
On Nigeria's Budgetary Allocations to The Education Sector (1960-2023) In View of UNESCO'S Benchmarks

Emmanuel Uchenna Ohaegbulem

Department of Statistics, Imo State University, Owerri, Imo State, Nigeria.

Emails: emmanx2002@yahoo.com; emma.ohaegbulem@imsu.edu.ng

Samuel Chimuanya Chijioko

Department of Statistics, Imo State University, Owerri, Imo State, Nigeria.

doi: <https://doi.org/10.37745/ijmss.13/vol11n1119>

Published December 09, 2023

Citation: Ohaegbulem E.U., and Chijioko S.C. (2023) On Nigeria's Budgetary Allocations to The Education Sector (1960-2023) In View of UNESCO'S Benchmarks, *International Journal of Mathematics and Statistics Studies*, 11 (4), 32-44

ABSTRACT: *This paper assessed the percentage budgetary allocations to the education sector by the Federal Government of Nigeria, from 1960 to 2023 in compliance with the UNESCO recommended benchmarks. Also assessed for some descriptive comparison were the percentage budgetary allocations to the education sectors of Nigeria and some other selected African countries (which include Ghana, South Africa, Senegal, Kenya and Morocco) from 1991 to 2021. This study used secondary data that were obtained from both the 2018 Edition of the Statistical Bulletin of the Central Bank of Nigeria and the Official Website of the Budget Office of the Federal Government of Nigeria (budgetoffice.gov.ng). Descriptive statistics, the Analysis of Variance (ANOVA) test and the Z-test for equality of two population means were employed in the data analyses. Results showed that for the period, (1960-2023), the average allocation made to the education sector of Nigeria was about 5.94%, which was about 9.06%, 14.06% and 20.06% significantly less than the three UNESCO's recommended benchmarks of 15%, 20% and 26%, respectively. Also, the average percentage budgetary allocation to the education sector of Nigeria during the Recent Democratic Regime (1999-2023) was significantly higher than in the Pre-Recent Democratic Regime (1960-1998). Results further showed that, for the period, (1999-2021), the average annual percentage budgetary allocations for Nigeria, Ghana, South Africa, Senegal, Kenya and Morocco were 7.81%, 24.37%, 19.49%, 21.32%, 21.70% and 17.61%, respectively; and these figures, no doubt, implied that the level of adherence to the UNESCO's 15%, 20% and 26% recommended minimum benchmarks was highest in Ghana, followed closely by Kenya, and then Senegal, South Africa, Morocco and lastly, Nigeria. As a matter of fact, Nigeria was unable to meet up with adhering to any of the UNESCO's 15%, 20% and 26% recommended benchmarks for the period, (1999-2021). However, for the same period, South Africa, Senegal and Kenya were able to meet up with adhering to the benchmarks; Ghana could not meet up with adhering to the benchmarks for 1999 and 2000, but succeeded for the period, (2001-2021). Morocco succeeded in 2003, 2004 and (2006-2021). In conclusion, the annual percentage budgetary allocations to the education sector by the Federal Government of Nigeria, from 1960 to 2023, was not in adherence to the UNESCO recommended benchmarks. Also, for the period, (1999-2021), Nigeria's adherence level to the UNESCO recommended benchmarks was far below those of some other African countries, like Ghana, Kenya, Senegal, South Africa and Morocco.*

KEYWORDS: budgetary allocations, UNESCO, benchmarks, compliance, Federal Government of Nigeria, education sector.

INTRODUCTION

Government (Public) expenditure is directed towards accelerating economic growth and human capital development, with the ultimate aim of transforming a nation into an industrialized economy as well as raising standard of living of the people (see, for example, Babatunde, 2018). Human capital development involves the provision of essentials including quality education. Education is recognized as a major factor of national development in all countries of the world. Education is one of the primary sources that help in achieving human capital development. It delivers the channel through which industrialization is achieved and sustained, moral upbringing upheld and the standard of living of people improved. It is the hub which tends to connect all other sectors of the economy; it serves as the processing or coordinating unit of the economy, and a verifiable tool for expanding man's knowledge (see, for example, Omotor, 2017).

Education improves the quality of lives and leads to broad social benefits to individual and society. The education system is undeniably the major backbone of the development of any country, as it inculcates in the individual, the ability to be an important part in nation-building. According to World Bank (1999), education raises people's productivity, creativity and promotes entrepreneurship and technological advancement, as have been demonstrated in several countries such as Malaysia, Bolivia and China.

The significance of education can also be perceived in the sociopolitical stability of a nation (see, Odigwe and Owan, 2019). A society's future depends largely on the quality of its citizens' education, because education is the main instrument used by the society to preserve, maintain and upgrade its social equilibrium (see, Oriakhi, 2014). Investment in education is as important as the plan for nation-building, as it has the capacity to boost the human capital assets of individuals and fosters economic advancement for increased welfare and livelihood (see, Odigwe and Owan, 2019). Education is also considered a major remedy for many problems faced by developing countries, and the importance of government expenditure in education is well recognized.

