THE PATTERN OF FEDERAL GOVERNMENT EXPENDITURE ON ROAD CONSTRUCTION IN NIGERIA (1976 -1995)

BY

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DECLARATION

I hereby declare that this thesis was written by me and that it is a record of my own research work. It has not been presented before in any previous application for a higher degree or reputable presentation elsewhere. All borrowed ideas have been duly acknowledge by means of references and quotation marks.

SALAMI, Saheed Olawale.

CERTIFICATION

This thesis entitled "The pattern of Federal Government Expenditure on Road Construction in Nigeria 1976-1995" by Salami Saheed Olawale, meets the regulation governing the award of the degree of Master of Science of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary application.

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DEDICATION

This thesis is dedicated to my Mother, sisters and brothers and to you 'matu, all of whom deemed it necessary to send me to do this programme and who have all borne the pains to train me to this level.

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ABSTRACT

The main purpose of this thesis is to validate Wagner's law which states that as per capita income of a country rises, its public sector will grow in relative importance. In Nigeria, total government expenditure as a percentage of GDP has risen several fold since 1970. However, expenditure on road transport has either remained relatively constant or declined as a proportion of GDP. This thesis found that Wagner's law appears to hold in aggregate terms for the period between 1976 and 1995 but most rapid expenditure increases were generally in the social services and administration. There was a declining share of the transport sector in the total public sector investment. The proportionate contribution of the road transport sector also declined contrary to expectation. The income-elasticity of road expenditure was less than one. There is no doubt that expenditures were limited by the dwindling revenues particularly from the oil sector.

Investment on road transport in terms of public expenditure is a sine qua non for economic development. However, in over two decades of public expenditure programming, the goal of good road network all over the country remains elusive and the development outlook continues to be precarious. This thesis also examines the pattern of Federal Government expenditure on road construction, the

degree of government commitment to it's funding and the effect of such expenditure on the country between 1976 to 1995. Hence, the need to estimate it's determinants appropriately. Several models are specified and estimated. The result indicates a positive correlation between government expenditure on road and population, Government Revenue, Density, Total government Expenditure. The thesis concludes that public expenditure management which recognises the unique role of road transportation is required in order to ensure that the sector obtains its right share of public financial support and to promote economic development.

The thesis recommends that investment in critical infrastructure like road development, should discontinue to remain in public domain in the near future.

For the time being, priority should be given to rehabilitating roads on the basis of their economic viability. Those with high economic viability should be accorded priority and completed expeditiously.

CHAPTER ONE: GENERAL INTRODUCTION

1.0. Introduction

One cannot get the Nigerian economy into perspective unless one begins by recognising that it's rate of growth since 1986 compares very unfavourably with what obtains in industrial countries. Several factors are responsible, but this thesis focuses on infrastructure.

If we were writing in Europe or North America, it would seem, strange to focus on infrastructure since in these continents the rate of economic growth would not be affected by spending more on infrastructure. Africa is different.

Infrastructure is commonly referred to as services (or capital assets helping to provide them) that are basic to economic activities in its modern form. This includes transport and communications, electricity and water supply, education, preventive and currative medicine and housing (Anthony and Douglas, 1981).

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Until the late 1960s, Nigeria experienced inadequate supply of high level manpower. This was a barrier to development. The importance of money capital is predicated on the need for money to acquire real capital, the machinery, equipment, and building facilities with which productive

activities are undertaken. To a large extent economic growth is determined by the volume of money capital available. Human know-how i.e. engineers, accountants, economists etc., are vital to the appropriate selection of the instruments of growth.

Since money capital is relative to need, it cannot always be enough. Starting with the oil boom in the seventies, there was a large money capital available in Nigeria. The contribution of the petroleum sector has risen significantly in recent times, signifying the reliance of the economy on oil as a source of revenue. The rate of addition to major facilities induced large inflow of capital within a decade and led to the building of large petroleum refining complexes, river basin irrigation projects etc. The creation of agricultural, transportation and manufacturing productive facilities triggered the need for more infrastructural facilities; the need for more electricity; portable water; better communications; motorable roads among others. These were the missing links that constrained the adequate use of productive facilities available.

For effective economic system, there is need for a good network of roads. There are quite some good roads linking important cities and towns, but few roads link the rural production centres to the cities and within cities and towns.

Many of the roads are bad and inadequate which results in more time being spent on road transacting business than is necessary. Air transportation is not left out of these inadequacies as it is riddled with poor organisation, delays at airports, cancellation of flights etc. Thus, a fast means of transportation designed to make travelling faster is not performing as expected. This is as a result of inadequate management and planning of the variables involved which creates constraints inhibiting production, distribution and development.

Either private enterprises or public agencies can supply infrastructural services. This lies with the government in Nigeria. However, the explanation of government responsibility for road development lies in colonial history. Roads, railways, bridges, ports, telecommunication, electricity and water are long standing public responsibility. Responsibilities for education and health too have been shifted to the public sectors as far back as 1940's.

Some of these public service facilities were provided with the aim of reducing costs. These costs are both capital and recurrent costs. Thus road making implies the cost of road construction and the cost of maintenance. Public sector provision of infrastructure entails both kinds of costs, whether at subsidised prices or without charge.

If infrastructure is provided according to commercial criteria, there would be less of it. If roads were provided to meet an economic demand, then fees would have been charged to those who utilise them, and there would be less of it, than are currently available in Nigeria. Since in practise much infrastructure is provided by public authorities especially the Federal Government without charge, or at less than its cost, for the delivery of social services as well as economic inputs, the optional amount cannot be determined economically. In this thesis, attempts have been made by extending the concept of investment to include outlays on overhead capital (e.g. road).

For industrialization to take place in Nigeria and to be able to improve the welfare of its people, infrastructural outlays have been in the fore front of the government policies. At the beginning of development plan in 1946, infrastructure was given utmost priority. It however diminished in importance because of the growth of capital outlays on defence and general administration.

1.1 Statement of Problem

The insatiable nature of current needs and prevailing wide notion regarding gross inadequacies in public services and the compelling expenditure that backlogs have on the

balance increased rather than diminished public expenditure.

In the past, the direction of the supply of public goods and services weighed heavily in favour of administrative and social services expansion. The inherited burden of recurrent costs associated with this lop-sided expenditure pattern imposed considerable strains on budgetary possibilities and policies and further complicated future expenditure pattern in particular. This has undermined the capacity of the government to finance capital expenditure.

Public services have been so poorly developed since the introduction of the structural adjustment that they have become a bettle neckk to economic development. This is especially true of transportation, electricity and water supply. It is an indisputable fact that the improvement of the public services will enable the country to grow more rapidly than it will otherwise do.

The generally declining economic growth calls to question the effectiveness of transport sector contributed to economic development.

Still another problem relates to dwindling public revenues. It appears that public expenditure has almost reached the limit of budgetary resources due to shortages of

funds which in turn have resulted from the depressed nature of the economy. Indeed, shortage of funds has become an outstanding contemporary problem of road development in Nigeria.

1.2 Objective of the Study

Historically, European nations have developed due largely to the adequate supply of infrastructural facilities in their countries: Our major objective in the study is to explain the growth of public expenditure in the transport sector over the past 20 years. The thesis, also seeks to examine the trend of public expenditure on road, and to assess government committment to road development.

1.3. Research Hypothesis

The statistics of a country's public expenditure on roads deserve attention, at least, for the light it sheds on the process of the growth of the public sector. Although it does not indicate how in practice government outlays on roads are or should be made at any particular time, it does illustrate, through the ex post facto which it provides, the scale and direction of public sector activity. Consequently, it is hypothesized in this thesis that;

(i) government expenditure on roads rises faster than Gross

Domestic Product. The result will help to validate or otherwise the Wagner's hypothesis.

(ii) Secondly, that Government expenditure on road varies with population, Total government expenditure.

1.4 Justification of the Study

Transport costs are high in Nigeria and their reduction is a powerful force in improving the living standards of the people. The bulk of freight traffic in the early 1990s are carried out on the road. The development of which have accordingly been a major part of government policies.

Successful diversification of production, expanding trade, coupled with population growth and poverty alleviation are closely linked to adequate provision of good infrastructural facilities especially to road transportation system. This could alleviate rural poverty as it could increase produce, non farm rural employment and the sale of farm produce in urban areas. However, studies on public expenditure on roads are limited. Specifically studies on the determination of public expenditures on road are none existence.

There has been neglect in the study of public expenditure as it affects the development of nations and developing

nations in particular. This neglect is gradually being removed through various studies one of which is this thesis.

The dominant role of government in the economic life of Nigerians is shown in the various development plans and national budgets of the country since independence. When we realise that the major revenue and expenditure lies directly in the hands of the government, and most revenue accrues directly to the federal government; no one should then be surprised that we are using the Federal government as our choice for analysis in this work.

1.5. Sources of Data

The data for this study are secondary data, obtained from Nigerian Institute of Transport Technology, Central Bank of Nigeria's Annual Reports, Statement of Accounts, Statistical Bulletins, Publications by the Federal Office of Statistics, Annual Budget Speeches, United Nations African Year Book, Nigerian Economic Society's Journal of various issues, Journals, Newspapers and Magazines of various years.

1.6. Scope and Limitation of the Study

The period between 1976 to 1995 is covered in this work. Nigeria is a country, where there is paucity of data. We

however have tried as much as possible in this work to overcome the limitation imposed by paucity of data by trying to use actual data instead of proxies and disaggregating our data to the sub sector.

1.7 Research Methodology

Both theoretical and analytical approaches were used. Econometrics and statistical tools based on ordinary least square (OLS) assumptions were used to obtain the parameters of regression equations.

1.8 Organisation of Work

The study is organised into five chapters. Chapter one contains the introduction, problem statement, objective of the study was discussed. It also discussed the hypothesis and justification of the study, methodology, scope organisation and limitation of study.

Chapter two presents the theoretical framework for the study, also the review of literatures on public expenditure as well as the empirical literatures on government spending vis a vis public utilities (road). Chapter three discusses, the various policies on government expenditure with respect to roads. And also, an over view of transport sector

contribution to GDP. Chapter four, focusses on the presentation of the models, the explanation of the regression results. Also, the test of hypothesis for the study was done in this chapter. Chapter five is the summary and conclusion of the study. The recommendation drawn from the study was also obtained in this chapter.

