THE ROLE OF INFRASTRUCTURE DEVELOPMENT ON NATIONAL ECONOMIC GROWTH: A CASE STUDY OF THE TELECOMMUNICATION SECTOR IN NIGERIA (2000-1-2010-4)

A PROJECT WORK SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.SC) DEGREE IN ECONOMICS

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APPROVAL PAGE

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DEDICATION

This work is dedicated to God almighty the giver of life and wisdom, favour, protection in carrying out this study and also for being there for me throughout my stay in this University and also to my most priced asset in the world, my Mum.

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ABSTRACT

The study examines the role of infrastructure development in national economic growth. A model was specified for the purpose and secondary quarterly data was collected for the period 2000-2010. The objective of this research was primarily to investigate the level of telecom infrastructure development on the Nigeria economy. Statistical technique of ordinary least square (OLS) was employed for the estimation. Our result shows that developments in telecommunications sector provided by teledensity have positive and significant impact on economic growth in Nigeria. We recommend that increased infrastructure development in the telecommunications sector, and greater deregulation for competition among operations will bring about sustained economic growth.

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CHAPTER ONE

1.0. INTRODUCTION

1.1 BACKGROUND OF STUDY

It takes little analysis to see that infrastructure plays a major role in the economy of a country, whether developing or developed. The need for good infrastructure management is of great importance to the economics of countries all over the world and the various sectors of the economy need to be understood. The world is fast becoming a global village and a necessary tool for this process is communication of which telecommunication is a key elements. Development in the telecommunication industry all over the world is very rapid as one innovation replaces another in a matter of weeks.

Nigeria is part of this race for rapid developments, as the years of economic reversal via mismanagement have had adverse effects ton its rate of growth and development. The Nigeria telecommunications sector was grossly underdeveloped before the sector was deregulated under the military regime in 1992 and placed under the jurisdiction of the Nigeria Communication Commission (NCC) since then, the NCC has issued various licenses to private telephone operators. These licenses allow private telephone operators (PTO) to roll out both fixed wireless

telephone lines and analog mobile phones. The return of democracy in 1990 however paved the way for the granting of GSM licenses to three service providers, MTN, ECONET (which is now AIRTEL) and NITEL Plc in 2001 with GLOBACOM joining in 2003. Telecommunication is a major driver of any economy infrastructure which is therefore regarded as a vital instrument in ensuring economic development. Attention this work would be focused on this area of Endeavour, as it appears to be one of the most neglected areas of economic development goals in most countries today.

1.2 SIGNIFICANCE OF THE STUDY

The provision of infrastructure services to meet the demands of business, household and other users is one of the major challenges of economic development.

The provision of economic infrastructure can expand the productive capacity of the economy by increasing the quantity and quantity of such infrastructure. The transformation curve or the production possibility frontier or curve would shift with the expansion of the economic infrastructural base, thereby accelerating the rate of economic development and enhancing the pace of socio-economic

development. Better management of economic infrastructure would have positive output, income and employment effects on the economy. Moreover, it will impact directly on the poor, thus reducing poverty. Education as well as telecommunication is a very important source of economic growth. It is also an economic investment since it enhance the stock of human capital.

Road infrastructure has been found to be a significant factor of economic growth and development. The development of seaports as an economic infrastructure assumes that like roads, communications and other economic infrastructure ports have a positive impact on the growth and developments of countries. Without ports the Americans might not have been easily explored. Today, the United States of America is one the leading economic global power. Seaports are an economic infrastructure with significant multiplier effects on the domestic economy. Infrastructure will provide benefits to rich and poor equally because of the non-exclusionary nature of the consumption of public goods and services it provides. To the extent that infrastructure improves the quality of life for the poor; the development of infrastructure is likely to alleviate poverty.

1.3 OBJECTIVES OF THE STUDY

The following are the objectives of this study:

(a) To analyze the effectiveness of infrastructure policies in the country.

(b) To protect the rights and interest of service providers and consumers within Nigeria.

(c) To carry about a critical appraisal of infrastructure development so as to show its role in economic development of a country.

(d) To proffer suggestions towards a better improvement on the infrastructural system in the country.