Resource allocation to any government sector is achieved through annual budgets. Budgetary allocations to the education sector are channeled through appropriate organs of government and such funds are in turn disbursed to all the levels of education.

The Education 2030 Framework for Action (EFA) set two benchmarks on domestic financing for education: 4% to 6% of Gross Domestic Product (GDP) and 15% to 20% of public expenditure (UNESCO, 2015d). As the 2015 EFA Global Monitoring Report showed, poorer countries have made considerable efforts to prioritize education in their budgets but are more likely to miss spending targets because their overall budgets are small due to lack of domestic revenue (UNESCO, 2015a).

Furthermore, the perceived poor funding to education sectors of many developing countries by her governments mandated the United Nations Educational Scientific and Cultural Organization (UNESCO) to recommend a minimum benchmark of 26% of the total annual budgets of every developing country be allocated to the education sectors (see, for example, Ekaette et al, 2019). Accordingly, all developing countries are expected to comply with this benchmark directive, as this

would improve the standard of education in these countries (see, Callaway and Musone, 1968). Unfortunately, most of the developing countries, such as Nigeria, experience inadequate funding to their education sectors, which reflect in poor conditions of service, such as in the areas of poor salaries and allowances to teachers, irregularities of teachers' enumeration, inadequate staffing, and lack of teaching aids, rusty and cranky classroom facilities in our secondary and tertiary institutions. The Education Sector in Nigeria still faces the problem of inadequate funding with regard to the benchmark advocated by UNESCO.

In Nigeria, for example, these poor conditions of service have resulted to incessant industrial actions (strikes) frequently embarked upon by almost all the concerned bodies of stakeholders in the education sector, such as, the Academic Staff Union of Universities (ASUU), Academic Staff Union of Polytechnics (ASUP), Colleges of Education Academic Staff Union (COEASU), Nigerian Union of Teachers (NUT), Academic Staff Union of Secondary Schools (ASUSS), Non-Academic Staff Union (NASU), and some other related bodies (see, for example, Ojewumi and Oladimeji, 2016). Consequently, the academic calendars have been constantly disrupted, pupils and students kept at home more than required in their studies, and this have really affected the education sector badly.

Justification of Study

The rate at which the citizens of Nigeria (usually referred to as 'the Giant of Africa') are trooping out in large numbers to some Western countries, and in recent times, some other African countries in pursuance for better education is actually a thing of concern. This act, which is tantamount to education tourism, in turn contributes positively to the economies of those countries at the detriment of the Nigerian economy. This circumstance, among others, leaves a very big ugly remark on the standard of education in Nigeria. These could probably be due to inadequate funding of the education sector. There is therefore the need to evaluate the annual budgetary allocations of the Federal Government of Nigeria (FGN) to the Education Sector, with a view to assessing the levels of compliance to the UNESCO recommended benchmark of 26% of the total annual budget. It will also be of great interest to somehow further weigh the extent Nigeria has been able to measure up with some other economically rival African countries (like Ghana, South Africa, Senegal, Kenya and Morocco) in terms of the percentage budgetary allocations to their respective education sectors over a couple of years, especially given the usually acclaimed status of Nigeria as the 'Giant of Africa'.

METHODOLOGY

The major data used for this study, as presented in Tables 1 and 2, were obtained from two separate sources; namely; the 2018 Edition of the Statistical Bulletin of the Central Bank of Nigeria and the Official Website of the Budget Office of the Federal Government of Nigeria (budgetoffice.gov.ng). Table 1 shows the percentage budgetary allocations to the Education Sector by the Federal Government of Nigeria from 1960 to 2023. On the other hand, Table 2 shows the percentage budgetary allocations to the Education Sectors of some selected African countries (namely, Nigeria, Ghana, South Africa, Senegal, Kenya and Morocco) by their respective Federal Governments, from 1999 to 2021.

A few descriptive analyses shall be employed in this study, especially the use of graphical representations to show the trends in the percentage budgetary allocations to the education sector of

Nigeria for the period, (1960-2023), as well as the trends in the percentage budgetary allocations to the education sectors of Nigeria, Ghana, South Africa, Senegal, Kenya and Morocco for the period, (1999-2021).

The Analysis of Variance (ANOVA) test shall also be used to determine whether or not significant differences exist among the percentage budgetary allocations to the education sectors of Nigeria by the Federal Government of Nigeria and the UNESCO recommended benchmarks of 15-20% for international, and 26% for developing countries, from 1960 to 2023.

The Z-test for equality of two population means is employed in comparing the percentage allocations to the Education Sector by the Federal Government of Nigeria during the Pre-Recent Democratic Regime (1960-1998) and the Recent Democratic Regime (1999-2023).

