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ABSTRACT

This study investigated the impact of public spending on enrolments in primary and secondary education in Nigeria using a multiple regression model. The model was constructed to identify the relationship between government spending, primary and secondary enrolments rate while also considering the interaction with control variables; per capita income, workers remittances, and population growth. Using the OLS approach to analyse the data for the period 1981 to 2013. Interesting observations were made which are explained for by inconsistency in government allocation or spending on education in Nigeria. It was observed that a significant positive relationship exists between per capita income, government spending, and primary school enrolment rates while a negative relationship exists between population growth, workers' remittances and primary education enrolment. As for secondary education enrolment rate, there is a positive relationship between per capita income, population growth but a negative relationship with government spending and workers' remittances due to the fee-paying secondary schools and interest in informal trade. These findings add nuance to the understanding of the variables affecting education enrolment rates in Nigeria beyond that of government spending, to other variables which are critical to the structure of the economy given its high immigration and out of school children population. This study is part of the growing empirical literature addressing education finance and outcomes gap. Beyond the consistency required in financing, the Nigerian government must build infrastructure that will support improvement in the overall social wellbeing of the growing populace and encourage transition into secondary schools.

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GLOSSARY OF TERMS

CBN	Central Bank of Nigeria
CPI	Consumer Price Index
EFA	Education for All
EFCC	Economic And Financial Crimes Commission
FME	Federal Ministry Of Education
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
ICPC	Independent Corrupt Practices, And Other Related Offences Commission
IEA	International Association for The Evaluation Of Educational Achievement
IMF	International Monetary Funds
ISCED	International Standard Classification Of Education
JSCE	Junior Schools And Senior School Certificate Examinations
NABTEB	National Business And Technical Examinations Board
NBS	National Bureau Of Statistics
NCE	Nigerian Certificate In Education
NECO	National Examination Council
NER	Net Enrolment Ratio
NERDC	Nigerian Educational Research And Development Council
PRY	Primary
SAP	Structural Adjustment Programme
SEC	Secondary
SFA	School Fees Abolition
SSCE	Secondary Schools And Senior School Certificate Examinations
SUBEB	State Universal Basic Education Board
TIMSS	Trends In International Mathematics And Science Study
UBE	Universal Basic Education Programme
UIS	UNESCO's Institute For Statistics
UNESCO	United Nations Educational, Scientific And Cultural Organization
UPE	Universal Primary Education
WAEC	West African Examinations Council

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CHAPTER 1: INTRODUCTION

1.1 Background to the Study

Economic growth is fundamental for sustainable development as it relies on public spending to invest in key infrastructural systems like sanitation, health, education, transportation and so on. Development finance institutions like the United Nations, have in the past decades continued to emphasize the need for increased spending on human capital development in developing countries.

According to Okojie (1995), the propositions of human capital simply means “the skills and abilities of human resources of a country”(p. 44). Human capital formation is the process of increasing the number of persons with the skills, experience, and education required for increasing a country’s gross domestic product and standard of living. Human capital formation is a continuing process from childhood to adulthood, and very vital for any enterprise or society that wishes to survive under the stiff challenges of an emerging world (Adebisi, 2006).

According to Heltberg et al. (2003), to achieve poverty and inequality reduction, there has to be an increased investment in human capital such as education. It is, therefore, important for a developing country to improve the standards of living of its citizens through the efficient allocation of public spending to expand infrastructure, improve education and encourage local and foreign investments (Saad and Kalakech, 2009).

Education, according to the Centre for Global Development in 2002, has been described as one of the main channels through which developing economies can grow and develop. Education delivers economic development through the channel of human capacity improvement, which, in turn, enables a democratic system of government to thrive. Education is regarded as the most direct means to rescue a significant number of persons from poverty since there is likely to be higher wages for skilled workers and more employment opportunities (World Bank, 2004).

Education is also one of the primary sectors that helps in achieving development; it delivers the channel through which industrialization is achieved and sustained, moral upbringing upheld and standard of living improved (Orji and Maekae, 2013). The relevance of education in economic development cannot be overemphasized and as a result, both international and

local organizations have supported the UNESCO's drive for governments in Sub-Saharan Africa to invest at least 26 percentage of their total budget on education.

Various theories of government spending underscore the importance of increasing public expenditure in social services such as education, in order to enhance economic growth. For example, theories of Wagner, Keynesian theory of deficit financing, and Musgrave's theory of increasing state activities all emphasize the need for government spending to enhance economic welfare through its expenditure in the provision of public goods. According to the Keynesian view, downturns in the economy could be reversed by government borrowing money from the private sector and then returning the money to the private sector through different spending programs (Alajekwu and Obi, 2011). High stages of government consumption are likely to increase profitability, employment and investment via multiplier effects on aggregate demand. Thus, government expenditure, even of a repetitive nature, can contribute positively to economic growth (Chude and Chude, 2013).

The management of public expenditure is key for efficient targeting which is now increasingly important in the new dispensation of macroeconomic reforms as most governments are under pressure to reduce their total cost due to expanding deficits. Also, if not well-targeted, such spending may not be able to achieve its goals; hence, policy makers are required to be armed with information on structure and financing within the education sector so as to drive economic growth through human capital development.

However, Nigeria over the past decades has experienced sluggish economic growth and development when compared to the growth potentials that exist within the economy given its natural and human resource base. The policy makers have consistently politicized justification for the impact of public spending and the quota of public spending on human capital development. Education, which is one of the drivers of human capital development, has not regularly been a major focus of government and this has lead to the need to understand the relationship between government spending and education outcomes such as enrolment rates across the country. Is public spending relevant in increasing enrolment rates in Nigeria's basic education level, that is primary and secondary schools, given the demographics and developmental challenges facing the country?

1.1.1 Background to Education Spending in Nigeria

Education in Nigeria is a shared responsibility amongst the three tiers of government that is the federal, state, and local governments. All tiers are jointly responsible for the provision of

primary, secondary and tertiary education across the thirty-six states of the country. The federal government allocates revenue based on the federal revenue sharing policy to state and local government. The revenue sharing allocation is distributed as 52.68 percent to the federal government, 26.72 percent to the states, and 20.60 percent to local governments. The states and local governments are expected to allocate four percent of their quota towards the financing of primary and secondary education (Budget Office, 2012).

After independence in 1960, the education sector was focused on providing the manpower and job skills required to aid the development of the country. Therefore, enrolment rates increased significantly across all levels of education. Specifically, primary school enrolment increased from 3,515,827 pupils in 1970 to 14,097,249 in 1990, secondary school enrolment increased from 356,565 pupils to 2,901,993 while tertiary enrolment increased from 15,560 students to 326,557. These figures reflect the amounts of resources committed by the government to the education sector (Geo-Jaja and Mangum, 2003).

The early years of independence witnessed significant public spending and resulted in the high enrolment rates. Government spending on education has been inconsistent over the years with no stable increase. In 1970, 6.2 million naira was allocated to education, increased to 1,238 million naira in 1980 and further increased to 9,434 million naira in 1994 before declining. The share of federal government expenditure to education was recorded at 9.9 percent in 1997 and reduced to 8 percent in 2002 (Hinchliffe, 2002).

According to UNESCO (2013), Nigeria has 10.5 million children classified as ‘out-of-school’, accounting for 47percent of the world’s total out-of-school children. Within Nigeria itself, 45percent of the country’s population is under the age of 15. With such a large at-risk demographic, coupled with 70percent of its population living below USD1.25/ day, the demand on government to provide vital social services like education is very high. In the last few decades government spending on education, as a component of social and community services has continued to vary and this along with other factors affect the enrolment rates in primary and secondary schools.

One major problem with public spending on education in Nigeria is the insufficient, mismanagement, and misappropriation of government allocation to the human capital development sectors (education included) which have resulted in the sluggish performance of the sector in terms of enrolment rates (Maku, 2009). Government spending comprises recurrent expenditure and capital expenditure channels. It is evident that this level of

misappropriation is more prone to the capital expenditure rather than the recurrent expenditure which is the channel through which teachers salaries and other operating cost are financed (Ogujiuba and Adeniyi, 2004). Further, this high level of capital expenditure misappropriation has hampered the improvement in facilities and left most public schools in the uncondusive state.

The widespread corruption amongst public officials responsible for implementing and designing the education policies in Nigeria coupled with the prolonged military rule has also worsened the mismanagement and lack of accountability within the Education sector. The military regime prioritized spending on defense over the provision of education (Omojomite 2010).

Beyond the above-identified drawbacks and challenges of the Education sector, government revenue has also contributed to the lag in public spending on education. Government spending has been funded primarily by oil export revenues since the oil boom of the 1970s. What this also means is that drops in oil prices may have a significant impact on the spending on public education. Historically, the inconsistent funding became apparent during the oil market crash of the early 1980s. This led to a reduction in government spending which affected allocation to the education sector. Currently, Nigeria still relies on oil revenue to fund 75 percent of its annual budget and the recent volatility in oil prices have had the same impact that the oil market crash had on fiscal balance of the country (The Economist, 2014). This has therefore meant a drop in enrolment. These challenges are just in addition to a host of other non-economic factors. For instance, households, especially in the rural and undeveloped parts of the country, have been discouraged from enrolling their children in schools as a result of social vices prevalent in the Nigerian education system, especially at the secondary and tertiary levels. Some of these social vices are sexual harassment, rent seeking by teachers, result racketeering coupled with the high level of unemployment which has led to a brain drain from the economy (Ayara, 2002).

But despite the inconsistencies in public spending and enrolment rates, government expenditure on education can improve productivity, raise living standards, improve social cohesion and increase the inflow of foreign capital and local business activity as human capital development progress, which ultimately supports economic growth (Olulu, Erhieyovwe et al. 2014). This is in line with the national development plan for the education sector in Nigeria and the government will continue to discover new and innovative ways to

finance education provision, increase enrolment rates and reduce the high number of out-of-school children within the country. The thesis attempts to emphasize the importance of public spending on enrolment rates in Nigeria.

1.2 Statement of Problem

Education funding and outcome historically have been a constant issue of debate amongst policy makers as the need to increase finance remains unjustifiable if the results do not support the efforts. Significant amounts of research have emphasized government increased spending on education but have shown mixed findings regarding the performance in redistribution and improved social wellbeing. The UN has consistently encouraged governments, especially in Africa, to increase education spending while the continent still battles with quality and weak performance in its education sector.

Despite the effort to increase public spending on education, Nigeria still holds the majority of the numbers of out-of-school children (10.5 million of 29.8 million out-of-school children) in Sub-Saharan Africa (World Bank, 2012). Forty-five percent of Nigeria's population are children under the age of 15 years, placing an overwhelming demand on the education sector. The UNESCO, 2013 reports that 40 percent of the children aged between 6 and 11 who are expected to be in the primary schools were out of school.

The completion rate in primary education has improved over the years, increasing from 58 percent in 2003 to 72 percent in 2011, but with a decline in 2013 to 68 percent. Of the data provided 53 percent of children recorded to have completed primary education in 2003 were female, which increased to 66 percent in 2013. Secondary education completion rates in 2003 equaled 39 percent, with only 35 percent being girls; by 2011 it was 46 percent and increased in 2013 to 49 percent, of which 43 percent were girls. This indicates a gender disparity in the outcomes of spending on primary and secondary education levels.

Life expectancy levels improved significantly for both sexes, especially at the secondary education level. In 1999 it was 1.42 years, increasing to 2.12 years by 2008, and 3.37 years in 2013. Primary education life expectancy experience has been unstable. It increased from 5.88 years in 1999 to 5.94 years in 2003, declined to 5.11 years in 2008 and then to 5.70 years in 2013. Despite the structure in demographics, gender imbalance, and inconsistent budgetary allocation, adequate justification does not exist to show the impact of government spending in reducing the number of out-of-school children.

1.3 Purpose and Objective of the Study

The purpose of this current study is to analyze the relationship between government spending and school enrolment rate at both the primary and secondary level. The research aims to look at the relationships that government spending, among other macroeconomic variables like per capita income, population growth rate, and workers' remittance, have with primary and secondary school enrolment rates separately.

1.4 Research Questions

This research aimed to highlight the impact public spending, and macroeconomic variables such as per capita income, population growth, and workers' remittances, had on primary and secondary school enrolment rate in Nigeria for the period 1981 to 2013. In order to determine this impact, the following questions were proposed:

1. Is there a relationship between public spending on education and enrolment rates in primary and secondary schools?
2. Is there a relationship between macroeconomic variables and enrolment rates in primary and secondary schools?

Conducting this study was premised on these key objectives:

1. To determine the relationship between public spending on education and enrolment rates in primary and secondary schools.
2. To determine the relationship between macroeconomic variables such as per capita income, population growth, workers' remittances and enrolment rates in primary and secondary schools.

1.5 Significance of Study

Currently, Nigeria is facing major challenges relating to declining government revenue, increasing population, reducing per capita income and high immigration. Further, there is an ongoing debate on how the government can continue to finance education adequately given international pressures and local concerns.

Understanding how government spending and other macroeconomic variables affect enrolment rates will help the government make a sound decision around the reasonable level of education. This will help to channel more finance towards education, especially given the

current economic conditions, while creating alternative finance through the private sector for the education level with lower government spending impact.