CHAPTER TWO: REVIEW OF LITERATURE

2.1 Introduction

Public expenditure is defined by Bhatia (1980) as "the expenses the government incurs for its own maintenance as well as for the society and the economy as a whole". This also includes the expenses by some governments to help other countries.

Overtime, public expenditure has been found to be continuously increasing in almost all countries. Traditional thinking and philosophy with regards to public expenditure have not been encouraging because, the market mechanism is regarded by many authors as a better mechanism by which the working of the economy could be better guided and the allocation of resources decided. This thinking is usually based on the argument that each economic unit is the best judge of its own interests and government should not decide on behalf of others (Bhatia, 1980). The conclusion of the apologists of this argument is that the best government is the one which does the least. According to Friedman (1962), one of the proponent of the argument is that government should concern itself with matters of state security, administration of justice, provision of certain public works etc. Instead of involving itself in direct productive sectors of the economy.

Governments all over the world have found that with the development of socialist ideas along the free market colony that they cannot just fold their arms and watch. Therefore, any nation which is conscious of national development does not toy with its public expenditure, whatever the economic in practice. This is evident in the performance of both developing and developed worlds. Countries have demonstrated their national awareness of public expenditure as a vehicle of development which translates, national policies and goal into realities.

2.2 Wagner's Law of Public Expenditures

Adolph Wagner, a German economist formulated a law of expanding state expenditures which highlighted the growing importance of government activities and expenditures as an inevitable feature of a 'progressive' state. The main thrust of the thesis was that the relative importance of the public sector increases as the per capita income rises. He went further to say that as per capita income in a country increases, government expenditure as a proportion of gross domestic output also increases, meaning that, the income elasticity of public expenditure tends to exceed unity. In other words, Wagner's argument was that as a nation experiences economic development, an increase must occur in the activities of the public sector. This was based on the

following reasons:

Firstly, the administrative and protective function of government rises, as government partake in activities that should be undertaken by the private sector.

Again, with the increasing population density and the resultant urbanisation (which he saw as accompanying industrialisation), public expenditure on law and order (in order to maintain the efficient performance of the economy in the face of the increased violence of urban life) will increase the activity of government.

He thus predicted that the income elasticities of demand for social infrastructures, particularly education would be greater than unity, so that more of them would be demanded as income rose. The same could be said of road.

Furthermore, Wagner suggested that the inevitable changes in technology and the scale of investment required in many activities would create a number of large private monopolies whose effects have to be eliminated by government either by taking over such monopolies or establishing institutions to compete with such monopolies. This has the effect of increasing the expenditure of government.

2.3 A Development Model of Public Expenditure

The above approach is best represented by the work of Musgrave and Rowstow. Who maintained that in the early stages of economic growth and development, public investment was complementary to the growth in private investment. During all the stages of development, market failures exist which can frustrate the push towards maturity. Hence, the increased government involvement in order to deal with these failures (Bhatia, 1980).

Rostow (1971) claimed that once the economy reaches the maturity stage, public sector investment as a proportion of the total investment in the economy will be high (Brown and Jackson, 1990). This is based on the argument that large public sectors are needed to gear up the economy for a take-off into middle stages of economic and social development. In the middle stages of growth, the government continues to supply investment goods, but this time, the mix of public expenditure will shift from expenditure on infrastructure to increasing expenditure on education, health and welfare services.

2.4. Determinants of Government Expenditure on Infrastructure

Dominique, (1985) believes that "public spending aims at promoting efficiency and equity by improving the distribution of economic welfare" Government is therefore highly essential in the development process as it plays a key role in the provision of certain public services. The purpose of investment in infrastructure and public consumption of goods is to increase urban productivity and National economic development.

In their empirical findings, Bleyjr and Khan (1984) found while using cross country data, that public investment in infrastructural compliments private investments. Infrastructure investment facilitates private investment by lowering private production cost and opening new markets, thereby creating new opportunities for profit. There are reasons for this:

1. Stock of Infrastructure existing: In holding every other thing constant, countries with high stock of infrastructure are expected to derive less benefit from additional expenditures on infrastructure and will tend to spend less. Again, the higher the infrastructure, the greater will be the expenditure required to service and

off-set depreciating stock in existence. World Bank (1988) shows that road deterioration is currently perhaps the most acute problem of the transport sector in developing countries. On the average, one quarter of its paved road system is in poor condition and needs major rehabilitation.

2. Another factor is population density. Where population is sparsely distributed, the miles of road that will be needed to link population centres will be high, this will then mean that per capital infrastructure expenditure will be inversely related to population and the total land area in square kilometre.
3. Centeris paribus, the higher the proportion of population in urban areas the less will be spent on infrastructure per capital since urbanisation entails specialisation and less self provision. This is because urban population are less likely to rely on government to provide infrastructural services (Heller and Diamond, 1990).
4. Another point is that as the level of development increases, the structure of the economy is expected to change in ways that increase the productivity of infrastructural investment.
5. Furthermore, if there is a government deficit in the previous year, there is a tendency for government expenditure to decrease in the following year, as well as government's ability to make infrastructural investment

in the current period. This is known as internal balance.

6. The level of foreign funding is another important point. Foreign investment or savings, directly provide funds for investment in infrastructure. According to Khan and Hoshino, (1992); "the relationship between netflow of foreign savings and infrastructural investment is expected to be positive".
7. Government spending always reflect or manifest on what objectives and priorities it has. Also debt obligation, if high, can decrease government expenditure on infrastructure.

2.5 Factors Influencing the Structure of Government Spending:

The structure of government spending has impacted on income distribution. There are some government expenditures whose social benefits are common to all citizens. Examples are justice and security, agriculture, public works, electricity, transportation etc. The benefits of these expenditures cannot be analysed among different income groups.

However, government expenditures on education can be so analysed. Public education is necessary for accelerated development and where intelligent citizenship is most

required. Educational opportunities to the masses help a lot in making them understand the causes of their poverty and how to overcome them economically and politically. Besides, education helps in equalising income distribution very effectively by providing equal opportunities for all, (Bello, 1995).

Two other services which contribute to reduction in the inequality of income are social insurance and public health care. The mere fact that public expenditures on education and health are progressive helps to make it improve the welfare efficiency of the poor class by increasing their income, thereby enabling them to spend more on things which contribute to efficiency such as food and shelter (Naye, 1997). Thus the more Government can raise the already low standard of public social services the more it will raise efficiency. That is, efficiency results from increased expenditures on social services.

However, government resources are limited. The more it spends on social services the less the resources are available for other sectors, such as the economic sector, administration, transfers etc.

It is equally important to spend on the economic sector to combat poverty. Increased production is required in all

commodities. This requires capital formation on a large scale. Many of the projects required cannot be provided by the private sector alone. Besides, there are projects which are not renumerative enough to induce private investment. For these reasons and in order to develop the economy at a rapid rate and to overcome the problems of economic development, economic growth has become a major component of government policy. Government expenditure is needed in irrigation, drainage, electric power generation and distribution, extension services experimentation in new crops, search for and participation in new industries and transportation and others (Bello, 1995).

Bello (1995) went ahead to say government has in the past, floated a public debt by offering attractive rates of interest. The present cost of servicing such a debt is a problem to government as the debt was not invested in productive undertakings (in developmental projects conducive to a rapid increase in real income). Transfers to finance such a debt redistributes income in favour of the wealthy class. Payment of pensions and debts constitutes a bulky part of the transfers. If the total annual interest payable on debt is large it may increase the burden of taxation, causing possibly a reduction of expenditure on social and economic services. Interest on debt which is simply a transfer payment to a particular group of people in the society helps to

redistribute income. Waste (i.e. Mismanagement of public expenditures) due to poor administration has contributed to the growth of administrative sector.

Governments do approach the issue of income redistribution through the expenditure part of the budget. More attention could be paid to the social services and economic sectors at the expense of other sectors. Whatever instruments that are used (subsidies to consumers, subsidies to producers) government expenditure must rise (Olowononi, 1978).

There are a number of ways in which we can look at government expenditures. We can look at expenditures from the point of view of the object of the expenditure, the purpose of the expenditure and whether or not the expenditure is for current or capital purpose.

In a number of countries including West African countries, Governments present their expenditures in accordance with what objects or items the money is spent on, for example, there might be money to be spent on salaries, or on stationery, or on child allowance or transport, to name only a few. In this context, the structure of government expenditure is a reflection of how much the total expenditure allocated to salaries, transport charges, office materials,

etc are. This type of expenditure classification is referred to as the object of expenditure in the sense that the focus of attention is on the items of expenditure (Bello, 1995). This type of expenditure classification is useful for purpose of internal control. However, this kind of expenditure classification does not provide useful information from the point of view of indicating the priorities of Government. The Government priorities will indicate the major goals which the Government has set for itself as far as the economy is concerned.

Modern day Governments present their expenditures so as to show the purpose of the total Government expenditures. This type of expenditure classification enables us for example, to know what amount is being spent on communication, health, education, industries, transportation or agriculture as the case might be. This information enables us to appraise whether too much is being spent on some areas and too little on others. This type of Government expenditure presentation is referred to as "functional classification" of Government expenditures.

Governments also present their expenditures in such a way as to show which expenditures are being directed to current purposes and which are being directed to capital purposes (Lambo, 1987). This classification is very important to show

whether the Government is putting enough emphasis on capital expenditures. Capital expenditures reflect the Government's determination to increase the rate of economic development in the country. In the current account, information is also given as to total expenditures on wages and salaries, transfer payments (i.e. money paid to members of the society through government).

2.5. The Significance of Road Transport

Transport, one of the most important sectors of the economic activity in any economy, is believed to be a key stone in civilisation (Law, 1978). It is a widely accepted fact, that the development process of any society, depends to a large extent, on the efficiency of the transportation network in existence in that society.

The success of our daily economic activities depends on tranportation. Every product consumed must have been transported before it finally got to the consumer. The products, before they were produced, also must have required inputs used in their production which must have been transported from the suppliers (Jimaza, 1983).

Again, because transportation facilitates mobility it is a basic foundation of economic development (Adefolalu, 1984).

This is due to the spread of production, trades and ideas, and the economic ascendancy of man depends upon the ability to move across areas and mix with different people.

Specifically, transport system enables inter-regional contacts and so promotes social and political unity of societies. For purposes of development therefore, it is rational for developing countries to devote a substantial proportion of their total public expenditure to investment in transportation. According to Rowstow, (1971) the railroad was historically the most powerful single initiator of take-off in development process. Road transportation was of no less importance (Law, 1978).