Table 1: The percentage budgetary allocations to the education sector by the FGN (1960-2023)

| Year | % Allocation | Year | % Allocation | Year | % Allocation | Year | % Allocation |
|------|--------------|------|--------------|------|--------------|------|--------------|
| 1960 | 6.02 | 1976 | 8.71 | 1992 | 3.86 | 2008 | 13.00 |
| 1961 | 6.15 | 1977 | 3.12 | 1993 | 5.62 | 2009 | 6.54 |
| 1962 | 5.19 | 1978 | 11.44 | 1994 | 7.13 | 2010 | 6.40 |
| 1963 | 3.45 | 1979 | 3.70 | 1995 | 7.20 | 2011 | 1.69 |
| 1964 | 3.65 | 1980 | 4.95 | 1996 | 12.32 | 2012 | 10.00 |
| 1965 | 3.57 | 1981 | 6.45 | 1997 | 17.59 | 2013 | 8.70 |
| 1966 | 4.23 | 1982 | 8.09 | 1998 | 10.27 | 2014 | 10.60 |
| 1967 | 4.88 | 1983 | 4.04 | 1999 | 11.12 | 2015 | 9.50 |
| 1968 | 2.84 | 1984 | 4.49 | 2000 | 8.36 | 2016 | 6.10 |
| 1969 | 2.20 | 1985 | 3.79 | 2001 | 7.00 | 2017 | 7.38 |
| 1970 | 0.69 | 1986 | 2.69 | 2002 | 5.90 | 2018 | 7.03 |
| 1971 | 0.53 | 1987 | 1.93 | 2003 | 1.83 | 2019 | 7.20 |
| 1972 | 0.62 | 1988 | 2.40 | 2004 | 10.50 | 2020 | 6.70 |
| 1973 | 0.88 | 1989 | 3.55 | 2005 | 9.30 | 2021 | 5.60 |
| 1974 | 2.96 | 1990 | 2.83 | 2006 | 11.00 | 2022 | 5.40 |
| 1975 | 4.57 | 1991 | 1.09 | 2007 | 8.09 | 2023 | 5.30 |

Table 2: The percentage budgetary allocations to the education sectors by the governments of some other African countries (1999-2021)

| <i>Year</i> | Country/Percentage Budgetary Allocation | | | | |
|-------------|--|---------------------|----------------|--------------|----------------|
| | <i>Ghana</i> | <i>South Africa</i> | <i>Senegal</i> | <i>Kenya</i> | <i>Morocco</i> |
| 1999 | 11.73 | 15.24 | 16.82 | 24.55 | 5.14 |
| 2000 | 14.20 | 18.09 | 17.62 | 23.40 | 8.28 |
| 2001 | 19.54 | 20.47 | 15.73 | 22.41 | 10.11 |
| 2002 | 22.07 | 20.10 | 16.72 | 25.63 | 13.91 |
| 2003 | 20.30 | 19.59 | 16.12 | 24.98 | 16.67 |
| 2004 | 26.02 | 19.93 | 16.96 | 26.67 | 15.16 |
| 2005 | 25.85 | 19.92 | 21.77 | 27.47 | 12.22 |
| 2006 | 20.30 | 18.00 | 17.95 | 25.08 | 16.31 |
| 2007 | 26.00 | 18.03 | 18.73 | 21.03 | 17.27 |
| 2008 | 25.85 | 17.91 | 19.23 | 18.64 | 18.61 |
| 2009 | 23.87 | 18.31 | 23.30 | 15.72 | 19.65 |
| 2010 | 20.70 | 18.04 | 24.05 | 20.56 | 18.29 |
| 2011 | 30.63 | 18.96 | 21.09 | 19.25 | 18.10 |
| 2012 | 37.53 | 20.64 | 20.80 | 19.92 | 17.58 |
| 2013 | 31.00 | 25.76 | 25.74 | 19.14 | 16.93 |
| 2014 | 20.99 | 19.14 | 24.76 | 17.08 | 16.31 |
| 2015 | 23.81 | 18.70 | 23.76 | 16.66 | 17.14 |
| 2016 | 22.09 | 18.05 | 21.34 | 17.34 | 20.18 |
| 2017 | 20.10 | 18.72 | 25.60 | 17.88 | 19.89 |
| 2018 | 18.61 | 18.87 | 27.80 | 20.02 | 20.46 |
| 2019 | 26.72 | 20.00 | 22.61 | 21.70 | 25.77 |
| 2020 | 33.54 | 22.21 | 26.08 | 26.70 | 30.02 |
| 2021 | 39.02 | 23.50 | 25.81 | 27.20 | 31.06 |

ANALYSES, RESULTS AND DISCUSSIONS

Line charts/graphs are used here to show the plots of the annual percentage budgetary allocations to the education sector of Nigeria by the FGN from 1960 to 2023 together with the three UNESCO's recommended benchmarks of 15%, 20% and 26% superimposed. Also, charts/graphs are used to show the percentage budgetary allocations to the education sectors of Nigeria, Ghana, South Africa, Senegal, Kenya and Morocco by their respective governments from 1999 to 2021.

