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EXAMINING THE RELATIONSHIP BETWEEN PUBLIC SPENDING ON EDUCATION AND UNEMPLOYMENT PROBLEM IN NIGERIA

Olayinka K. Binuomoyo

* Corresponding author's email:

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ABSTRACT

Much of the problems of unemployment in the past has been placed on the inadequacy of the country's schooling system to be able to impact needed skills. Empirical and theoretical evidences are overwhelmingly in support of the significant role of public expenditure in education having multiplier effect on employment. Empirical evidence shows that this is not consistent in a macroeconomic framework. Government has been indicted of not doing enough to support education with its budgetary shortcomings to the sector. This study investigates the impact of government spending on unemployment in Nigeria. OLS estimates adopted for secondary data regressed over 27-year period for unemployment, federal government recurrent expenditure on education and economic growth indicated that while growth is significant and indeed influence unemployment negatively in line with our a-priori expectation, it is not the same for the impact of public expenditure on education. Our findings from this was that while Nigeria's educational capacity has increased, its impact is shallow as the economy is unable to absorb the graduates. In order to address this anomaly, government will need to enhance its effectiveness through creating adequate channels for enterprise growth and sustainability which will increase the latter's capacity to employ more labour.

INTRODUCTION

Macroeconomic objectives of governments are basically directed at attainable a sustainable development engendered by stable economic growth. As such, while economic growth speaks to institutional stability and viability, development talks about human welfare, as the achievement of the desired economic growth enhances overall development of the people and society (Vaish, 2002). Investment in education is imperative to a sustainable economy. A sustainable economy is in turn able to stimulate desired development, so that both the macro-economy and the micro-economy touch at ends to impact the final objective. It is therefore agreed that there needs to be tremendous growth in per capita income and economic productivity by investing in human capital development of labour through training and value-based education.

The United Nations Development Programme (UNDP; 2005) has noted that huge gaps yet exist in educational opportunities the world over, which should be seriously considered being aware of the fact that an estimated 115 million children globally are denied access to the most basic primary education with the largest percentage of these children in South Asia and sub-Saharan Africa (SSA) regions. And indeed, for the developed and developing countries, educational access and quality are getting larger, while creativity further inequalities for poor quality education.

It must be noted that that while human capital investment is necessary to attaining sustainable economic growth, the onus is on the government to not only drive this but also lead it, thus emphasising that greater consideration should be given to the adequacy of expenditure on people development (Weisbrod, 1962). And while Nigeria boasts of economic growth, being the largest economy in Africa as such, her growth has been regarded as an 'economic growth without real growth' owing to its lack of real impact on the whole economy as it did not create jobs. There is a firm linkage between education and the economy, with the former regarded as the most important driver of the latter.

While there had been increased private sector entry into secondary and tertiary education sub-sectors, as well as government expansion of tertiary education even across career domains, these have not been enough to cater for the country's educational demand, neither had there been improvement in its quality. To explain better, years of neglect and educational disinvestment following bad policies have left a large gap between where the country was and the endpoint of its development goals. In Nigeria, expenditure on public education to total public expenditure in the years 1970 and 2010 was averaged at 5.72 per cent, while the mean economic growth rate for the same period was 0.6 per cent, which means that it would take over a hundred years for the country to double its 1970 per capita income at this growth rate (Central Bank of Nigeria [CBN], 2009).

While government policy decisions are important for the profitability and sustainability of businesses, human capital investment is also crucial in creating a pool of skilled labour force and highly educated manpower. Thus, educational financing has critical implication for employment. Unemployment has both private and public consequences. Timothy (2016) noted that the lack of income affects the life of the person and it spells negative impact for the nation's fiscal planning, on both expenditure and tax. The idea behind the demand for highly skilled manpower by countries like Canada, Australia and the United Kingdom could be situated in the aforementioned education-income relationship.

The concerns above have triggered an important question which we attempt to answer in this study, and is critical to this study: how effective is expenditure on public education in reducing unemployment?

Hence, the main objective of the study was to determine the level of government spending on education which will reduce unemployment in the country. The following null hypothesis was therefore tested, that 'public spending on education has no significant effect on unemployment in Nigeria'.

This study is based on data obtained on Nigeria between 1991 and 2017 regarding government spending on education (recurrent) which is provided in the annual budget of the federal government, the unemployment rates, the gross domestic product (GDP) as well as its annual growth rates, for the 27-year period under review.

REVIEW OF LITERATURE AND THEORIES

Education and the Outcome: A Literature Diagnosis

Education has twin nature: it is largely a social good (more especially for developing countries) though with immediate private benefits as it impacts the income of the possessor of the educational good directly. So, a well-educated labour force is a better skilled manpower with enhanced economic potency and possibility of expansion to accommodate more workers with innovation and creativity setting in (Mukherjee, 2007; Sen, 1999).