This study adds to the existing body of knowledge especially in the area of development finance. Education is critical in developing a country's human capital and understanding the impact of public spending on education will inform public policy design and implementations. This study, unlike past studies, makes use of recent data to provide better understanding and introduces additional macroeconomic variables which can further explain the relationship between government spending and enrolment rates in primary and secondary school. This study attempts to support other literature and emphasize the significance of government allocating sufficient funds in providing primary and secondary education in Nigeria while considering other macroeconomic variables.

Finally, this research is expected to make suggestions on how government spending on education can be better channeled towards achieving higher primary and secondary school enrolment rates not only in Nigeria but in developing countries with similar history, demography, and economy.

1.6 Scope of Study

This thesis used secondary data from the Central Bank of Nigeria's Annual Statistical Bulletin for various years covering government spending on education, per capita income, and the United Nations Educational, Scientific, and Cultural Organization (UNESCO), National Bureau of Statistics (NBS), World Bank's Databank providing data on enrolment rates, workers' remittances and population growth. The period of study chosen was between 1981 and 2013 which is assumed sufficient to note the trend in public spending on education after the oil boom of the 1970s where public spending on education became inconsistent and the performance of the sector began to dwindle.

CHAPTER 2: NIGERIA'S EDUCATION SECTOR

2.1 Introduction

Nigeria has a population estimated at 160 million people, and with an annual growth rate of 2.8 percent (National Bureau of Statistics, 2011). The country is the second-largest economy in Sub-Saharan Africa and the most populous in Africa (World Bank, 2014). There are thirty-six states, the Federal Capital Territory (FCT) and seven hundred and seventy-four local government areas. The Nigerian economy relies on oil for 75percent of its revenue and 95percent of its export before the fall of oil prices in 2014 (The Economist, 2014). The recent hit on revenue as a result of the decline in oil prices coupled with insecurity in the Northern and Niger Delta regions of Nigeria has worsened the economic situation. With such declining government revenue, social services (one of which is education) spending is likely to be affected.

Education is seen as an important tool to achieve national development in the country. As a result, it is a sector requiring huge government spending but the current decline in revenue for the government will raise challenges around the effort to sustain the provision of education to Nigeria's teeming population.

After achieving independence in 1960, the realization of the need for public spending on education was forefront in policy making discussions. Since independence, there has been a major need to restructure the education system passed down by the colonial governments (Moja, 2009). This drive led to the first National Curriculum Conference of 1969 and the institutionalization of the National Policy on Education in 1977 (Akudolu, 2012). A number of reforms beyond the National Policy on Education of 1977 have come to define what the education sector is in Nigeria today and the major concern of every reform is the financing of the sector to achieve the set goals of ensuring a highly educated populace which will drive the national development plan of the country.

Thus, it is evident that Nigeria has always considered education as an important social service but frequent review of reforms show that the government has not been consistent in its effort to provide adequate funding from the national budget. The funding provided also has not been able to sufficiently increase enrolment rates in view of the high population. Understanding the history of the country's education sector will explain some of the complexities involved in the relationship between financing and the enrolment rates in primary and secondary school.

2.2 Developmental Phases in the Education Sector

The Nigerian education sector has been through two major phases regarding development. The first stage between 1950 and 1980 witnessed significant expansion regarding government spending, enrolment rates and the number of school buildings. The second phase was one of reduced spending and rise of private involvement in the provision of education, and this was between the year 1981 and 2009.

2.2.1 1950-1980 Period

Rapid access to education was one of the most significant aspects of the initial stage of development in Nigeria's education sector. Primary school attendance increased from 626,000 to 2,912,619 between 1954 and 1960 (Aigbokhan, 2005). Government education policies during this period enabled the increase in school building projects and grant-in-aids to schools owned by churches thereby increasing access to education. At this phase, churches were actively involved in the education sector before the earlier years of independence when government's commitment to education increased with the aim of fading out the colonial master's system to achieve a self-sustaining education system focused on providing the expertise required to nurture the newly independent Nigeria.

At the initial stage of educational development, a particular emphasis was placed on structuring curriculum with the objective of achieving long-term development of the country. The curriculum during the colonial government administration placed emphasis on numerical skills development and general knowledge building. The only University before independence, University College, Ibadan, at this time, lacked the human resource and facilities for technical skills acquisition. Post-independence regional governments established and funded the University of Nigeria, the University of Lagos, University of Ife, the University of Benin and Ahmadu Bello University, Zaria between 1960 and 1970. These led to a significant rise in access to tertiary education and simultaneously an improvement in the primary and secondary education which are pre-requisite to tertiary education.

The federal governments in 1975 took over the administration and funding of these universities and extended grant-in-aid to state polytechnics. Awopegba and Adedeji (2000) identified that government's decision to create more tertiary institutions was driven by the desire for regional interests and personal gains.

2.2.2 1981-2009 Period

This phase records a fall in public spending on education resulting in weakening of fixed assets and standards. The period between 1978 and 1999 according to Aigbokhan et al. (2007) experienced significant inadequate funding leading to the crisis in the sector. The oil revenue fall in the 1980s was a contributing factor that led to inadequate funding, as government's budgetary allocations reduced. The Structural Adjustment Programme (SAP) of 1986 was introduced to manage the economic challenges resulting from the central government deficit and this further worsened the funding gap resulted in a decline in the percentage of national budget allocated to education from 15 percent in 1984 to 8 percent (Babalola et al, 1999).

This period of 1981 to 2009 also witnessed a high debt holding by the federal government placing a heavy burden on the budget in terms of debt servicing. Based on available data from the Central Bank of Nigeria (2014), Nigeria's debt holding increased from 2.33 billion naira in 1981 to 100.79 billion naira in 1987 after the SAP was introduced. By 1999, before the transition to a civilian regime of the Olusegun Obasanjo administration, the total external debt was recorded as 2.6 billion naira. Debt in itself is not negative if such debt is efficiently disbursed to establish the infrastructure and institutions required for growth and development. However, this was not the case in Nigeria, as the frequent instability in governance and predominance of military administration underpinned investment in education leading to weakening of the sector.

The long years of the military regime also favoured higher budgetary allocation to defense at the detriment of the education sector (Oseni,2012). Government capital expenditure on social services including education as a percentage of total capital expenditure was recorded as 19.78 percent in 1981, by 1986 it was 9.72percent, and further declined to a minimal 3.46 percent by 1999 before the transition to civilian rule. From 2000, the percentage of capital expenditure spent on social services increased from 3.46 percent in 1999 to 11.68 percent, though unstable over the preceding years but have been between 8.56 percent and 23 percent. Enrolment rates during this period also highlight the negative impact decline in government spending on education had. Primary enrolment in 1981 was 102.8 million and by 1986 it had declined to 93.2 million and much lower to 82.8 million in 1989. By 1996, primary enrolment rate in Nigeria was 78.45 million with the increase in allocation by the civilian government enrolments rate in 2000 and 2004 significantly increasing from 98.3million to 100.2 million,

respectively. A positive impact was experienced in the case of secondary school enrolment rates as it increased from 23.4million in 1999 to 34.7million by 2004.

During this period, the long military regime, mismanagement of borrowings, and drop in revenue as a result of the oil market crash negatively impacted enrolments rates in primary and secondary school. With the transition to a civilian government in 1999, the performance of the sector though better still remains sluggish as a result of the institutional damages that occurred between 1981 and 1999.

2.3 National Policy on Education and its role in the performance of the Education Sector.

The National Policy on Education has been through three major reforms and amendments in 1977, 1981 and 2004. The education policy of 1977 was the Universal Primary Education (UPE) programme which laid the foundation for growth in enrolments rates across all states in the country which increased the number of primary school pupils from three million in 1976 to twelve million by 1980. The main objective of the UPE was to provide basic education to every school age child (between the ages of six and 11 years) in Nigeria with the aim of making citizens valuable members of the society (Ogunsanmi and Ibimiluyi, 2014).

The revised National Policy on Education under which the UPE scheme was formed, introduced the new education structure of 6-3-3-4. Translating into six years of primary education, three years of junior secondary education, three years of senior secondary education and, at least, four years of tertiary education (Ajibola, 2008). Enrolment rates during the implementation of the UPE increased significantly as a result of the abolition of school fees and high dependency on government funding. However, this was short-lived as a result of poor planning, mismanagement, and strain on available educational facilities in the country (Babalola, et al, 1999).

2.3.1 Universal Basic Education (UBE) Programme

By 1999, the country successfully transitioned to a civilian government after thirteen consecutive years of military rule. The civilian regime led by Olusegun Obasanjo introduced the UBE programme under the National Policy on Education, with the major objectives of eradicating illiteracy and significantly increasing adult literacy (Omotor, 2004). The school fee abolition policy of the failed Universal Primary Education programme was re-introduced

through the UBE and this re-established government has the major provider of education at all levels in Nigeria. The expectation of the fee abolition policy was to encourage school enrolments and drive the national development goals (UNICEF, 2012).

The UBE Act (Universal Basic Education, 2004) provided free and compulsory nine-year continuous education for every Nigerian child; that is three years pre-primary and six years of primary education. It mandates enrolment of children in schools and sanctions parents who do not comply with the act. Within the Act, two percent of the Federal Account was to be reserved as intervention fund to ensure the UBE is implemented at the state level. This is with the aim of ensuring equal access and provision of primary education across the country (Atanda, et al 2009).

The Nigerian education system within the UBE Act of 2004 recognized that children are expected to spend six years in primary education. Pre-primary education begins at the age of three and lasts for a three-year period. The secondary education spans for a six years period with the initial three years called Junior secondary (which is comparable to level 2 in the International Standard Classification of Education ISCED) while the later three year period is for the senior secondary (comparable to level 3 in the ISCED). The last stage of education is the tertiary education structured for a minimum period of four years. The universities, technical and vocational schools are the component of Nigeria's tertiary education (UNICEF, 2012). This defined structure around age and number of years required at each stage of education enables the government to put better facilities and physical structures in place to encourage enrolments by parents and plan public spending on education. This, in the early years of UBE implementation, led to increase in public spending on buildings and infrastructure for primary and secondary education in Nigeria.

The impact of UBE programme is also felt through the programme's mandatory two percent of federal account allocated to education funding. As a result of this, government spending on education became a priority for the subsequent government after the Obasanjo administration. This is noticeable in the continuous effort by the government to ensure the mandatory nine years of basic education are provided to all school aged children. As stated previously, the introduction of the UBE Act was fundamental to institutionalizing of government spending on education. The UBE Act led to an increase in enrolment rate especially in the primary school

due to the emphasis placed by the federal government with the goal of achieving equal educational advancement across the country.

2.4 Institutional Framework and Responsibilities of Government and Agencies

The success of the Universal Basic Education programme is dependent on the institutions created through the National Policy on Education. These institutions have evolved in responsibilities and accountability since implementation in 1977. Though the provision of education across the three levels (primary, secondary and tertiary) are shared responsibilities between the tiers of government, institutions exist with the policy to ensure objectives of programmes are achieved and national development plan achieved. Beyond the national government, the local government is also responsible for the provision of primary education at the council and grassroots level. Secondary education is however majorly provided by the state government while the federal and state governments are jointly involved in the provision of tertiary education (Moja, 2000).

Table 2.1: Summary of Education Funding & Responsibilities among the Three Tiers of Government

	Federal	State	Local
Basic (Pre-Primary, Primary, and Junior Secondary)	(i) Development of national education policy (ii) Allocation of education funding through Federal Account (iii) Institutionalization of standards across all states through the Federal Ministry of Education.	Responsible for the implementation of the current Universal Basic Education programme through the state education boards (State Universal Basic Education Board, SUBEB) with the objective of increasing enrolment rate	Responsible for management of primary schools Ensures provision of quality education through the Local Government Education Authority.

Secondary education	<ul style="list-style-type: none"> (i) Development of national curriculum to be taught in all secondary schools (ii) Responsible for the examinations to be conducted at the end of the senior secondary education (through institutions like WAEC and NECO) (iii) Management of federal government owned schools. (iv) Allocation of funding 	<ul style="list-style-type: none"> (i) Responsible for the implementation of the current Universal Basic Education programme through the state education boards (State Universal Basic Education Board, SUBEB) with the objective of increasing enrolment rate (ii) Responsible for issuing approval to schools operating within the state 	
Tertiary Education	<ul style="list-style-type: none"> (i) Implementation of national education policy (ii) Provision of funding to tertiary institutions (iii) Responsible for quality control and issuance of approvals to tertiary institutions 	<ul style="list-style-type: none"> (i) Provision of funding to tertiary institutions within the state. 	

Source: Federal Ministry of Education's Ten-year Strategic Plan, 2007

The individual responsibilities of the three tiers of government are delivered through separate institutions. These institutions are the National Council of Education (NCE), Nigerian Educational Research and Development Council (NERDC), Examination boards (National Education Commission, National Business and Technical Examinations Board) and tertiary institutions' supervisory bodies (National Universities Commission, National Board for Technical Education and National Commission for Colleges of Education).