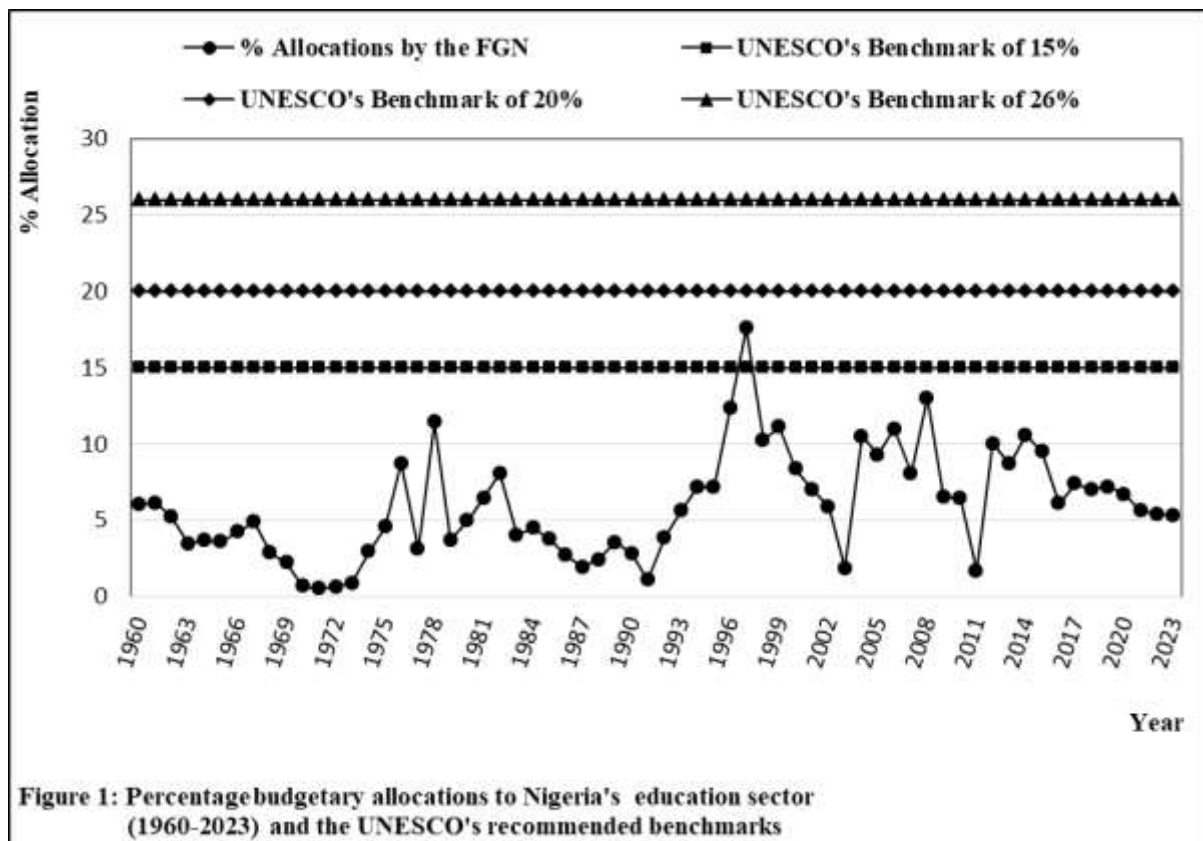
The Two-Way ANOVA test is used to determine whether or not significant differences exist among the percentage budgetary allocations to the education sectors of Nigeria by the FGN from 1960 to 2023 and the UNESCO's recommended benchmarks of 15%, 20% and 26%. Furthermore, where the null hypothesis is rejected; thus significant difference is established, a post hoc pairwise comparison test is used to ascertain the actual cause of the rejection of the null hypothesis.

The Z-test for equality of two population means is used to determine whether or not significant difference exists between the percentage budgetary allocations to the education sector by the FGN during the Pre-Recent Democratic Regime (PRDR) and the Recent Democratic Regime (RDR).

Assessing the Level of Adherence to the UNESCO Benchmarks by Nigerian Government (1960-2023)

It could be seen from Table 1 that from 1960 to 2021, the annual percentage budgetary allocations to the education sector by the FGN recorded its highest value (17.59%; which is only higher than the UNESCO’s 15% benchmark) in 1997, followed by the second highest value (13.00%) in 2008; while the very least values that are less than 1% (which are 0.69%, 0.53%, 0.62% and 0.88) occurred between 1970 to 1973, respectively. Also, generally, between 1960 and 2023, the average annual percentage budgetary allocation to the education sector by the FGN was about 5.94% which is about 9.06%, 14.06% and 20.06%, respectively, less than the UNESCO’s recommended minimum benchmarks of 15%, 20% and 26% of the total annual budget.