Educational outcomes refer to the goals of learning and development, upon which general educational programs are based, which include knowledge, skills, attitudes, and values that learners require to be successful on the job, in family and their communities. They also mostly refer to what learners should know, understand, and be able to do in order to be educated and to meet the demands that the future will place on them, of the complex, diverse, and globally interdependent world of the twenty-first century, speaking to their core abilities and competencies (Board of Governors of Missouri State University, 2019).

Education provides the ladder for employment and better opportunities at lifelong employment and income. The labour participation rate increases with the level of education attained by individuals, and of course income level is positively impacted. Differences in pay are often associated with either human capital (that is educational qualifications) or knowledge capital (further training and experiences), being the differentiators. Evidences abound that qualifications are often tied to incomes, which by extension are linked to workers' unequal endowment in human capital (C & K CareersOnline, n.d.). As such, the traditional theories of human capital noted that workers are paid on the basis of their marginal productivity, and more educated workers logically earn higher wages because they are supposedly more productive (Siphambe, 2000; Diagne, 2006).

While establishing an analogy between human capital and physical capital, many research outcomes have indicated the enormous role of education in the standard of living as countries that invest and drive education more have richer citizens than those which do not (Akpolat, 2004). This is because education has the power to transform its recipients, by endowing beneficiaries with the capability to comprehend new information and adapt one's behaviour accordingly, thereby making it easier for enhanced skills and new technological adoption for the greater good of the economy. Emphasising the good fit of education, Öztürk (2005) though identified four areas where education makes sense to the economy, six broad areas on the economic benefits of education are however identified as follows: (i) it increases the efficiency of labour and thus production vis-a-vis scientific and technological innovations; (ii) it develops individuals' skills set; (iii) it enhances the ability to adapt to current business realities; (iv) it enhances knowledge transfer; (v) it encourages and induces healthy and admirable lifestyles for the educated in the society; and (vi) it enhances a good

socio-economic development of the society, for example, in that since the fertility rates of educated families are low, which leads to an improvement on income distribution and prevents poverty, population growth will be balanced resulting in high savings per capita, which positively contributes to economy (Öztürk, 2005; İnaç, Güner, and Sarısoy, 2006, and Sari, 2002).

Education and human capital formation

Today's market demands are dynamic and so require varying degrees of skills, which also require an endless manpower development. And because Nigeria has a very youthful population that requires in-depth skill training right from the pre-tertiary educational level, there is also the need to upskill existing workforce. This is because a higher level of education increases the opportunity for the unemployed population to gain employment whether as self- or by an employer.

Education is defined as a process which generates general knowledge and human capital as outcome (Figueroa, 2015). The importance of education and training in the modern economy is emphasized in today's automation of business activities all over the world that has seen increased productivity and a great cross-border movement of goods and services (Okeke, 2014). Education increases the number of knowledgeable workers by improving their skills and preparing them adequately for new challenges. Enhanced manpower capacity through education and training reduces unemployment rate while also increasing income level and of course enhancing the standard of living of the people.

Human capital is explained in terms of workplace skills possessed by the labour force. And as explained, as a by-product of educational input which Figueroa (2015) refers to as an economic process, human capital is an important machinery and innovation (like machines and technology) in the production process, while also, higher human capital indicates higher labour productivity and higher incomes for labour force, and in a way, higher human capital also necessitates greater period of schooling which enable labour the basic capacity to learn skills (Figueroa, 2015). Figueroa (2015) noted as well that there could not have been an innate capacity to discharge productive activities as workers but because people invest in acquiring it through education (Figueroa, 2015). Thus, education provides both the mill and the tools for human capital formation.

Education and the Nigerian situation

The narrative on education and unemployment in Nigeria is told around youth population in the country, and the perspective given by Akande (2014) in a Brookings blog appears to underscore the relationship between youth, education and joblessness. Nigeria's huge population is close to 200 million and is made up of about 50 per cent youth (age bracket 15-34 years), but this also account for much of the unemployment rate with as much as two-thirds of unemployed youth between 15 and 24 years of age (Akande, 2014). He further analysed that youth unemployment is predominant in the rural areas which have less educational opportunities than those in the urban.

Beyond primary and secondary schooling, access to higher education in Nigeria has remained inadequate, as the country continues to have a little percentage of prospective students not being absorbed year-on-year. For example, just about 29.26 per cent candidates were admitted into higher educational institutions in 2015 (415,500 candidates got admitted out of 1.42 million applicants), while the capacity of the private institutions is still limited as evidenced by its ability to admit only 9,656 applicants in 2016 from the pool of over 1.5 million applicants, with the backlogs still growing and the skills shortage yet remains unsolved (BudgIT, 2018).