The National Council of Education is the institution through which the federal government of Nigeria directs the planning, designing of policy and financing of the education sector. It is a composition of the Ministers and Commissioners of Education and the Joint Consultative Committee of Education. The NERDC, set up by decree number 31 of August 1972 is to promote and organize educational research programmes to train primary and secondary teachers and develop curriculum for primary and secondary schools. It finances these programmes and maintains a register of academic research projects in the country through the education allocation from the Federal Government.

Examination boards focus on conducting the general qualifying education into tertiary education which certifies students to have completed the primary and secondary education. The West African Examination Council (WAEC) conducts examination for students who have successfully completed the six years of secondary education and awards certificates. While the National Examination Council (NECO) is responsible for conducting terminal examinations in third and sixth years of secondary education in all schools operating in Nigeria.

The NECO plays a vital role in ensuring students can successful transit from junior secondary to the senior secondary and therefore ensures schools adhere to the national curriculum in order to continue to drive enrolment rates into secondary school and reduce the number of school drop out as a result of failure at the junior and senior secondary examination.

Tertiary supervisory boards, National Universities Commission, National Board for Technical Education and, National Commission for Colleges of Education are the channels through which federal and state governments provide finance to tertiary institutions. These institutions are also responsible for curriculum development, quality control, and accreditation of degrees. The budgetary allocation of spending on education passes through these institutions which have the overall objective of encouraging school attendance and establishing quality education (Khemani, 2001). Despite the overall objective of establishing these aforementioned institutions, mismanagement of fund, bureaucracy, and lack of expertise has hampered the institutions capacity to efficiently utilize allocated funds and steadily increase enrolment rates across the country.

2.5 Rise of Private Schools

Private involvement in the provision of education came into existence as a result of the strain on government schools and failure of the Universal Primary Education programme, however, ineffectiveness and inadequate funding of the education sector in recent times has led to the rise of private schools. The rise in private schools has further created a widening finance gap which has had a negative impact on enrolment rate and led to an increase in drop-out rates and unattractiveness of public schools to households.

The increase in private schools has positively impacted on primary and secondary enrolments rate overall especially in the urban areas of the country. On the other hand, the rise of private schools has allowed further deterioration and laxity on the part of government towards providing adequate funding for public schools. state-created schools (that is public schools) have no autonomy and are fully within the control of governments regarding management and funding. Public schools were built to provide education for all families no matter the social status or economic capacity. However, these schools are inadequate with regard to quality of educational services offered. The known ones are for poor facilities, unqualified, and unmotivated teachers who frequently proceed to labour strikes to show dissatisfaction. These factors have contributed to the rise in private schools (Umar, 2008). The state of the government schools infrastructure is uncalled-for, small buildings, damaged roofs, and poor sanitation and the learner-unfriendly environment (Oladunni et al 2014, FME, 2005). Public schools in line with the Universal Basic Education policy are free, but families pay parent teachers association levies and purchase uniforms which school authorities use to subsidize government fund.

As a result of the poor state of public schools, the private sector's involvement has grown over the years and is becoming the preferred choice of families despite the fee payment. Private schools in Nigeria are owned by individuals, groups, or religious organizations. The reason for private involvement varies in motives (Rose, 2007). Private schools are typically self-financed without support from the government. Historically, mission schools received grant-in-aid from the government to meet financial obligations (Adelabu and Rose, 2007). Private schools vary in quality, tuition cost, and are free from government interference regarding management and administration. They adhere to the national curriculum as their pupils also take the national or state examinations. Pupils could also transit from private primary schools

to government-owned secondary schools after completion of the national primary education study (Adelabu and Rose, 2007).

Thus, it is clear that despite the potential of private schools to reduce the negative impact insufficient government spending has on education enrolment rates, the approval process to operate as a private school is often tedious and full of stringent guidelines frequently resolving in the need to bribe to obtain government approval in time. These approval guidelines are often difficult to meet and discouraging for potential investors. In Lagos, the commercial hub of Nigeria, 74percent of schools in 2010/2011 operating in the state were reported to be unapproved by the government (Adefisayo, 2009).

2.5.1 Low-cost Private Schools

Low-cost private schools in the group of private schools have the significant impact on public spending and enrolment rates in primary and secondary school. They are the class of schools most attractive to the lower social class families which alternatively would have sent their children to state schools. The increase of these schools create an alternative to public schools and therefore encourage leniency in public spending especially on infrastructure and salaries.

As a result of the bureaucracy and corruption within government agencies, these private schools are unapproved to operate and as a result, charge a very low tuition. These low-cost private schools provide educational services to low-income families but are still unaffordable to the poor living below a dollar a day. They are predominantly in urban areas. The fees in such schools are determined by the location, economic capacity of clients, quality of education and competitors' price. Parents find these schools attractive based on the flexibility in payment and small class size (Harma, 2011). The minimum requirement for teachers in the low-cost schools is the Nigerian Certificate in Education (or NCE).

On account of the low tuition, there are concerns about the quality of education provided by low-cost private schools. However, low-cost private schools remain the closest alternative to public schools and therefore play a major role in increasing primary and secondary school enrolment rates in Nigeria. Their existence does not replace the importance of public spending on key infrastructure that will enhance the overall performance of the sector.

2.6 Enrolment and educational participation across regions in Nigeria

Generally, the UBE programme has increased enrolment rates and social consciousness to education but the negative impact of the Universal Primary Education programme is still predominant in the country (Aluede, 2006). The overall objective of the national education policy is to achieve educational development across all the regions of the country. Enrolment rate pattern across the country varies despite an overall improvement after independence. Enrolment in primary education in 1960 was approximately 2.9 million by 1970, the numbers had increased to 3.5 million. Enrolment rate further witnessed a tremendous increase from 4.7million in 1973 to 8.2million 1976 at the inception of the Universal Primary Education programme (Taiwo, 1980). Within the public sector, enrolment rate rose to 14.1 million by 1996 from 13.6million in 1990, 45percent of which were female. (Federal Ministry of Education, 2000).

Table 2.2: Number of Public Schools in Nigeria and enrolment (1995-2000)

	1995	1996	1997	1998	1999	2000
Number of primary schools	39,677	41,660	43,951	45,621	47,902	48,860
Number of secondary schools	6,452	6,646	7,311	7,801	8,113	8,275
Enrolment in primary school	17.99m	19.79m	21.16m	22.47	23.71	24.89
Enrolment in secondary school	5.08m	5.39m	5.58m	5.79m	6.06m	6.36m

Source: 1. Central Bank of Nigeria (1999), Annual Report and Statement of Accounts, p. 92. 2. Central Bank of Nigeria (2000) Annual Report and Statement of Account p.130

After the introduction of the UBE in 1999, enrolment has been on the rise, picking up from 17.9 million in 1999 to 19.4 million by 2001 with an increasing population. The number of public schools increased from 40,204 in 1997 to 49,306 by 2001 (Francis, 1998).

It is important to assess enrolment rate relative to the percentage of population within school age, given Nigeria is a highly populated country. This will give a better interpretation to concerns around the high number of out-of-school children given an increase in nominal enrolment numbers. Demographic and Health Survey of the Ministry of Health in 1999 reported that 43percent of children between the age 6 to 10 were not in school. The survey also showed that 60percent of Nigerian children are not enrolled in school at the

recommended age of five years into the primary one. Unlike other Sub-Saharan African countries, the net attendance rate is lower at a rate of 61percent and 75percent for boys and girls, respectively. The Federal Ministry of Education reported an increase in gross enrolment rate 1994 as 68percent. The rate declined from 84percent in 1995 to 70percent in 1996 for both male and female, by 1999, gross enrolment rate was recorded as 81percent (Federal Ministry of Education report, 2000). The ministry has attributed the decline between 1996 and 1999 to unstable economic and political climate in the country at that time

Despite the gross enrolment and net attendance rates, educational attainment varies across the different region of the country and this has led to the uneven development, funding gap and sluggish overall performance of the education sector in Nigeria. The enrolment rate between 1999 (after the transition to the democratic government) and 2001 grew steadily over the different regions of the country. However, performance varies across the six geo-political zones.

Table 2.3: Enrolment Trends by Zone

Zone	1999	2000	2001
North West	3,744,959	4,023,809	4,049,984
North Central	2,756,275	2,957,578	2,905,642
North East	3,327,840	3,613,879	4,020,095
South West	3,033,852	3,136,805	2,876,297
South South	2,915,114	3,187,338	3,267,509
South East	2,128,970	2,239,030	2,265,377
Total	17,907,010	19,158,439	19,384,904

Source: FME Baseline Survey data covering both public and private sectors.

Despite the effort of government to withhold a uniform educational development across Nigeria, the North Central and South-Eastern part of the country has performed below the other geo-political zones. The North central part historically lagged behind in accepting the initial Universal Primary Education policy (Aluede, 2006).

Due to the population distribution across the country, between 1999 and 2001, the North Western region has consistently recorded highest enrolment rate in the country. The South Eastern region, on the other hand, has the lowest population coupled with a behavioral pattern of families to send children to private vocational centres to establish early interest in trade and business.

2.6.1 Impact of Gender Disparity on Enrolment rates across the Country

Another important factor in the enrolment disparity in Nigeria, according to previous literature is gender. Nigeria has 478 ethnic groups and over 521 languages are spoken. Given such a complex and diverse system, historically these ethnic groups hold varying beliefs regarding westernization and education of the sexes. Thus, as a result, gender disparity in education remains a major concern for the Nigerian government in achieving higher enrolment rates and unified educational development across the entire country. A number of factors have been identified to explain the gender disparity in school enrolments in Nigeria which affects public spending at state and local government levels. Some of the identified factors are the negative impact of household income on girls' enrolment into primary schools (Lincove, 2009). Other factors are religious values, household values, educational level of parents, economic condition, political values (Aluko, 2005).

Table 2.4: Enrolment Trends by Zone and Gender

Zone	Male 1999	Female 1999	Male 2000	Female 2000	Male 2001	Female 2001
N-W	2,439,394	1,305,565	2,625,139	1,398,670	2,633,666	1,416,318
N-C	1,543,844	1,212,431	1,645,660	1,311,918	1,606,316	1,299,326
N-E	2,024,592	1,303,248	2,190,877	1,423,002	2,501,140	1,518,955
S-W	1,508,920	1,524,932	1,551,084	1,585,721	1,421,266	1,455,031
S-S	1,470,785	1,444,329	1,606,711	1,580,627	1,638,758	1,628,751
S-E	1,070,899	1,058,071	1,125,657	1,113,373	1,130,896	1,134,481
Total	10,058,434	7,848,576	10,745,128	8,413,311	10,932,042	8,452,862

Source: National Summary of Primary School Statistics, 1999-2001.

The enrolment trend shows that the UBE drive has been a success, with primary school enrolment rates significantly higher than secondary enrolment rates. From 2001 to 2010, the gross enrolment rates of boys have been higher than that of girls in primary schools. The primary school trend between 2002 and 2010 has been unstable. Since 2006, there has been an 18 percent decrease in gross enrolment rate in the primary schools. This has been explained for by the increasing population of school-aged population, failure of public schools in meeting the growing demand for higher quality of education and the poor infrastructural conditions of the school, security concerns and insurgency in the Northern and South-South part of the country.

Table 2.5: Summary of Gross and Net Enrolment Rates by School Level and Gender.

Gross Enrolment Rate (GER)%					
LEVEL	2002	2004	2006	2008	2010
Primary	97.8	100.9	102.8	85.0	83.3
Female	88.6	92.1	95.2	80.1	79.3
Male	106.6	109.3	110.1	89.9	87.1
Secondary	29.4	34.8	34.2	35.1	43.8
Female	25.5	31.0	30.9	32.1	41.2
Male	33.1	38.3	37.3	37.9	46.4
Net Enrolment Rate (NER)%					
Primary	-----	66.5	67.8	58.8	57.6
Female	-----	61.8	63.9	55.4	54.8
Male	-----	71.1	71.6	62.0	60.1

Source: UNICEF Global Initiative on Out-of-School Children- Nigeria (2013)

Similar gender disparity exists between female and male gross enrolment rates within the secondary school with boys enrolment rate rising steadily at an average of 20 percent (except for the decline experienced in 2006). The average growth rate in the female enrolment in secondary school is 8 percent. This trend also reflects the low rate of transition from primary school to secondary school with primary enrolment rate over the secondary enrolment rate in subsequent years. It is evidence that the objectives of the UBE have been successful in maintaining high primary enrolment rates over the years but less impressive result in terms of secondary school enrolment rate.

The issue of gender disparity within the primary and secondary school has led to the increase in public spending, especially on initiatives within the education sector that encourage female education with more emphasis on the Northern region. This increase in public spending also comes as a result of the pressure from international development organizations driving for gender equality and higher enrolment rates across the country. In order to curb the prevalence of gender disparity, public spending on education has increased in the country with an additional aim of closing the gender gap and increasing overall primary and secondary school enrolment rates.

