Empirical Analysis of the impact of Kaduna State Government Expenditure on Education on Human Capital Development

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Abstract

This study empirically examines the impact of government expenditure on education on human capital development in Kaduna State over the last 15 years (2000-2015) using econometrics models with Ordinary Least Square (OLS) technique. The paper test for presence of stationary between the variables using Augmented Dickey Fuller (ADF) and autocorrelation using Durbin Watson statistics. The results reveal all the variables were not stationary in levels except capital expenditure (CE) and Primary schools enrolment (PE) while the rest were stationary at second difference. DW shows presence of serial correlation. The regression results indicated that government expenditure on education have significant impact on human capital development in Kaduna State. It could therefore be recommended that the state government should increase its capital and recurrent expenditure on education, ensure proper management and monitoring of funds made for the teachers, constant payment of teachers’ salaries and allowances in a manner that it will raise the state production capacity. The state should construct addition primary and secondary schools across the state, with modern facilities, and employ more teachers.

Keywords: Current Expenditure, Recurrent Expenditure, Education, Human Capital, Enrolment

1. Introduction

Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. Educational methods include storytelling, discussion, teaching, training, and directed research. Education frequently takes place under the guidance of educators, but learners may also educate themselves (Dewey, John (1944) [1916]). Education can take place in formal or informal settings and any experience that has a formative effect on the way one thinks, feels, or acts may be considered educational. The methodology of teaching is called pedagogy. Education guarantees the avenue for national stability, security, unity, and prosperity which is only one but vital aspect of Capital formation in form of developing the quality and quantity of human resources that will be available to an economy as the ingredient necessary for continuity, sustenance, and development. In the third world economies public expenditure is the most important channel through which the development of human resources is achieved.

Any expenditure by the government should be on projects and programmes that will help reduce the inequality of income, improve the welfare of the citizens of the country (Likita 1999). In order for the expenditure to make an impact on the life of the citizens the spending should firstly be economical. This is because economic resources are scarce; care must be taken in planning and executing public expenditure on projects to reduce delays due to increasing cost.

The importance of mental and physical efforts put towards an economic activity cannot be over emphasized, more especially in Kaduna state, in which the state being the most populous and possessing many educational institutions in Nigeria can only maintain its position as it continues to develop its human capital. Kaduna is one of the education centers in Nigeria, with many colleges and the most recognized university in Nigeria. They include: Nigerian Defence Academy, Ahmadu Bello University, Zaria, NuhuBamalli Polytechnic, Zaria, Kaduna State University, Federal Polytechnic, Kaduna, Nigerian College of Aviation Technology, Zaria, College of Education GidanWaya-Kafanchan, ShehuDikris College of Health Health Sciences And Technology-Makarfi, College of Nursing-Kafanchan, Institute of Leather Research-Zaria, Federal College of Education-Zaria, Federal cooperative collage, Kaduna, National Open University of Nigeria, National Water Resources Institute, Kaduna, Nigerian Institute of transport technology, Zaria, National Teachers Institute, Kaduna and School of Midwifery Kaduna. With these numbers of institutions in the state, inappropriate and inadequate human capital formations erode the potentials of state to compete in Nigeria and worldwide. Without education, a nation has no future. Kaduna State and Nigeria needs to secure that future by investing heavily in education from primary to tertiary level.

Generally, the Northern part of Nigeria is well-known to be dis-advantaged in education. Successive administrations over the years exhibited a lack of concern, even poor vision by de-emphasising education. Any leader who would transform that part of the country especially must start with education. In an attempt to promote equity in the polity, such unproductive ideas as “Federal Character” and “quota system,” were introduced into Nigeria’s education system and also enshrined in the constitution. That, notwithstanding, a huge gap still exists between the North and the South and how to close that yawning gap remains a major challenge, which only a leader with vision can tackle.
To every economy under-education of various kinds is a serious barrier to development and this posse the need to continuously increase spending of educational funds in the private and public sectors. Apart from being heavily dependent on federal allocation as the source of the state government revenue, there is increasing serious neglect of agricultural modernization and expansion, moreover there is slow pace of substituting non indigenous manpower in the effort of the state government in checking unemployment among the state indigenes. Therefore, the problem which this research work is attempting to look into is basically the extent to which increasing number of population of the state is tallying with the increasing number of its human capital development that is sponsored by government. This paper is organized into five sections. The general background to the study is in section one. We reviewed related literature and theoretical framework in the second section, the third section deal with methodology while the fourth section is the presentation and analysis of result and finally, conclusion and recommendations in section five.

Objective of the study

The major focus of this research is to empirically analyze the impact of Kaduna state government expenditure on human capital development.