Table 1 Economic accounts of GDP, economic growth, unemployment and government effectiveness in Nigeria

Year	GDP on Education at Current Basic Prices (NGN billion)	Total Nominal GDP at Current Basic Prices (NGN billion)	GDP on Education at Current Basic Prices (%)	Unemployment rate (%)	Public Expenses on Education (NGN billion)	GDP Growth rate (%)	Government Effectiveness Index (band of -2.5 to 2.5)
1991	9.89	596.04	1.659905	3.562	1.659905	0.358353	-0.92
1992	25.48	909.80	2.800288	3.562	2.800288	4.631193	-0.92
1993	37.09	1,259.07	2.945969	3.826	2.945969	-2.03512	-0.92
1994	42.97	1,762.81	2.437587	4.016	2.437587	-1.81492	-0.92
1995	49.65	2,895.20	1.714921	3.947	1.714921	-0.07266	-0.92
1996	51.13	3,779.13	1.353007	3.951	1.353007	4.195924	-0.92
1997	55.38	4,111.64	1.346801	3.974	1.346801	2.937099	-1.02
1998	90.78	4,588.99	1.978158	3.992	1.978158	2.581254	-1.12
1999	104.15	5,307.36	1.962394	4.009	1.962394	0.584127	-1.02
2000	205.95	6,897.48	2.985936	3.954	2.985936	5.015935	-0.96
2001	260.17	8,134.14	3.198487	4.029	3.198487	5.917685	-1
2002	273.22	11,332.25	2.410951	4.11	2.410951	15.32916	-1.03
2003	300.57	13,301.56	2.259624	4.063	2.259624	7.347195	-0.96
2004	336.66	17,321.30	1.943619	3.98	1.943619	9.250558	-0.94
2005	383.82	22,269.98	1.723466	3.87	1.723466	6.438517	-0.89
2006	437.57	28,662.47	1.526632	3.666	1.526632	6.059428	-0.97
2007	491.61	32,995.38	1.489938	3.439	1.489938	6.59113	-1.04
2008	580.59	39,157.88	1.482695	3.424	1.482695	6.764473	-0.98
2009	694.10	44,285.56	1.567323	3.757	1.567323	8.036925	-1.21
2010	826.67	54,612.26	1.513711	3.77	1.513711	8.005656	-1.17
2011	1,110.72	62,980.40	1.763598	3.697	1.763598	5.307924	-1.1
2012	1,252.72	71,713.94	1.746832	3.693	1.746832	4.230061	-1
2013	1,549.93	80,092.56	1.935178	3.703	1.935178	6.671335	-0.99
2014	1,804.40	89,043.62	2.026428	4.437	2.026428	6.309719	-1.19
2015	2,116.35	94,144.96	2.247968	5.313	2.247968	2.652693	-0.96
2016	2,445.95	101,489.49	2.410054	6.237	2.410054	-1.61687	-1.09
2017*	2,590.86	113,711.63	2.278444	6.013	2.278444	0.805887	-0.96

Sources: Central Bank of Nigeria (2017); World Bank (2019a, b); *This was at2017Q1.

Nigeria's unemployment status

Nigeria has experienced an economic growth, albeit also after the rebasing of the economic indices of the country (though this has been described as jobless growth, due to the fact that it has no effect on the economy itself). Table 1 provides the trend of Nigeria's economic estimates as related to unemployment and fiscal finances on education, showing that there had not been more differences to the spending on education, and where we have, unemployment had rather been rising. According to PwC Nigeria (2018), despite strong economic growth averaging 6.5 per cent between 2000 and 2017, Nigeria is still

faced with high unemployment, as average job growth was 1.6 per cent, weaker than labour force growth of 3.9 per cent between 2010 and 2017 (PwC Nigeria, 2018). This trend was not coincidental though as unemployment rate in the country has been steadily high with 18.8 per cent in 2017Q3, representing an increase of 5 per cent points (that is, 13.88 per cent) over the same period in 2016 (National Bureau of Statistics [NBS], 2018).

Nigerian economy contracted by 1.7 per cent in 2016 as the country entered into recession due largely to the decline in oil production and fall in global oil prices, with the local currency (Naira) losing over than 50 per cent of its value; the GDP grew by 3.96 per cent in real terms in 2015Q1, year-on-year over and lowest in two years, so that at the end of the year, an estimated 7.5 per cent of the labour force remained unemployed (UNDP, 2016). UNDP noted further that Nigeria faces a rise in unemployment, going by the fact that it rose from 3.5 per cent in 2006 to 13.9 per cent in 2016Q3, with youth being the most impacted with as many as 20 million young people seeking for jobs (youth unemployment doubled from 12.7 per cent in 2006 to 23.9 per cent in 2011 (UNDP, 2016).