1.4 STATEMENT OF THE PROBLEM

Infrastructure of any country is of immense importance to that country whether developed or developing. It is therefore of outmost necessity that the various infrastructure of a country should be managed in proficient ways which will serve not only as pride to such country but also as an encouragement to other countries towards economic development.

The various propositions for this research work include;

a) The role of infrastructure is not vital to national economic growth?

b) The role of infrastructure Development is vital to national economic growth.

1.5 RESEARCH QUESTION

The research questions or the hypothesis could be defined as a provisional assumption made in order to investigate the logical consequences. It could be also be defined as the ideal suggestions, postulation, or assertion put towards starting points for reasoning but with awaiting validities.

The various points this research seeks to investigate is enumerated below:

(a) Does the state of infrastructure influence a nations drive towards economic development?

(b) Does the populaces enhance the drive for government's infrastructure policies?

(c) Does a good infrastructural system play a vital role in economic development.

1.6 SCOPE AND LIMITATIONS OF THE STUDY

This study has reported empirical findings on the perception of her stakeholders regarding the impact GSM on Nigeria rural economy. However the study has a number of weaknesses. These includes the fact that it drew samples, the perception of the work force linked to the petroleum sector were not included

in the target population of he study despite the fact that petroleum comes from rural areas and it has impacted the economy in those zones. In the light of all these identified limitations and shortcomings future research is needed to extend the scope of the study to cover those limitations.

1.7 DEFINITIONS OF TERMS

(A) INFRASTRUCTURE: This refers to the basic physical and organizational structures needed for the operations of a society or enterprises or the service and facilities necessary for an economy to function. The term typically refers to the technical structures that support a society such as roads, water supply, sewers, electrical grids; telecommunication etc. viewed functionally infrastructure facilities the production of goods and serves.

(B). ECONOMY: An economy consists of the economic system of a county or other areas, the labour, capital and land resources, and the economic agents that socially participate in the production, exchange, distribution and consumption of goods and services of that area.

(C). ECONOMIC GROWTH: Thus is defined as the increasing capacity of the economy to satisfy the wants of goods and services of the members of society. Economic growth is enabled by increase in productivity which lowers the inputs (labour, capital, material energy etc) for a given amount of output. Economic growth is concerned with he log run trend in production due to basic causes such as industrialization.

(D) ECONOMIC DEVELOPMENT: This refers o the increase in the standard of living in a nations population with sustained growth sustained growth from a simple, low-income economy to a modern high-income economy.

It typically involves improvements in a variety of indications such as literacy rates, life expectancy, and poverty rates. A country's economic development is related to its human development, which encompasses, among other things, health and education.

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CHAPTER TWO

LITERATURE REVIEW

2.1 THEORETICAL FRAMEWORK

The journey to success in Nigeria's telecommunications milieu has been long. Telecommunication facilities in Nigeria were first established in 1886 by the colonial administration. At independence in 1960, with a population of roughly 4million people. The country only had about 18,724 telephone lines. This translated into a teledensity of about 0.5 telephone lines per 1000 people. The telephone network consisted of 121 exchanges of which 116 were manual type and only five (5) were automatic. (Adeyinka et al. 2010)

Between 1960 and 1985 the telecommunication sector consisted of the department of post and telecommunication (P$T) in charge of the internal network and a limited liability company, the Nigeria external telecommunication (NET) limited responsible for the telecommunications gateway to the outside world. The installed witching capacity at the end of 1985 was about 200,000 lines as against the planned target of about 460,000. All the exchanges were analogue, one telephone for 440 inhabitants, well below the target of I telephone line for 100 inhabitants recommended by ITU for developing countries. The quality of services was

unsatisfactory. The telephone was unreliable, congested expensive and customer unfriendly. (ibid)

In January 1985, the rest while posts and telecommunications department was split into postal and telecommunication division. The latter was merged with NET to form Nigeria telecommunication limited (NITEL) a limited liability Company the main objectives of establishing NITEL was to harmonies the planning and co-ordination of the internal and external telecommunications services rationalize investments in telecommunication development and provide accessible efficient and affordable services. However after almost 43years NITEL had only roughly half a million lines available for over 100 million Nigerians.