Adams Smith (1776) contends "that with increase in transport facilities, greater division of labour and increases in capital are bound to occur". Which implies that improved transport extends the market which increases the division of labour and this raises productivity.

An integral part of production and distribution is road transportation and transportation in general. Large scale production and distribution are very necessary for economic development. This cannot be possible without efficient and relatively cheap transportation. Thus, the significance of transportation is predicated upon the provision of a

foundation upon which the economic growth of a nation develops (Lee, 1995).

Moreover, transportation, by changing location of things and people for purposes of production creates value. Regional specialisation and division of labour are valuable requirements for economic progress, these are stimulated by general transportation (Amaghionyeodiwe and Abiodun, 1998).

Transportation is also of relative magnitude in virtually all countries. Since transportation is an important absorber of scarce resources, ill timed, misdirected or misplaced investment in this sector can have a negative impact upon the whole economy. Most of the investments in transportation is large, indivisible and long lasting, hence it can tie up vast amounts of resources for a long period of time.

Hawkins (1962) asserted that one sure generalization that can be made about the under developed countries is that economic investment in transport and communication is a vital force, meaning that transportation is very important at least in the early stages of development.

2.6. Review of Empirical Studies

Miller, (1969) studied the highway between cities of

Bahia Blanca in the province of Buenos Aires and Sonta Rosa, Capital of the province La-Pampa in Argentine; using personal contact and questionnaire method to obtain information relating to the effect road improvement had on the rural dwellings with the farmers attitude and technique and savings in marketing cost and transport costs, the prospective gains from road improvement were estimated and generalised and they showed that roads did not act as a significant limitation on the quantity of farm produce sold.

Fred (1969) concluded that "the general opinion seems to be that roads are desirable and it is expected that it will have an appreciable effect on the economy".

Ogwude (1984) conducted a study on the Wukari Numan road in Gongola State (now Taraba and Adamawa States) to assess the impact of the road on farming trading/marketing, traffic flow, travel, time saving and vehicle operating costs. Using descriptive statistics in his analysis, he found that road transport had the most significant impact on farming, trading/marketing and time savings.

Ogwude said further that households were able to travel in a shorter time and on the basis of social cost benefit analysis. The transport facilities or improvement which brings over one and a half hour travel time savings deserves

a greater consideration within the area. The travel time savings in Ogwude's study are however, based on household perception.

Ogwude's work shared in similarity with Fred's (1969) in the type of road assessed-highway construction. But there was also a deviation along the line. Fred's work was on a new road construction and comparatively; taking differences in geographical setting for granted, the impact of new road construction seems to be more on agricultural production and marketing than mere road improvement.

In his evaluation of feeder, road supply in Yagba East local government area of Kogi State, Arosanyin (1993), using descriptive statistical tools to analyse both primary and secondary data, showed that the type of road works (reconstruction, rehabilitation and new construction) was influenced by the phase of construction. The degree of the strength of the association between the two variables is high. That the Ogbom-Imela road was found to have positive effect i.e. reduced travel time and transport fare, and increased access to farm and increased access to market. The road has stimulated trip and travel which considering the socio-political reasons of the area would not have been undertaken, if the road was not constructed.

The question remains that, in Nigeria which body is responsible for financing road transportation?. Highways in Nigeria consists of trunk roads which links the major cities, urban centres and boarder crossings to neighbouring countries.

A well developed road network is essential for economic development. In Nigeria about 90% of our land commerce depends on road transport. According to Fejokwu, (1988). The issue of ownership and control are of particular interest in road transport. The federal government provides the permanent way. In a similar vein, Adefolalu, (1984), expressed a similar view as to who should provide such infrastructure that transport is financed and maintained by governments....

There also exists a functional relationship between the growth of government activities and economic growth so that government sector grows faster than the economy "(Bhatia, 1980). This law of ever increasing state activity is supported by Nitti (1903). who with empirical evidence concluded that the law was not only applicable to Germany but to all kinds and levels of government that has the same tendency of increasing public expenditure".

Wiseman and Peacock (1961) accepted the historical contention of Wagner's "Law'. They however rejected the conclusion on the ever increasing state activities. The

authors believed that public expenditure does not increase in a smooth and continuous manner but in jerks. According to this hypothesis which was tested in U.K. for the period of 1890 - 1955. At times social and other disturbances took place which at **once** showed the need for increased public expenditure which the existing public revenue could not meet..... Thus public expenditure increases and makes the inadequacy of present revenue clear to everyone. In summary, displacement effect relates to the changes introduced in people's notions about the tolerable burden of taxation by major disturbance such as wars or long depressions, and whose impact on public revenue and expenditure results in shifting them from their previous levels to a higher one. While the concentration effects hold that the changes in responsibilities between layers of government brought about by similar forces, is always in favour of higher organs of government. This implies that there is tendency for the central government economic activity to grow faster than that of the state and local government.

The possible criticism of Peacock and Wiseman examination of Wagner's 'Law' is that they emphasised more on recurrence of abnormal/extreme situations that cause sizeable jumps in public expenditure and revenue forgetting the constant and regular increments in public expenditure due to some expansion and structural changes in the economy. However, increasing

population, urbanization, rising price levels, civic rights have the tendency to grow on account of a systematic expansion of government activities. One can assume however that expansion of government expenditure is due to rapid population growth, inflation and civic rights.

In a study of public expenditure Fabricant (1952) remarked that urbanization is one of the factors that contributes to increasing government activities. This is due to massive movement of able citizens in search of jobs in the industrial sector. This, lead to increase in public expenditure to cater for the high concentration of the urban populace.

Thorn (1967), also observed this similarity that "rising proportion of urban population accompanying development all other things being equal, is sufficient to raise the relative level of public expenditure". Thorn's findings are in accordance with those of Kuznet's.

However, studies have shown that these findings are only consistent with Britain. Its applications to other countries need to be verified as the aspect of concentration effect is closely connected with the political set up of Britain.

Bhatia, then argued that on the face of it, the wiseman-

Peacock hypothesis looks quite convincing but that they are emphasising the occurrence of abnormal situation which causes sizeable jumps in public expenditure and revenue. He further emphasised that public expenditure has a tendency to grow on account of systematic expansion of government expenditure and due to rapid population growth, inflation as well as civil rights.

Bird (1971), studied Wagner's law of expending activity in Canada and concluded that there was a positive relationship between the ratio of public expenditure and gross national product per capita.

Goffen and Mahar (1971) in their study of six Carribean countries between 1940 - 1965, came up with a similar observation on the positive relationship between the ratio of public expenditure and gross National Product to per capita income. They believed that the greatest factor of expenditure growth is found in social expenditure.

Thorn (1967), observed "that there exists similarities in that rising proportion of urban population accompanying development all other things being equal, alone is sufficient to raise the relative level of public expenditure".

It is seen that to understand Wagner's hypothesis it has

to be seen in the light of the structures of government expenditure and revenue. This was the aim of Lambo (1987) when he examined the trend of Federal government expenditure between 1961 and 1977. He classified them under two components, namely; recurrent and capital expenditure. He concluded that "during that period expenditure was fast growing due to cost of administration and defence services spending during war which forced government expenditure upwards".

The theory of displacement effect was critisised by Teriba (1967) who did an empirical study on the growth of public expenditure in Western Nigeria. He stated that "evidence on Nigerian war-time public expenditures shows nothing of the nature of the displacement effect described by Peacock and Wiseman". It is in conclusion that government expenditure will keep on increasing as the pressure on government increases that the direction of these pressures and hence, the supply of public goods and services has been weighted in favour of administrative and social expansion.

Olowononi (1978) examined the growth and pattern of public expenditure in former Kwara State between 1968/69 and 1975/76. The findings were that government direct involvement in state activities, such as health, education and transportation was responsible for rapid expenditure.

Olalokun, (1975) examined the pattern of public expenditure in Nigeria between 1960 to 1970. He found that expenditure growth was due to social, economic and political factors. That decentralisation led to expenditure growth, implying that fiscal system should be centralised in order to minimise expenditure. He further analysed how government finance road transportation. He tried to evaluate the role of user charges on the one hand and general tax revenue on the other, as an alternative technique for financing of roads in Nigeria. He said "in doing this, we

> have tried to establish the equity basis for adoption of the benefit principle of taxation through users charges technique of road financing, that while the existing system of road user charges goes some way in the satisfaction of this principles, it is still far from being fulfilled as the typical Nigerian road user is subsidised to a large extent by other tax payers. This is because of the existence of a considerable gap between the revenue that goes towards the cost of construction and maintenance of roads"

Adamu (1972) critically examined Phillip's Model which he used to estimate the Nigeria public consumption expenditure. the model is $E/Y = a(Y/P)^b$

Where E = Consumption Expenditure, Y = Gross Domestic Product,

Population, as inadequate in giving the right result that errors lies in the available data. This model seeks to estimate the parameters and to give some meaningful economic interpretations for them. Adamu said it was incorrect, if we linearise and log the model and call it G.D.P. elasticity of expenditure. That a better way of showing it is to express E as a function of both Y and P.

According to Adamu in drawing his conclusion "that the model used does not look like a policy model even for comparative static analysis... A good model should be able to classify the observed variables into two groups namely indigenous, and exogenous variables.

Based on the studies discussed above, most researchers employed regression analysis to explain the trend and pattern of public expenditure in both developed and developing countries. Some studies revealed that income, urbanisation and population are the main determinants of public expenditure, while some, maintained that gross National product and per capita income are the only determinants of government expenditure growth of a country. Therefore, no single factor can sufficiently explain the growth of public expenditure of a country.

The review so far has shown that, public expenditure has not been adequately analysed in the literature. Even in their pioneering study of public expenditure on the United Kingdom, Peacock and Wiseman (1961) complained that the subject of

government expenditure had not received satisfactory attention from economists in general and students of public finance in particular. They were surprised that government spending activities which accounted for 25 to 40 percent of the total had largely gone unexplained. However, there has been a considerable improvement since they wrote their book, as various attempts have been made to study and analyse the growth of public expenditure in various countries. Some attempts have also been made to compare the public expenditures in various countries and empirically locate the factors which explain the difference in the expenditure pattern of different countries.

What emerged from these studies was that public expenditure patterns change with the level of economic development. Indices used were per capital income, degree of urbanisation, openness of the economy and so on (Hinrich, 1965).