Education and the Input: A Government Call

Public good and government input

Government spending refers in short, to public expenditure, whether capital or recurrent, which means the outward movement of resources from government treasury to the designated recipient sector or project, as a means of achieving set goals through the provision of social and infrastructural services and facilities.

Mostly, the economic impact of development variables is influenced by the number of beneficiaries. As such, public expenditure is impacted by the population (size, width and composition), all determining the per capita resource availability and the use of these resources.

Educational spending overview

It is in this light that public spending on education has been advocated as important to the cause notwithstanding the financial input from the Education Tax Fund. Manpower development has been found to be positively related to economic growth (World Bank, 1980).

Indeed, spending on social goods like education has been established as being able to sustain economic growth while also enhancing development, knowing that such social goods cannot be provided effectively by the private sector or through the market economy (market failures and inherent inefficiencies), hence require the need for the provision of such goods through state budget. While the need for government spending on education for manpower development has been established, in most countries, this has not been adequate, even though the United Nations Educational and Scientific Organisation (UNESCO) recommended between 15 per cent and 20 per cent of government budget allocated to the education sector (BudgIT, 2018). UNESCO may indeed have recommended a certain percentage of government total budgetary allocations in developing countries to education (as noted in the case of Swaziland), but differing positions of between 15 and 20 percent on one hand and 26 per cent on the other, or not making any recommendation at all are debatable (United Nations International Children Emergency Fund [UNICEF], 2017). According to Adedigba (2017), the clarification by Premium Times Fact Check did resolved this misunderstanding on the UNESCO' 26 per cent recommendation which the ministry of education contended, stating that none of the E-9 or D-8 countries[1] including sub-Saharan African (SSA) countries

[1] The E-9 countries refer to Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan, while D-8 countries are Bangladesh, Egypt, Nigeria, Indonesia, Iran, Malaysia, Pakistan, and Turkey.

other than Nigeria, allocates less than 20 per cent of its annual budget to education, but hoped the country could achieve the minimum of 15 per cent benchmark in its next budget.

Premium Times indeed did a fact check[2] and a corroboration to this was made by certain experts who also described the 26 percent allocation to education as 'mythical', but that the recommended allocation came out of a 'localised' UNESCO meeting held in Nigeria sometime in the past, though he recommended a minimum of 30 per cent for the next 20 years to be able to repair the decay on ground (Adedigba, 2017; Atueyi, 2015).

Public expenditure reflects the policy direction of a government, which could be executed as monetary or fiscal choice (Dorotinsky, 2004). Renowned economists like Wagner as well as Peacock and Wiseman noted the role of government spending and economic growth and development, with the conclusion that at every point in time, government intervention is needed in the economy because of the imperfections that characterise the markets (Wagner, 1883, 1893; Peacock and Wiseman, 1961). As such, development variables will be able to trickle down to all – the rich and poor.

The Nigerian budgetary allocation for 2019 which was NGN620.5 billion, representing about 7.05 per cent of a total budget of NGN8.83 trillion falls below the region 15 per cent to 20 per cent of the minimum recommended benchmark for developing countries by UNESCO, and in contrast with the 2017 (which represented 6 per cent of the NGN7.3 trillion budget) and 2018 budgets of NGN398 billion and NGN448.01 billion respectively on education (Ameh **and Aluko, 2019**). In the report by ThisDay newspaper, the under allocation of public expenditure to education is not really different in the federating states with 33 states allocating 7.3 per cent of their combined total budget estimates to education in 2017 compared with NGN653.53 billion (that is, 10.70 per cent of NGN6.1 trillion) for 2016 which was allocated to education in Nigeria (Dipo, 2018). From all indication, education is at the backdrop of Nigeria's development, with federal government expenditure on education relative to its total expenditure having dropped from a high of 7.53 per cent in 2013 to a low of 6.65 per cent in 2016 (BudgIT, 2018).

It is understood that a workforce that is healthy and well educated will help Nigeria reverse the drift of debility and restore the economy on the path of inclusive growth, which will be strongly influenced by the accessibility of highly motivated and skilled labour, with the implication that on the basis of the UNESCO's recommendation of between 15 per cent to 20 per cent of the nation's budget to education, budgetary allocation to the education sector for 2018 budget for example, relative to the size of the budget, should be increased from its abysmal 7.04 per cent which should rather have the budget at around NGN2.2 trillion as against the actual paltry budget of NGN606 billion (BudgIT, 2018).