VENT FOR SURPLUS THEORY

This model was developed by NLA MYHT, but thus theory was first proposed by Adam smith. The theory asserts that international trade allows for the fuller use of economic resources that closed domestic trade. By extension it implies that closed economic are likely to posses under utilized surplus resources

Trade in this context, brings about direct gains in the form of cheaper imports, but also indirect gains through the structural utilization of resources. Since countries

generally operate inside their production possibilities curve, they are producing at less than fuel capacity. This under capacity utilization of resources, especially labour is a major characteristics of countries, especially the less developed countries (LDC)

The logic is that the unemployed resources can be mobilized to produce goods & service, both public and private to push the economy closer to or on its production possibility frontier. In this way growth can be promoted through a more efficient utilization of so critical resources within this context, the vent for surplus is in the form of mobilization of surplus labour, the open and the disguisedly unemployed to expand the stock of economic and social infrastructure in the less developed economics. Especially, civil works by the military can also be viewed from this perspective.

PRIVATIZATION AND COMMERCIALIZATION THEORY

Privatization and commercialization strategy is a latter day form of the classical laissez-faire policy or strategy of development. The concept embraces deregulation of the economy so as to encourage private initiative and boost productivity and efficiency. Although the concept of privatization is an emotive, ideological and

controversial one, its political origins meaning and objectives are not ambiguous (paulstarr, 1988) this article also papers in Alfred kalin and shalakamermon 1989.

……privatization is a fuzzy concept that evokes sharp political reactions. It covers a great range of ideas and policies varying from the eminently reasonable to the widely impractical. However varied an at times unclear in its meaning, privatization has unambiguous political origins and objectives. Privatization proposals do not aim mercy to return service to the original location in the private sphere.

The key elements are the disengagement of government from the ownership of state-owned enterprises (SOEs) and constant sale of such to private entrepreneurs. The organized private sector becomes the driving force or engine of development and growth, while the government role is reduced to that of a catalyst responsible for the creation of an enabling environment for the growth of the economy.

From a global perspective, this is a strategy of development through a more efficient pattern of resource allocation by a free interplay of market forces deregulation encourages competition and in this way a greater quantum of economic and social over head capital or infrastructures will be built up in a more efficient and competitive market environment. This is the strategy of the new

millennium as governments try to shed their economy inefficient and productive overloads to generate more revenue from the sale of the state-owned enterprise (SOE). ITU (2004)

This expectedly, would enable the government reduce their public expenditure, generate more revenue and balance their budgets, at least. The disposal of the economic infrastructure and parastatal would enable there government to focus more attention to funds more adequately. The social parastatals and infrastructuresthat create substantial external economics through the provision of public goods such as health, education, sanitations,portable water and power etc.

ECONOMIC IMPORTANCE OF PRIVATIZATION AND COMMERCIALIZATION IN NIGERIA.

Governments around the world have pursued privatization as a technique to achieve various objectives, to attract foreign and local currency in order to enhance the fiscal spread and pay off debt to reduce the government reserves donated to public entities as subsides and reduce fiscal deficit and also to draw foreign direct investment to abate the level of unemployment. Therefore privatization in developing country can prove to be of significant importance if handled efficiently.

Taking Nigeria as a case study, on assumption of office on may 29 1999 the president OLUSEGUN OBASANJOR'S administration swung into action to deregulate the telecom sector, most especially the granting of licenses of GSM service providers and setting in motion the privatization of NITEL. Thus approach by the governments to the telecom sector has made it possible for there to be over 95,886,714 as at December 2011. GSM telephone subscribers in Nigeria quarterly summary of telecoms in Nigeria NCC (2011). The basic importance of privatization in the Nigeria economy include.

- It aids in the eradication of unemployment in the country the telecommunication regulator (NCC) estimated that in may 2010 alone the telecom sector created 929500 positions directly and primarily due to the growth in the mobile sector

- It improves productive efficiency, reduction in transaction costs.

- It is expected to reduce poverty by contributing to growth and development of the private sector therefore importance of privatization and commercialization has added to the growth and development of the telecommunication sector, this improving and pushing the telecom sector to a greater height.

