: Data for Test of Hypothesis I\***

Year	Allocation to Transport Sector (N'000)	Transport Sector's Contribution to the GDP (N'000)
1990	1,105,000	8,537.91
1991	1,105,000	9,405.09
1992	4,273,031	16,947.24
1993	4,273,031	22,089.19
1994	4,273,031	28,928.15
1995	4,273,031	61,527.63
1996	14,245,710	97,066.74
1997	14,245,710	112,359.10
1998	26,155,080	101,227.84
1999	26,155,080	111,335.72
2000	9,604,800	185,318.89
2001	53,176,100	165,529.51
2002	53,176,100	206,287.26
2003	29,309,400	195,792.91
2004	15,046,000	279,506.29

\*Source: Tables 2.3 and 2.4

## 4.2 SUMMARY OUTPUT

### Correlation Coefficient

$$r = 0.6297$$

$$t = 2.915$$

The summary output of the correlation coefficient shows that **r** has a positive value of 0.63 and the test of its significant **t** is 2.92.

Since  $t_{cal} = 2.92 > t_{0.975}(13) = 2.16$  we reject  $H_{0_1}$  and accept  $H_{A_1}$  to conclude that the transport sector's contribution to the economy increases as investment in infrastructure increases.

## 4.3 TEST OF HYPOTHESIS II

$H_{0_2}$ : There is no significant difference between the contributions of the transport modes to the GDP over time.

$H_{A_2}$ : There is a significant difference between the contributions of the transport modes to the GDP over time.

The following set of data (Table 4.2) was used in testing this particular hypothesis.



**Table 4.2: Data for Test of Hypothesis II\* (%)**

YEAR	ROAD	RAIL	OCEAN	AIR
1981	5.17	0.15	0.46	0.20
1982	5.93	0.17	0.38	0.23
1983	3.26	0.16	0.61	0.26
1984	3.31	0.11	0.43	0.27
1985	3.38	0.12	0.34	0.25
1986	3.34	0.11	0.24	0.21
1987	3.39	0.08	0.23	0.21
1988	3.12	0.06	0.23	0.18
1989	2.97	0.04	0.18	0.16
1990	2.80	0.02	0.17	0.15
1991	2.97	0.03	0.17	0.14
1992	2.80	0.02	0.16	0.14
1993	2.93	0.02	0.15	0.11
1994	3.94	0.02	0.14	0.10
1995	2.91	0.03	0.14	0.10
1996	2.99	0.04	0.35	0.21
1997	3.30	0.12	0.236	0.23
1998	3.30	0.07	0.28	0.27
1999	2.92	0.05	0.22	0.17
2000	2.15	0.13	0.38	0.26
2001	2.77	0.001	0.19	0.04
2002	2.97	0.001	0.21	0.05
2003	2.96	0.001	0.24	0.04
2004	4.08	0.001	0.26	0.04
2005	5.29	0.001	0.20	0.05

\*Source: Table 2.3

**4.4 RELIABILITY ANALYSIS - SCALE (ALPHA)****Table 4.3: Correlation Matrix**

	ROAD	RAIL	OCEAN	AIR
ROAD	1.0000			
RAIL	.3019	1.0000		
OCEAN	.2582	.7737	1.0000	
AIR	-.0132	.8448	.6272	1.0000

No of Cases = 25.0

**Table 4.4: Analysis of Variance**

Source of Variation	Sum of Sq.	DF	Mean Square	F	Prob.
Between Modes	5.3588	24	.2233		
Within Modes	210.2038	75	2.8027		
Between Measures	196.7377	3	65.5792	350.6355	.0000
Residual	13.4661	72	.1870		
Total	215.5626	99	2.1774		
Grand Mean	.9717				

Reliability Coefficients: 4 items

Alpha = .1624                      Standardized item alpha = .7769.

In Table 4.4, since  $F_{cal}=350.63 > F_{0.05}(3,96)=2.76$  we therefore reject  $H_{O_2}$  and accept  $H_{A_2}$  to conclude that there is a significant difference between the contributions of the transport modes to the GDP over time.

## 4.5 TEST OF HYPOTHESIS III

$H_{O_3}$ : The contribution of the transport sector to the GDP is not significant.

$H_{A_3}$ : The contribution of the transport sector to the GDP is significant.

