International Journal of Financial Management and Economics

P-ISSN: 2617-9210
E-ISSN: 2617-9229
IJFME 2023; 6(2): 158-164
www.theeconomicsjournal.com
Received: 04-10-2023
Accepted: 15-11-2023

Oru Anthony Odu
Ph.D., Department of Banking and Finance, University of Cross River State, Calabar, Nigeria

Corresponding Author:
Oru Anthony Odu
Ph.D., Department of Banking and Finance, University of Cross River State, Calabar, Nigeria

Capital expenditure and educational outcome in Nigeria: Performance analysis of fiscal authorities

Oru Anthony Odu

DOI: https://doi.org/10.33545/26179210.2023.v6.i2.244

Abstract
The study examines the impact of public expenditure on educational outcome in Nigeria by the various forms of governance or fiscal authorities from 1984 to 2021 in Nigeria. The data was analysed with the statistical package for social sciences (SPSSWIN-25) and the findings revealed that; both eras had non-significant impact on education but the democratic era surpassed the military with about 43.2% and the change in educational outcome negates the capital expenditure and the human factor was a constrain. The study recommends an increase in education budget to 26% of total budget, strict adherence to control mechanisms and avoidance of fiscal practitioners.

Keywords: Public expenditure, educational outcome, fiscal authorities JEL classification code: H41, H52, I121, I122

Introduction
The capital expenditure on education in Nigeria is basically an expenditure window for the provision of goods and services for the promotion of infrastructure and amenities towards the acceleration of educational growth in Nigeria. The universal standard for the measure of educational outcome is the level of literacy (UNDP, 2016) [20]. The level of education is critical and much of our scare's resources are expended on education and we are yet to live out of strikes as most often than not, the strikes have been on the inabilities of government to provide conducive environment for educational improvement and this has made quite lucrative the private venture in education from the cradle to tertiary institutions amidst higher tuition. One of the key sector in any economy is the social and community service sector which has amongst it, the primary responsibility of establishing and promoting education but today Nigeria is a country where almost all average to upper class citizens desire to school abroad not because of the advancement in education but basically because of the failure of the educational system in Nigeria, symbolized by dilapidated structures, poor, inadequate and unavailability of instructional materials as well as incessant strikes. The level of capital expenditure is key to the level of educational outcome (literacy level) and this study seeks to evaluate the contribution of various fiscal authorities (pre-democratic and democratic authorities) to literacy level in Nigeria.

Literature review
Public capital expenditure on education and educational outcome
Capital expenditure on education refers to public budgetary expenditure for the provision of public goods and services in the educational sector of the economy for her growth and efficiency. Educational outcome is in this study a function of the level of literacy in Nigeria. The united nation educational scientific and cultural organization (UNESCO) defines literacy as the ability to identify, understand, interpret, create, communicate and compute using printed and written materials associated with varying context.
The literacy rate by convention and UNESCO rating is a function of the public spending at different levels of education and recommends a standard of twenty-six percent (26%) of every country's total budget on public education to attain the improved literacy level as one of the sustainable development goals (SDG) 2030. IMF (2019) [5], asserts that the investment in education by convention should have a positive effect on educational status of the

population, employment and productivity levels. Thus, the expected years of school entry and school leaving as well as drop-outs are a product of investments in education.

Iana, Robert and Nulle (2019) [6], stated that within the last decade, there has been an increase in public expenditure committed to education. In most of the emerging and developing economies it reached 4% of GDP while most of the countries in Latin America, Caribbean, Middle East and North America increased investment in education. Low-income countries keep spending at around 3% in relation to GDP but Nigeria spends between 1.59 to 2.30 percent of GDP on both social services and economic sector where education is an aspect (CBN, 2019). This explains more better the availability and quality of public education in Europe in comparison with other regions.

Global data (2021) [3], opined that social factors such as seasonal workforce, migration early marriage according to social customs, restrictions on girls based on social norms, households chores managed by young girls, gender differences in homes, society, lack of educational facilities, economic conditions on the family, divisions of the family responsibilities after the death of the elderly family member, government policies and female health are delimiting factors to female education and not just public spending on education as a lone variable.