Mensiner (1962) also found that factors like centrilisation in administration and employment in the primary industries were important in explaining the level and pattern of public expenditure in a cross-sectional study. Gandhi (1962) also investigated the empirical relationship between expenditures on civil administration and the size of a nation. He focused on a particular sector. He defined the size of a nation in terms of population, area, and gross domestic products. Following various studies on state and local governments in the United States, one could also consider the

population density i.e the ratio of population and area of the country, as a measure of size. This is a factor that has been neglected by previous studies.

Generally it is assumed that population density is not significantly related to government expenditures. In fact, Basoah (1969) showed empirically that in explaining government expenditure on Administration in Africa, population density was a statistically insignificant factor.

It is not easy to hypothesise about the relationship between expenditure on road sector and the various indices indicated above because this seems to be a new field in economic analysis, one cannot even find a priori hypothesis in the theoretical literature for guidance. After an exhaustive research, one did not find much theoretical literature on the road sector and economic development. This study is using the public expenditure approach to look at the effect of government expenditure on road as it affects population, total government revenue, density, GDP and total government expenditure using statistical methods over a period of 20 years.

CHAPTER THREE: AN OVERVIEW OF THE TRANSPORT SECTOR

3.0. Introduction

The road sector is believed to be the engine of growth of any nation. This was indicated in Nigeria by various development plans instituted by various government starting with the first development plan to the fourth development plan.

The civil war of 1967 to 1970 disrupted the first plan. Nigeria had a coincidence in relation to the rise in price of oil after the civil war and the country experienced a strong growth in the transport sector. About 10,000 kilometre of road were constructed by the Federal government between 1975 to 1985, an increase of over 50% in one decade (Fadaka Boswel, 1993).

Unfortunately, however, the rise in price of petroleum in the world oil market was short lived and there ensued a big drop in oil price in the early 1980's. During this period, there was a prevalent economic crisis characterised by corruption, and wasteful spending which ate deep into the revenue of the government and what followed was massive borrowing from external sources. As expansion of roads was not backed up with maintenance, deterioration set in.

Despite the huge overall public expenditure from year to

year, this crucial sector of the economy on which other development efforts seem to hang lacked the necessary commitment it deserved in terms of revenue allocation and management of the meagre allocation to it.

3.1. Road Transport

The growth and changing structure of the economy, as well as the development of the road networks, generate rapid increases in motor vehicle stocks and usage. Data from the Nigerian office of statistics show that the number of all vehicles combined, increased on the average at a rate of 12 per cent per annum between 1958 and 1963. While commercial vehicles (trucks, buses, tractors and special purpose vehicles) numbered 16,000 in 1958, they were estimated at over 24,000 in 1965, 100,000 in 1975 and by 1982 it has risen to 200,000. Furthermore, the total available carrying capacity of the trucking fleet increased faster still. For example, while lorry registration grew by only 14 per cent between 1958 and 1963, their total carrying capacity went up by 25 per cent.

These upward trends in motor vehicle registration are expected to continue, studies indicate that future average rate of increase for private cars may be about 8 to 12 per cent per annum and for commercial vehicles about 5 to 10 per cent per annum. Such growth rates appear reasonable or even conservative, considering the strong forces of industrialization, urbanization and demand for personal

mobility which are present in Nigeria. It is important to translate this anticipated transport demands into precise flows by mode, origin, destination, route and future time patterns. For this, improved data systems and transport planning capabilities will be required.

Increasing road use has caused higher expenditure on imported vehicle, parts, tyres and tubes. Cost of these items went up from ₦60 Billion in 1986 to ₦150 billion in 1990 and nearly ₦220 billion in 1998. This averages about 8.5 per cent of the value of total Nigerian imports, but if imported fuel is included then the proportion rises to close to 15 per cent. Vehicle imports and usage together with questions of national energy and petroleum product policies, warrant close examination in Nigeria, since such large amount of money are at stake. By provision of better services, substantial economies could be achieved, largely in foreign exchange. For example, the average life span of a lorry in Nigeria was estimated at 100,000 to 120,000 kilometers or only 18 months to two years. A generally accepted rule of thumb places the cost of routine maintenance and repairs over the life of the lorry, at three times the initial cost of the vehicle. By international standards, these figures look quite favourable and survey could be improved upon by the right policies. The road transport industry in Nigeria is highly competitive and therefore resulting benefits would probably be transmitted quite quickly to the economy at large through lower rates. There is also scope for making the road-user tax system more productive and equitable.

Road accidents appears to be a serious problem, resulting in heavy loss of human and material resources. Gross overloading and poor maintenance of vehicles, dangerous highways, unskilled drivers, and excessive driving hours are prominent causes. During a trip last year from Kontagora to Ibadan, the author observed about ₦200 million worth of very recent truck wrecks along the road, some of them involving almost new, expensive tractor-trailer combinations. This is an appalling waste which Nigeria can ill afford.

3.2. Analysis of Government Policy on Road Transportation

The colonial government era was the first attempt of government towards a transportation policy for the country. They started with construction of farm access roads while some major ones included the laying of tracts for rail lines to aid easy movement of goods and people. As they colonised more territories, expansion and growth in commerce and subsequent construction of railway lines in 1898 and the establishment of the Nigeria branch of West African Airways Corporation (WAAC) in 1945 and later Nigerian Airways Limited in 1961 followed.

A lot of prominence has been accorded the transport sector since independence. Different governments implemented different policies as a means of achieving improvement in the country's transportation system. Government investment in road transportation ranged from capital expenditures on the construction of road networks, to the maintenance expenditure. And in the past decade, government took the controversial step

of buying commuter buses as a means of reducing hardships of commuters in major urban centres across the country (Amaghionyeodiwe and Folawewo 1998).

In the first Nigerian National Development Plan (1962-68), government's road transportation policy was aimed principally at expanding and upgrading road transport facilities in order to provide the infrastructures necessary to support the nation's development effort. It was with this plan that the government invested about £144 million representing 21.3% of the total plan size on transport, which saw road transport taking £35,382 million representing 24.6% of the plan size of the share of the transportation funds. This reflected government determination to ensure a good transportation system. To realise this aim, government codified its transport policy in the sessional paper, No. 1 of 1965 entitled "statement of policy on transport". The policy provided for the co-ordinated development of various forms of transport which would be promoted by concentrating on developing those modes that are capable of carrying persons and goods at the lowest costs per unit of service (Amaghionyeodiweano Foilawewo, 1998). This policy then served as a guiding rule for governments investment measures, in subsequent National development plans.

The commonest mode of transportation in Nigeria is road. This is because of the dual nature of the economy. The economy is firstly characterised by rural dominance in terms of food production, employment and in the provision of raw

materials for agro-based industries and also because the road is the major access to the rural areas. Secondly, as Nigeria's population grew, the pace of development accelerated while its attendant increase in commercial activities put much pressure on the need for road transportation. This accounts for the large share of road transport in the total transportation investment. Government investment in transport has been skewed in favour of road.

The economic downturn of the 1980's which was as a result of the oil glut and corruption coupled with external debt led to the adoption of Structural Adjustment Programme (SAP) in 1986. The aim of SAP was the contraction of the public sector of the economy and reduction in its spending.

Thus, with the adoption, government embarked on reducing its investment in those areas where it feels the private sector could do better. The social infrastructure to which road transport belongs was affected as the government total capital expenditure declined.

The various government policies on transport and investment, have been generally ineffective and malfunctioning. The problem is further compounded by administrative bottlenecks.

The philosophy underlying the existence of an efficient flexible transport service is its contribution to rapid economic expansion. To analyse the contribution of road

transport, we have to examined its relationship with the gross domestic product.

Table 3.1: Share of transport in the National Development Plans

Plans	Total outlays on Development	Outlays on Transport	Transport as % of total
1st NDP 1962-68	678,800*	143,817*	21.3
2nd NDP 1970-74	1,025,396*	242,294*	23.6
3rd NDP 1975-80	32,854,616	7,303,068	22.2
4th NDP 1981-85	70,276,225	10,706,616	15.2

Note*: Figures are in Nigerian Pound
Sources: Nigerian National Development Plans.

Table 3.1 shows the share of the Transportation in the First Nigerian National Development Plan, with the government investing £144 million, and the sum of £242,294 million in the Second Development Plan of 1970 - 74. Also the sum of ₦7,303,068 and ₦10,706,616 billion were earmarked for transport sector during the Third National Development Plan (1975-80) and Fourth Development Plan (1981-85) respectively. Outlays on transport as a share of total outlays on development stood at 21.3% in the first development plan and increased to 23.6% in the second development plan and by the third development plan, it fell to 22.2 percent. In the fourth development plan it was 15.2. This shows that transport sharce has declined.

Table 3.2: Road Investment as a proportion of total transport investment

	Investment on Road	Total Investment	Road investment as % of total
1st NDP 1962-68	35,382*	143,817*	24.6
2nd NDP 1970-74	166,294*	242, 294*	68.5
3rd NDP 1975-80	5,340,436	7,303,068	73.1
4th NDP 1981-85	7,446,992	10,706,616	69.6

Note*: Figures are in Nigerian Pound
Sources: Nigerian National Development Plans.

As Table 3.2 indicates in the First Development Plan, road transport, got an investment of £35,382 or 24.6% of the total fund for transport sector and £166,294 or 68.5% for the 2nd Development plan, ₦5,340,436 or 73.1% for the third plan and ₦7,446,992 or 69.6% was for Third and fourth Development Plans with 73.1% and 69.6% respectively.

3.3 Relative Importance of the Transport Sector to Gross Domestic Product

Table 3.3: Percentage contribution of the transport sector to the G.D.P at 1984 Constant Factor Cost 1981-1994

Year	Road	Rail	Ocean	Air	Total
1981	5.17	0.15	0.46	0.20	5.98
1982	5.93	0.17	0.36	0.23	4.71
1983	3.26	0.16	0.61	0.26	4.29
1984	3.31	0.17	0.43	0.27	4.18
1985	3.88	0.12	0.34	0.25	4.60
1986	3.34	0.11	0.24	0.21	3.90
1987	3.39	0.02	0.23	0.18	3.91
1988	3.12	0.06	0.23	0.16	3.59
1989	2.97	0.04	0.18	0.15	3.35
1990	2.80	0.04	0.17	0.14	3.16
1991	2.78	0.03	0.17	0.14	3.12
1992	2.84	0.02	0.16	0.11	3.17
1993	2.93	0.02	0.15	0.10	3.22
1994	2.93	0.00	0.14	0.10	3.17

Source: Federal Office of Statistics

0.00 = less than 0.01%

Indeed the sector's real contribution to G.D.P. continued to decline from 6% in 1981 to 3.12% in 1991 and 3.17 in 1994. Roads which remain the most significant sub sector declined from 5.17% in 1981 to 3.88% in 1985, 2.78 in 1991 and slightly rose to 2.93% in 1994. Before the introduction of SAP, the transport sector as a whole contributed 5.98% to G.D.P. in 1981 and 4.60% in 1985, before a continuous decline to 3.17 in 1994 (see Table 3.3).