**Table 4.5: Data for Test of Hypothesis III\***

YEAR	Modal Contribution to the GDP (=N'000)				GDP @ 2003 current factor cost=Y(=N'000)
	ROAD=X1	RAIL=X2	OCEAN=X3	AIR=X4	
1981	2608.58	75.68	232.09	100.91	50456.1
1982	3063.05	87.81	196.28	118.80	51653.4
1983	1835.80	90.10	343.51	146.41	56312.9
1984	2067.90	68.72	268.64	168.68	62474.2
1985	2387.40	94.76	240.15	176.58	70633.2
1986	2400.09	79.05	172.46	150.90	71859.0
1987	3667.40	86.55	248.62	227.18	108183.0
1988	13883.01	85.57	328.02	256.71	142618.0
1989	6593.94	88.08	396.36	352.32	220200.0
1990	7613.42	54.38	462.24	407.86	271908.0
1991	9405.09	95.00	538.34	443.34	316670.0
1992	15016.54	107.26	858.09	750.83	536305.1
1993	20162.40	137.63	1032.21	756.95	688136.6
1994	35617.79	180.80	1265.61	904.01	904004.7
1995	56303.52	580.45	2708.76	1934.83	1934831.0
1996	80843.89	1081.52	9463.33	5677.99	2703809.0
1997	92465.10	3362.36	6612.66	6444.54	2801972.6
1998	89798.89	1904.83	7619.30	7347.18	2721178.4
1999	96756.04	1656.78	7289.84	5633.06	3313563.1
2000	101641.74	6145.78	17964.59	12291.56	4727522.6
2001	148869.07	53.74	10211.24	2149.73	5374334.8
2002	185097.63	62.32	13087.71	3116.12	6232243.6
2003	179426.32	60.61	14548.08	2424.68	6061700.0
2004	263368.49	64.55	16783.29	2582.04	6455110.0

\*Source: Federal Office of Statistics

## 4.6 REGRESSION RESULTS

**Table 4.6: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.986	.973	.967	414800.186	1.533

a. Predictor (constant), X4, X1, X2, X3

b. Dependent Variable :Y

**Table 4.7: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.17E+14	4	2.917E+13	169.512	.000
Residual	3.27E+12	19	1.721E+11		
Total	1.20E+14	23			

a. Predictor (constant), X4, X1, X2, X3

b. Dependent Variable: Y

**Table 4.8: Coefficients of the Regression**

Model	Unstandardized coefficients		standardized coefficients	T	Sig.
	B	Std. Error	Beta		
1 (constant)	67580.470	119554.0		0.565	0.579
X1	17.447	4.376	0.557	3.987	0.001
X2	-93.376	201.949	-0.058	-0.462	0.649
X3	169.985	62.616	0.444	2.715	0.014
X4	33.005	104.071	0.045	0.317	0.755

a. Dependent Variable: Y

**Table 4.9: Residual Statistics**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	136370.5	7594775	1911570	2252189.472	24
Residual	-1139664	907686.0	0.0000	377009.09309	24
Std. Predicted Value	-0.788	2.523	0.000	1.000	24
Std. Residual	-2.748	2.188	0.000	0.909	24

a. Dependent Variable: Y

$$\text{Prediction Model: } Y = 67580.47 + 17.45X_1 - 93.38X_2 + 169.99X_3 + 33.01X_4 \dots\dots\dots (4.0)$$

(3.987)                      (-0.462)                      (2.715)                      (0.317)

The positive constant value 67580.47 implies that there is a significant contribution to the GDP by the transport sector. Thus, the Multiple R is the correlation between the dependent variable and independent variables and its value is 0.986 while  $R^2$  with the value of 0.973 is the percentage of variance of the dependent variable that is explained by the independent variables. Since  $F_{\text{cal}} = 169.51 > F_{0.95}(4, 19) = 2.90$  we reject  $H_{0_2}$  and accept  $H_{A_2}$  to conclude that the contribution of the transport sector to the GDP is significant.

## 4.7 FITTING A TREND LINE TO THE LEAST SQUARE METHOD

For this type of time series data observed over an even number of years, we choose the first year in our series as the origin and assign that year a code ( $t = 0$ ). All successive years are then assigned consecutively increasing integer codes 1, 2, 3 ...  $n$ , so that the year in the series, the  $n^{\text{th}}$  year, has the code  $n-1$ .