Figure 1 shows the plot of the percentage budgetary allocations to the education sector by the FGN as against the UNESCO’s recommended minimum benchmarks of 15%, 20% and 26% of the total annual budget (1960 – 2023).



The plots in Figure 1 show that the percentage allocation falls below all the UNESCO’s benchmarks except for the year, 1997, which was a little above the 15% benchmark figure. These perceived differences are further presented in Table 3. This necessitated the testing for significant difference(s) among the FGN’s percentage budgetary allocations to the education sector and the three UNESCO’s benchmark figures over the years under study.

Table 3: The differences between the percentages budgetary allocations to the education sector by the FGN (1960-2023) and each of the UNESCO's benchmarks

| Year | % Allocation by FGN | Difference w.r.t. UNESCO's Benchmarks | | | Year | % Allocation by FGN | Difference w.r.t. UNESCO's Benchmarks | | |
|------|---------------------|---------------------------------------|--------|----------------------|------|---------------------|---------------------------------------|--------|----------------------|
| | | International | | Developing Countries | | | International | | Developing Countries |
| | | 15% | 20% | 26% | | | 15% | 20% | 26% |
| 1960 | 6.02 | -8.98 | -13.98 | -19.98 | 1992 | 3.86 | -11.14 | -16.14 | -22.14 |
| 1961 | 6.15 | -8.85 | -13.85 | -19.85 | 1993 | 5.62 | -9.38 | -14.38 | -20.38 |
| 1962 | 5.19 | -9.81 | -14.81 | -20.81 | 1994 | 7.13 | -7.87 | -12.87 | -18.87 |
| 1963 | 3.45 | -11.55 | -16.55 | -22.55 | 1995 | 7.20 | -7.80 | -12.80 | -18.80 |
| 1964 | 3.65 | -11.35 | -16.35 | -22.35 | 1996 | 12.32 | -2.68 | -7.68 | -13.68 |
| 1965 | 3.57 | -11.43 | -16.43 | -22.43 | 1997 | 17.59 | 2.59 | -2.41 | -8.41 |
| 1966 | 4.23 | -10.77 | -15.77 | -21.77 | 1998 | 10.27 | -4.73 | -9.73 | -15.73 |
| 1967 | 4.88 | -10.12 | -15.12 | -21.12 | 1999 | 11.12 | -3.88 | -8.88 | -14.88 |
| 1968 | 2.84 | -12.16 | -17.16 | -23.16 | 2000 | 8.36 | -6.64 | -11.64 | -17.64 |
| 1969 | 2.20 | -12.8 | -17.8 | -23.8 | 2001 | 7.00 | -8.00 | -13.00 | -19.00 |
| 1970 | 0.69 | -14.31 | -19.31 | -25.31 | 2002 | 5.90 | -9.10 | -14.10 | -20.10 |
| 1971 | 0.53 | -14.47 | -19.47 | -25.47 | 2003 | 1.83 | -13.17 | -18.17 | -24.17 |
| 1972 | 0.62 | -14.38 | -19.38 | -25.38 | 2004 | 10.50 | -4.50 | -9.50 | -15.50 |
| 1973 | 0.88 | -14.12 | -19.12 | -25.12 | 2005 | 9.30 | -5.70 | -10.70 | -16.70 |
| 1974 | 2.96 | -12.04 | -17.04 | -23.04 | 2006 | 11.00 | -4.00 | -9.00 | -15.00 |
| 1975 | 4.57 | -10.43 | -15.43 | -21.43 | 2007 | 8.09 | -6.91 | -11.91 | -17.91 |
| 1976 | 8.71 | -6.29 | -11.29 | -17.29 | 2008 | 13.00 | -2.00 | -7.00 | -13.00 |
| 1977 | 3.12 | -11.88 | -16.88 | -22.88 | 2009 | 6.54 | -8.46 | -13.46 | -19.46 |
| 1978 | 11.44 | -3.56 | -8.56 | -14.56 | 2010 | 6.40 | -8.60 | -13.60 | -19.60 |
| 1979 | 3.70 | -11.3 | -16.3 | -22.3 | 2011 | 1.69 | -13.31 | -18.31 | -24.31 |
| 1980 | 4.95 | -10.05 | -15.05 | -21.05 | 2012 | 10.00 | -5.00 | -10.00 | -16.00 |
| 1981 | 6.45 | -8.55 | -13.55 | -19.55 | 2013 | 8.70 | -6.30 | -11.30 | -17.30 |
| 1982 | 8.09 | -6.91 | -11.91 | -17.91 | 2014 | 10.60 | -4.40 | -9.40 | -15.40 |
| 1983 | 4.04 | -10.96 | -15.96 | -21.96 | 2015 | 9.50 | -5.50 | -10.50 | -16.50 |
| 1984 | 4.49 | -10.51 | -15.51 | -21.51 | 2016 | 6.10 | -8.90 | -13.90 | -19.90 |
| 1985 | 3.79 | -11.21 | -16.21 | -22.21 | 2017 | 7.38 | -7.62 | -12.62 | -18.62 |
| 1986 | 2.69 | -12.31 | -17.31 | -23.31 | 2018 | 7.03 | -7.97 | -12.97 | -18.97 |
| 1987 | 1.93 | -13.07 | -18.07 | -24.07 | 2019 | 7.20 | -7.80 | -12.80 | -18.80 |
| 1988 | 2.40 | -12.6 | -17.6 | -23.6 | 2020 | 6.70 | -8.30 | -13.30 | -19.30 |
| 1989 | 3.55 | -11.45 | -16.45 | -22.45 | 2021 | 5.60 | -9.40 | -14.40 | -20.40 |
| 1990 | 2.83 | -12.17 | -17.17 | -23.17 | 2022 | 5.40 | -9.60 | -14.60 | -20.60 |
| 1991 | 1.09 | -13.91 | -18.91 | -24.91 | 2023 | 5.30 | -9.70 | -14.70 | -20.70 |