Nigeria has a literacy level of 77.62 in 2021 while countries like Pakistan 99.99%, Kyrgyz republic 99.59%, Kenya 81.54%, republic of Congo 80.30% since 2018 when we ranked 62.02%, thus in a space of four years we are unable to beat their records (Global data, 2021) [3]. Extant empirical reviews from Obi, Obi and Ejefobihi (2020) [8-10], Uzonwanne, Eze, Nzeribe and Ezenekwe (2020) [23] as well as Obayori and Akpan (2022) [9] revealed that the level of educational outcome is indeed negatively correlated to public spending because as spending increases, literacy declines. The study is anchored on the theory of public expenditure by Adams, H.C (1895) [1], which states that the aim of public expenditure is to discover the meaning of expenditures for the life of a people and in this manner to arrive at the principles which centres appropriation and that the poor state would be called upon to make larger relative expenditure for the primary governmental functions. This theory is in line with the act of budget, budgetary control as well as the public sector performance which reflects the expectations of the public from its representatives which correlates with the agency theory by Jensen and Meckling (1975) [7].

Methodology

The Ex-post facto research design was used in this study because of the use of time series data. The non-probability sampling technique of convenience sampling was adopted and considered the fiscal authorities in the military era (pre-democratic era) from 1984 to 1998 and the democratic era from 1999 to 2021 with data from annual publications and bulletins of the Ministries of Finance, Budget and Planning, the National Bureau of Statistic (NBS), the Central Bank of Nigeria (CBN), the Federal Ministry of Health, Federal Ministry of Education and the World bank Group. The study employed descriptive and inferential statistical technique using the statistical package for social sciences (SPSSWIN) with the F and T statistic for test of hypothesis at 5% degree of freedom and 95% judicial limits.

Model specification

The model for the study and the decomposition of the variables for data analysis is as shown below;

$$Lit_{lev} = f(CapbgtEd + \alpha_i)$$

Where;
Lit_{lev} = Literacy level
α_i = other lurking variables

Results and Discussions

A Impact of capital expenditure on education and average literacy level (pre-democratic era)

Table 1: Descriptive Statistics

	Mean	Std. Deviation	N
lit_{lev}	46.5750	22.83558	15
CapbgtEd	2447.3333	1282.37124	15
%Tbgt	4.2167	1.69046	15

In table 1, the pre-democratic era, the standard deviation for literacy is low showing a less deviation from mean expenditure as seen by 1282.37 which indicates a more scatter and less uniformity in the capital expenditure and a more uniformity in the percentage of education budget with a standard duration of 1.69 from the mean.

Table 2: Correlations

		Percentage of literacy level	Capital expenditure on education	Percentage of total budget
Pearson correlation	lit_{lev}	1.000	.038	-601
	CapbgttEd	.038	1.000	-.647
	% Tbgt	.601	-.647	1.000
Sig. (1-tailed)	Litier	.	.471	.104
	CapbgttEd	471	.	.083
	% Tbgt	.104	.083	.
N	Litier	6	6	6
	CapbgttEd	6	6	6
	% Tbgt	6	6	6

In table 2, the Pearson correlation reveals a 0.038 impact of capital budget on education to literacy rate which indicates a positive but non-significant effect of capital expenditure on education to the literacy rate in Nigeria between 1984 to 1998. There exist a negative relationship of -0.647 between literacy rate and percentage of education budget which means while the budget rises the rate of literacy declines.

Table 3: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change Statistics		
					R Square Change	F Change	df1
1.	.756[a]	.572	.286	19.29156	.572	2.003	2

The result in table 3 indicates reliability as the coefficient of the model summary is 0.756 and that of determination at 0.572 with an F-change of 2.003.

Table 4: Model Summary[b]

Model	Change Statistics		Durbin-Watson
	Df2	Sig. F Change	
1.	3	.280	3.426

a) Dependent Variable: Percentage of Literacy Level
b) Predictors: (Constant), Percentage of Total Budget, Capital Expenditure on Education.

In table 4, Durbin-Watson of 3.426 was revealed, which indicates a negative auto correlation between the variables. This reveals that as the value of capital expenditure on education rises, the level of literacy and percentage of budget decreased.

Table 5: ANOVA[a]

Model		Sums of squares of Squares	DF	Mean Square	F	Sig.
1.	Regression	1490.826	2	745.413	2.003	.280[b]
	Residual	1116.444	3	372.164		
	Total	2607.311	5			

Dependent Variable: Literacy level
Predictors: (constant), percentage of total budget, capital expenditure on education

In table 5, the ANOVA reveals a regression of 1490.82 which has a mean of 743.43 and a residual of 1116.493 regression the difference of the observed from the expected which is a strong indication of the correlation between the capital budget on education and the literacy level in Nigeria.