ROLE OF ECONOMIC INFRASTRUCTURE

Economic infrastructure has played a very significant positive role in the growth performance of countries in recent times where development of economic infrastructure has followed a relational, well-coordinated and harmonized path, growth and development have received a big boost (Aigbokhan (1999) gives examples of economic infrastructure as public utilities such as power, telecommunication, piped water supply sanitation, sewage, solid waste collection and disposal and pipe gas as well as public works which include roads, major dam and canal works for irrigation and drainage, and other transport projects like urban transport, sea ports, waterways and airports.

The provision of economic infrastructure can expand the productive capacity of the economy by increasing the quantity and quality of such infrastructure. The transformation curve or the production possibility frontier curve would shift with the expansion of the economic infrastructure bases, thereby accelerating the rate of economic growth and enhancing the pace of socio-economic development better and proper management of economic infrastructure would have positive output income and employment effects on the economy. More over, it will impact directly on the poor, thus reducing poverty.

THE ROLE OF SOCIAL INFRASTRUCTURE

Social infrastructure has enormous externalities. Education and health are both social infrastructure and are also social goods under social marginal productivity (SMP) which exceeds the private marginal productivity (PMP). Therefore private investment capital in such social infrastructure is likely to fall far short of what is needed. In that case, it is imperative for the state to provide the finance and other complementary resources for the take-off of such social infrastructural projects.

Education is a very important source of economic growth, though education may be a social investment it is also an economic investment, since it enhances the stock of human capital. (Olukoju 1996)

Human resource development may be a more realistic and reliable indicator or modernization or development than any other single measure. It is one of the necessary conditions for all kinds of growth. Social, political, cultural or economic, this economic development is not possible without education and investment in human capital which is hugely productive. Therefore Hingham (1975) states that it devolves on the state to initiate a long term programme of educational expression and reform stretching from a literacy drive to the university level so that in all branches of national life, education becomes the focal point of a country's

development. The role of education as a social infrastructure, and as a stimulant of growth and development can be enhanced only if it is qualitatively provided. Qualitative education is a major determinant of the stock of human capital. Infact UNESCO recommends a minimum of fifteen percent (15%) of national expenditure to be on education some advanced countries spend more than 5& of there GDP on education and yet education still remains in the front burner of national debate on the development priorities.

The human development index (HDI) of the United Nations development programme (UNDP) was devised in the early 1990s to measure the level of human deprivation and development. The HDI ranges of between O and 1. And HDI of less than 0.5 implies a low level of development, while 0.5 <HD!< 0.8 implies medium level of development.

An HDI greater than 0.8 implies a high level of development according to the 1996 world development report, Nigeria's HDI was 0.4 for example out of the 174 member countries, Nigeria ranked 137 on the HDI scale. This implies that life expectancy was low, with about third of the population not enjoying health services, two thirds of the population not having access to safe water and sanitation and 47.5% of the population being educational illiterates. (ibid)

2.2 EMPIRICAL STUDIES

The role of social and economic infrastructure is a very wide role and controversial empirical studies, our effort here is a limited on and confined to an overview of relevant empirical works contained in Aigbokhan B.E (1999) CessarQueirozand SurhidGautamOput(1990) Adeyinka et al. (2010) Olukoju (1996) and a host of other notable authors.

Basic infrastructure studies

AigbokhanB.E .(Ibid) submits that studies have found that as an economy grows, its infrastructural capacity grows. That is infrastructure capacity grows step by step with economic output.

The world development report (1994) shows that "a1 percent increase in the stock of infrastructure is associated with a1 percent increase in the gross domestic product across all countries". And as countries develop, infrastructure must adapt to support changing pattern of demand as the shares of power, roads and telecommunications in the total stock of infrastructure increase. As the economy develop an increasing proportion of the country would need to be opened up by the construction of roads, there would be increased demand for power supply for industrial and domestic consumption and telecommunications facilities. The

emprial evidence shows that infrastructural stocks expand with output growth, that infrastructure coverage and performance increase with income level

Aigibokha (ibid) in his own study in "infrastructure private investment and economic growth" adopted an extended Cob-Douglas production function and regressed output on each six infrastructural components, introducing each of them at a time. These infrastructural component are transport, communication, agriculture water resources, electricity generation, and consumption, education and health care.