2. Literature Review and Theoretical Framework

2.1 Literature Review

Human Capital is asserted to be the most important element of success in business today. Developing human capital requires creating and cultivating environments in which human beings can rapidly learn and apply new ideas, competencies, skills, behaviors and attitudes. Human capital represents mental effort by workers which results from investment through education and training. Classical economists such as Adam Smith quoted in Eltis (1984) and Marshall (1930) commented on the role that human capital development could play in economic growth of a nation. They believed that through education human capital needs in the areas of construction and heavy industries can be provided. To highlight the importance of human capital Adoeye and Chete (2008) explained that the ability to create wealth is more important than the wealth itself. This is because it guarantees the substitution in case the wealth lost, thus, the importance of technology and knowledge accumulated in human capital.

Omankhanlen, Joshua, Emmanuel and Uchechukwu (2014) investigate the Nigerian government Expenditure on Human Capital Development. This study seeks to evaluate how efficient government spending on human capital development in Nigeria has been with particular emphasis on the education component of human capital development. The unit root test was conducted to determine whether the variables are stationary or not using Phillip Peron test. The Phillip Peron test was used to efficiently account for the stochastic trends in the data series. In order to capture the efficiency of government expenditure on human capital development in Nigeria the data analysis was conducted using Data Envelopment Analysis involving Input Oriented Variable Return to Scale. The findings of the study reveal that there has been significant reduction in the efficiency of government expenditure since 1990 up till 2011 which has been on decreasing level. This result therefore could be evidenced from the poor quality and output experienced in the Nigerian education sector.

Chude, Nkiru Patricia and Chude, Daniel Izuchukwu (2013) investigates the effects of public expenditure in education on economic growth in Nigeria over a period from 1977 to 2012, with particular focus on disaggregated and sectoral expenditures analysis. Government expenditures are very crucial instruments for economic growth at the disposal of policy makers in developing countries like Nigeria. The study used Ex-post facto research design and applied time series econometrics technique to examine the long and short run effects of public expenditure on economic growth in Nigeria. The results indicate that Total Expenditure Education is highly and statistically significant and have positive relationship to economic growth in Nigeria in the long run. The result has an important implication in terms of policy and budget implementation in Nigerian. We conclude that economic growth is clearly impacted by factors both exogenous and endogenous to the public expenditure in Nigeria.

Achugbue, Edwin Iroroewwo and Ochonogor, Wilson C (2013) the study examines education and human capital development through appropriate utilisation of information services. The paper is essentially a descriptive analysis of the state of education and human development in Delta state and assesses the readiness of Delta state government on the development of education and human capital. The study from various literature consulted revealed that government contribution to education and human capital development is inadequate and maintain that government use of information machineries and services are unsatisfactory and so beneficiaries of education and human capital are starved. In view of the above, it was recommended that Delta state government should increase her budgetary allocation to education and adopt appropriate strategies for training and retraining of teachers in all categories of academic institutions in Delta state and also overhaul her information service delivery machinery

Adamu, Sanusi (2012)analysed the impact of public expenditure on human capital development in Kano state in the last twenty years. For that purpose recurrent and capital expenditure on education services together with pupils and students gender enrolment, number of teachers/tutors employed, and schools buildings were used as proxies for number of graduates generated in the state as the basis of human capital. The available data were basically secondary in nature. The study made use of both qualitative and quantitative method of analysis. The results of the study showed that there was insufficient funding and inappropriate expenditure in education service and that was why accessibility to western education was limited, school buildings we rein adequate and not in good shape, equity in providing education is neglected and therefore secondary school leaving examination has never been appreciative the result of which is shortage of modern manpower among the indigenes of the state.
Edward (2009) has explained the relationship of public spending in Ghana and its relationship to economic growth where aggregated and disaggregated expenditure were verified. The main funding shed that aggregated government expenditure delayed the progress of the economy, though expenditure on health and infrastructure enhance economic growth, on the contrary, such spending on education has shown no effect in the short run. In addition the result revealed that the political economy of the country has proved to be significant in shaping the structure of the economic growth attained within the study period.

Isah (2006) assess the empirical relationship between education and economic growth in Nigeria. He established a positive and significant relationship between education expenditure and economic growth. Nevertheless, the research has identified that in Nigeria capital expenditure that is meant to facilitate the sector is given second hand attention and priority as per annual allocation from national budget unlike their recurrent expenditure which “mainly cover personnel cost and other day to day overhead” that is given top priority; therefore, the federal government is facing the challenge of doubling efforts to increase and sustain capital ‘vote’. For Nigerian to promote rapid growth of industrial transformation, the research suggested that public expenditure must grow in actual terms.