A Two-Way ANOVA was carried out in order to ascertain the significance of otherwise of the perceived differences between the percentage budgetary allocations to the education sector by the FGN (1960-2023) and each of the UNESCO's 15%, 20% and 26% benchmarks and the results outputs are as shown in Table 4.

Table 4: ANOVA Table (Two-factor without replication)

| Source of Variation | SS | df | MS | F | p-Value | F crit. |
|--|------------------|------------|----------|----------|-----------|---------|
| Years | 190.211 | 63 | 3.019 | 1 | 0.486 | 1.382 |
| % Allocations by FGN (1960-2023) & UNESCO's Benchmarks | 13831.700 | 3 | 4610.566 | 1527.069 | 3.4E-132* | 2.652* |
| Error | 570.634 | 189 | 3.019 | | | |
| Total | 14592.545 | 255 | | | | |

* Significance

The ANOVA test results presented in Table 4 show that there was no significant difference in the percentage budgetary allocations to the education sector by the FGN among the years under study. On the other hand, significant difference exists among the percentage budgetary allocations to the education sector by the FGN (1960-2023) and the UNESCO's 15%, 20% and 26% benchmarks. As a follow up, a post hoc pairwise comparison test was further conducted for the percentage allocations by the FGN and each of the three UNESCO's benchmarks. The summary of the respective p-Values are as presented in Table 5.

Table 5: Summary of the test for significant difference between the percentage budgetary allocations to the education sector by the FGN (1960-2023) and the UNESCO's 15%, 20% and 26% recommended benchmarks

| % Allocations by FGN (1960-2023) | UNESCO's Benchmarks | | |
|----------------------------------|-----------------------|-----------------------|--------------------------|
| | Global | | For Developing Countries |
| | 15% | 20% | 26% |
| p-Value | 1.1E-42* ^L | 6.4E-63* ^L | 7.7E-81* ^L |

*^L Significantly low difference

The p-Values in the result outputs in Table 5 show that the percentage budgetary allocations to the education sector by the FGN (1960-2023) is significantly different from each of the three UNESCO's benchmarks of 15%, 20% and 26%. In other words, the percentage budgetary allocations to the education sector by the FGN (1960-2023) were significantly below the three UNESCO's 15%, 20% and 26% benchmarks.

Comparing the Percentage Budgetary Allocations to the Education Sector by the FGN during the Pre-Recent and Recent Democratic Regimes (1960-2023)

This comparison is done to actually ascertain how the compliance by the FGN to the UNESCO's recommended benchmarks on the Percentage Budgetary Allocations to the education sector fared during the Pre-Recent Democratic Regimes, 1960 to 1998 (PRDR) and the Recent Democratic Regimes, 1999 to 2023 (RDR). This is so, given that the PRDRs were agreed to have been bedeviled with frequent interruptions by the military, and as such the administrations were not stable as supposed and consequently not expected to exhibit good governance, especially in the education sector. On the other hand, in the RDR, the administrations have continued to enjoy very robust atmospheres and enviable stability and are more relaxed to govern with utmost competences. Thus,

the expectations are very high that there will surely be significant improvements in the levels of compliances of the UNESCO's benchmarks by the FGN in different tenures so far encountered.

In carrying out this comparison between PRDR and RDR, in regards to the FGN's compliance to the UNESCO's recommended benchmarks on the percentage budgetary allocations to the education sector (1960-2023), the test for equality of two population means was conducted. The Z-test for two sample means was used because of large sample sizes (the sample size for PRDR, 39, is large; and the sample size for the RDR, 25, is seemingly large). The summary statistics for PRDR and RDR are as presented in Table 6, while the results output for the Z-test for two sample means is as presented in Table 7.