Table 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1.	(Constant)	129.194	45.950	-.602	2.812	.067
	Capital Expenditure on Education	-.011	.009	-.990	-1.215	.311
	Percentage of Total Budget	-13.374	6.691		-1.999	.139

The both coefficients reveals the negative conditions and its t-value of -1.215 and -1.999 all less than 0.05 indicating a negative and very significant effect between the capital expenditure on education and literacy level as well as the percentage of education budget to the total budget.

Table 7: Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations		
		B	Std. Error	Beta		
1.	(Constant)	-17.039	275.428	.038	-.574	-.459
	Capital Expenditure on Education	-.039	.017	-.601	-.756	-.755
	Percentage of Total Budget	-34.666	7.919			

There exists a positive relationship in the capital expenditure on education. Indicating that it kept rising every year. The -0.601 coefficient on percentage of educations reveals that the budget on education did not rise directly proportional to the rise in total budget. This reveals education expenditure falls as total expenditure rises.

Table 8: Coefficients[a]

		Collinearity Statistics	
		Tolerance	VIF
1.	(Constant)		
	Capital Expenditure on Education	.582	1.719
	Percentage of Total Budget	.582	1.719

In table 8, the collinearity statistics do not yet reveal any auto correlation between the variables under study. a) Dependent Variable: Percentage of Literacy Level

Table 9: Coefficients Correlations[a]

Model			Percentage of Total Budget	Capital Expenditure on Education
1.	Correlations	Percentage of Total Budget	1.000	-.647
		Capital Expenditure on Education	-.647	1.000
	Covariances	Percentage of Total Budget	44.764	.038
		Capital Expenditure on Education	.038	7.779E-005

Table 9 reveals that capital expenditure on education is negatively significant to the percentage of total budget at a correlation with a correlation of -0.647. A covariance of 0.038 reveals that as capital expenditure decreases, the budget on education to total budget also decreases.

a) Dependent Variable: Percentage of literacy level

Table 10: Collinearity Diagnostic[a]

Model	Dimension	Eigenvalue	Conditin Index	Variance Proportions		
				(Constant)	Capital Expenditure on Education	Percentage of Total Budget
1.	1	2.731	1.000	.00	.01	.01
	2	.251	3.301	.00	.24	.12
	3	.019	12.083	1.00	.75	.87

a) Dependent Variable: Percentage of literacy level

The Eigen value, condition index and the variance proportions. There exist is 14.943 18 deviations from the level of literacy to the capital budget on education. This implies issues from execution to accountability (human factor) or control issues.

4.2.1B Impact of capital expenditure on education and average literacy level (Democratic era)

Table 1: Descriptive Statistics

	Mean	Std. Deviation	N
% lit_{lev}	65.6375	5.96096	23
CapbgtEd	14162583136	28325165844	23
%Tbgt	6.6100	1.45013	23

In the democratic era, the mean literacy level is 65.6% with a low deviation of 3.9 showing less variation from the mean, with a capital expenditure mean with a wide scatter and less uniformity to the mean as shown by the standard deviation of 28323163844 and a percentage of education budget mean of 6.6% with a standard deviation of 1.45 which indicates less scatter form the mean revealing a slight change in education budget in the era.

Table 2: Correlations

		Percentage of Literacy Level	Capital Expenditure on Education	Percentage of Total Budget
Pearson Correlation	Lit_{lev}	1.000	.470	-.098
	CapbgtEd	.470	1.000	.731
	% Tbgt	.098	.731	1.000
Sig. (1-tailed)	Lit_{lev}	.	.265	.451
	CapbgtEd	.265	.	.135
	% Tbgt	.451	.135	.
N	Lit_{lev}	23	23	23
	CapbgtEd	23	23	23
	% Tbgt	23	23	23

In table 2, the capital budget on education has an impact of 0.470 on literacy level which indicates a positive but non-significant impact of the capital expenditure on education as proven by the literacy level. The percentage of the budget has a negative impact on the literacy level at -0.98 which indicated that the percentage of total budget has a negative relationship with the rate of literacy in Nigeria.

Table 3: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change statistics		
					R Square Change	F Change	Df1
1.	.800[a]	.639	-.082	6.20126	.639	.886	2

Table 3 reveals that the result has a high coefficient of 80% and a coefficient of determination of 63% and an F-change of 88.6% indicating the strength of the model used for analysis and andicator of the reliability of the test.