Olulowo (2006) made both descriptive and empirical analysis of the impact of human capital development on economic growth in Nigeria. For that purpose, government expenditure on education, health and other social services were employed as proxies for human capital development. The result of the study showed that despite that education is better funded than health and other social services yet the sector is still faced with challenges which disturbs its proper functioning. Moreover, the result of the study shows that although human capital development is very crucial to economic growth, yet poor funding of education, health and other social services has made it impossible to achieve reasonable result in Nigeria.

2.2 Theoretical Framework

This research work is underpinned to the endogenous growth theory of human capital approach. This is an economic theory that holds the view that economic growth and development comes from within the system as an uninterrupted outcome of internal process. More particularly, the theory reveals that the augmentation of a nation’s human capital will bring about economic growth by means of the development of new forms of innovations in technology together with efficient and effective means of production. In economics, endogenous growth theory otherwise known as new growth theory was developed as response to criticism of the neo-classical growth model. The new growth theory believes that policy measures can have an impact on the long run growth rate of an economy. For instance, subsidies (government expenditure) on research and development (R&D) or education has the possibilities of increasing the growth rate in some endogenous growth models by increasing the incentive to innovate.

3. Research Methodology

3.1 Description of the study area

Kaduna was created on 27th May, 1967 out of the former Northern region by the then regime of General Murtala Mohammed. The state has population of about 6,066,562 (2006 Estimate) and 23 local government areas. Its capital is Kaduna. The State is located at the centre of Northern Nigeria. It has a political significance as the former administrative headquarters of the North during the colonial era. The state shares boundaries with Niger State to the west, Zamfara, Katsina and Kano states to the north, Bauchi and Plateau States to the east and FCT Abuja and Nassarawa state to the south. Kaduna State occupies 46,053 square kilometres.

Agriculture is the mainstay of the economy of Kaduna state with about 80% of the people actively engaged in farming. Cash and food crops are cultivated and the produce includes: yam, cotton, groundnut, tobacco, maize, beans, guinea corn, millet, ginger, rice and cassava. Over 180,000 tonnes of groundnut are produced in the state annually. The major cash crop is cotton which the state has a comparative advantage in as it is the leading producer in the country. Another major occupation of the people is animal rearing and poultry farming. The animal reared includes cattle, sheep, goats and pigs.

Kaduna state is blessed with minerals which include clay, serpentine, asbestos, amethyst, kyannite, gold, graphite and siltimanite graphite, which is found in SabonBirninGwari, in the BirninGwari local government. This is an important raw material used in the manufacture of pencils, crucibles, electrodes, generator brushes and other sundry parts.Kaduna state is a metropolitan as well as a cosmopolitan industrialized state with over 80 commercial and manufacturing industries.Goods ranging from carpets, textiles, reinforced concrete materials, bicycles assembly, toiletries and cigarettes in the state. Consumer goods produced range from dairy products to soft drinks, flour and groundnut oil.

3.2 Method of Data Analysis

The research work used a time series data covering a period of 15 years from 2000 to 2015. The choice of period was to focus straightly on the fourth republic. Multiple regression model was applied and estimated using the ordinary least squares in determining the relationship that exist between Government Expenditure on Education (GEE) on Human
Capital Development (HCD) in Kaduna State. The data used in this research were from Kaduna State Ministry of Economic planning, Kaduna State Ministry of Education, Kaduna State Scholarship Board and National Population Commission (NPC) Kaduna State office.

3.3 Model Specification

In measuring the relationship between Government Expenditure on Education (GEE) on Human Capital Development (HCD) in Kaduna State, the regression model is specified as:

$$HCD = f(REE, KPE, PSE, SSE, ASE, NB)$$…………………..1

In stochastic form equation 1 becomes:

$$HCD = \beta_0 + \beta_1 CE + \beta_2 RE + \beta_3 SE + \beta_4 PE + \beta_5 AE + \beta_6 NB + \mu$$…………………..2

Where

HCD = Human Capital proxy by Number of graduates
CE= Capital Expenditure
RE = Recurrent Expenditure
SE = Secondary School Enrolment
PE = Primary school Enrollment
AE = Academic Staff Employed
NB = Number of schools Built
\(\mu\) = Error term
\(\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \) and \(\beta_6\) are parameters to be estimated, and are expectation to carry positive signs.

3.4 Research Hypothesis

H0: \(\beta \neq 0\); There is no positive relationship between Government Expenditure on Education and Human Capital Development in Kaduna State.

H1: \(\beta = 0\); There is a positive relationship between Government Expenditure on Education and Human Capital Development in Kaduna State.