2.7 Conclusion

Nigerians regard education as the principal instrument for the social, political and economic development of the country. Thus, there is a high reliance on the government to provide quality educational facilities and policies to achieve the developmental needs of the country. A number of challenges have led to the failure of past educational policy and still pose a major challenge to the existing educational policies and regulatory structure. It is clear from the literature that the trend in enrolment rates is as a result of the national education policy, rise of private schools in response to government failure, gender disparity and cultural diversity in Nigeria. All of these elements briefly explain what the education sector in Nigeria looks like.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

Public spending on education and education outcomes has always been an issue of much controversy in public policy. A review of public expenditure theories introduces the concept of public expenditure and theoretical justifications. These include discussions of public spending along the questions of quality of education, expenditure, other identified variables and their relationship based on empirical findings. The major theories of public spending include The Median Voter Hypothesis, Musgrave, and Rostow Theory of Public Expenditure, Pure Theory of Public Expenditure.

3.2 Theoretical Literature on Government spending and enrollment rates

3.2.1 The Median Voter Hypothesis

The median voter hypothesis suggests that the level of public expenditure indirectly is driven by voters who voted government officials into power. Based on the assumption that government is chosen based on preferences of voters and the personal feeling of closeness in ideologies between citizens and elected government officials (Garrett and Rhine, 2006). Government spending is therefore driven by the median voter's income and demand for public services coupled with the tax implication. However, due to the long military regime in Nigeria, institutions involved in public spending decision has been driven by perceived opinion of the administration rather than the opinion of the citizens. With a democratic system of government in existence currently, slight improvement has taken place as the government makes an effort to direct public spending based on national development goals and convenient campaign promises.

3.2.2 Musgrave and Rostow's Theory of Public Expenditure

This theory is based on an economic development model. Musgrave and Rostow argued that to achieve economic growth, government spending is a major determinant and driver. They proposed that the state grows like an organism and makes decisions for the social wellbeing of the citizen. Provision of basic social amenities and infrastructure such as water, road, energy, security, and sanitation are to be provided by the public sector. As economic growth begins, public spending increases towards human capital development such as health and education required to sustain economic growth (Agboro and Edema,2014).

Musgrave and Rotow's theory holds in the public spending trend experienced in Nigeria. The government has continued to provide basic social amenities and infrastructure required for growth while involving private investment to ensure the high demand on social amenities are conveniently met but at a different cost. The country has witnessed increased spending on human capital development (education) as the economy grows by encouraging private investment.

3.2.3 Pure Theory of Public Expenditure

The pure theory of public spending is based on the work of P.A Samuelson. He categorized spending into private consumption goods and collective consumption goods. Individual preferences and choices drive private consumption goods. Collective consumption goods are goods consumed by all individuals, but one person's consumption does not reduce the availability of the good to another. This categorization was used to replicate the category of government spending (Samuelson, 1954).

According to Samuelson, public expenditure will grow to achieve growth in labor (L), and this will involve an increase in education expenses, growth in capital (K). All these will come through savings or borrowings and technological innovation (Tn), therefore, $Q=F(K, L, Tn)$ (Greg and Agboro, 2014). Samuelson's work has a close relationship with the pattern in public spending in 1977 when the national education policy was drafted to ensure the required expertise and job skills needed for building the economy was emphasised in Nigeria's education system. As the need for development came with high revenue from the oil boom, the government's spending was channeled at education and other infrastructural development. In summary, above theories in public spending all have relevance in the case of Nigeria's public spending trend and decision-making process. They provide insight into the underlying factors driving public spending on education in Nigeria coupled with the resulting impact such spending has on school enrolment rates.

3.3 Empirical Literature on Government Spending and Enrolment Rates

3.3.1 The Nigerian Experience

Nigeria's public spending on education has been strongly influenced by international developmental organizations and its commitment to achieving the Millennium Development goals and most recently the Sustainable Development goals in 2015. This coupled with local concerns on even national development continues to drive the need to increase public

spending on education in Nigeria. At the Copenhagen Declaration of 1996, the global developmental targets were set to reduce poverty levels across the world. Education, especially primary education, was identified as an important driver for delivering these development goals. At the 2000 Dakar conference, further, commitments were made as regards achieving the millennium development goals. Quality as an important measure of these goals was also included.

Commitments at the Dakar conference were to ensure that by 2015 all children, particularly girls, in difficult circumstances and those belonging to ethnic minorities, have access to and complete, free and compulsory primary education of good quality. It also committed to eliminating gender disparities in primary and secondary education by 2005 and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality. This goal put gender disparity in education to perspective in Nigeria and encouraged public spending on initiatives that addressed the education of the girl child especially in the Northern part of the country. Other commitments are to improve all aspects of the quality of education, ensuring excellence of all and achieving measurable learning outcomes, especially in literacy, numeracy and essential life skills (World Education Forum, 2000).

The utilization of national and international resources to increase allocation to primary education is critical in the achievement of these goals. The main importance of resources in the Dakar Framework was highlighted by an assertive statement on the non-acceptance of insufficient resources as a constraint to achieving the goal of quality education for all school-aged children. 'We affirm that no countries seriously committed to education for all will be thwarted in their achievement of this goal by a lack of resources' (UNESCO, 2006).

The relevance of finance in achieving these goals has been elaborated in the works of Brossard and Gacougnolle (2001), (Devarajan et al., 2002) and a few others. It is estimated that between US\$9 billion and US\$28 billion of additional resources will be required in the education sector annually to achieve these goals (World Bank 2002). This translates into increasing percentage of gross national product allocated to education from 3.9 percent to 4.3 percent in the less developed countries (UNESCO, 2000). The Dakar commitments came at the inception of the Obasanjo administration, civilian regime, and therefore policymakers were under international pressure to ensure Nigeria achieved these goals. This contributed to

the increase in public spending on education between 1999 and 2004 resulting in an increase in enrolment and reduction in gender disparity, especially in the primary schools.

In a study conducted by Gupta *et. al.*, (1999) on fifty transitional and developing countries, using the Ordinary Least Squares approach, their results show that higher public spending on primary and secondary education had a positive impact on the measure of education. Other factors like per capita income, urbanization, environment, and sanitation were also identified to affect enrolment rates and performance of the education sector. Ogbu and Gallagher (1991) and Anyanwu and Erhijakpor (2007), in similar studies on African countries (including Nigeria), showed a positive relationship exists between public spending on education and enrolment rates.

Extending the macroeconomic variables identified by Gupta et al (1999), Dauda's (2011) research on the impact of public expenditure and other macroeconomic uncertainties in Nigeria captured a wider number of explanatory variables. These variables are political instability, terms of trade shocks and unemployment. He found that public spending on education had a positive effect on enrolment rate, while macroeconomic uncertainties had a negative impact on enrolment rate. The study justified the impact of macroeconomic variables (which measure economic and social welfare), on enrolment rate.

Omotor (2004), in his study on Nigeria's education sector, examined the determinants of federal government spending using the Ordinary Least Squares (OLS) methods. The study showed that education investment has been unstable, reflecting instability in sources of government revenue. The result of his research recommended a development of multiple sources of government revenue to sustain consistent funding of the sector. Sustaining government spending, through multiple revenue streams, requires planning and justification of spending on education in Nigeria and other developing countries, educational services should be structured to meet the needs of the populace

Obi et al(2016), in a study on the impact of public education spending, recorded that public spending has a positive effect on education which was measured by primary enrolment rates using the Ordinary Least Square method. Included in this study was the effect of per capita income, urbanization and public spending on health, which had a weak positive relationship with primary enrolment rates.

Okeke(2014), on a study on government spending on health and education and their outcomes, using vector error correction mechanism for the period 1980 to 2010, showed that government health spending significantly reduced mortality rates among children under the age of 5 years, but had no significant effect on total school enrolment rate for the period.

Ude and Ekésiobi(2014), using fixed and random effect model, conducted a study on the impact of state-specific spending on social sectors with main emphasis on education in the 36 states across Nigeria. The result of the study showed that state spending on education had a significant impact on primary enrolment rates, secondary enrolment rates and adult literacy in the states.

Ojewumi and Oladimeji (2016), using the OLS approach, assessed the effect of capital and recurrent expenditure on education growth in Nigeria. The result showed that government expenditure had a negative effect on the education growth due to the prevalence of corruption in the sector. The study also showed that population growth had a strong positive effect on education.

Despite the varying findings, the majority of empirical literature focus on and agree that Nigeria's government should continue to increase spending on education to support enrolment rates, which affect economic growth.

Dauda (2009), using Johansen's co-integration approach, studied the effect of education investment on economic growth in Nigeria. His results show that a long-run relationship exists between government spending on education and expected economic growth. Odeleye (2012), conducted a similar study, dividing spending components into capital and recurrent expenditures; his findings show that recurrent expenditures, due to its direct effect on teacher welfare had a positive relationship with economic growth over capital expenditure, which is more prone to mismanagement.

The above studies show mixed findings, and it is evident that public spending is not the only determining factor when considering enrolment rates in Nigeria. Amakom and Iheoma(2014) conducted research on the impact of remittances on health and education in 18 sub-Saharan African countries using a two-stage Least Square approach. The results showed that in these countries (including Nigeria), remittances had a positive and statistically significant impact on

health and education outcomes (primary and secondary enrolment rates). This research also showed a positive and significant relationship exists between per capita income and primary school enrolment rates.

Olarinde (2015) assessed the relationship between population, immigration, human capital development and economic growth in Nigeria using the Ordinary Least Square approach. Findings from his study show that an increasing population places a strain on available limited resources and therefore has a negative relationship with human capital development.

3.3.2 Experience in Other Countries

Despite the emphasis on increasing public spending education in order to achieve higher enrolment, the results in the literature vary just as experienced in Nigeria. Some countries spend lower than regional averages but produce better outcomes than countries with higher spending percentage. Due to insufficient data, minimal studies have been carried out to establish the relationship between required resources (of finance being government spending) and education outcomes across specific countries. Most research in this area have focused on a micro-level approach and are particularly in the developed countries. Lately, comparable international measures are employed to assess the relationship between resources and outcomes across economies. Developing countries in most cases are limited to the quantity and quality of education offered. It is, therefore, important to consider the interaction between education allocation and an increase in school-aged children enrolled in schools. The primary gross and net enrolment rates are an easily available measure of education access. Education quality available in schools is usually subject to the amount of resources available in the schools.

International Association for Evaluation of Education Achievement (IEA) conducts cross-country research on education achievements to support the implementation of effective education policies. The most recent survey, the 2011 Trends in International Mathematics and Science analyses mathematics and science test scores for primary and secondary schools in 63 countries including few African countries like South Africa, Botswana, and Ghana. No African country was reported to have improved or performed better than the last report in the areas of Mathematics and Sciences. Furthermore, recent internationally accepted comparable indicators for measuring educational achievement is the Monitoring Learning Achievement Project and the Southern African Consortium for Monitoring Educational Quality (SACMEQ)

project in Africa (Nassor and Mohammed, 1998; Nkamba and Kanyika, 1998). Studies which adopted these indicators include a small sample size of countries and report cover a year period.

Due to the complexity of measuring learning outcomes and education quality, results from cross-country studies on quality in some countries have been inconsistent. Varying variables used are pupil-teacher ratio, the relative price of teachers, class size, international comparable test scores, primary school repetition, dropout rates to measure school survival rates and spending per pupil. These proxies were used to measure the efficiency of the education system of involved countries and were included as indicators to measure the progress towards the achievement of Dakar goals (Cavicchioni, 2001). Lee and Barro (1997), in their cross-country study on 214 countries, including a few African countries, measured education quality with the pupil-teacher ratio. Regressing primary school drop-out and repetition rate against a set of resource variables, the result showed a negative relationship between government spending and education achievement. The result of this study also showed that a positive relationship exists between pupil-teacher ratio and quality of education and efficiency within the education system.

Hanushek and Kinko (2000), conducted a cross-country comparison of 74 developed and developing countries, between 1965 and 1991, using the pupil-teacher ratio as a resource variable, the result established a positive relationship at no significance level. Woessmann's (2000) study made use of class size as the resource variable and established a positive relationship at a 1percent significance level, signifying that large class sizes are related to better achievement and enrolment rates in primary and secondary school.

The main limitation of most of these studies is their lack of developing country coverage, especially of Sub-Saharan Africa. Low-income countries were excluded in the study, and only South Africa was included from the African continent. Trends in International Mathematics and Science Study (TIMSS) covered 45 countries in total, only 11 of which were developing countries. These findings, coupled with the outcome of the test score studies, suggest that larger pupil-teacher ratios (McMahon, 1999) study look at the impact of resources on Grade 5 survival rates. This study shows that expenditure per pupil has a significant effect on primary school completion rates, as higher expenditure per pupil results in higher primary school completion rate.

Schultz (1995), in his cross-country study of primary education in 60 countries between the period 1965 to 1980, shows a negative relationship between the teachers' salaries and primary gross enrolment rate. The result suggests that increase in the relative cost of teachers will lead to a reduction in enrolment rate of primary schools. On the other hand, McMahon (1999) in a similar cross-country study showed that primary gross enrolment rate can positively be impacted if expenditure per pupil was held constant.