Table 4: Model Summary[b]

Model	Change Statistics		Durbin-Watson
	Df2	Sig. F Change	
1.	1	.601	2.069

Predictors: (Constant), Percentage of Total Budget, Capital Expenditure on Education b. Dependent Variable: Percentage of Literacy Level

Table 4 reveals that the Durbin-Watson of 2.069 indicates an absence of auto correlation between the dependent variables literacy rate and capital expenditure in education which indicate that there are no collinearity problems.

Table 5: ANOVA[a]

Model		Sums of squares m of Squares	DF	Mean Square	F	Sig.
1.	Regression	68.144	2	34.072	.886	.601[b]
	Residual	38.456	1	38.456		
	Total	106.595	3			

Dependent Variable: Percentage of Literacy Level
Predictors: (Constant), Percentage of Total Budget, Capital Expenditure on Education

In table 5, the ANOVA reveals a regression, of 68.144 which shows less variation in the result and also a residual of 38.456 which is some as the mean square with an F-value of 0.886 indicating a very strong positive relationship between the variables.

Table 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1.	(Constant)	87.925	22.287	1.163	3.945	.158
	Capital Expenditure on Education	2.447E-010	.000		1.321	.412
	Percentage of Total Budget	-3.896	3.618	-.948	-1.077	.476

In table 6, the constant t-statistics of 3.945 and the t-statistics for capital expenditure of 1.321 and percentage of total budget of -1.0766 are all less than the constant which infers that the result is non-significant and that of percentage of education budget to total total budget is most non-significant.

Table 7: Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations		
		B	Std. Error	Beta		
1.	(Constant)	-195.257	371.107	.470	.797	.794
	Capital Expenditure on Education	.00	.000			
	Percentage of Total Budget	-49.867	42.075	-.098	-.733	-.647

In table 7, the 95.0% confidence limit replicates an error level of 5% which is expressed as 0. 005. Thus, the result for capital expenditure on education to literacy level and that of education expenditure to percentage of the budget have correlations less than 0.005. it implicitly explains that the result of the test is confirmed as being non-significant.

Table 8: Coefficients[a]

	Collinearity Statistics		
	Tolerance	VIF	
1.	(Constant)		
	Capital Expenditure on Education	.466	2.147
	Percentage of Total Budget	.466	2.147

b) Dependent Variable: Percentage of Literacy Level

In table 8, the tolerance of 0.466 and VIF 2.147 of the capital budget to literacy and percentage budget to literacy level reveals the absence of collinearity problems.

Table 9: Coefficients Correlations[a]

Model			Percentage of Total Budget	Capital Expenditure on Education
1.	Correlations	Percentage of Total Budget	1.000	-.731
		Capital Expenditure on Education	-.731	1.000
	Covariances	Percentage of Total Budget	13.090	-4.899E-010
		Capital Expenditure on Education	-4.899E-010	3.431E-020

Dependent Variable: Percentage of Literacy Level

Table 9 reveals the correlation coefficient between the percentage of total budget and capital expenditure on education was negative and literacy is non-significant at -0.731% all indicating that as capital expenditure decreases, total budget percentage rises and vice-versa.

Table 10: Collinearity Diagnostic[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Capital Expenditure on Education	Percentage of Total Budget
1	1	2.417	1.000	.00	.03	.00
	2	.574	2.052	.01	.46	.00
	3	.009	16.601	.99	.51	1.00

Dependent Variable: Percentage of Literacy Level

In table 10, the collinearity diagnostics has from Eigen values to variance proportions all in the values that reveals the absence of multicollinearity between the variables. This is obviously so as not more than one column of the variance proportion is more than 0.99. This further eludes the variables and results of multicollinearity problems.

4.3 Discussion of findings

The study revealed that the public capital expenditure did not impact on the educational outcome proportionately in both era. This study is in consonance with the studies of Obi, Obi and Ejefobihi (2020) [8, 10], Uzonwanne, Eze, Nzeribe and Ezenekwe (2020) [23] as well as Obayori and Akpan (2022) [9] revealed that the level of educational outcome is indeed negatively correlated to public spending because as spending increases, literacy declines.