[2] Premium Times carried out a fact check by contacting the UNESCO regional office in Abuja to authenticate and clarify the 15 – 20 per cent versus 26 per cent benchmark debate, in order to verify the claims by media and researchers, as well as those of the policy makers. It the response of the spokespersons of UNESCO, Shola Macaulay and Alice Ateh-Abang, they made available some documents titled 'Education for All, EFA, 2000-2015: achievement and challenges' and 'World Education Forum 2015 final report', which established that there was a recommendation close to that effect, noting that, "15 percent to 20 percent is the international benchmark." According to Premium Times, while though many governments have increased spending on education, only a few have prioritized it in their in national budgets. Though, a 2000-2015 report tagged Dakar framework for action sought to increase educational funding significantly by governments band donors to accelerate progress toward the EFA goals, with the EFA high level steering committee proposing that 15 per cent to 20 per cent of annual budgets be earmarked for education. See Adedigba (2017).

The Theoretical Standpoints

Structural unemployment

Structural unemployment refers to a type of unemployment resulting from the discrepancy between the skills possessed by the unemployed population and the available works in the labour market, which is caused basically by changes in the country's economy, with an attendant long-lasting effects, including an increase in the natural unemployment rate (CFI Education Inc., 2019). While frictional unemployment is defined in time by the period when workers move between jobs, cyclical unemployment explains the reasons for the rise and fall in unemployment during the respective recession and economic prosperity, and structural unemployment explains reason for unemployment at other times even when the economy is good (OER Services, 2019). Structural unemployment takes place where a fundamental shift in the economy makes it difficult for certain population groups to find jobs. This could in this case refer to the youth in terms of skills gap caused by poor or low education (Amadeo, 2019).

While the causes of this type of unemployment could be traced to recession in some cases, in certain other cases, it could occur during periods of economic growth. Indeed, this problem are mostly related to technological advancement which alters the skills requirements against the technological-driven jobs so that the demand for certain jobs is reduced while others require re-skilling through training (Economy, 2019). It is a paradox of some sort though, where the country has a high unemployment rate yet there are vacancies in certain skilled jobs. Structural unemployment is also a result mostly attributed though to skill mismatch in the face of new technologies.

The solution to the problem of structural unemployment is traced to the government who is expected to invest massively in technological infrastructure which can aid growth and industrial establishments, as well as in research and formal education with new skills curriculum.

Adolph Wagner's law of increasing state activity

Wagner's law is alternatively called the law of increasing state activity, which states that the functions and activities of government increase over time with economic growth and development, and these could be in the areas of administration of government and economic regulation, knowing well that: (i) the quest for modern and industrial society will result in the call for increased allowance for social consideration in the behaviour of industry; (ii) increased public expenditure will expand the public sector following a rise in national income; and (iii) the rise in public expenditure will in the initial phase of economic growth see to the state's activities expanding quite fast in several fields like education, health, social and infrastructural amenities, and so on, though this increase in state activities may slow down over time (Wagner, 1893).

Wagner analyses the trends in the growth of public expenditure and in the size of public sector, with a position that in the course of the industrialization (which indicates an era of modern industrial society), as the real income per capita of a country increases, the share of public expenditure to total expenditure increases, resulting in an increased political pressure for social advancement. The bases for increased state expenditure considered by Wagner are industrialization process (where public sector activity will replace private sector activity, resulting in increased state functions like administrative and protective); the need for the state to finance social services like education, public health, social insurance and welfare packages; and technological change from increased industrialization which could lead to monopolistic tendency by large firms. The resulting industrialization effects will have to be cushioned by providing social and

merit goods provided by the state through budgetary activities. In all, Wagner noted that public spending as an endogenous factor is determined by the growth of national income (Ageli, 2013).

Musgrave and Rostow's development model

Rostow and Musgrave development model is of the view that fiscal policy influences economic growth through its impact on allocative efficiency, economic stability and income distribution. Thus, at separate times, Musgrave and Rostow proposed that the growth of public expenditure might be related to the pattern of economic growth and development in societies, highlighting three stages in the development process:

(i) the early stage of development that require substantial public expenditure on education and infrastructure (that is, social overhead capital), as private savings are inadequate to provide this financing (at this primary stage, it is expected that government expenditure must constitute a high percentage of total output), leading to a steady increase in government spending (Musgrave, 1999);
(ii) the second stage of rapid growth characterised by large increases in private savings, but with a proportionate fall in public investment; and
(iii) the full stage of high income societies with increased demand for private goods which require complementary public investment (for instance, industrialisation and power).

The increased requirement in high-income societies for skilled labour leads education to become increasingly an investment good for society as a whole. And with increased population movements, there is need to increase infrastructural development that could help private businesses and investments. Thus, an important need for an increased public expenditure in relation to total output is required.