4. Presentation and Analysis of Results

Attempt was made to estimate the level of impact of government expenditure in Kano State on human capital generation and development with respect to formal education expenditure. Before embarking on any econometric estimation, the variables must be subjected to unit root test. This is to avoid misleading results.

To apply a standard econometric technique, stationary test was performed using the augmented Dickey Fuller (ADF) test to find the existence of unit root in each of the time series data. This is to avoid misleading results. The result shows that the variables were not stationary in levels except capital expenditure (CE) and Primary schools enrolment (PE) while the rest were stationary at second difference. We proceed to investigate the impact of government expenditure on human capital development in Kaduan State, we make used of the ordinary least square (OLS) by estimating equation (2). The result is presented in equation.

$$HCD = -2.575 + 0.042CE - 0.187RE + 0.321SE + 0.945PE + 0.002AE - 0.049NB………3$$

$$t-stat (1.09) \quad (2.38) \quad (4.45) \quad (-1.53) \quad (-2.01) \quad (-3.75) \quad (1.96)$$

\(R^2 = 0.65; \quad R^2 = 0.59; \quad F.stat = 243.78; \quad DW = 1.412$$

The regression results shows that a 1% rise in capital expenditure on education (CE) in Kaduna State would give rise to 0.042% in human capital development proxy by number of graduate in State (HCD) and the variable is statistically significant as indicated the t-statistics. This result is in line with a priori expectation. With this positive relationship, it is expected that the various efforts diverted to increase the level of capital expenditure on education would sparked up the number of graduates in the State.

The coefficient of recurrent expenditure on education in State (RE) is negative but significant. This means that a 1% rise in recurrent expenditure on education in Kaduna State (RE) would result to 0.19% reduction in number of graduate in State. This is in line with the a priori expectation. Theoretically, it is expected that increase in recurrent expenditure would give rise to number of graduate in the state. This may be possible as a result of recurrent expenditure like salaries and allowance not getting to the teachers adequately.

The coefficient result of secondary school enrolment (SE) in Kaduna State is positive and insignificant; this is in line with a priori expectation although not significant in explaining number of graduates in the state. A 1% rise in secondary school enrolment would expand human capital development proxy by number of graduates in the state by 0.32%. The coefficient
of primary School enrolment (PE) showed positive relationship with human capital development proxy with number of graduates in the state (NOG), and is statistically significant. This means that, 1% increase in primary schools enrolment (PE) would increase number of graduates in the state by 0.95%.

The coefficient of Academic Staff employed is positive; this is in line with the a priori expectation. The increase in the number of academic staff employ would expand the number of graduate in the state. 1% increase in the academic staff in the state would increase the number of graduates in the state by 0.002%. Also, number of schools build in Kano State (NB) showed a negative sign and is significant. This is also in line with a priori expectation. The negative relationship between number of schools build and number of graduates may be due to the building of the schools without provision of facilities that would provide conducive environment for learning thereby leading to drop out of students from the formal schools. Also the kaduna state government have for long never build primary schools but rather renovating the old once despite the increase in primary school enrolment in the state.

The adjusted R$^2$ of 0.59 shows that 59% of the variation in human capital development as proxy with number of graduates in the state is explained by government expenditure component in the state. In the same vein, the F-statistic is high, this is significant and it is an indicative of the overwhelming significance of the R$^2$ and the overall integrity of the estimated regression model. The DW statistic is low; it implies the presence of auto-correlation.

5. Conclusion and Recommendations

The study empirically analysed the impact of government expenditure on education on human capital development in Kaduna State focused on the fourth republic (2000 to 2015). Until we develop artificial intelligence, we pretty much need human capital to accomplish anything in the world today. In fact, it takes human capital to create some other forms of capital. While a machine may eliminate the need to have hundreds of production workers make stuff, it still took human capital to design and build the machine. And as we move deeper and deeper into a knowledge-based economy that depends on information, knowledge and high-level skills, human capital will become increasingly important. Ordinary least squared was used and estimated the multiple regression equation that indicated the relationship between government expenditure on education on human capital development in kaduna state. The results showed that government expenditure on education have significant impact on human capital development in the state.

In the light of the researcher’s findings, we make the following recommendations: the state Government should increase its capital and recurrent expenditure on education, ensure proper management and monitory of funds made for the teachers, constant payment of teachers’ salaries and allowances in a manner that it will raise the state production capacity. Government should build more primary and secondary schools across the state, provide infrastructural facilities to meet up with the raising enrolment of children. Finally, our primary and secondary schools need more teachers; the government should employed more to meet the raising population particularly in primary schools.

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