3.4 Trends of Government Expenditure on Road Sector

Table 3.4, shows that government's budgetary allocation to the road subsector has been on the decline, though it fluctuated at times. The G.D.P. has been rising, showing that the income of government has been on the increase. In 1976 it was ₦26656.3 million and in 1995 it was ₦1430578.5 million. And the total expenditure has been increasing steadily due possibly to the increasing state activities of government starting from 9701.5 million naira in 1976 to 256520.0 million naira by 1995. The total road expenditure as a percentage of G.D.P has been declining. In 1976 it stood at 4.2% and fell to 1.3% in 1979 and from 1980 when it stood at 1.2%, it fell to 0.5% in 1984 and decreased to 0.2 in 1985. It rose slightly in 1986 to 0.5%, and by 1995 it stood at 0.2%. During the SAP years it consistently fell to below 0.5%.

In 1976, the total government expenditure on roads was 11.6% of the total government expenditure. This percentage fell to 10.9% in 1982 and sharply declined to 2.8% in 1984. The expenditure on the road sector as a percentage ranged from 0.3% to 2.10% of the total government expenditure from 1986 - 1995.

Table 3.4: Budgetary Allocation to Road construction in Nigeria 1976 to 1995

Year	Budgetary allocation to road transport. ₦ million	Total Govt. expenditure ₦ million	G.D.P. at current factor cost ₦ million	Total road expenditure as % G.D.P	Road exp. as % of total exp.
1976/77	1123.47	9701.5	26656.3	4.2	11.6
1977/78	966.14	11695.3	31520.3	3.0	8.2
1978/79	739.92	12337.1	34540.1	2.1	6.0
1979/80	546.43	13191.4	41947.7	1.3	4.1
1980	600.50	23695.7	49632.3	1.2	2.5
1981	979.23	21238.8	50456.6	1.9	4.6
1982	1267.14	11536.8	51570.3	2.5	10.9
1983	844.97	11525.0	56709.3	1.5	7.3
1984	315.49	11168.4	63006.2	0.5	2.8
1985	163.17	14328.8	71368.1	0.2	1.3
1986	359.20	16773.7	72128.2	0.5	2.1
1987	275.79	22018.7	106883.2	0.3	1.3
1988	420.12	27749.5	142678.3	0.3	1.5
1989	491.11	41028.3	222451.6	0.2	1.2
1990	155.84	60268.2	257873.0	0.1	0.3
1991	201.66	66584.4	320247.3	0.1	0.3
1992	363.39	92797.4	544330.7	0.1	0.4
1993	752.9	177310.2	695985.1	0.1	0.4
1994	1070.1	202513.0	908494.4	0.1	0.5
1995	2510.5	256520.0	1430578.5	0.2	1.0

Source: 1 CBN Annual Report and Statement of accounts
2 National Development plans, years
3 Annual Budgets Speeches of Various Years

The Nigerian authorities must consider giving road rehabilitation and maintenance high priorities for the time being. Maintenance, although less glamorous than new road construction is a low-risk activity and often yields high benefit to the National economy.

In essence, the foregoing analysis of the size, structure and relative importance of the road expenditure unfolds a generally unimpressive pattern of government sector over the years with the trend becoming worse under Structural Adjustment Programme. The economic situation in the country rise in 1986 has forced government to restructure its expenditure policies, to foster financial discipline and to reduce the overall fiscal deficit. Expenditure reallocation accompanied expenditure reduction in order to ensure that net benefits were obtained from the limited funds.

Inadequate maintenance of infrastructure greatky impaired the delivery of public and private goods. Routine periodic maintenance could not be done. The highways therefore became rapidly deteriorated. The thesis found therefore that most of the roads particularly in the southern part of the country required extensive rehabilitation. In view of the in inability of the Federal Government to maintain its roads adequately, this thesis recommends that they should be either privatised or commercialized.

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CHAPTER FOUR: MODEL SPECIFICATION AND ANALYSIS OF EMPIRICAL RESULTS

4.0 Introduction

The exact functional forms of quantitative relationship in econometric studies are seldomly deduced theoretically; but they are usually determined empirically. The simplest functional form is a linear equation, which is easier to estimate and explain.

However, economic relationships cannot always be expressed in linear forms. This is so because a logarithmic function can some times better describe the curvature of the economic relationship. The logarithmic function can easily be transformed into a suitable linear form and the economic analysis can be handled very easily.

In this chapter, we have decided to use both functional forms because, in the first place, they will provide the coefficients required in handling and explaining the variables. Infact, the virtue of simplicity in economics has perhaps induced many researchers to rely upon the linear functions. Also these functional forms will enable this study to have a good predictive power. In this chapter, ten functional forms of expenditure model were estimated. As said earlier, the OLS techniques would be. In its double-log form,

the coefficients of the equations can be interpreted directly as elasticities.

The attempt to estimate 10 functional forms was informed by the desire to obtain the best explanatory variable(s) for the growth of expenditure on the road sector. Our desire was to estimate the contribution of each variable to the growth of public expenditure on roads.

4.1. Model Specification

Model 1

$G = f(Y,D,T)$

The linear form is

$G = b_o + b_iY + b_2D + b_3T + U$ ..... equation 1A

The log form

$\log G = b_o + b_1 \log Y + b_2 \log D + b_3 \log T + U$.... equation 1B

Where,

G = Government expenditure on Road

Y = Gross domestic product (GDP)

D = Density of population

T = Time trend, U = error term

b_o = Constant factor, b_1 to b_3 = regressive coefficients which are expected to be statistically significant and positive.

Model 2

G = f(Y, FCR, T)

The linear form

$G = a_o + a_1Y + a_2FCR + a_3T + U$ ..... equation 2A

The logarithmic form

$\text{Log } G = a_o + a_1 \text{ log}Y + a_2 \text{ log}FCR + a_3 \text{ log}T + U$.... equation 2B

Where,

G = Government expenditure on Road

Y = Gross domestic product (GDP)

FCR = Federal current revenue

T = Time trend, U = error term

a_o = Constant factor

a_1 to a_3 = regression coefficient which are expected to be positive and statistically significant.

Model 3

G = f(P,Y,T) ..... functional form

The linear form

$G = c_o + c_1P + c_2Y + c_3T + U$ ..... equation 3A

The logarithmic form

$\text{Log } G = c_o + c_1 \text{ log}P + c_2 \text{ log}Y + c_3 \text{ log}T + U$.... equation 3B

Where,

G = Government expenditure on Road

P = Population

Y = Gross domestic product

T = Time trend, U = error term

c_o = are constant factor

c_1 to c_3 = regression coefficients which are expected to be positive and statistically significant.

Model 4

G = f(TGE)

The linear form

$G = g_o + g_1TGE + U$ ..... equation 4A

The logarithmic form

$\text{Log } G = g_o + g_1 \text{ logTGE} + U$.... equation 4B

Where,

G = Government expenditure on Road

TGE = Total government expenditure

U = error term

g_o = Constant factor

g_1 = Regression coefficient which is expectedf to be positive anmd statistically signifiant.

Model 5

G = f(FCR)

The linear form

$G = h_o + h_1FCR + U$ ..... equation 5A

The logarithmic form

$\text{Log } G = h_o + h_1 \text{ logFCR} + U$.... equation 5B

Where,

G = Government expenditure on Road

FCR = Federal current revenue

U = error term

h_o = Constant factor

h_1 = Regression coefficient which is expected to be

positive and statistically significant.

4.2 Explanation of Variables in the Model and Their Expected Signs

Population (P) in this study was chosen to determine the extent to which, over the years, the increase in the size of the country's population has affected the expenditure on roads. It is argued in economics that increase in the size of population has a positive relationship with government expenditure on social services (roads) all things being equal. The expected sign of this variable should be positive.

Gross Domestic Product (GDP), the inclusion of GDP in this write up as one of the variable is to enable us determine the degree of output of the economy on government expenditure on road. Generally, it is believed that the growth process do enhance the growth of government expenditure. The expected sign to be borne by GDP is positive.

Federal Current Revenue (FCR), the inclusion of this variable is to justify how increased government revenue has increased viz a viz road expenditure. The expected sign of FCR is expected to be positive. This is so because as government generate more current revenue, the expenditure on social services (roads) should increase. If the relationship

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is negative it means road transport is an inferior good.

Total Government Expenditure (TGE) is used in this thesis to determine the extent to which the government total expenditure increase has impacted on road construction and maintenance. A positive sign is expected to be borne by this variable.

Density (D) Heller and Diamond (1990) maintained that the higher the proportion of population in an area, the less will be the expenditure of government infrastructure. This according to the authors is because urban population is unlikely to rely on government to provide infrastructural services. This study therefore, include density in order to ascertain or to justify the extent to which Density in Nigeria affect expenditure on road. In this study, it is expected that density should have a negative sign.

The variables discussed above are the independent variables, which are expected to influence the expenditure made by government on road which is the dependent variable. The error term (u) as specified in the models will enable us to capture all those variables that could influence government expenditure on road but were omitted in this study. In other words, the error term takes into consideration the influence of other factors not specified in the model.

4.3 Criteria for Assessing the Regression Coefficient.

In order to estimate the regression parameters of the model, the ordinary least square approach was used for the linear and logarithmic models. The student t-statistics was used in this study to ascertain the statistical significance of the variables as implied in a regression analysis. All the parameters estimated for significance were done at 5 percent level of significance. If the t-statistics is higher than the t-tabulated value, we can conclude that the independent variable has a significant effect on dependent variable. But where the t-statistics value is less than the t-tabulated, we can conclude that the independent variable had no significant effect on dependent variable.

Also, the coefficient of determination (R^2) was used in assessing the extent to which the dependent variables variation is jointly explained by the independent variables. Where the coefficient of determination is 50 percent or more, we can say that the independent variable has a strong explanatory power on the dependent variable. But where R^2 is less than 50 percent, we can say that the explanatory variable is insignificant in explaining the variation in the dependent variable.