Maximum social advantage

Public expenditure has so much been politicized in the context of welfare maximization of the society. The law of maximum social advantage which states that, ceteris paribus, a rational person will distribute his given income on at least two goods in a way that the marginal utility of the last money spent on either good is the same. This principle is a derivative of the principle of equi-marginal utility. This explains one of the reasons for underfunding of education as being politicized as in the case of Nigeria, with politicians seeking higher funding for constituency projects and sectors of interest rather than seeking the point of maximum social benefit. Both the raising of revenue and public spendings are often met with political criticisms without taking cognizance of the overall social advantage (Ngerebo, 2010).

Based on Dalton and Pigou's conditions maximum social advantage, the best system of public finance is one which guarantees the maximum social advantage, so that the social benefit from every unit spent on public expenditure is equal to the sacrifice for the last unit collected by way of revenue (tax).[3] The changes in the fiscal process will stimulate production for increase in employment (with the added benefit of effective economic management, sound government fiscal functions and a viable standard of living), hence conferring maximum social advantage on the consumers, especially in the aspect of human capital development (Ngerebo, 2010).

The endogenous growth theory

The endogenous growth theory (EGT) was propounded by Romer (1990) and Lucas (1990), and explained that in order to increase productivity, the labour force must constantly be supplied with more resources

[3] See the Principle of maximum social advantage as explained on http://cms.gcg11.ac.in/attachments/article/78/Principle%20of%20maximum%20social%20advantage.pptx

such as physical capital, human capital and knowledge capital (technology-based). That is, the primary determinants of economic growth are population growth and the accumulation of human capital and knowledge, with emphasis by Becker and Schultz underlining the importance of education and training as human capital investments which are capable of enhancing productivity (Hayes, 2019; Becker, 1962; Schultz, 1961).

The stock of human capital determines the rate of growth. Human capital is explained in a number of ways: (i) being loosely defined as referring to knowledge, experience and skills of a worker; and (ii) an improvement on the exiting human capital as a way of incentivizing workers for greater productivity (that is, human capital recognizes labour capital is not homogeneous) (Ross, 2015).

While this is so, the EGT might not in absolute scenario be a medium for the government to meet its social and constitutional obligations (even though private licensure could be granted to provide greater access to such 'social' services like health and education) since growth in this model is driven by technological change that arises from deliberate investment decisions made by profit maximizing agents. The distinguishing feature of the technology as an input is that it is neither a conventional good nor a public good (it is a non-rival, partially excludable good). But recent technological advances and the COVID-19 pandemic has necessitated the need for massive investment in this direction.

The EGT holds that investment in human capital, innovation, and knowledge are important contributors to economic growth, with a focus on positive externalities and spill-over effects of a knowledge-based economy leading to economic development (Liberto, 2019). It basically explains that the long run growth rate of an economy depends on policy measures, with education and research and development (R & D) increasing the growth rate in some endogenous growth models by increasing the incentive for innovation. Thus, improvements in productivity can be tied directly to faster innovation and more investments in human capital, and as such, there is need for government and private sector institutions to nurture innovation initiatives while offering incentives for individuals and businesses to be more creative (Kenton, 2018).

Further to the above, Kenton highlights the principles of endogenous growth to include the fact that: (i) public policies' ability to raise a country's growth rate with the possibility to create more intense competition in markets and to stimulate product and process innovation; (ii) private and public sectors investments in R&D are key sources of technological progress (iii) capital investment like infrastructure and investment in education and health and telecommunications leads to increasing returns to scale; (iv) government policies enhance innovation and research, create room for entrepreneurship and new businesses to thrive, and being an important source of new jobs, investment and further innovation; and (iii) investment in human capital is a vital component of growth (Kenton, 2018).

METHODOLOGY AND DATA

Theoretical Review

The role of government in social welfare services like education involves public spending so as to maximize social welfare, and empirical data have been put to test the relationship between government spending on these social services and economic growth rate in line with Wagner's proposition that increased public spending leads to a rise in economic growth.

There is a positive relationship between growth in GDP per capita and each of human capital, of which the growth in GDP per capita

is positively related to initial human capital and to investment, and negatively related to GDP per capita (Summers and Alan, 1988). It was also noted that the role of fiscal policy along with the rate of economic growth significantly contribute to the endogenous growth, and by extension, public spending directly affecting private production functions (Barro, 1990).

In a study on the rise in government expenditure at state level in the United States, it was shown from Wagner's law that the income elasticity of demand for public goods is greater than one, that is, public goods and services are luxuries, and further postulated that this is consistent with lower and middle-income groups (Yousefi and Abizadeh, 1992). Based on the above, it appears that the theoretical disposition of Wagner's law is able to annex the public spending economic relationship effectively, as optimal government revenues maximize economic and social welfare.