His regression results using ordinary least square (OLS) method with annual data covering the period 1980-1997 shows thatthemodel has a good fit with adjusting R^2 of 0.98-0-99 and the six infrastructural components are all positively correlated with GDP, with varying levels of significance the author also found that human capital components of infrastructure appear to have impact on growth.

Expenditure on health care, and education, record statistically insignificant impact on growth, he avers the fact that the variables have a positive correlation is however, encouraging as it suggests that if efficiently applied public spending on the services is capable of impacting positively and strongly on growth. The least significant of the variables is agriculture and water resources.

TELECOMMUNICATION STUDIES

The positive relationship between telecommunication and economic growth is evident, given the various studies that abound. For instance, Jorgensen (2001) study of the United States, showed that investment in information technology (IT) contributed more than one-half of the recent increase in the US economic growth. Kraemer andDedrick (2001) using data from 43 countries upheld the view that the growth in IT investment is correlated with productivity growth. Oulton (2001) study of the united kingdom showed that in the beginning and later part of the 1990s, information and communication technology (ICT) contribution to GDP' growth was 0.36% and 0.57% respectively, same for Belguim, (Kegels Van Overbekeand Van and Wedge (2002) found that the accumulation of ICT capital has a significant. Impact on output growth and average labour productivity growth. Similarly (ITU 2006) report that over the last five years, mobile phones have been the out-standing ICT platforms interms of growth and impact in the developing world in Nigeria, Africa's most populated country, the telecommunication industry and particularly the mobile industry has been recognized as the fastest growing employer of labour.

By year 2000, Nigeria had only 400,000 connected lines and 25,000 analogue mobile lines and teledensity was 0.4lines per 100 inhabitants connection costs at this period were prohibitively high for as much as N60,000 for an analogue mobile line and waiting times for fixed lines could run into years. The increase in teledensity goes thus 0.4 lines per 1000 inhabitants in 2000, reached 1.96 in Dec. 2002, 0.33 in Dec. 2003, and in March 2004 100 inhabitants. The Nigeria population now stands at 140 millions with GDP USD 52b, GDP growth of 3.7% and inflation rate of 10.4% (ITU, 2004)

The telecommunication regulator (NCC) estimated that in March 2004 the sector created 5,000 new jobs directly, in the same month, it was estimated that the spin offs in new businesses, dealer in retails outlets for GSM handsets and accessories and one, man phone both operations created no less than 400,000 new jobs. The licensed operators in Nigeria such as MTN, AIRTEL, GLOBACOM, ETISALAT and the likes are still recruiting workers. In Nigeria, the national economic empowerment development strategy (NEEDS) brought up the summary that the telecommunication sector has exceeded it's teledensity targets under it's body (NEEDS) this is due to the advent of the GSM services, between Nigeria's independence in 1960 and the end of 2000, the number of connected line grew at

an average of 10,000 lines per annum, however since 2001 after the liberalization of the industry, the an average growth rate of over 12million lines per annum have been recorded. Teldensity has now grown from 0.4 lines per 100 inhabitants in 1999 and early 2000 to 68.49 per 100 inhabitants in 2011 and active telephone subscriptions has risen to 95,886, 714 as at December 2011.

Growth Rate of the Nigerian Telecoms Industry 2000-2010.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Teledensity	0.49	0.72	1.89	3.35	8.50	16.27	24.18	29.98	45.93	53.23	63.11
Fixed growth	16.9	8.5	16.9	26.60	15.60	19.0	37.9	45.2	48.9	N/A	N/A
Mobile growth	00	661.3	488.8	100.70	191.30	102.6	73.9	70.9	182.3	N/A	N/A
Total growth	15.7	47.3	162.0	77.8	152.6	94.2	71.7	69.4	78.8	N/A	N/A
Teledensity growth	16.7	46.9	162.5	77.80	153	84.9	54.5	69.7	45.93	53.23	63.11
	48.98	158.9	77.25	153.7	91.4	48.6	23.99	53.2	15.9	18.6	8.5

Source Nigeria communication commission. NCC (2005)

On an aggregate basis the economy when measured by the real gross domestic product (GDP) is expected to grow by 7.98 percent in 2011 against 7.85 percent recorded in year 2010 states the national bureau of statistic (NBS).