Table 6: Summary statistics for PRDR and RDR

| PRDR | | RDR | |
|--------------------------|--------|--------------------------|--------|
| Mean | 4.86 | Mean | 7.61 |
| Standard Error | 0.56 | Standard Error | 0.54 |
| Median | 3.86 | Median | 7.20 |
| Standard Deviation | 3.51 | Standard Deviation | 2.71 |
| Sample Variance | 12.35 | Sample Variance | 7.36 |
| Kurtosis | 3.64 | Kurtosis | 0.31 |
| Skewness | 1.65 | Skewness | -0.29 |
| Range | 17.06 | Range | 11.31 |
| Minimum | 0.53 | Minimum | 1.69 |
| Maximum | 17.59 | Maximum | 13.00 |
| Sum | 189.69 | Sum | 190.24 |
| Count | 39 | Count | 25 |
| Coefficient of Variation | 72.26% | Coefficient of Variation | 35.64% |

Table 7: Z-Test (Two Sample for Means)

| | PRDR | RDR |
|------------------------------|---------|------|
| Mean | 4.86 | 7.61 |
| Known Standard Deviation | 3.51 | 2.71 |
| Known Variance | 12.35 | 7.36 |
| Observations | 39 | 25 |
| Hypothesized Mean Difference | 0 | |
| Z | -3.5125 | |
| P(Z<=z) one-tail | 0.0002* | |
| Z Critical one-tail | 1.6449 | |
| P(Z<=z) two-tail | 0.0004* | |
| Z Critical two-tail | 1.9600 | |

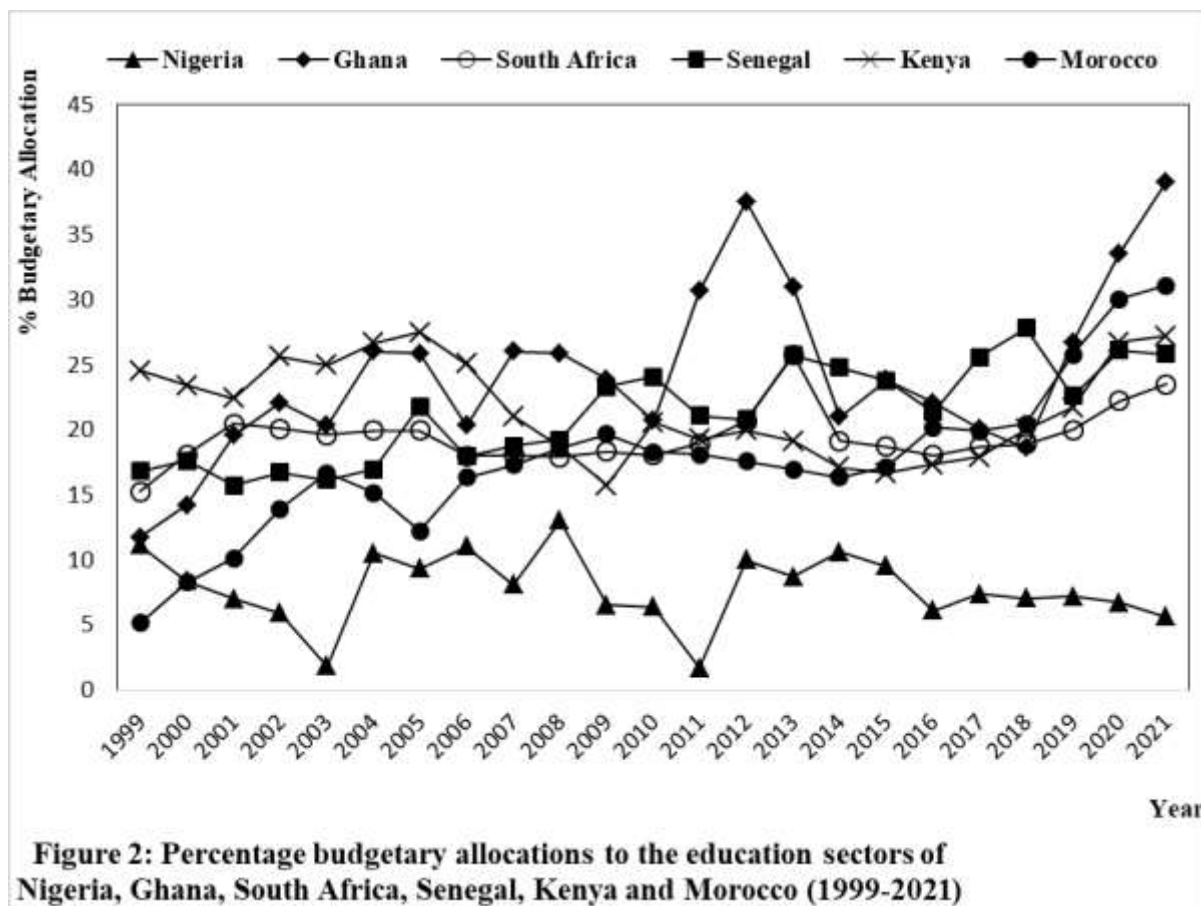
*** Significance**

The results outputs in Tables 6 and 7 show that the average percentage budgetary allocation to the education sector by the FGN is higher in the RDR (with about 7.61%) than in the PRDR (with about

4.86%). Also, the Coefficients of Variation (CoV) for the RDR is less (about 35.64%) than for the PRDR (about 72.26%), which are suggestive that the allocations during the RDR may have been higher than during the PRDR. The Z-test for the difference between two population means concludes that significant difference (0.0004) exists between the average percentage allocations for the RDR and PRDR. As a matter of fact, the average percentage allocation during the RDR is significantly higher (0.0002) than that of PRDR, at 5% level of significance of testing.