Works like Meltzer and Richard (1981) as well as Persson and Tabellini (1990) considered the issue of public choice in the distribution of public good in order to make the government distribute social benefits efficiently. In their models, they explained the growth of government which leads to a large voter disposition and the way government is satisfying the median voters which generate a relationship between economic growth and public spending. Along this position, the decisive voter shifts towards their own benefits with social benefits that include training, enhanced skill, which leads to increased income and ultimately, resource redistribution (Meltzer and Richard, 1981; Persson. and Tabellini, 1990).

Theoretical and empirical works have advocated the importance pf public policy and development intervention in providing infrastructural development, which is able to support the society's needs for essential social services like schools, roads, water supply, electricity, and so on with education, jobs and health being the top priorities though, with the need to support these ones by the secondary needs of the society (Mundle, 1998; Edame, 2008).

Scope and Data

Time series data for the period 1991 to 2017 on unemployment rates (in per cent), recurrent government expenditure on education (in NGN billion), GDP (in NGN billion) and GDP growth rates were employed, while government effectiveness was employed to capture the quality of political and economic governance provided by the government. The data were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin 2017 and Wold Bank databank.

Public spending on education can be measured in many ways – ratio of expenditure on education to total public expenditure, ratio of expenditure on education to gross domestic product, per capita expenditure on education, total absolute value of budgetary allocation to education, and proportion of education expenditure devoted to the three levels of education. Emphasis in this study was on a modified version of the ratio of education expenditure to total government expenditure.

Measures of the variables employed are as follows: (i) public spending on education is measured as ratio of public recurrent expenditure at current prices on education to GDP at current basic prices, (ii) unemployment rate, as being the total unemployment as percent of total labour force, using the ILO estimate, (iii) economic growth rate, which refers to gross domestic product (GDP) per annual (in per cent), and (iv) index of government effectiveness as the last exogenous variable which is made up of the atmosphere created by the government for educational investment to thrive and business enterprises to succeed to be able to absorb labour. Wikipedia (2019), in a more elaborate term, says government effectiveness "measures

the quality of public services, civil service, policy formulation, policy implementation and credibility of the government's commitment to raise these qualities and keep them high."

The Model

The study adopts a regression technique where the model consists of the unemployment rates (Ue) in Nigeria (as the dependent variable), while the independent variables are recurrent federal government expenditures on education (PEdu), economic growth represented by the growth of gross domestic product (GDPg) and the vector of control variables represented by government effectiveness (GEff) between the years 1991 to 2017. In econometric form, our estimated equation, associated with growth model, is thus:

$$Ue = f(PEdu, GDPg, GEff) \quad (1)$$

Or, in its functional form,

$$Ue = \beta_0 + \beta_1 PEdu + \beta_2 GDPg + \beta_3 GEff + \xi \quad (2)$$

Where ξ is a stochastic error term.

Where β_0 is constant, and β_1, β_2 and β_3 are unknown parameters of interest, while ξ is the structural disturbance or error term in the model.

Our a-priori expectations of the above model are specified based on the exogenous growth theory of Lucas (1988) and Barro and Sala-i-Martin (2004) so that:

$\delta Ue/\delta PEdu < 0$, $\delta Ue/\delta GDPg < 0$, $\delta Ue/\delta GEff < 0$, indicating that the more the spending on education by the federal government, the lower we have of unemployment rate. And the better the economy by having a consistent economic growth, the unemployment rate is also lower. Also, a greater government effectiveness induces a more functional economy and thereby reduces the rate of unemployment in Nigeria.

REGRESSION RESULTS AND DISCUSSION

Results

Having analysed the above model, we present the results in our estimated model as follows:

$$Ue = 4.017 + 0.03PEdu - 0.066GDPg \quad (4)$$

GEff was excluded from the model during the regression analysis.

Table 2 is a table showing the regression results of the analysed model. The model shows a very weak fit since it has a R^2 of 39.3 per cent. The explanatory variables explain only about 39 per cent of the variation in unemployment rate for the sample population of 28 under study though the implication is that as much as 61 per cent of the variations in unemployment is left unexplained. Nevertheless, the lack of explanatory power does not mean other characteristics of public expenditure on education, economic growth and government effectiveness would not influence unemployment, and have of course been included in the errors of the regression analysis (Wooldridge, 2013; Gujarati and Porter, 2009).