The NBS in its economic outlook tagged “2011 GDP forecast for Nigeria” notes that the Nigeria telecom sector continues to be one of the fastest growing and most competitive in the world with over 86million subscribers.

Likewise, it is expected that the non-oil sector continue to drive the Nigeria economy in 2011. On overall GDP growth the report notes that the 0.13 percentage point increase in real GDP growth observed in the projected figure for 2011 would

be accounted for by the increase in the activities of the wholesale/retail trade, building and construction, finance and insurance, and telecoms sectors of the economy.

The nominal GDP for the year 2011 is projected at N33.99 trillion as against the N29.10 trillion recorded in 2010, thus indicating an increase. “The two major output groups of the economy, that is oil and non-oil sectors, are expected to witness an increase in output in 2011. A GSM activity along with growth in lines has become a boom in private investment in the telecommunication sector. Recognizing the seemingly insatiable appetite of consumers for phone services and the potentials of the Nigeria market, investors pumped USD 2.55billion into the sector by June 2003. This represents a phenomenal 5000% end of 1999. Today investment in the telecom sectors ranks second only to that in the oil industry so that fixed lines cost between N7,000-N30,000 in 2003 from over N100,000 in 1999 (Ndukwe 2003)

Owing to several factors including government deregulation policy, the world wide trend of rapid development in telecommunications and information technology and the huge potential of the Nigeria market, the story is very different the immediate past administration, through the government regulator, the Nigeria

communications commission, has proved itself fully committed to the liberalization of the telecom market. Since year 2000 NCC has licensed digital mobile service providers several private telephone operators, fixed wireless access operators, two long distance operators, internet provider and a second national carrier (Ndukwe 2003).

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In any empirical study, the procedures to be adopted by the researcher are determined by the nature of the problems being investigated and the objectives of the study. This chapter therefore describes the methodology of the research work. The source of data collected, procedures and method of gathering data as well as techniques for testing the hypothesis.

3.2 RESEARCH DESIGN:

Research design involves the systematic process of collecting, analyzing and interpreting data with a view to finding solutions to the problem being investigated. The research is design such that the purpose of the research shall be made easy for whoever goes through it, also to make serve as a guide to the growth of the economy. As such the telecommunication factor shall be the independent variable while the development in national economic growth shall be the dependent variable.

3.3 MODEL SPECIFICATION:

Model specification is concerned with the mathematical relationship that exist between the dependent variables and the independent variables which will be included in the model and a priori expectation about the sign and size of the parameters of the functions.

In this work, the economic use the method of ordinary least square (OLS) technique to analyze the impact of the independent variables. On the dependent variables, the model can be specified as follows:

Log (GDP) = α1 + α2LOG (teld) log L**F**+ μ:

Where $\propto_1$ $\propto_2$

GDP = Gross Domestic product

Teld = teledensity

Lf = Labour force

It is expected that all the inputs namely (labour force, teledensity and Gross Domestic product) telecom infrastructure have a positive effects on the Economic Growth. The choice of the independent variables excludes measures of government deficits or of the trade openness which the literature shows affect national output. This is because it is not the determinants of national output that is being estimated.

3.4 METHOD OF EVALUATION

When the parameters of the regression equation are estimated, various tests are then employed to determined if the model, is satisfactory. It the model is deemed satisfactory, the estimated regression equation can be sued to predict the value of the dependent variable given values for the independent variables given values for the independent variables.

After the estimation of he parameters of economic relationships by using the method of ordinary least squares, next is to establish criteria for judging the goodness of the parameters estimated, therefore the criteria will be used.

ECONOMIC APRIORI CRITERION

This is an examination of the signs and sizes (magnitude) of the estimated parameters. Their conformity with theoretical economic expectations is very important for value judgment. This means that the size and signs of parameter estimate are thus evaluated and expected to meet the standard economic expectation.

FIRST ORDER STATISTICAL TEST.