The Durbin Watson statistics was used to test for the

existence of serial correlation.

4.4 Explanation of Regression Results.

In this study, we have used the linear and the logarithmic equations to analyse the impact of various variables on government expenditures on road transportation in Nigeria. A time trend variable was included to see the effect of time on the regression. From the results presented in section 4.5, we have used GDP, FCR, D, P, TGE, T as the factors that could affect government expenditure on roads in Nigeria.

Table 4.4.1 Government **Expenditure on Road Transport** Regression Result (Figures in Parenthesis Re
T-Ratio).

Equation	Dependent variable	Intercept	P	Y	D	TGE	FCR	T	R^2	DW
1A	G	4025.0 (5.175)		0.001 (6.470)*	43.16 (4.60)*			2.03 (1.798)	0.71	1.40
1B	G	27.06 (3.058)		0.644 (3.216)*	6.32 (2.401)*			0.01 (1.86)	0.25	1.55
2A	G	679.8 (6.85)		0.003 (5.50)*				8.10 (2.73)*	0.70	2.11
2B	G	5.006 (3.053)		1.658 (2.04)				2.17 (1.84)	0.20	1.76
3A	G	4065.3 (4.52)	47.47 (4.068)*	0.002 (3.00)*				0.001 (1.57)	0.72	2.23
3B	G	8.131 (0.64)	8.05 (2.53)*	0.12 (0.135				0.014 (0.07)	0.63	1.73
4A	G	485.0 (3.693)				0.005 (2.80)*			0.50	1.47
4B	G	5.943 (4.772)				0.036 (0.30)			0.20	1.96
5A	G	5.226 (3.409)					0.004 (2.25)*		0.56	2.40
5B	G	5.943 (2.237)					0.036 0.191)		0.42	1.35

From equation 1A and 1B which are the linear and logarithmic equations respectively, the estimated regression coefficient, for equation 1A are 0.001Y, 43.16D, and 2.03T. Their respective t-calculated values are 6.47, 4.60 and 2.32. The t-tabulated value at 5 percent level of significance was 2.14. All the coefficient in the linear equation were positively related to government expenditure on roads. The coefficients of Gross Domestic Product (0.001), Density of population (43.16) and Time trend (2.03) all showed a positive impact on government expenditure on roads. In equation 1B, which represent the logarithmic function, the estimated regression coefficients are 0.644Y, 6.32D, and 0.01T. There respective t-calculated values are 3.22, 2.401 and 1.86. The t-tabulated value at 5 per cent level of significance was 2.14. The equation 1B depicted a positive impact of the coefficients on road expenditure.

In equations 2A and 2B which represents linear and logarithmic equations respectively, we have GDP (Y) and Time trend (T) as the determinants of government expenditure on roads. In the linear equations (2A), the estimated regression coefficients are 0.003, and 8.10 for GDP and T respectively. Their respective t-tabulated values are 5.50 and 2.73.

The estimated coefficient in equation 2A showed that all the variables are positively related to road expenditure. The

t-statistics table value is 2.14 at 5 percent level of significance. In the logarithmic equation (2B), the estimated regression coefficients are 1.658Y, and 2.17T, the estimated t-calculated value are 2.04; and 1.84, for GDP respectively. The t-tabulated value at 5 percent level of significance was 2.14. The estimated regression coefficient in equation 2B were all positively related to expenditure on roads.

In equation 3A and 3B which are the linear and logarithmic equations respectively, the variables used are GDP(Y) population (P) and Time trend (T) as determinants of road expenditure. Equation 3A which is the linear equation, the estimated regression coefficient are 47.47, 0.002 and 0.001 for population, gross domestic product and time trend respectively. The respective t-calculated values are 4.67, 3.00 and 1.57. The estimated regression coefficients show that population, GDP and Time trend have a positive impact on government road expenditure in Nigeria. The t-tabulated value for equation 3A was found to be 2.14 at 5 percent level of significance. In equation 3B, which is the logarithmic equation, the estimated regression coefficients are 8.05, 0.12 and 0.014 for population, GDP and Time trend respectively. Their t-statistics table stood at 2.14 given a 5 per cent level of significance. The estimated regression coefficient had a t-calculated value of 2.53, 0.14 and 0.07 for population, GDP and Time trend respectively. Just like the

*A

linear equation in 3A, equation 3B which is the logarithmic equation showed that all the variables had a positive relationship on road expenditure.

Equation 4A and 4B shows the linear and the logarithmic equations in which Total Government Expenditure (TGE) is a determinant of government expenditure on roads. The calculated coefficient of 0.005 was obtained for TGE. The estimated t-calculated value stood at 2.80 and the t-statistics table was found to be 2.14 at 5 percent level of significance. The estimated positive relationship on government road expenditure in Nigeria. The logarithmic equation was also estimated for TGE. It was observed in equation 4B that TGE regression coefficient estimated was 0.036 while the estimated t-calculated was 0.30 and the t-statistics table was 2.14 at 5 percent level of significance. The relationship that exist between TGE and road expenditure in the logarithmic equation was found to be positive.

Equations 5A and 5B represent the linear and logarithmic equations in which the coefficient of the Federal Current Revenue (FCR) was estimated. The regression coefficient estimated for FCR in equation 5A was found to be 0.004 and the accompanied t-calculated value was 2.25 while the t-statistics value was 2.14 at 5 per cent level of significant. This result shows that TGE regression coefficient (0.004) was found

to be positively related to Government expenditure. In equation 5B which is the logarithmic estimated for TGE, the regression coefficients of 0.036 was obtained and the t-calculated value stood at 2.14. This result also concludes that government total expenditure has a positive relationship on road expenditure.

The R^2 of equation 1A and 1B are 0.70, 0.25. In equation 2A and 2B are 0.70 and 0.20, while in equation 3A and 3B they are 0.72 and 0.63. In equation 4A and 4B, 5A and 5B are 0.50, 0.20, 0.56 and 0.42 respectively. Using equation 1A and 1B which is the linear and logarithmic equations that estimated GDP, Density and Time trend, the R^2 of 0.71 and 0.25 were found that 71 percent and 25 percent of the variation in government expenditure on roads is explained by the variables in the model. In equation 2A and 2B, the R^2 were found to be 0.70 and 0.20, which concludes that 70 percent and 20 percent of the variation in government expenditures on road is jointly explained by the explanatory variables, GDP, FCR and T in the model. In equation 3A and 3B, the R^2 were found to be 0.72 and 0.63. It was found that 72 percent and 63 percent of the variation in the dependent variable were explained by the independent variables. In equation 4A and 4B, the R^2 = 0.50 and 0.20 shows that 50 percent and 20 percent in the variation in the dependent variable is explained by the independent variables. The R^2 in equation 5A and 5B which are 0.56 and

0.46 shows that about 56 per cent and 46 per cent of the variation in the Government expenditure on roads is explained by Federal Current Revenue.

The Durbin-Watson results for the equations in the linear and log-linear functions showed values of approximately 2. This clearly shows that there is little or no evidence of serial correlation in the variables used for the study.

4.5 Test of Hypothesis Using Linear and Logarithmic Equations.

In this study, the linear and logarithmic results were used for testing the hypothesis in section 1.3(i) and (ii). The hypothesis in 1.3(i) states that Government expenditure on roads does not have impact on Gross Domestic Product ($Ho: b_1 = 0$), which is the null hypothesis. The alternative hypothesis, states that Government expenditure on road has an impact on GDP ($Ha: b_1 > 0$), if the calculated t_c is greater than the t-table value t_t, we reject the null hypothesis - The rejection of the null hypothesis is the acceptance of the alternative hypothesis

$t_c < t_t$ accept Ho

$t_c < t_t$ reject Ho

The regression coefficient for 1A are 0.001Y, 43.115D and 2.03T and their respective t-calculated value are 6.47, 4.59 and 1.7. The regression coefficient show that GDP (0.001), Density (43.115) and Time trend (2.03) have a positive relationship on road expenditure.

A one per cent increase in GDP and Density will lead to 0.001 per cent and 43.115 per cent increase in government expenditure on roads. The t_c value of GDP was compared with the t-statistics table value of 2.14 at 5 per cent level of significance. The result shows that t-value (6.47) was greater than t-statistic table value (2.14) at 5 per cent level of significance. Hence, $t_c > t_t$, we reject the Ho and accept Ha, which states that government expenditure on road has impact on GDP. The hypothesis test in equation 1A conforms with the apriori expectation of the study, that as output increases road expenditure increases.

In equation 1B, which is the logarithmic equation, the regression coefficient for GDP and Density were found to be 0.644 and 6.32 respectively. Their t-calculated values were found to be 3.22 and 2.40 and the t-statistic value of 2.14 at 5 per cent level was compared with the t-calculated value for a test of significance.

The regression coefficient shows that a one per cent

increase in GDP and Density will lead to 0.644 and 6.32 increase in road expenditure. The GDP value was 3.22 which was greater than the t-table value of 2.14 and was statistically significant at 5 per cent level, hence we reject Ho and accept Ha.

Equation 2A and 2B is also used to test the hypothesis in 1.3(ii) which states that Government expenditure on road varies with population, Total government expenditure, Federal current revenue and Density.

Ho:$b_1 = 0$ which is the null hypothesis

The alternative hypothesis, states that, Government expenditure on road rises with population, Total government expenditure, Density, Federal current revenue

Ha: $b_1 > 0$

The regression coefficient for 2A are 0.003Y, and 8.10T. A one per cent increase in GDP will lead to 0.003 per cent increase in government expenditure on roads. The t_c value of GDP and FCR was compared to the t-tabulated which is 5.50 compared to the t-tabulated which is 2.14 at 5 per cent significance level. The result showed that the t_c value is greater than the t-table value. We reject Ho and accept Ha. The hypothesis test in equation 2A conforms with the apriori expectation of the study that as Federal current revenue

increases, government expenditure on road.

In equation 2B, which is the logarithmic equation, the regression coefficient for GDP and FCR were found to be 1.658. Their t-calculated values were found to be 2.044, while the t-tabulated stood at 2.14 given a 5 per cent level of significance. This shows that $t_c<t_t$, we therefore accept Ho and reject Ha. This result shows that GDP is statistically insignificant in explaining the variation on government expenditure on roads. However, the coefficient was positively related to road expenditure.