Table 2 Regression results of unemployment, economic growth and government effectiveness in Nigeria

Variables	Coefficients, t-values (in parentheses) and significance levels (asterisked)
Intercept	4.017 (20.537); 0.000*
InPEdu	0.003 (3.216); 0.004*
InGDPg	-0.066 (-2.333); 0.028*
R^2	0.383
F	7.456; 0.003*
DW	0.463

Source: Author

Further analysis indicates that at 5 per cent level of significance, F-statistic shows that the model is useful in determining the influence of public education and economic growth on unemployment in Nigeria as

shown by the computed F-statistic which is greater than the tabulated F-statistic (3,23) valued at 3.03. For individual variables, the coefficients and the associated t-values (at 5 per cent level of significance) showed that public spending on education is positively related to unemployment thus contradicting our a-priori expectation of the influence of public expenditure on unemployment, while economic growth is inversely related to unemployment which conforms to our a-priori expectation of this relationship.

Discussion of the Results

An observation of our results show that there exists a positive relationship between public expenditure on education and unemployment in Nigeria. The reason for this result could be linked to the weak economic management which is explainable by country policy and institutional assessment (CPIA) with component factors stretching across macroeconomic management, fiscal and debt policy management, accountability, transparency and corruption – all related to poor governance, with deep economic implications, which could altogether negatively affect business licenses and operations, cost of doing business and business sustainability, and related economic issues.

These positions conform with the observations made on economic growth and unemployment in a number of studies by Levin (1983), Ghafar (2016), Riddell and Song (2011), as well as the research group, PwC Nigeria (2018) where they signalled that a boast of positive economic growth does not guarantee more employment opportunities, or a resolution of unemployment crisis, like the case with Nigerian policy makers where the economic growth feat was referred to as jobless growth going by the fact that unemployment has further deepened over these years, nor does just education guaranteed this. Evidence on the impact of formal schooling on unemployment rate is mixed as different factors could affect the impact of education on (un)employment, from years of schooling to certificate receipt (Riddell & Song, 2011).

It has also been well established that a weak economy which could not substantially support small businesses tend to brood a persistent high unemployment rate, with the fact that such type of unemployment is not cyclical but 'structural', because the unemployment problem is not a lack of demand for workers but rather a mismatch between workers' skills and employers' needs (Levin, 1983). The case study of Egypt substantially reflects the Nigerian situation as provided by Ghafar (2016) who noted that the problem of unemployment in Egypt was related to the government lack of strategy for absorbing tens of thousands of additional university graduates into the workforce, despite a bogus educational reform that spanned the primary to tertiary levels, and saw to the expansion of universities and their faculties, and other educational expansion. So, during the 1970s reform era, Egypt's illiteracy dropped significantly but the numerical strength of students increased, which was overwhelming on the system and resulted in declined quality and skills-mismatch were the undoing of the human capital stock. The demand for the available skills was low from both the government and the private sectors, and further inappropriate 'neoliberal' economic reforms made matters worse.

Finally, reflecting on the position and analysis of Mishel (2011) who did not support in the entirety that the solution to structural unemployment is indeed educational (investment) even though the author expressed worry over a coming skills shortage, especially quality graduates when the economy is at full employment, with the reservations that available job openings are much fewer than prospective workers and cuts across all sectors, and the fact that the rise of long-term unemployment is not attributable to any educational level. And while the

challenge of high unemployment persists, it is not resolvable through better education and training for those currently unemployed, but addressing the industry for lack of jobs.

CONCLUSION AND RECOMMEDATIONS

An empirical investigation on the impact of government spending on education in Nigeria was carried out using time series data and a multiple regression analysis. The findings show that public spending on education is not significant to addressing the unemployment problem.

The result is hence a clear indication of some inferences: the mis-match between allocation to recurrent and capital expenditures on education, the inadequacy of the budgetary allocation to the educational sector, the mismanagement of these funds, and a general poor governance associated with providing sound social, political and economic environment for businesses and enterprises to thrive, including the provision of viable policies and infrastructures. These would have to be put in place as there is need for government to make available a stable macroeconomic policy environment that would guarantee a healthy competitive business environment that is protective of local businesses, assures of competitive market pricing, ensures stable exchange rate, cheap and easy credit access and real sector growth. These are essential for business sustainability and will be well supported by an educated workforce.

Related to the above is the issue of non-accountability and corruption that create leakages and lead to economic inefficiencies. The place of the law should also be that government itself is subjective to it (rule of law).

Lastly, even though education seems to be the general path to being gainfully employed, the demand of skills globally has become broad-based. We reconcile this observation by emphasizing the role of specific skill development which can be achieved through either complementary investments and innovations that areas like information technology induces in our society as a general purpose technology. Thus, conventional schooling is in many cases globally unable to address this kind of skills demand which is why government should consider strong policy support for further education and training institutions as being practised in South Africa, to thrive and duly recognised as work acceptable qualifications, integrated into the country's national qualification framework as an institutional model in human capital development.

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