**Table 4.10: Least Square Analysis Method\***

<b>t</b>	<b>y</b>	<b>ty</b>	<b>t<sup>2</sup></b>
0	5.98	0	0
1	6.71	6.71	1
2	4.29	8.58	4
3	4.12	12.36	9
4	4.09	16.36	16
5	3.90	19.50	25
6	3.91	23.46	36
7	3.59	25.13	49
8	3.35	26.80	64
9	3.14	28.26	81
10	3.12	31.20	100
11	3.16	34.76	121
12	3.21	38.52	144
13	3.20	41.60	169
14	3.18	44.52	196
15	3.59	53.85	225
16	4.01	64.16	256
17	3.72	63.24	289
18	3.36	60.48	324
19	3.92	74.48	361
20	3.08	61.60	400
21	3.31	69.51	441
22	3.23	71.06	484
23	4.33	99.59	529
24	5.54	132.96	576
<b>300</b>	<b>97.04</b>	<b>1108.69</b>	<b>4900</b>

\*Source: Table 2.3

Using Equations 3.4 and 3.5, we have that:

$$b = \frac{25(1108.69) - (300)(97.04)}{25(4900) - (300)^2} = \frac{27717.25 - 29112}{122500 - 90000} = -\frac{1394.75}{32500} \\ = -0.0429$$

$$\bar{y} = \frac{\sum y}{n} = \frac{97.04}{25} = 3.88$$

$$\bar{t} = \frac{\sum t}{n} = \frac{300}{25} = 12$$

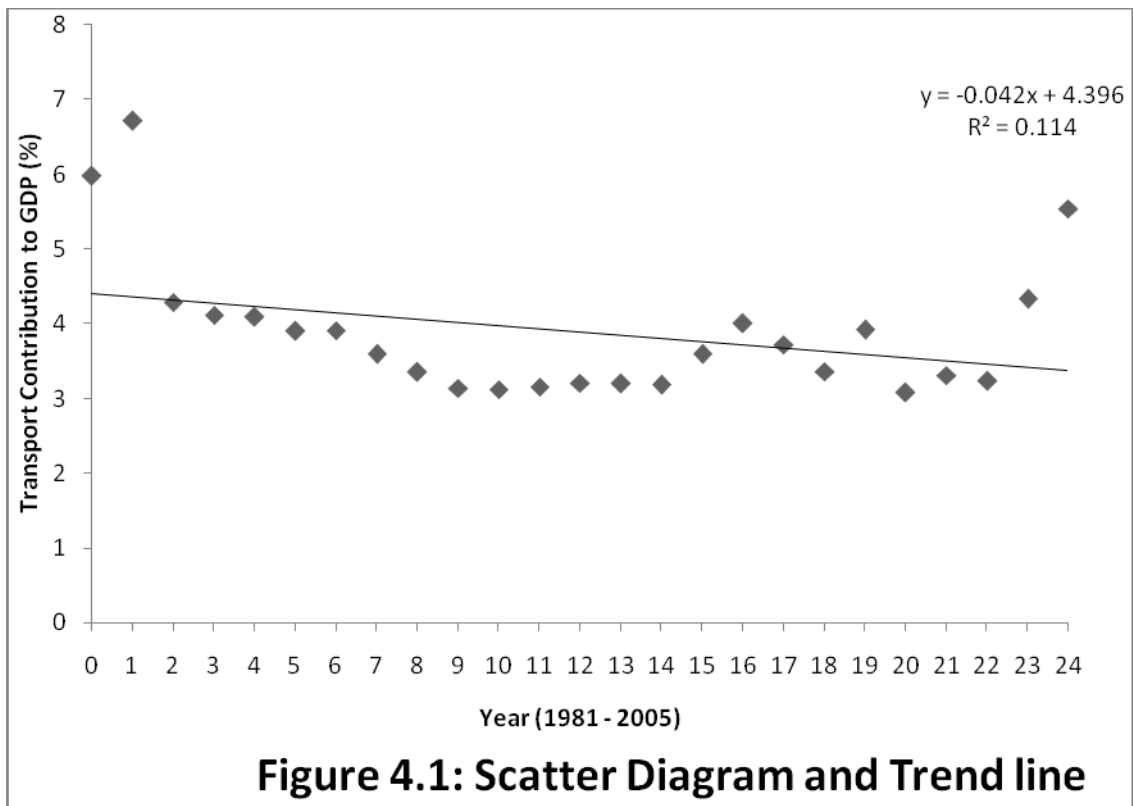
$$a = \bar{y} - b\bar{t} = 3.88 - (-0.0429 \times 12) = 4.39 \approx 4.4$$

$$\text{But } y_t = a + bt$$

$$\therefore y_t = 4.4 - 0.04t \dots\dots\dots (4.1)$$

Where the origin corresponds to 1981 and t is in units of year. The intercept is the fitted trend value reflecting the percentage contribution of the transport sector to the GDP in the base year, 1981. The slope indicates that such contributions are decreasing at the rate of 0.04% per year. To fit the trend line to the observed years of the series, we nearly substitute appropriate coded values of t into Equation 4.1.