None of these studies included per capita income as a control variable in their analysis. Colclough and Lewin (1993), included per capita income in their analysis. Their result shows that public expenditure as a percentage of Gross Net Product does not have a significant impact on enrolment rates in the primary. These cross-country studies show that the relationship between enrolment rates and resource allocation(public expenditure) varies and are affected by other variables such as per capita income which also explains the difference between results in developing and developed countries (Hanushek, 1995).

The literature on developing country remains unclear on the effects of resources on outcomes. The lack of sufficient data on test scores and linkages to resources further makes it difficult to compare with the micro-based research on cross countries. Studies using quantity findings show a significant negative relationship exists between expenditure per pupil and the access. These studies do not establish a significant association between primary gross enrolment rate and resources expended (Colclough and Lewin 1993, McMahon 1999). These studies showed that in high-cost educational systems enrolment was low and in low-cost education systems, enrolment rate was high. However, these studies did not assess the impact of higher public expenditure on enrolment.

Studies that analysed the interaction between government spending on education, education outcomes, enrolment rate, and human capital development experience varying results regardless of the ratios used. These varying results create wildly different answers on the question of the relationship between public spending on education and enrolment rates in developing countries and Nigeria. Some of these studies also establish the importance of public spending on education as a channel for economic growth.

Public spending on education has been identified as a major driver for economic growth and development in all countries. Romer (1990), Barro (1991), and Lucas (1998) introduced the relevance of education and human capital development to economic growth. The result showed a positive relationship existed between the growth rate of per capita output and school enrolment rate. This study introduced the relevance of per capita income as an important variable to consider in public spending. The study also suggested that increasing spending on human capital development will address the economic and social welfare gap between developed and developing countries. To understand the link between human capital development and economic growth, Ramirez et al. (1997) and Blis and Klenow (2000) in a separate cross-country analysis of the channels show that there is a positive relationship between economic growth and spending in human capital.

The relationship between economic growth and public spending on education extends through years to bring about economic development. Afzal *et al.* (2010) in their study based on Pakistan supported that there is a positive long-run and short-run relationship between education and economic growth. These findings have been backed by Lin (2003) and Tamang (2011) in their studies on Taiwan and India, respectively. Yoshida (2000), using a correlation approach showed that a positive relationship existed between economic growth and public expenditure on education, energy, and transportation in Japan. He also discovered that the growth rate of demand for infrastructure was higher than the growth rate of per capita GNP in the early stage of development.

Studies on the relationship between public spending on education and education outcomes have made use of enrolment rates, completion rates, teacher-pupil ratio, international test scores performance and others. Some of which are studies conducted by Diamond (1989), Mingat and Tan (1992), Easterly and Rabelo (1993), and Schaddy (2002).

However, a different observation was made by McMahon (1999) and Wössmann (2001) who discovered a negative and significant relationship between per pupil expenditures and the primary gross enrolment rate and a positive and significant effect of total education expenditure as a proportion of GNP. McMahon suggested increasing public spending on education while holding per pupil expenditure constant, would lead to increase in gross enrolment rate in primary education. In a separate study, Deolalikar (1997) in a study conducted in Kenya, used household data and the result shows a positive and significant

relationship between school spending and primary school enrolment. None of these studies included income per capita as a distinct explanatory variable which is a key signal of the macroeconomic state of a country.

In order to capture the relevance of macroeconomic and social indicators, Colclough and Lewin (1993) introducing per capita income as an explanatory variable in a similar study, found that the positive relationship between public spending on education is not significant, justifying the importance of per capita income in explaining enrolment trend.

In a similar model study, Blejer and Khan (1984), using a cross-country data set, found that public spending, infrastructure, urbanization, demographic structure, income inequality, and per capita income showed to have a statistically significant relationship with enrolment rates.

Despite other macroeconomic variables relevant in understanding factors affecting enrolment rates, Baldacci *et al.*, (2003) and Gupta *et al.*, (2002) discovered that public spending is still a useful determinant of education outcomes. Their findings revealed that the effect of social expenditure on education outcomes is stronger in cross-section samples than when the time dimension is also added. However, according to Baldacci *et al.* (2003), African countries tend to achieve lower education outcomes for different levels of spending measured by expenditure on education as a ratio of GDP. Anand and Ravallion (1993), Psacharopoulos (1994) and Psacharopoulos and Patrinos (2004) supported the positive effect of social spending on social indicators basing their research on human capital theory. After correcting for quality, Gallagher (1993) found that public expenditure has a positive impact on educational attainment.

However, in a cross-country test on Malawi, Botswana, and Uganda, Al-Samarrai (2003) established a weak link between public spending and access to primary education. The results showed that as per pupil expenditure decreased, access to schools increased. The negative relationship between access and spending in Malawi and Uganda was explained for by the change in the educational services provided during the period under review. Contrasting the results, Deolalikar (1997) in his study on Kenya using household spending data observed that a positive relationship existed between spending on primary education and enrolment rate.

These studies vary in their report on the relationship between government spending and enrolment rates. This can be explained by the different measure used as a proxy for education outcomes and government spending, and the time frame in consideration. The result in some countries shows a negative relationship between governments spending and education outcomes such as completion rate, international test scores and gross enrolment (which is relevant to this study). In some countries, the result showed a positive relationship between government spending on education and enrolment in primary and secondary school. A common explanatory factor in most of the literature is the relevance of the efficient use of allocated fund and provision of necessary infrastructure to increasing enrolment rates.

As observed in the Nigerian experience, other explanatory variables besides government spending affect enrolment rates in developed or developing countries. Some of which were identified in the earlier literature are per capita income, population growth, and workers' remittances.

The Migration Policy Institute (2013) household survey, results show that household who receive remittances are able to spend more on human capital development like health and education. Therefore, contributing to increased education outcomes such as enrolment rates for such economies. Remittances, especially in countries with high immigration rate, have been shown to stimulate the economy through increasing household spending and desire for education (Aboulezz, 2015). Remittance increases household income and invariably the likelihood to spend on social welfare services like education. However, Kalaj(2015), on a study on Albania using a regression analysis based on proportional hazard model, discovered a negative relationship between remittance and male enrolment rate in the rural area. This was explained by the potential for more job options in labour-intensive roles making male children more attractive than female children as a way for families to quickly enrich themselves. The result showed a positive relationship between remittance and secondary school completion rate for females generally. This shows that remittances can also be a contributory factor in gender disparity and enrolment rates in developing countries like Nigeria.

Remittances provide an additional revenue stream for governments, enabling an increase in public spending on education. Acosta et al.(2008), in a cross-country study on 11 Latin American countries, showed that migrants' remittances had a positive impact on education.

Beyond the direct impact of remittances on public spending through the channel of government levies on foreign cash inflow, remittances also increase household's purchasing power and interest in educational services. Income has been identified at the household level as a major determinant of purchasing power and demand for education. Remittances in countries with high immigration and population growth contribute significantly to household income and their desire for education. Chernichovsky(1985), on his study of household characteristics in Botswana, showed that large families did not necessarily give up on educating their children but rather selected children to be educated and those to be involved in child labour in order to sustain the household income. Acosta(2006) and Calero et al.(2008), in separate studies using household data on El-Salvador and Ecuador respectively, focused on assessing the impact of worker's remittances on school enrolment rate. Their findings show that remittances had a positive effect on school enrolment rate and a reducing the effect on child labor. However, these studies did not include population and public spending in their analysis, limiting the model of analysis.

Population growth places pressure on publicly financed services like education and these increases the pressure on the government to fund social amenities that will sustain a favourable standard of living and reduce the rate of immigration due to its negative impact on the human capital of an economy. Population trends have therefore been established to have an influence on the economy in the medium or long term through the impact on government's spending, economic growth, years spent schooling and retirement age in a country (Boucekkine, Croix, and Licandro, 2002).

Using data on family and cohort size, Lam and Marteleto (2005) research showed in the case of Brazil that a negative relationship existed between school enrolment rate and growth in family size which could represent population growth. This was justified by a lower economic performance which led to reducing family income within 1977 to 1999. The introduction of number of siblings, parents' education, and school age population reflected that the negative effect was minimal and there was a positive relationship between parents' educational attainment and the enrolment rates implying that a highly educated population will lead to higher enrolment rates. Lam and Marteleto's findings are similar to the earlier work of Psacharopoulos and Yang(1991) where it was established that father's educational attainment was positively related to enrolment rates in Venezuela. The impact of a number of siblings

was insignificant in the case of Paraguay, where language, father's and family's income had a more significant impact on school enrolment rate.

Psacharopoulos and Patrinos (1997) in a study conducted based on living standard survey of Peru in 1991; it was observed that higher number of younger children within a family had a high negative impact on age-grade distortions (a measure of enrolment). This reiterates the role population growth through an increase in number of younger children in families play in determining the overall enrolment rates in a country. Pilarski and Simon(1979) elaborated on education outcomes by considering the impact of population growth using cross-country data. The countries were segmented in less developed and more developed countries. The result shows a negative effect of population growth on primary, secondary and tertiary enrolment rate.

The dynamics between household income and population size (family size is apparent in the case of Nigeria given a large informal sector of 70 percent (CBN, 2014) and reliance on government to subsidize the provision of education in order to achieve the Universal Basic Education for all school-aged population. The major limitations of these findings are the period of review which is years away and given the increase in female education, birth control, and technological improvement in most developing countries; demographics and family sizes and behaviours have changed.

3.4 Conclusion

These studies have shown varying results of the effect of public spending on enrolment rates in education. Public spending, in the case of Nigeria, has been shown to have both positive and negative effects on enrolment rates or education outcomes. This section also identified the significance of other macroeconomic variables, such as per capita income, population growth rate, and worker's remittance, on enrolment rates.

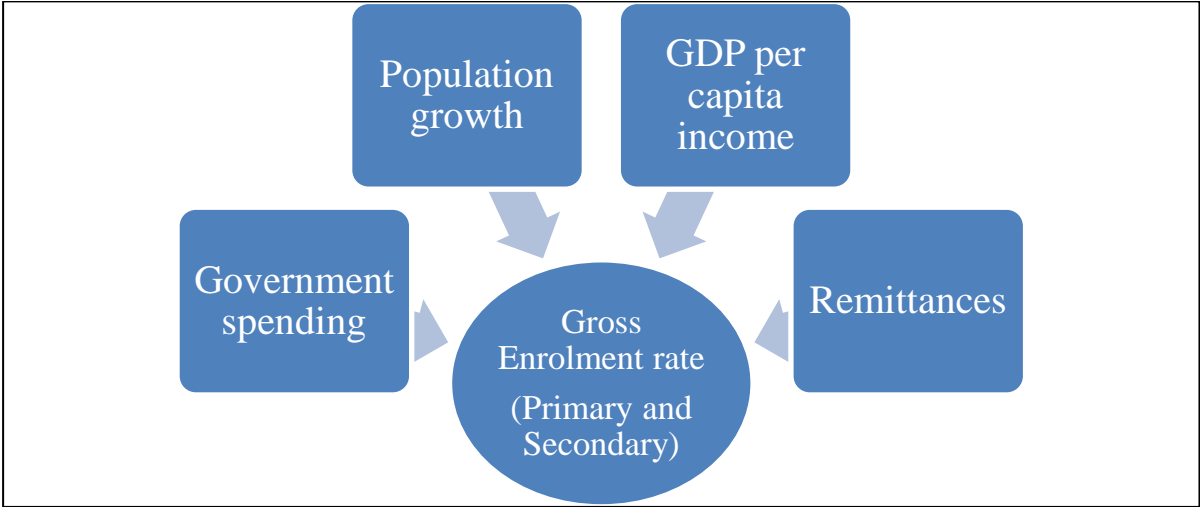
The majority of the study used panel data approaches, while a few of the empirical literature focused on Nigeria or other developing countries. This section identified a few gaps in the literature regarding the effect of public spending, as most studies available assessed the impact of public spending on education on economic growth, providing further evidence for the government to increase public spending on education.

Other socio-economic variables identified in the literature which this study did not consider due to insufficient data are father’s source of income (Sanguinety, 1983), and, language and culture (Rojas, 1999) which have a positive relationship and are statistically significant in determining enrolment rates.

3.5 Conceptual Framework of Public Spending on Education

The conceptual framework was developed based on the composition of Anyanwu and Erhijakhor (2007)’s approach. However, this study is an improvement of Anyanwu and Erhiajakhor’s work, as workers’ remittances, per capita income, and population growth rate are included in the model to present a robust interpretation and justification for public spending on education. These variables are newly introduced to these models based on the socioeconomic structure of Nigeria characterized by high immigration and steadily growing population rate. These variables according to literature have direct impacts on enrolment rates in primary and secondary education.

Figure 3.1: Conceptual Framework of Public Spending on Education in Nigeria



Source: Author’s Computation (2015)

Educational attainment is proxy by the gross enrolment ratio in primary and secondary education (the number of enrolled students as a percentage of the total number of school-age persons).

In line with the empirical literature, public spending is assumed to impact positively on primary and secondary school enrolment rates in Nigeria (Anyanwu and Erhijiakpo, 2007). Roberts (2003) has emphasized that demographic factors such as rural or urban location and population size affect education enrolment. Schultz (1995) and Baldacci et al. (2004)’s study

also emphasized these factors. Per capita income signifying the standard of living has a significant relationship with human capital development (Baldacci, 2004; Roberts, 2003) and workers' remittances also have a positive relationship with enrolment rate (Amakom and Iheoma, 2014).