5. Conclusion and recommendation

Base on the findings, the study concludes that capital expenditure in the pre-democratic and the democratic era impacted but non-significantly on the level of educational outcome in Nigeria. However, the democratic era fared better than the pre-democratic era in the growth and improvement of literacy in Nigeria by 43.2%. The duo is a concern over non -compliance to control mechanisms as there have demystified the assertion of improved educational outcome from increased public spending especially in the democratic era. Thus, human factors ranging from religious, social, environmental and corrupt practices are responsible for the decline in educational outcome amidst increase in public spending on education to total budget especially in the democratic era. The study therefore recommends an increase in capital expenditure on education with the target of attaining the recommended 26% of total budget on education as proposed by the United Nations economic, social and cultural organization (UNESCO). The study also recommended strict adherence to control mechanisms and also avert the influence by fiscal practitioners.

References

1. Adams HC. The Theory of Public Expenditures. Publication of the American Association; c1895 Mar. p. 87-95. Retrieved from https://wwwjstor.org/stable /2485646 on the 2nd of February, 2022.
2. Federal ministry of Education. Literacy rate among young men and women in Nigeria retrieved from educeleb.com-del on 5th January; c2022
3. Global data. Female literacy rate in Nigeria; c2021. (2010 – 2022, 8) retrieved from globaldata.com/data – insights/macroeconomic/female –literacy –rate–in– Nigeria/. Retrieved on the 20th of December, 2022.
4. Human Development Indices and Indicators. Statistical update, 2018 United Nations; c2018.
5. IMF Database: https://www. imf.org/en/Data
6. Iana P, Robert N, Grant N. Multiple Dimensions of human development index and development. International monetary fund (IMF) working paper; c2019 Sept. p. 1-42.
7. Jensen MC, Meckling WH. Theory of the Firm: Managerial Behaviour, Agency Cost and Ownership Structure. Journal of Financial Economics. 1976;3(4)305-360. https://doi.org/10.1016/0304-405X(76)90026-X
8. Obi OU, Ekesiobi CS, Dimwobi KS, Mgbemena ME. Government Education Spending and Educational Outcome in Nigeria, International Journal of Economic. Finance and Management Sciences. 2016;4(4):223-234.
9. Obayori JB, Akpan JI. Government spending in education and human development index in Nigeria. British international journal of education and social sciences. 2022;9:13-30.
10. Obi Obi, Ejefobihi. The efficiency of Education expenditure in Nigeria. European journal of Educational studies, 2020, 7(1). Retrieved from doi:http//:dx.doi.org/10.46827/ejesvoio.2994
11. OECD Better life initiative. Measuring well – being and progress; c2020. http://www.oced.org/statistic/better-life-initiative.htm
12. Omopariola O. Government Budgeting in Nigeria: Principles, Policies and Practices. Ile-Ife. Obafemi Awolowo University Press Ltd; c2021.
13. Our world in data workings. https://ourworldindata.org/workinghours accessed January 25, 2022.
14. Tsegba IN, Upaa JU. Consequences of Financial Statement Fraud: A developing country perspective. International Journal of Business and Management. 2015;10(8):115-126.
15. United Nations. Human development report for everyoneUnited Nations' 2030 Agenda for sustainable Development; c2016. http://www.un.org/sustainabledevelopment/developmentagenda\
16. United Nations Development Programme. Norway, https://hdr.undp.org/en/countries/profiles/NOR.
17. United Nations development Programme. Human Development report; c2020. https://hdr.-undp.org/en/content/latest-human-development-index-ranking". Accessed January 25, 2022
18. United Nations Development Programme. United States, https://hdr.undp.org/eb/countries/profiles/USA, accessed; c2022 Jan 25.
19. United Nations Development Programme. Niger,

https://hdr.undp.org/en/countries/profiles/NER. accessed January 25, 2022.
20. UNDP. Human development report - United Nations digital library system; c2019. Retrieved from https://www.digital library.Un.org
21. World Bank. Public Expenditure Management Handbook. Washington DC: The International Bank for Reconstruction and Development/The World Bank; c1998. p. 5-92.
22. World Bank. The global burden of diseases: main finding for sub-saharah Afrrica 2013 (cited 2017) January 21); c2013. Available from: http://www.worldbankorg/en/news/features/2013/09/09 /global-burden-of-disease findings –for-subsaharan-africa
23. Uzonwanne MC, Nzeribe GE, Ezenekwe UR, Ukeje CD. Assessment of the efficiency of public education expenditure on literacy rate in Nigeria. Journal of economic and social thought. 2020 Apr 25;7(1):1-3.