Figure 4.1 shows the data in Table 4.10 plotted as a scatter diagram and a straight line trend.



It can be observed that the figure shows a negative or downward trend which is in conformity with the value of  $b$  calculated using the least square method. This means that even though contribution of transport sector to economy has been significant, the trend has declined continuously.

#### **4.8 FURTHER ANALYSIS OF TRANSPORT INFRASTRUCTURAL DEVELOPMENT AND ITS EFFECT ON NATIONAL ECONOMY**

Between 1990 and 1992, a sum of ₦2, 210,000 was budgeted for the transport sector and the contribution of the sector to the GDP for the three years were 3.14%, 3.31% and 3.12% respectively. In the 1991 – 1993 Rolling Plan, the sum of ₦2, 695,428 was spent on the sector. It contributed only 3.21% to the GDP in 1993. Between 1993 and 1995; ₦8, 379,446 was earmarked for the sector and it contributed 4.2% of the GDP in 1994. Of course, the GDP of the sector appreciated, probably because of the slight increase in budgetary allocation. Significantly, the allocation increased to ₦28, 491,420 in the 1996 – 1998 Rolling Plan. The contribution of the sector to the GDP appreciated 3.59%, 4.01% and 3.92% in 1996, 1997 and 1998, respectively (Tables 2.3 and 2.4). This is an indication that appropriate and adequate funding of the sector will enhance its contribution to the economy.

However, this does not mean that there have been adequate investments to the industry. If you compare what a country like Canada invests into transport, then, you will know that ours is relatively low. This also reflects in the sector's contribution to the GDP. For most advanced economies, it contributes between 11%



and 16% while for emerging economies like ours it is between 3 and 6% (Table 2.3). The investment into the sector has been consistently inadequate. In the year 2000; ₦9, 604,800 of the budget was allocated to transport. But in the years 2001, 2002, 2003, 2004 and 2005; only 5.01%, 4.49%, 2.39%, 1.23% and 1.52% of the respective budgets was earmarked to the sector (Table 4.9).

**Table 4.11: Budgetary Allocation to the Transport Sector (N'000)\***

Year	2000	2001	2002	2003	2004
Amount	9,604,800	53,176,100	53,662,600	29,309,400	15,046,000

\*Source: Federal Bureau of Statistics (2006)

## 4.9 DISCUSSION OF FINDINGS

- i. The result of Hypothesis I showed that the increased investment in the transport sector impact positively on the returns it made to the economy. This means that returns has a direct relationship with investment.
- ii. The contributions of the various modes transport to the GDP varied over time according to the attention given to them
- iii. Hypothesis III indicates that the transport sector has contributed significantly to the GDP.
- iv. Fig.4.1 showed a downward trend confirming the value of the slope  $b$  calculated with the least square method. This indicates that the contribution of the transport sector to the GDP over the years has not been constant but declined steadily.

## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATIONS**

#### **5.1 CONCLUSION**

Based on the findings of this study, we conclude that appropriate and adequate investment in transport infrastructure is a catalyst to the economic growth of Nigeria. This is because the situation improved at some points on the graph (Fig 4.1) where investment in transport infrastructure increased. This goes a long way to show that if substantial amount of money is invested in transport infrastructure, the sector will contribute much to the economic growth of the nation.

As a matter of fact, the pace of transport infrastructural development in Nigeria is low. Really, the bureaucracy of the state and its attendant short-comings coupled with the socio-economic realities have raised questions on what exactly should be the role of the state in transport infrastructure provision and maintenance. A key factor that makes private participation in transport infrastructure provision essential is the continuous assured managerial autonomy.

## **5.2 RECOMMENDATIONS**

In view of the foregoing observations, the following recommendations were made:

- i. Public ownership and private sector operations of the transport infrastructure should be encouraged.
- ii. Private sector should hence-forth be involved in the transport infrastructure planning and development as a part of the present administration.
- iii. Government should see to it that the port tariffs are further reduced to make our ports competitive.
- iv. Government should take legislative, policy and fund intervention measures to develop our transport infrastructure.
- v. Government should set up Transport Regulatory Commission which will provide regulatory roles while the private sector provides the operational requirement.
- vi. A holistic strategy involving the overall improvement of all the modes is required. Consequently, a Master/Blue Print should be evolved instead of uncoordinated approach for all the modes.

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