3.5.1 Government Spending On Education and Worker's remittances

Government spending based on the empirical literature reviewed in this study, government spending has a positive relationship with enrolment rates (Anyanwu and Erhijakpor, 2007). Remittance on the other hand, aids government spending and has a relationship with enrolment rates through the household income channel. As household income rise through transfers received from non-residents of a country, the relative cost of enrolling children into school is reduced, willingness to enroll in basic education programme such as primary and secondary education increases, suggesting that higher income is associated with increasing enrolments (Colclough, 2010).

3.5.2 GDP Per capita income and Population growth

GDP per capita income is a key indicator of the general social well-being of a populace, however, is the actual value and economic significance is influenced by population growth rate. Population growth rate has a negative impact on per capita income while an increasing per capita income increases the likelihood for education and ultimately drives up government spending and enrolment rates (Mankiw et al, 1990). The relationship between per capita income and enrolment rate is also established to be statistically significant (Blejer and Khan, 1984). The relationship between population growth and enrolment rate is negative as increasing population places strain on available resources in developing countries (Barro, 1995).

3.5.3 Conclusion

Factors determining education outcome; enrolment rate is diverse and not only limited to public spending. The relationship between enrolment rate and other variables differ across regions or countries. This difference is as a result of the relationship between enrolment rate and other macroeconomic variables such as per capita income, workers' remittances, and population growth which are considered in this study to be of relevance. There is, however, no clear defining relationship between these variables in developing countries. This study

considers the impact of government spending on enrolment rate in the presence of such identified macroeconomic variables as contributory variable spending.

CHAPTER 4: RESEARCH METHODOLOGY

4.0 Research Approach and Strategy

The research method used is the case study approach. This approach allows for the exploration and understanding of particular complex issues, particularly when a holistic and in-depth investigation is required. Through analysis of cases under investigation, reconstruction, and keen observation we explain the outcome and process of education issues as regards all other variables like enrolment rate, per capital income, inflation, urban population that is affecting it. This research strategy adopts a regression analysis approach utilizing time series data collected on a yearly basis over a thirty-two year period, 1981 and 2013. The use of yearly data helps estimate dynamic causal effects and a period of thirty-two years is in line with the use of regression analysis which requires that the number of observations is many to produce reliable results.

4.1 Model Specification

The model is an improvement of Anyanwu and Erhjiakhor (2007)'s model which did not account for population growth rate and workers' remittances in Nigeria. The introduction of these variables is applicable in the case of Nigeria given the high number of Nigerians in diaspora, volume of remittances received annually and the population of the country as the large.

$$E_r = f(G_s, GDPPCI, WR, P)$$

Where E_r is the gross enrolment rates of secondary and primary schools (dependent variable), G_s is government spending on education as a percentage of GDP (independent variables). Control variables are GDPPCI is gross domestic product per capita income, WR is workers' remittances and P is population growth rate.

Equation One: model to explain the relationship between primary enrolment rate and government spending

$$\ln PRIENR = \beta_{0i} + \beta_1 \text{LOGGDPCA} + \beta_2 \text{LOGGOVSP} + \beta_3 \text{LOGPOPGR} + \beta_4 \text{LOGREM} + \varepsilon_i$$

Equation two: model to explain the relationship between secondary enrolment and government spending.

$$\ln SECENR = \beta_{0i} + \beta_1 \text{LOGGDPCA} + \beta_2 \text{LOGGOVSP} + \beta_3 \text{LOGPOPGR} + \beta_4 \text{LOGREM} + \varepsilon_i$$

Where:

- *lnPRIENR* represent natural log of primary schools gross enrolment rate
- *lnSECENR* represent natural log of secondary schools gross enrolment rate
- *LOGGDPCA* represent log of per capita income
- *LOGGOVSP* represent log of government spending on education
- *LOGPOPGR* represent log of population growth rate
- *LOGREM* represent log of workers' remittances
- ε_i is error term in the equation

4.2 Data Collection

The study used yearly secondary unadjusted data, spanning the period 1981 to 2013. This reduced the extent of measurement error and the problem of autocorrelation that is often associated with high-frequency data (Nwokoro, 2011). The data sources are financial releases and public statements of the Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, World Bank Databank, and UNESCO financial statistics database and publications. The research adopted a regression approach utilising time series data that was collected on a yearly basis over the period under review, beginning 1981 and ending 2013. The use of data effectively increased the number of observations to 32 which is in line with the provisions of regression analysis which requires that the number of observations is sufficient to produce reliable results.

This period is considered in this study due to the availability of sufficient data during the years 1981 to 2013 to make meaningful observations to improve on current empirical literature.

4.3 Justification for Variables

The macroeconomic factors included in this study were assessed through per capita income, population growth rate, and workers' remittances. These factors contribute to the effect government spending on education has on enrolment rates in primary and secondary schools in Nigeria. The table below shows a summary of the variables and the a priori expectations:

Table 4.1: Summary of variables used in regression model

Variable	A priori expectation	Research Support
Government Spending	+ (positive) -(negative)	Omotor (2004) Chude and Chude (2013)

GDP Per Capita Income	-(negative) + (positive)	Dauda, (2011) ,Colclough and Lewin (1993) Mankiw et al, 1990).
Remittances	+ (positive)	Calero et al(2008),
Population growth	- (negative)	Lam and Marteleto (2005) Olarinde (2015)

Source: Author's compilation

4.4 Analytical Techniques and Diagnostic Tools

4.4.1 Ordinary Least Square (OLS) Technique

The Ordinary Least Square (OLS) method was used to conduct the test. This method has been adopted in recent studies assessing the relationship between public spending and education outcome. The method supports the research question of ascertaining the relationship between public spending on education (and other identified independent variables) and primary and secondary school enrolment rates.

This method reduces the error sum of squares, it is unbiased, consistent, efficient and has minimum variance. It is also the easiest method for testing the multiple regression equations on the variables determining enrolment rate, based on non-correlation in the independent variables identified. However, the weakness of this approach lies in its inability to address the occurrence of causality between variables; to get around that, the focus is on analysing the relationship between the variables and including control variables like per capita income, population growth rate, and workers' remittances. OLS regression assumes that all variables included in the analysis are continuous variables and importance is attached to actual values (Hutcheson, 1999).

4.4.2 Stationarity Test

For the OLS technique to be effective in achieving the research objective, variables in the model will be tested for stationarity. Kwiatkowski, et al (1992), based on empirical evidence relating to macroeconomic variables, argue that stationarity exists in time series data when variables are differenced over a lag period. The explanation of stationarity was established as trend-stationarity in the event that unit root does not exist using the KPSS (Kwiatkowski-Phillips-Schmidt-Shin) approach.

Conducting a stationarity test is preliminary for the relevance of this research findings, and the augmented Dickey-Fuller (ADF) test was adopted based on its use in similar empirical

literature related to this study. The augmented Dickey-Fuller approach tests for unit root hypothesis in time series data.

$$\Delta y_t = \beta_0 + \beta_1 y_{t-1} + \beta_2 t + \varepsilon_t$$

The test is conducted in a statistical software on each variable of the model and interpretation of critical values are made based on the Dickey-Fuller table (1976).

4.4.3 Multicollinearity Test

Multicollinearity is explained as a condition whereby two or more variables in a model are related or affected by one another. This affects the ability of the model to accurately explain the relationship between the predictive variables and expected outcomes (Krishna, 1975)

The Variance Inflation Factor will be adopted to estimate the degree of multicollinearity in this model given this study is based on ordinary least square regression analysis. The outcome of the VIF will be considered alongside the correlation coefficients. The VIF is estimated as;

$$VIF = \frac{(SE)^2 (n-1) StdDev^2}{OSE^2}$$

Where SE is standard error of the variable, (n-1) represents number of observations, StdDev is the standard deviation of the variable and OSE is the standard error of the model.

4.4.4 Autocorrelation

Autocorrelation using the Durbin-Watson test was used to know whether the errors are uncorrelated with each other. A test of this nature is necessary since we need to avert instances i.e. making a type I error; rejecting the null hypothesis when we are supposed to be accepting it. The value of the Durbin-Watson test lies between 0 and 4. If the value is less than two, there is the presence of a positive autocorrelation and if the value is greater than two, there is negative autocorrelation. The Positive serial correlation is one in which an absolute error for a single observation leads to a higher likelihood of a positive error for another observation. Negative serial correlation implies that a good error for one observation increases the probability of an adverse error for another observation. No autocorrelation occurs if the value is statistically equal to two.

4.4.4 Test of Goodness of Fit (R²)

After the estimation of the parameters is completed and the regression line is established, it is important to establish the accuracy of the regression line given the sample observations of the

dependent variable (y) and independent variables (x). A measure of the goodness of fit is the square of the correlation coefficient, R^2 that shows the percentage of the total variation in the dependent variable that can be explained for by the independent variable. The value of R^2 increases at an addition of another independent (explanatory) variable(s). To assess the goodness of fit of a multiple regression equation R^2 – adjusted or R^2 adj is estimated. This shows the percentage of the total variation in the dependent variable that is explained by the independent variables.

4.4.5 Testing the Significance of the Coefficients

After estimation of the model, the parameters of the model are tested for their adequacy and statistical credibility. In this research, the t- ratios and the probabilities of the coefficient were used to test for the significance of the factors. The decision rule is that if the magnitudes of the t-ratios are greater than 2 (rule of thumb) and the probabilities less than 5percent the coefficients are significant (Mason and Perreault, 1991).

4.5 Limitations of Study

Data used in this study have been generated from development finance institutions and data relies on transparency in data collection process. Variables that have an impact on enrolment rate are numerous and this research has focused on only a few. There are limited data on the actual breakdown of government spending on education along the tiers of government involved in the provision of education and this research will focus on national government spending on education as a proxy for government spending education. The macroeconomic variables were lagged over quarterly periods to allow for trend stationarity given this study is based on ordinary least square regression analysis. This limits the ability of the model to conclusively explain the relationship between the variables and outcome.

4.6 Summary

The research adopted a case study data analysis utilizing time series of annual data over a 31 year period 1981 to 2013. The control variables were per capital income, urban population, and inflation rate. The study used E-views for data treatment and analysis. OLS regression is one of the major techniques used to analyse data and forms the basis of many other techniques, Rutherford, (2001). The usefulness of the method can be significantly extended with the use of dummy variable coding to include grouped explanatory variables (Hutcheson

and Moutinho, 2008)) and data transformation methods. OLS regression is particularly influential as it is relatively easy also to check the model assumption such as linearity, autocorrelation and the effect of outliers using simple graphical methods (Hutcheson, Graeme, and Sofroniou, 1999).

CHAPTER 5: RESEARCH FINDINGS AND ANALYSIS

5.0 Introduction

Using econometric methodology, this chapter discusses the findings of whether government expenditure on education influences the human capital development in Nigeria. To achieve these objectives, section 5.1 of this chapter focuses on the descriptive statistics of data employed in this study. In section 5.1 the descriptive statistics results are interpreted, 5.2 and 5.3 present diagnostic tests, correlation analysis is carried out to examine the degree of association among the variables. The econometric analysis and interpretation of the result are carried out in section 5.5, is the last section, summarizes the main findings of this study.

5.1 Description Statistics

In order to achieve the two specific objectives earlier stated for this study, the descriptive statistics of the data used was initially examined. The description statistics of data series gives information about sample statistics such as mean, median, minimum, maximum value, skewness, kurtosis and Jarque-Beta statistics.

5.1.1 Descriptive Statistics of Macroeconomic Variables and Primary Enrolment Rate

The descriptive statistics in Table 5.1 below shows that natural logarithm of remittances has the lowest mean rate of -0.24 while logarithm of gross domestic product per capita (GDPCA) exhibit the maximum mean rate of 6.23.

Table 5.1: Descriptive Statistics of Objective One

	LOGPRIENR	LOGGDPCA	GOVSP	POPGR	LOGREM
Mean	4.53	6.23	0.68	2.58	-0.24
Median	4.53	5.85	0.71	2.60	0.99
Maximum	4.72	7.99	1.40	2.80	2.56
Minimum	4.36	5.03	0.23	2.50	-4.60
Standard Deviation	0.09	0.82	0.26	0.09	2.46
Skewness	0.27	0.80	0.35	0.82	-0.59
Kurtosis	2.31	2.58	2.94	2.57	1.67
Jarque-Bera	1.04	3.81	0.64	4.02	4.32

Source: Author's Computation from E-view 7, 2016

Government expenditure on education and population growth rate exhibit mean values of 4.53, 0.68 and 2.58 respectively. The maximum values of the data series, log primary school enrolment, the logarithm of gross domestic product per capita, government expenditure on education, population growth rate and the logarithm of remittances are 4.72, 7.99, 1.440, 2.80 and 2.56 respectively. The skewness which is a measure of the departure of a distribution from symmetry presented in Table 4.1 indicates that almost all the series are positively skewed except logarithm of remittances that is negatively skewed.