Equation 3A and 3B are used to test the hypothesis 1.3(ii) states that expenditure on road does not rise with population, Total Government expenditure, Density and Federal Current Revenue.

The regression coefficients for 3A are 47.47, 0.002 and 0.001T for population, GDP and Time trend respectively. It also shows that these variables have a positive relationship on road expenditure as the regression signs were positive. Their respective t-calculated values are 4.068, 3.00 and 1.57. A one per cent increase in population and GDP will bring about a 47.47, 0.002 increase in government expenditure on road. The t-calculated value for population which was 4.068 was compared with t-statistics table value of 2.14 at 5 per cent

level of significance. This concludes that $t_c > t_t$, we reject Ho and accept Ha. This shows that the result was statistically significant at 5 per cent level of significance. This also conforms with the apriori expectation of this study.

Equation 3B, we can test the hypothesis on 1.3(ii), the regression coefficient for population and GDP were 8.05, 0.12 respectively. The t-calculated values were found to be 2.63, 0.135 and the t-statistics value is 2.14 at 5 per cent level of significance. The regression coefficient shows that one per cent increase in population and GDP will increase government expenditure on road by 8.05 and 0.12 per cent. Comparing the t_c value with the t-statistics value at 5 per cent level of significance. It was observed that population value (2.63) was greater than 2.14 of the t-table value at 5 per cent level of significance. So we reject Ho, accept Ha 1.3(ii).

Equation 4A and 4B also used to test the hypothesis in 1.3. This 4A and 4B are the linear and logarithmic equations. The regression coefficient for 4A is 0.05 for Total Government Expenditure. It shows that it has a positive relationship with government road expenditure. And the t-calculated value is 2.795. The regression coefficient showed that TGE has a positive relationship to road government expenditure. A one per cent increase in Total Government Expenditure will bring

about 0.005 per cent increase in road expenditure by government. The t-calculated of 2.795 was compared to the t-tabulated of 2.14 at 5 per cent level of significance. This concludes that $t_c > t_t$ hence we reject Ho and accept Ha, which states that Government expenditure on road varies with Total Government Expenditure. It also conform with our apriori expectation of the study.

In using Equation 4B to test the hypothesis, the regression coefficient was 0.036 for Total Government Expenditure. The t-calculated was 0.30 at 5 per cent level of significance was compared with the t-tabulated of 2.14. The regression coefficient shows that a one per cent increase in TGE will bring about 0.036 per cent increase in road expenditure by government comparing the t-calculated value with t-statistic table at 5 per cent level of significance. It was observed that the t-table value was greater than the t-calculated. So we accept Ho. That it does not conform with to our hypothesis.

Equation 5A and 5B are linear and logarithmic equations. The regression coefficients in equation 5A are 0.004 for Federal Current Revenue (FCR). It shows that there is a positive relationship between Government expenditure on Road and Federal Current Revenue. A one per cent increase in Federal Current Revenue will bring about 0.004 per cent in

Government expenditure on road. The t-calculated value for FRC 2.25 was compared with the t-statistic table value 2.14 at 5 per cent level of significance. The result shows that t-calculated level of 2.25 was greater that t-table value of 2.14 at 5 percent level of significance. This concludes that out hypothesis, that Government expenditure on road rises with Federal Current Revenue is accepted.

Equation 5B, which is the logarithmic equation can be used to test our hypothesis in 1.3(ii), to see if it will conform. The regression coefficient for Federal Current Revenue was 0.036. The t-calculated is 0.191 and the t-statistics table is 2.14 at 5 per cent was compared for a test of significance. The regression shows that a one per cent increase in Federal Current Revenue will bring about a 0.036 per cent in Government road expenditure. Comparing, the t_c value with the t-statistics table value at 5 per cent level of significance, it was observed that FCR value of 2.14 is statistically insignificant at 5 per cent level of significance. Therefore, our hypothesis is not confirmed. Thus we accept Ho and reject Ha.

4.6 Observations

In this study we have used the linear and double logarithmic models to estimate empirically the relationship

that existed between population, Total Government Expenditure, and Federal Current Revenue population density and Government expenditure on road.

One of the observations from this study was that the linear and logarthmic equations showed that the variables have a positive relationship with government expenditure on roads. But the logarithmic equations did not show much statistical significance. This study prefers the linear equations to the logarithmic equation as it conforms with our apriori expectations. It also helped in rejecting our hypothesis better than the logarithmic equations. Most of the variables in the linear equations were found to be statistically significant.

The R^2 in the linear equation was well above 50%, signifying that the variations in the dependent variable were explained by independent variables.

We also observed that Density did not conform with Bosouh (1969), Diamond and Heller (1990) studies which shows that the higher the proportion of the population in an area, the less will be the expenditure of government on infrastructure. This study has shown that the higher the Density the more Government spent on social services (roads) to maintain and construct new ones. An example is Lagos, where the Density is

high and pressure is put on the available roads-traffic jams etc, these had seen government increasing expenditure to maintain roads and construction of overhead bridges.

Again with the inclusion of Time trend in the study, it has enabled the variables to be statistically significant. The coefficients of time trend in both equations are positively related to Governments expenditure on roads.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Summary

In this thesis, we identified that Nigeria experienced inadequate supply of high level manpower and capital shortage in the 1960s which was needed to facilitates economic development. But with the oil boom in the 1970's came a large money capital and the reliance on oil as a source of revenue. With large supply of money there was increased real capital and government activities expanded in Nigeria especially in the provision of infrastructural facilities. The growth and development hinged on infrastructural facilities like roads, bridges, railways, posts, electricity, water, telecommunication etc. It is against this background that the research was structured to verify if there existed an impact of government Expenditure on road transportation on population and GDP.

An expirical testing of Wagner's law was conducted and the law was found to hold in Nigeria because proportionately more was spent through the government as the per capital income rose. While the law was not disapproved in aggregate term government expenditure on roads as a percentage of GDP declined particularly since 1986 when SAP was introduced.

Road transportation aided mobility, promote social,

economic and political unity of the society and happens to be an intergral part of production process. Investment in transportation was facilitated by the welfaristic objectives. The thesis also shows that funding of road transportation, was the sole responsibility of government. We also found that investment on road construction and maintenance has an effect on travel time, transport fares, and accessibility to town and farms.

In chapter three, it was observed that government expenditure on road sector relative to GDP declined considerably under SAP than before it. The performance of the road sector also declined. The available infrastructure was not adequate to sustain economic development and productivity declined. A downward review of expenditure by government on all sectors of the economy had serious adverse effects on the road sector.

It appears that government did not properly identify the expenditure items that would be affected by SAP. The extent of reduction has jeoprdized the attainment of the overall development objectives of the economy. By placing the burden of expenditure reduction on the road sector which had a declining small share of total expenditure, the government was not able to achieve the goal of adequate delivery of essential services. Government should therefore urgently re-order it's priority as the dwindling resources continue in the short run.

Government should however consider commercializing or privatising the road sector in the long run.

Chapter four is on the analyses of public expenditure on road transport between 1976 to 1995. The linear and logarithmic models were used, to test the relationship that existed bewteen Government expenditure on roads, population, Density, Total government expenditure and Federal revenue. It was found that a positive correlation existed between government expenditure on road on the one hand and population, total government expenditure, density and federal current revenue on the other hand. This chapter also contains the test of hypothesis for the study. All the independent variables in the models shows a positive impact and statistically significant value after a comparison of the t-calculated value with the t-tabulated value at 5 percent level of significance. All the variables except density conform with our apriori expectations. The linear equations for all the variables shows R^2 of 50% and above, while the double-log equations shows R^2 of less than 50% except for equation 3B that is 63%. On the whole, the linear equations were preffered to the log-linear equations since, it shows a more dependable result for the study.

5.1 Conclusion and Recommendation

The study has shown how vital road construction and maintenance is to economic development in Nigria, and why it is necessary for government to attach much priority to the sector. Therefore, government should enhance proper management and maintenance of road facilities in order to ensure efficiency, safety and reliability of the road constructed. The increase in population and density have affected government expenditure on roads. We therefore call for more public funding and overhauling of the system, so as to allow funds to road development and the resultant social benefit to everyone. As road is now a major contributor to economic growth and that it's efficiency and effectiveness directly influence the cost of commodity produced, thereby affecting the business, economic and industrial development of the country; an appropriate framework should be designed for private sector participation which could go in line with the economic onjective of the government's transportation policy. However, the financial resources to meet public expenditure programmes are likely to be less than envisaged. The grim picture in oil markets and the substantial debt repayments falling due will mean that public expenditures especially those on roads will be severely curtained. We noticed that the road sector experienced a heavy loss in capital alloation at a time when it was expected to play a greater role in the economy.

It has been shown in this thesis that Nigeria is evidently a case where infrastructural provision has lagged behind directly productive activities, though not by conscious design. With the acceleration of economic growth in the 1970s this lag became conspicuous in transport, communication, power and water supply. Government reacted promptly and brought the situation under control.

However, the limited physical capacity to distribute goods in the country since 1986 arose from inadequate transport system. Bad roads have raised industrial costs and inhibited business expansion. The need to break this bottlenecks cannot be overemphasized. The need for greater spending on infrastructure particularly roads deserves more attetion than has been given it in recent years.

It was observed that public expenditure on road transportation grew marginally in absolute terms and declined as a proportion of GDP. The fact that the structure of public expenditure on road transportation did not follow the Wagner model of increasing public expenditure, is borne out by our findings.

Many areas are still found to be cut off from the services of the road system of transportation in Nigeria. The development of road have tended to favour those urban areas

and even in the urban areas the increase in influx of people had increased traffic. On these roads thereby causing traffic jam and quick wear and tear of the roads.

Again many rural areas are yet to have advantage of enjoying, federal, or state roads and as such are deprived of the resultant benefit acruing from the road system.

For us to have a good road system to bring faster economic development, the federal government should commercialized or privatize most roads. The private sector should build it up to standard so that it will facilitate the development of rural areas, as well as the nation in general.

For the time being government should increase its emphasis on the maintenance and rehabilitation of all highways despite an overall reduction in the level of expenditure.

REFERENCES

Aboyade, O. (1966). Foundation of an African Economy: A study of Investment and Growth in Nigeria. Frederick. A Praegner Publishers, U.S.A. pp. 11-13, 65-71, 209-212.

Adamu, S.O. (1972). "Nigerians Public Consumption Expenditure Comments". The Nigerian Journal of Economic and Social Studies, vol. 14, No. 3, Nov. pp. 365.