The model will be evaluated based on statistical (first order test) and econometric (second order test) .

- The F-test which will evaluate the significance of the over al regression.
- The coefficient of multiple determination R^2 will measure the goodness fit of the whole regression. It is expressed in percentages.

The coefficient of multiple determinations R^2 will measure the goodness fit of the whole regression.

THE ECONOMETRIC(SECOND ORDER) TEST.

In this study one econometric test of Durbin-Watson statistic should be carried out to check the presence of auto regression in the model , we also normally test will be carried out to know whether the error term is normally distributed. The decision rule for these tests are to be stated in chapter four.

3.5 DATA REQUIRED AND SOURCES

Secondary data used for the study was obtained from various sources like central bank of Nigeria Annual Report and Statement of Accounts (various years), and the Nigeria Communication Commission (website).

CHAPTER FOUR

4.1 PRESENTATION AND ANALYSIS OF RESEARCH FINDINGS.

In this chapter, the result of the ordinary least square (OLS) regression is presented. The analysis of the result involves subjecting the parameters estimate to theoretical statistical and econometric test to determine their robustness.

Log(RGDP)	Coefficient	Std. error	T-statistic	prob
CONS	32.68355	6.142730	5.320688	0.0000
TELD	0.120715	0.022201	5.437276	0.0000
LF	-3.15E-07	9.95E-08	-3.517006	0.0011

R^2 = 0.569169

F- Statistic = 27.08244

Durbin-Watson stat= 0.420514

4.2 EVALUATION OF RESULT BASED ON ECONOMIC CRITERIA

This involves checking the signs and magnitude of the parameter to ascertain whether it agrees with the economic theory. As shown in the table above the co-efficient of teledensity (TELD) is positive. This implies that teledensity impacts positively to real gross domestic product (RGDP). In other words, this means that an increase in infrastructural development proxied by teledensity brings about increase in economic growth. This is in line with the economic theory because increase in the teledensity (increase in the use of mobile phone) has both economic and social benefit that translate into economic growth. For instance and increase in teledensity brings about reduction in costs for businesses and therefore increase profit which can be ploughed back into business and thereby encourage economic growth. It also brings about increased access to health and education which bring about improved productivity and efficiency which makes an economy to grow.

The coefficient of labour force (LF) is negative which suggest that increase in labour force is detrimental to economic growth.

A priori expectation table.

Variables	Expected sign	Obtained sign	Remark
TELD	Positive(+)	Positive (+)	Conform
LF	Positive (+)	Negative(-)	Non-conform

From the table above, teledensity (TELD) conforms to the a priori expected signs, the negative sign on labour does not conform to the a priori expectation because a higher labour suppose to contribute positively to the growth of an economy, we attribute this non conformity to the error from the data used

4.3 EVALUATION BASED ON STATISTICAL CRITERION

This involves testing the explanatory power of the estimated parameters.

THE STUDENT t. TEST

This involves company the estimated t-statistic with the critical t-value of the estimated parameter if the estimated t- statistics is greater than the critical T- value, we conclude that variable attached to parameter is statistically significant, other wise the variable is statistically equal to zero.

T-Test table.

Variable	Coefficient	T-value	T-Tab	Result.
C	32.68355	5.320688	2.021	Significant
TELD	0.120715	5.437276	2.021	Significant
LF	-3.15E	-3.517006	2.021	Insignificant

The test will be carried out under the following criteria.

Ho: $\beta=O$

H_1: $\beta \neq O$

β= coefficient of the parameter

Ho= Null hypothesis

H_1= alternative hypothesis

Decision rule

Reject Ho if T- cal > T- tab and

Accept H_1 if T-cal < T-tab

N=44

4=3

Therefore n-k=44-3=41 at 5% significant level K-1=3-1=2

This result implies that teledensity has a statistical significant impact on real gross domestic product at 5% level. Therefore a unit increase in the teledensity brings about 0.1207 growth in real gross domestic production.

The absolute value of the estimated t- statistic for labour force is statistically insignificant ie has a significant negative influence on real gross domestic product.

R2 (coefficient of determination)

This is used to measure the goodness of fit of the model. It tells how the variation in the dependent variable is being explained by the independent variable. Given that R2 = 0.569109, it means that about 57% of variations in real gross domestic product is being explained by teledensity and labour force.