Kurtosis result which measures the degree of peakedness of a distribution in relative terms to a normal distribution indicates that primary school enrolment, gross domestic products per capita rate, and remittances are platykurtic ($r < 3$). The Jarque-Bera statistics shows that all the series are normally distributed as shown in the Jarque-Bera statistics.

5.1.2 Descriptive Statistics of Macroeconomic variable and Secondary Enrolment rate

Table 5.2 below shows that all data series exhibit a moderate degree of consistency as their mean, and median values remain within the maximum and minimum values. The consistency of the data series is confirmed by the low standard deviation. Specifically, LOGPRIENR, LOGGDPCA, GOVSP, POOGR and LOGREM have a relatively low standard deviation of 0.09, 0.82, 0.26, 0.09 and 2.46 respectively. The skewness which measures the symmetrical nature of the data series shows that almost all the data series are positively skewed except LOGREM which is negatively skewed.

Table 5.2: Descriptive Statistics of Objective Two

	Mean	Max.	Min.	Std Dev.	Skewness	Kurtosis	Median	J-B	OBS
LOGSECENR	3.33	3.78	2.83	0.24	0.09	2.52	3.29	0.36	33
LOGGDPCA	6.23	7.99	5.03	0.82	0.80	2.58	5.85	3.81	33
GOVSP	0.68	3.78	0.23	0.26	0.35	2.94	0.71	2.94	33
POPGR	2.58	2.80	2.50	0.09	0.82	2.57	2.60	4.02	33
LOGREM	-0.24	2.56	-4.60	2.46	-0.59	1.67	0.99	4.32	33

Source: Authors Computation from E. View 7, 2016

The Kurtosis result shows that all the series are platykurtic as indicated by less than 3 value with exception GOVSP that is close to three.

5.2 Stationarity Test

The table below shows the summary of the stationarity test result conducted on the variables included in the model. The statistical software used a combination of ADF and KPSS approach.

Table 5.3: ADF and KPSS test

	<i>Df</i> t Stat (Const+Trend+Trend^2)	STATIONARY?
LOGSECENR	-4.5	TRUE
LOGPRIENR	-9	TRUE
GOVT SPENDING	-8.8	TRUE
LOGGDPPERCAPITA	-6.9	TRUE
POP GROWTH	-8.9	TRUE
LOGREM	-7.5	TRUE

At 5% significance level.

Source: Authors Computation From Excel (using ADF and KPSS assumptions)

Using DF t-distribution table of critical values, the null hypothesis of a unit root is rejected and the KPSS assumption of trend-stationarity is accepted for all variables included in the model. All variables are stationary under the scenario of constant, time trend and squared time trend (as recommended in KPSS) using a lag period of 1.

5.3 Multicollinearity Test

The degree of multicollinearity test was conducted on the predictive variable using the Variance Inflation Factor, results are displayed below;

Table 5.4: Variance Inflation Factor Values

	Variance Inflation Factor value
LOGGDPCA	5.2649
GOVSP	1.1044
POPGR	4.3529
LOGREM	1.6042

Source: Author’s computation

According to Kutner et al(2004), the general rule is if VIF of a variable is greater than 10, then a high multicollinearity exists while between 1 and 5 indicates a moderate correlation.

From the VIF estimates, the LogGDP per capita income and Population growth have a value of 5.2649 and 4.3529. This can be explained by the impact of the population in estimating the value of per capita income of a country. The other variables, government spending, and logRemittance show a weak correlation relationship.

5.4 Conclusion

An assumption usually made in the econometric analysis and testing for the normality or asymptotic property of data series is normality. This becomes necessary since most probability distribution and other test statistics, such as t, f, and χ^2 are based on this assumption. From Table 5.1 and 5.2, all data used in this study are normally distributed at either 1percent or 5percent level.

5.5 Estimation Results

5.5.1 Correlation Analysis

Correlation analysis is to measure the strength or degree of linear association between two variables. There are significant differences between regression and correlation analysis. Regression analysis treats the dependent and explanatory variables in an asymmetric manner, assuming the dependent variable is statistically random. Correlation analysis, however, treats the two variables as symmetrical and there is no distinction between the dependent and explanatory variables.

One of the basic assumptions of correlation analysis is that there is no exact multicollinearity among the explanatory variables. The presence of perfect multicollinearity in renders coefficients indeterminate and their standard errors become infinite, Results in Tables 5.5 and 5.6 show there is no multicollinearity among the variable as shown by low or moderate relationships.

5.5.2 Correlation Analysis of Objective One

Table 5.5 below presents the correlation analysis of objective one. The result shows that gross domestic product per capita has a weak negative association with primary school enrolment.

Table 5.5: Correlation Analysis of Objective One

	LOGPRIENR	LOGGDPCA	GOVSP	POPGR	LOGREM
LOGPRIENR	1.0000				
LOGGDPCA	-0.0021	1.0000			
GOVSP	0.6186	0.0569	1.0000		
POPGR	-0.1504	0.8468	-0.0795	1.0000	
LOGREM	-0.2580	0.4192	0.0668	0.1308	1.0000
P-Value	0	0.0125	0.0001	0.0148	0.0017

Source: Authors Computation from E-view 7, 2016

Government expenditure on education exhibits a moderate positive association with primary school enrolment in Nigeria and this is statistically significant at 5%. This is supported in literature by emphasis on basic education programmes implemented by government over the period in review. The government has increased allocation to education with the clear target of increasing enrolment in primary schools and this positive and statistically significant relationship explains the impact of spending on enrolment rates.

On the other hand, population growth rate, per capita income and remittances have a weak negative association with primary school enrolment. The interaction between primary school enrolment rates, population growth rate and per capita income is weak and statistically significant due to correlation existing between population growth rate and per capita income.

The relationship between remittances and primary school enrolment rates is negative but the variable remains statistically significant in the determining enrolment rates into primary school. The empirical literature has shown that majority of remittances received into the country are diverted into funding secondary education level due to the inadequate provision from the government at this educational level.

5.5.3 Correlation Analysis of Objective Two

Table 5.6 below presents the correlation analysis of objective two. The result shows that government spending on education (GOVSP) has a weak inverse relationship with secondary

school enrolment in Nigeria. Gross domestic product per capita has a strong positive association with secondary school enrolment. Interestingly, population growth rate and remittances exhibit a moderate positive association with secondary school enrolment in Nigeria.

Table 5.6: Correlation Analysis Report of Objective Two

	LOGSECENR	LOGGDPCA	GOVSP	POPGR	LOGREM
LOGSECENR	1.0000				
LOGGDPCA	-0.0777	1.0000			
GOVSP	0.6965	0.0569	1.0000		
POPGR	0.6030	-0.0795	0.8468	1.0000	
LOGREM	0.5445	0.0668	0.4192	0.1308	1.0000
P-Value	0.0490	0.0360	0.0452	0.0232	0.0124

Source: Authors Computation from E-view 7, 2016

The negative relationship between government spending and secondary enrolment rates is explained for by emphasis placed on primary school education over secondary education in the country. Worker’s remittances, per capita income and population show a positive relationship which explains the interaction between general social well-being and willingness to pursue an education in the secondary schools. Higher per capita income, which is correlated with population growth, depicts additional disposable income for families to pursue secondary education which comes at a higher tuition and cost than primary education.

This explains the existing trend within the sector that the general wellbeing of the populace determines how attractive secondary education would be to families. As a result, secondary enrolment rates can increase with an increase in population growth rate, per capita income and workers’ remittances.

5.6 Regression Analysis

Regression analysis is the estimation or prediction of the mean value of the dependent variable on the basis of the observed fixed values of the explanatory variables.

5.6.1 OLS Regression Analysis of the Impact of Government Spending on Education on Primary School Enrolment in Nigeria

Table 5.7 presents the Ordinary Least Square result of primary school enrolment model; proxy by (LOGPRIENR). Here, LOGPRIENR is expressed as a function of the natural logarithm of gross domestic per capita (LOGGDPCA), government expenditure on education (GOVSP), population growth rate (POPGR), and the natural logarithm of workers' remittances. The coefficient of determination (R^2) shows that 58percent of the changes in the dependent variable can be explained by the explanatory variables.

Table 5.7: OLS RESULT ON OBJECTIVE ONE				
Objective One: Impact of Government spending on primary school enrolment				
Independent Variable	Dependent Variables: LOGPRIENR			
	Coefficient	Std Error	t-Statistics	Prob
LOGGDPCA	0.0941**	0.0352	2.6698	0.0125
GOVSP	0.2052***	0.0467	4.3892	0.0001
POPGR	-0.6981**	0.2686	-2.5989	0.0148
LOGREM	-0.0214***	0.0061	-3.4806	0.0017
C	5.6052***	0.5183	10.8129	0.0000
Diagnostic statistics				
R^2	0.58			
Adj R^2	0.52			
F-Stat	9.77			
Prob (F-Stats)	0.00			
Durbin-Watson	1.96			

Source: Authors Computation from E-View 7, 2016

Note: ***, **, * denotes significance at 1%, 5% and 10% respectively

LOGGDPCA, GOVSP, POPGR, LOGREM. The probability of F-statistics of 0.00 shows the model is adequately specified. The Durbin-Watson statistics of 1.96 also indicates the absence

of serial autocorrelation. The result presented above shows that the coefficient of gross domestic product per capita is positively related to primary school enrolment and statistically significant at 1percent level. This implies that holding other variables constant, a percentage change in Gross Domestic Product will result in 0.09 percentage change in primary school enrolment. This is consistent with our a priori expectation that increased output will lead to increase enrolment of primary school pupils.

There is also the positive and significant relationship between government spending and primary school enrolment. Holding other variables constant, a percentage change in government expenditure will result in a 0.2 percentage change in primary school enrolment. This is true of Nigerian situation, in view of billions of naira expended in the launch and implementation of Universal Basic Education in Nigeria during the early years of the return to democratic rule. Apart from the Federal Universal Basic Education, states of the federation in Nigeria also launched and implemented State Universal Basic Education (SUBEB). There was also huge capital expenditure on the building of “Almajari” schools in the northern part of the country. There is no doubt that these expenditures have impacted positively in the increase in primary school enrolment in Nigeria. This implies that increasing government spending in the education sector will significantly improve the enrolment rates into the primary schools as more infrastructure is provided to support higher enrolment rates.

The coefficient of population growth rate has a negative and statistically significant impact on primary school enrolment in Nigeria. Holding other variable constant, a percentage change in population growth rate would culminate to about 0.69 percentage decline in primary school enrolment. This finding is inconsistent with our a priori expectation because all things being equal, an increase in population is expected to result in an increase in primary school enrolment. However, this unexpected inverse relationship observed could be as a result of uncontrollable birth rate especially among the illiterates in Nigeria.

Another interesting finding of this study is the negative and significant relationship between remittances and primary school enrolment. This is contrary to our a priori expectation, but it should be noted that there are reports that most migrant remittances to the South East are used

to start-up micro enterprises, leading to increased out-of-school children who resort to apprenticeship without formal primary school enrolment.

5.6.2: OLS Regression Analysis of the Impact of Government Spending on Secondary School Enrolment in Nigeria

Table 5.8: OLS RESULT ON OBJECTIVE TWO				
Objective Two: Impact of Government spending on Secondary school enrolment				
Independent Variable	Dependent Variables: LOGSECENR			
	Coefficient	Std Error	t-Statistics	Prob
C	0.8709	1.2461	0.6989	0.4904
LOGGDPCA	0.0787	0.0847	0.9291	0.3608
GOVSP	-0.0855	0.1123	-0.7615	0.4527
POPGR	0.7884	0.6457	1.2210	0.2323
LOGREM	** 0.0395	0.0148	2.6738	0.0124
Diagnostic statistics				
R ²	0.60			
Adj R ²	0.54			
F-Stat	10.54			
Prob (F-Stats)	0.00			
Durbin-Watson	1.93			

Source: Authors Computation from E-View 7, 2016

Note: ***, **, * denotes significance at 1%, 5% and 10% respectively.

Table 5.8 presents the Ordinary Least Square result of objective two. The dependent variable (LOGSECENR) is expressed as a function of LOGGDPCA, GOVSP, POPGR and LOGREM. The result showed that the coefficient of determination (R^2) which measures the goodness of fit is 0.60, meaning that 60percent of the variation in the dependent variable LOGSECENR can be explained by the explanatory variables. The result indicates that the model has a good fit. The model adequacy is also shown by the F-statistics and probability of F-statistics of

10.54 and 0.00 respectively. The Durbin-Watson statistics of 1.93 indicates the absence of serial autocorrelation.

The coefficient of Gross Domestic Product per capita has a positive but statistically insignificant relationship with secondary school enrolment. This is in consonance with our a priori expectation. However, government spending on education has a negative relationship with secondary school enrolment. This can be explained by the federal government's high commitment to the Universal Basic Education which focuses on primary education over secondary education.

Similarly, the coefficient of population growth rate also exhibits a positive but statistically insignificant effect on secondary school enrolment. Surprisingly, government spending has a negative but statistically insignificant effect on secondary school enrolment in Nigeria. This is not strange to keen watchers of the educational system in Nigeria. As a result of the unprecedented high level of illiteracy among the teeming populace, governments of all level have directed attention to primary school at the neglect of secondary school.