Allan, B. (1989). "Provision of transport infrastructure - The Govt. Role". The Chartered Institute of transport and Sunday Times Conference, Preceeding manual. Wed, March 1st, 1989.

Amaghionyeodiwe and Abiodun (1998). Government Investment on Policy on Transport and Economic Growth: The Nigerian Experience. Nigerian Journal of Economic and Social Studies pp. 243-255

Anthony Kirk-Greene & Douglas Rimmer (1981). Nigeria Since Independence: A Political and Economic Outline. Houder and Stoughton pp. 109-11.

Attah, J. (1987). The 1987 Budtet and the Second-Tier Foreign exchange market (SFEM)" in the Department of Economic, Ahmadu Bello University, Za4ia,: The "Economics of foreign exchange market in a developing economy".

Awoseyila, A.P. (1996). "Infrastructure and Economic Development" The Nigerian Experience, Paper presented In-house Seminar on creating enabling environment for economic development for CBN executive staff, Ibadan, Sept. 3-6, 1996, pp. 817-827.

Basoah, R. (1969). The Influence of Selected Factors on Relative Allocation of Resources for Government General Administration (Draft Paper, IBRD, 26 Feb., 1969).

Bello, D. (1995). "Public Expenditure and economic Growth in Nigeria" (1960 - 1985). Unpublished PHD Thesis, Ahmadu Bello University, Zaria, pp. 30.

Bhatia, H.L. (1980). Public Finance, Vikas Publishing House, PVt Ltd, New Delhi.

Bird, R.M. (1971). "Wagners" Law of expanding state activity, Public Finance, vol. 26, No. 1.

Brown, C.V. & Jackson, P.M. (1990). Public Sector Economics, 4th edition, Basil Blackwell Ltd., USA.

Cardoso, Eliana (1993). "Private Investment in Latin America", Economic Development and Cultural Change. Vol. 41, July, pp. 833-48.

Central Bank of Nigeria (Various issues). Annual Report and Statement of Accounts

Dominique, Vande Walle, (1995). "Public spending and the poor". Policy research working papers of world bank.

Dudley, F.P. (1973). Transportation Economics and Public Policy 3rd edition, Richard Irwin, Inc.

Due, T.F. (1968). Government Finances, Economics of Public Sector, Home Weed Richard p. 1.

Ekpo, A.H. (1994). Public Expenditure and Economic growth in Nigeria (1960-1992).

Enweze, G. (1973). "Structure of public expenditure in selected developing countries: A Time series study, The Manchester School of Social Studies.

Fadaka, B. (1993). How to ensure suffcient road maintenance financing. Road maintenance initiative seminar, Federal Ministry of Works and Housing in house records.

Fajana, O. (1979). Trade and Growth: "The Nigerian experience" World Development vol. 7, No. 1, 1979.

Federal Republic of Nigeria 1981, 4th National Development Plan 1975-85, vol. 1, Federal Ministry of National Planning, Lagos.

Filani, M.O. 1981. Towards more efficient transportation network in Nigeria. Nigerian Journal of Economic and Social Studies. Vol. 23, pp. 209 - 224.

Fred Miller (1969). "Highway improvement and Agricultural production". "An Argentine case study" in Hoyles B. Sed (1973). Transport and Development Geographical Readings, Macmillan, London pp. 104-124.

Goffen and Mahar (1971). Wagners 'Law' of expanding state activity. Papers in economics vol. 5.

Gupta, S.P. (1968). "ublic Expenditure and Economic Development: A Cross Section Analysis". Financzarhius, XXVIII, I (October, 1968) pp. 26-41.

Hansen, L.M. (1970). "Comprehensive Economic Planning in Nigeria. In Growth and Development Planning in Nigeria, Macmillan State University Press.

Hawkins, E.K. (1958). "Road transport in Nigeria". Oxford University Press, 1958. Pp. 11-24, 40-50, 89-94.

Heller, P.S. and Jack, D. (1990). "International Comparison of Government Expenditure Revisited". The developing countries 1975-1986. IMF occasional papers, Washington D.C.

Hinrich, H. (1965). "Determinant of Government Revenue Among Less-Developed Countries". Economic Journal, LXXV, 299 (Sept., 1968). pp. 546-556.

Hutchinson, B.G. (1969). The Economic Evaluation of Urban Transport Investment, Working Paper, Centre for Environmental Studies, London, Agust 1969, pp. 11-16.

Ikporukpo, C.O., 1990. The rural transportation problem and public policy in Nigeria. Nigerian Journal of Economic and Social Studies (NJESS) Vol. 322, pp. 159-76.

Jimaza, M. (1983). The Nigerian Road Transport and its contribution to Economic Development. An upublished B.Sc. Project of Department of Economics, ABU, Zaria.

Keynes, J.M. (1936). General Theory of Employment, Interest and money, Macmillan and Co. Ltd., London, pp. 135-164.

Khan, H.A. and Eiich, H. (1992). "Impact of foreign aid on fiscal behaviour of Developing countries government". World development vol. 20, No. 10.

Law C.F. (1978). Nigerian Transport Aviation and Tourism. A Handbook Directory, Media Research Publishers.

Lee Hung (1995). Private funding of transport insfrasture. World bank Discussion Paper No. 352, East Asia and Pacific region series.

Lindaur, D.L., Valenchick, A.D. (1992). Government Spending in Developing Countries, Trends, Causes, and Consequences" in the world bank research observer. vol. 7 No. 1, pp. 59-58.

Locklin, D.P. (1972). "Economics of Transportation" Richard Irwin Inc. Seventh edition 1972, pp. 622-628.

Longe, J.P. (1986). The impact of Government Expenditure on Income distribution in Nigeria between Financial Year 1971/72 and 1976/77, Unpublished PHD Thesis, University of Lagos, 260 pp.

Mensiner, T.C. (1962). Government Expenditure and Economic Growth: "An International Comparative Study, University of Wisconsin, Unoublished Ph.D. theis. 1962 (Ann. Arbor i, University Microfilms, 1962).

Musgrave R.A. and Peakcork A.F. (1958) (eds). Classics in the theory of Public Finance, New York, Macmillan Press.

Naye, L.C. 91997). The growth and structure of public expenditure in Kaduna state. A Research proposal presented in partial fulfilment of the award of Master of Scinece degree in Economics.

Nitti, F.S. (1903). Principal Science Finance.

Obadan, M.I. (1975). The transportation account in Nigeria's balance of payments. Nigerian Journal of Economic and Social Studies, NJESS vol. 17 3 pp 229-44.

Ogunjumo, E. Ajibade (1981). Transportation Development in Nigeria: A case of public investment policy 1884 - 1975. Cornell Dissertations in planning, Cornel University, NY.

Ogwude, I.C. (1984). "The Impact of a new Road Construction: A case study of the Wukari/Numan road in Gongola State". ABU CSER Report No. 10.

Olalokun, F.A. et al. (1979). Structure of the Nigerian Economy, The Macmillan Press Ltd. London.

Olowononi, G.D. (1981). The growth pattern of public expenditure in Kwara State, CSER research report No. 8.

Onakomaiya, S.O. and Ekanem, N.F. 91977). Transportation in Nigerian National Development.

Phillips, O.A. (1971). "Nigeria's Public Consumption experience pattern 1952 - 1966", The Nigerian Journal of Economic and Social Studies, Nov. vol. 13, No. 3, pp. 352-364.

Poole, R.J. (1983). Resolving Gridlock in Southern California. Transportation Quarterly, Vol. 42, No. 4, October. Westport, Connecticut.

Richards T.B. (1979): How to Pass Exams in Economics. 1st Edition, Cassel London.

Rostow, W.W. (1971). The Stages of Economic Growth: "A non communist manifesto, 2nd ed, Cambridge University Press, London, 253 pp.

Sharp, C.H. (1973). Transport Economics, Macmillan Press Ltd., London, pp. 15-39, 71-75.

Smith, A. (1776). An Equiry into Nature and Causes of the Wealth of Nations.

Teriba, O. (1967). "The Growth of Public Expenditure in Western Nigeria". The Nigerian Journal of Economics of Economic and Social Studies, vol. 9, No. 2, July.

Ukoje, J.A. (1985). "IRD. An Appraisal of the Ayangba ADP, Benue State, Nigeria". Department of Geography, ABU, Zaria, Unpublished M.A. Thesis pp. 23-25.

Usman, M.M. (1983). "Government Investment on Road Transportation in Nigeria 1960-1980", An unpublished B.Sc. Project of the Department of Economics, ABU, Zaria.

Wiseman, J. and Peacork A.T. (1961). The Growth of Public Expenditure in the United Kingdom, Princeton University Press.

Appendix I: Nigeria Population, G.D.P., Price (million) and Government Roads 1976 to 1995

Year	Government allocation to road	G.D.P. at current factor	Population	Total Government Expenditure	Federal Current Expenditure
1976	1123.47	26656.3	63.0	9701.5	6,765.9
1977	966.14	31520.3	65.0	11695.3	6,810.1
1978	739.92	34540.1	67.0	12337.1	6,815.2
1979	546.43	41947.7	69.0	13191.4	13,806.0
1980	600.50	49632.3	71.0	23695.7	11,859.8
1981	979.23	50456.6	73.0	21238.8	11,978.9
1982	1267.14	51570.3	76.0	1536.8	11,748.8
1983	844.97	56709.3	78.0	11525.0	10,508.7
1984	315.49	63006.2	81.0	1168.4	11,133.7
1985	163.17	71368.1	83.0	14328.8	14,606.1
1986	359.20	72128.2	86.0	16773.7	14,189.9
1987	275.79	106883.2	88.0	22018.7	25,099.9
1988	420.12	142678.3	83.2	27749.5	27,310.8
1989	491.11	222451.6	84.9	41028.3	50,272.1
1990	155.84	257873.0	86.7	60268.2	66,895.4
1991	201.66	320247.3	88.5	66584.4	78,640.7
1992	363.39	544330.7	91.5	92797.4	138,610.0
1993	752.9	695985.1	94.1	177310.2	120,516.0
1994	1070.1	908494.4	96.8	202513.0	150,217.0
1995	2510.5	1430578.5	99.5	256520.0	180,906.3

Source: 1 CBN Annual Report and Statement of accounts
2 World Bank
3 African Statistical year book Vol. 1 part 2.
4 United Nations Publications
5 Federal Ministry of Works and Housing
6 * - Provisional