THE F. STATISTICS TEST

This measure the joint significance of all the variable used in the model by comparing the estimated F-statistic with the critical f-statistic.

F statistic table

F-cal	F-tab	Decision
27.08244	3.23	Reject

From the above result, it is observed that the f-cal is greater than f-tab (that is 27.08244>3.23) thus we reject the null hypothesis and conclude that the joint impact of teledensity and labour force on real gross domestic product is significant.

4.4 EVALUATION BASED ON ECONOMETRIC CRITERION

Under the econometric criterion we test the reliability of the estimated parameters.

Autocorrelation test

Null hypothesis	Decision	IF
No positive autocorrelation	Reject	O< d < dø
No positive autocorrelation	No decision	Dl< d< dø
No negative correlation	Reject	4-dl<d<4
No negative Correlation	No decision	4-dø<d<4-dø
No autocorrelation, positive or negative	No not reject	Dø<d<4-dø

To perform the autocorrelation test, we used the Durbin-Watson statistic to check whether the residuals from the regression result are correlated the null hypothesis is as follows:

Where: DL=lower limit

Du=upper limit

D=Durbin Watson (calculated)

From the Durbin Watson table:

Dl= 1.338 and dø= 1.659 and the estimated Durbin Watson d- statistic d= 0.420514

Since 0<d=0.420514 < dl=1.338. we reject the null hypothesis of no positive autocorrelation. This implies that the residuals are autocorrected.

HETHEROSCEDASTICITY TEST

This test is used to check whether the errors have constant variance. The null hypothesis is that there is no heteroscedaticity in the errors. Note that this tests follows chi-square distribution, so we compare NR^{x2} (number of observation multiplied by $\mathbf{R^2)}$ with the critical chi-square statistic under two degree of freedom. From the regression result NR^2= 40 32105 and is greater than the critical chi-

square statistic of 5.99 since NR^2 is greater than the critical chi-square statistics, we reject the null hypothesis which implies that the errors are heteroscedaticity.

NORMALITY TEST.

This test is used to determine whether the error term is normally distributed the null hypothesis is that the error term follows normal distribution. We use the Jarque Bera statistic by comparing it with the critical chi-square statistic under two degrees of freedom from the estimation, the Jarque Bera statistic is 0.6919 which is less than the critical chi square statistics of 5.99. Following this we accept the null hypothesis and conclude that the error follows normal distribution.

CHAPTER FIVE

SUMMARY OF FINDINGS, RECOMMENDATION AND CONCLUSION

5.1 SUMMARY OF FINDINGS

The aim of this study centered around the role of telecommunication development in national economic growth of Nigeria for the period 2000-2010. The study focused on finding the relationship between the explanatory variables and the dependent variable using secondary data. The result of the analysis revealed that development in telecommunications proxied by teledensity have positive and significant impact on economic growth in Nigeria. It also shows that a rise in the labour force is detrimental to economic growth in Nigeria that this interpretation of the analysis can be deduced from the statistical insignificance of a number of variables

5.2 RECOMMENDATIONS

Based on the findings, our result suggest that development in the telecommunication infrastructure are positively related to economic growth, while labour force increase is detrimental toe economic growth from the above analysis, we make these recommendations:

a) There is the need for increased investment in the telecommunication industry. This can be achieved through full liberalization of the sector as that will further increase the number of private participation. Thus reducing costs incurred by subscribers thereby increasing teledensity and growth.

b) That the government should ensure greater regulation of telecom sector in other to ensure greater competitions among operators, thus will increase consumers sovereignty

c) There is no doubt that increase in labour force can be an engine for development though our result did not show that. It should be emphasized that efforts should be made towards quality and not quantity of labour force required for sustain able growth in the sector.

5.3 CONCLUSION

From the study, it has been established that infrastructure development is an important aspect of the economic growth of a nation. Infrastructure development can be used to influence economic activities and also achieve economic objectives of the governments. Therefore it is important that sound policy measures should be put in place to improve infrastructure on the country, this will greatly influence the economic activities and growth of the nation.

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