Meanwhile, a positive and statistically significant relationship is observed between remittances and secondary school enrolment. This is consistent with our a priori expectation and several prior studies in Nigeria. Most Nigerians in diaspora remit funds to their relatives, who channel such income into smoothening consumption of private and public goods relevant to building human capital and in some cases such fund has been diverted to the establishment of private secondary schools which government has neglected. Remittances contribute to increase in human capital by providing the income required to keep younger members of a household in school rather than involving in child labour, street hawking in an effort to support individual household income. For example, evidence from this study suggests that receiving remittances leads to increased secondary school enrolment. However, the increased education would likely have little effect on domestic economic growth if it makes migration and search of greener pasture more appealing to the educated labour force.

5.7 Summary

This section presented the result and analysis of the regression model using Eviews. Preliminary tests on the data were conducted using correlation analysis, serial correlation analysis, and the Durbin-Watson test. The Durbin-Watson test was applied to know if the errors possible in the sample are uncorrelated or serially correlated. The result showed a positive relationship between government spending and primary enrolment rate but a negative relationship with secondary school enrolment rate. In both primary and secondary school, enrolment rate had positive relationships with per capita income. The relationship with population growth and workers' remittances was mixed.

Primary enrolment rates had a negative relationship with worker's remittances while secondary school education had a positive relationship with remittance, driven by how remittances were utilized. There was a negative relationship between population growth and primary school enrolment rate while a positive relationship exists between secondary school enrolment rate and population growth. These results are based on the model used in the analysis which is different from some of the initial studies considered and therefore it is subject to further analysis and the inclusion of other control variables.

CHAPTER 6: RESEARCH CONCLUSIONS & RECOMMENDATIONS

6.0 Research Conclusions

Increasing government expenditure on education is a major discussion amongst policy makers and stakeholders in Nigeria's education sector. The empirical literature on this subject is not comprehensive enough to justify actions required and the expected impact. This paper conducted a quantitative research and provides further clarification on the relationship between government spending and enrolment rates considering other explanatory variables such as per capita income, workers' remittances, and population growth. It supports government increasing spending on education. The evidence is stronger in the case of primary education.

The study reveals that education funding in Nigeria experienced a significant increase at the transition to democratic government and during past civilian rule before 1999. The result of empirical analysis conducted supports literature that there is a statistically significant positive relationship between government spending on education and primary school enrolment rate. A negative relationship exists between public spending and secondary school enrolment rate. This is explained for by the government's emphasis on the free primary education program and lower conversion rate into secondary schools due to higher interest in informal education and apprentice over continuing education. Beyond the interest in apprenticeship, secondary school enrolment rates decline with increasing government spending as a result of the fee-paying system. The increase in government spending on education majorly goes towards higher salaries as more qualified staff is required in secondary schools over primary schools and as a result, fees are collected to support public spending

Other factors; workers' remittances and population growth also affect the level of enrolment rates in primary and secondary schools. Workers remittances, population growth and per capita income has a positive relationship with secondary enrolment rates while primary enrolment rate has a negative relationship with population growth, workers remittances but a positive relationship with per capita income.

The study revealed a positive relationship between Nigeria's per capita income which is a reflection of social welfare and primary and secondary enrolment rates. This, however, does

not reflect equity but establishes that a population with high social welfare will result in more children going to school. Education, in turn, leads to higher productivity which will lead to increase in per capita income through an increase in GDP. Population growth was established to have a negative relationship with primary enrolment but positive relationship with secondary enrolment rate. Based on the research findings, it is recommended that government increase allocation to education, institutionalize monitoring and utilization of fund allocated. The various tiers of government should exhibit a higher level of transparency in the use of the fund and reduce wastage within the sector.

6.1 Policy Implications and Recommendations.

The policy implication of this study is that it further supports increasing government spending on education with the goal of achieving higher education outcomes despite any given macroeconomic stance. Nigerian governments must give priority to education financing and provision of social services. A significant percentage of public expenditure should be allocated consistently to the education sector. The government should ensure the provision of infrastructures such as electricity, water, sanitation, and transportation to support economic growth and ultimately cater for the high population and increase per capita income. The existence of basic infrastructure will favour sectors to grow and increase the general social wellbeing of the citizens, this, in turn, will encourage higher enrolment rates in primary and secondary education as seen by the positive relationship between per capita income and enrolment rates. In order to sustain economic growth, the government should increase awareness on the importance of pursuing beyond the basic primary education programme. This will reduce transition into informal training schools and lead to higher enrolment in secondary education. Most educational policies are justly intended, but poor planning and management often interrupt these policies in ensuring high enrolment rates in primary and secondary schools in Nigeria.

Proper budgeting should be done before implementation of any educational policy. The demographics of each state has to be included during budgeting to reduce the strain on government schools and ensure families are not incentivized to allow their children in child labour due to the unattractiveness of education. Moreover, since educational policies usually translate into plans before implementation, studies have shown that the costs of implementation are often not accounted for or inadequately provided. This can lead to a delay in realization of policy objectives and goals and should be considered in the budgeting phase.

Lack of adequate and reliable data has affected efficient implementation. Private and public sectors should invest in building a reliable and comprehensive database to aid policy implementation and research.

The problem of misappropriation of fund, corruption, and poor work ethics has enraged the education sector in Nigeria for years. Agencies such as Economic and Financial Crimes Commission (EFCC) and Independent Corrupt Practices, and other Related Offences Commission (ICPC) instituted to manage misdemeanors in the public service should be empowered to probe financial misappropriations. The introduction of the treasury single account to handle all revenue collection on behalf of agencies and parastatals will limit the autonomy and financial discretion formerly assigned to ministers and commissioners.

The number of Nigerians residing outside the country has continued to increase with the growth in population, the government should continue to provide and enable good financial systems that encourage such immigrants to continue to support their families in the country. These remittances are required especially in the secondary education to increase the creation of schools and willingness of families to transit from non-fee-paying primary education to the fee-paying secondary education.

Finally, the private sector's involvement in the provision of education has grown over the years but the bureaucracy and bottleneck in approval process have hampered growth and healthy competition within private schools to improve on quality. The approval process for private schools should be simplified to increase attractiveness to potential investors.

CHAPTER 7: RECOMMENDATIONS FOR FUTURE RESEARCH

This study provides an opportunity for future research in different areas as regards government financing and spending, efficient mechanism or channel for public spending on education to ensure higher enrolment rates in highly populated countries like Nigeria. This study can be developed through different ways. Nigeria in the last few years has been focusing on diversification of the economy to reduce reliance on oil exports. Further analysis around a more robust source of government income will support efficient budgeting and prioritization of expenditure on human capital like education.

Few country specific researches have focused on the relationship between government spending and enrolment rates in Nigeria and this is due to insufficient data on key variables for consideration. Studies focusing on economies with sufficient data collection system and which display similar socio-economic and demographics structure like Nigeria could be useful in recommending implications for policy makers in Nigeria. There is little empirical literature assessing the mix impact of government spending and social welfare indicators on enrolment rates in primary and secondary schools in Nigeria. Given the positive and negative relationships of these variables with enrolment rates, few studies have been done to focus on them in Nigeria.

The impact of regulatory bodies on enrolment rates has not been emphasized in the literature. A number of the education regulatory bodies exist to achieve the country's national development goals on literacy but most research has focused on the corruption and mismanagement within these bodies rather than assess the impact they have or could have on enrolment rates. This can be done through case studies on specific education related agencies or parastatals within the country. More research can be done in the area of inequitable public spending and enrolment rates across the country. These will provide insight into the political and social factors affecting enrolment in primary and secondary schools in Nigeria. This study adequately provides room for further research on the impact of public spending on enrolment rates beyond the case of Nigeria to countries with similar socio-economic structure.

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APPENDICES

Table 6: DESCRIPTIVE STATISTICS OF PRIMARY ENROLMENT RATE

	LOGPRIENR	LOGGDPCA	GOVSP	POPGR	LOGREM
Mean	4.530316	6.232770	0.680000	2.587879	-0.240142
Median	4.535391	5.858733	0.710000	2.600000	0.993252
Maximum	4.725705	7.995010	1.400000	2.800000	2.568022
Minimum	4.362461	5.030895	0.230000	2.500000	-4.605170
Std. Dev.	0.099642	0.822366	0.269235	0.099240	2.462929
Skewness	0.271925	0.807442	0.352488	0.828588	-0.591180
Kurtosis	2.319943	2.588369	2.943245	2.577903	1.678838
Jarque-Bera	1.042595	3.818778	0.687792	4.021046	4.322235
Probability	0.593750	0.148171	0.709003	0.133919	0.115196
Sum	149.5004	205.6814	22.44000	85.40000	-7.924671
Sum Sq. Dev.	0.317715	21.64117	2.319600	0.315152	194.1126
Observations	33	33	33	33	33

Table 7: CORRELATION ANALYSIS OF PRIMARY ENROLMENT RATE

	LOGPRIENR	LOGGDPCA	GOVSP	POPGR	LOGREM
LOGPRIENR	1.000000	-0.002194	0.618647	-0.150496	-0.258001
LOGGDPCA	-0.002194	1.000000	0.056973	0.846899	0.419274
GOVSP	0.618647	0.056973	1.000000	-0.079532	0.066889
POPGR	-0.150496	0.846899	-0.079532	1.000000	0.130882
LOGREM	-0.258001	0.419274	0.066889	0.130882	1.000000

Table 8: OLS RESULT ON PRIMARY ENROLMENT

Dependent Variable: LOGPRIENR

Method: Least Squares

Date: 07/07/16 Time: 13:40

Sample: 1981 2013

Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.605260	0.518383	10.81297	0.0000
LOGGDPCA	0.094177	0.035275	2.669806	0.0125
GOVSP	0.205223	0.046756	4.389257	0.0001
POPGR	-0.698110	0.268615	-2.598927	0.0148
LOGREM	-0.021441	0.006160	-3.480665	0.0017

R-squared	0.582715	Mean dependent var	4.530316
Adjusted R-squared	0.523103	S.D. dependent var	0.099642

S.E. of regression	0.068811	Akaike info criterion	-2.376188
Sum squared resid	0.132578	Schwarz criterion	-2.149445
Log likelihood	44.20710	Hannan-Quinn criter.	-2.299896
F-statistic	9.775121	Durbin-Watson stat	1.961278
Prob(F-statistic)	0.000044		

Table 9: DESCRIPTIVE STATISTICS OF SECONDARY ENROLMENT

	LOGSECENR	GOVSP	LOGGDPCA	POPGR	LOGREM
Mean	3.334673	0.680000	6.232770	2.587879	-0.240142
Median	3.295837	0.710000	5.858733	2.600000	0.993252
Maximum	3.780547	1.400000	7.995010	2.800000	2.568022
Minimum	2.833213	0.230000	5.030895	2.500000	-4.605170
Std. Dev.	0.244948	0.269235	0.822366	0.099240	2.462929
Skewness	0.092850	0.352488	0.807442	0.828588	-0.591180
Kurtosis	2.521630	2.943245	2.588369	2.577903	1.678838
Jarque-Bera	0.362068	0.687792	3.818778	4.021046	4.322235
Probability	0.834407	0.709003	0.148171	0.133919	0.115196
Sum	110.0442	22.44000	205.6814	85.40000	-7.924671
Sum Sq. Dev.	1.919990	2.319600	21.64117	0.315152	194.1126
Observations	33	33	33	33	33

Table 10: CORRELATION ANALYSIS OF SECONDARY ENROLMENT RATE

	LOGSECENR	GOVSP	LOGGDPCA	POPGR	LOGREM
LOGSECENR	1.000000	-0.077791	0.696589	0.603029	0.544528
GOVSP	-0.077791	1.000000	0.056973	-0.079532	0.066889
LOGGDPCA	0.696589	0.056973	1.000000	0.846899	0.419274
POPGR	0.603029	-0.079532	0.846899	1.000000	0.130882
LOGREM	0.544528	0.066889	0.419274	0.130882	1.000000

Table 11: OLS RESULT ON SECONDARY ENROLMENT RATE

Dependent Variable: LOGSECENR

Method: Least Squares

Date: 07/07/16 Time: 13:58

Sample: 1981 2013

Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.870959	1.246128	0.698932	0.4904
GOVSP	-0.085598	0.112395	-0.761579	0.4527
LOGGDPCA	0.078785	0.084796	0.929110	0.3608
POPGR	0.788438	0.645716	1.221028	0.2323

LOGREM	0.039594	0.014808	2.673827	0.0124
R-squared	0.600980	Mean dependent var	3.334673	
Adjusted R-squared	0.543977	S.D. dependent var	0.244948	
S.E. of regression	0.165412	Akaike info criterion	-0.622025	
Sum squared resid	0.766114	Schwarz criterion	-0.395281	
Log likelihood	15.26341	Hannan-Quinn criter.	-0.545733	
F-statistic	10.54299	Durbin-Watson stat	1.931145	
Prob(F-statistic)	0.000024			