A Comparison of the Percentage Budgetary Allocations to the Education Sectors of Nigeria, Ghana, South Africa, Senegal, Kenya and Morocco (1999-2021)

The percentage budgetary allocations to the education sectors of Nigeria, Ghana, South Africa, Senegal, Kenya and Morocco for the period, (1999-2021), are plotted in Figure 2.



The plots in Figure 2 show that, apart from in 1999 and 2000, the annual percentage budgetary allocations for Nigeria from 2001 to 2021 fall below those of Ghana, South Africa, Senegal, Kenya and Morocco. In fact, within the period, (1999-2021), the very highest percentage budgetary allocations for Nigeria occurred in 2008 (with about 13.00%); and the very least occurred in 2011 (with about 1.69%). The very highest percentage budgetary allocations for Ghana occurred in 2021 (with about 39.02%); and the very least occurred in 1999 (with about 11.73%). The very highest percentage budgetary allocations for South Africa occurred in 2013 (with about 25.75%); and the

very least occurred in 1999 (with about 15.24%). The very highest percentage budgetary allocations for Senegal occurred in 2018 (with about 27.80%); and the very least occurred in 2001 (with about 15.73%). The very highest percentage budgetary allocations for Kenya occurred in 2005 (with about 27.47%); and the very least occurred in 2009 (with about 15.72%). The very highest percentage budgetary allocations for Morocco occurred in 2021 (with about 31.06%); and the very least occurred in 1999 (with about 5.14%).

Taking a closer and critical look at Table 2, and doing some elementary mathematical calculations, it is evident that from 1999 to 2021, the average annual percentage budgetary allocations for Nigeria, Ghana, South Africa, Senegal, Kenya and Morocco were 7.81%, 24.37%, 19.49%, 21.32%, 21.70% and 17.61%, respectively. These figures no doubt imply that the level of adherence to the UNESCO's 15%, 20% and 26% recommended minimum benchmarks for the period, (1999-2021), was highest in Ghana, followed closely by Kenya, and then Senegal, South Africa, Morocco and lastly, Nigeria.

On a serious note, Nigeria was unable to meet up with adhering to any of the UNESCO's 15%, 20% and 26% recommended benchmarks for the period, (1999-2021). However, for the same period, South Africa, Senegal and Kenya were able to meet up with adhering benchmarks; Ghana could not so for 1999 and 2000, but succeeded for the period, (2001-2021). Morocco succeeded in 2003, 2004 and (2006-2021). Summary of the respective frequency of adherences to each of the three UNESCO's 15%, 20% and 26% recommended benchmarks for the period, (1999-2021), by each of the selected African countries are presented in Table 8.

Table 8: Summary of the frequency of adherences to the UNESCO's benchmarks by the selected African countries (1999-2021)

| Country | Frequency of Adherence to UNESCO's Benchmarks | | |
|---------------------|---|---|--|
| | $\geq 15\%$ | $\geq 20\%$ | $\geq 26\%$ |
| Nigeria | 0 (None). | 0 (None). | 0 (None). |
| Ghana | 21 ; (2001-2021). | 19 ; (2002-2017, 2019-2021). | 7 ; (2004, 2007, 2011-2013, 2019-2021). |
| South Africa | All 23 ; (1999-2021). | 7 ; (2001-2002, 2012-2013, 2019-2021). | 0 (None). |
| Senegal | All 23 ; (1999-2021). | 14 ; (2005, 2009-2021). | 2 ; (2018, 2020). |
| Kenya | All 23 ; (1999-2021). | 14 ; (1999-2007, 2010, 2018-2021). | 4 ; (2004-2005, 2020-2021). |
| Morocco | 18 ; (2003-2004, 2006-2021). | 5 ; (2016, 2018-2021). | 2 ; (2020-2021). |

CONCLUSION

A Two-Factor ANOVA test was carried out among the FGN's annual percentage budgetary allocations to the education sector (1960-2023) and the three UNESCO's benchmark figures. The result of the test showed that there was no significant difference among the years with respect to the percentage budgetary allocations to the education sector by the FGN for the period, 1960 to 2023. Also, for the same period, 1960 to 2023, significant difference exists among the percentage budgetary allocations to the education sector by the FGN and the three UNESCO's benchmarks. In fact, the percentage budgetary allocations to the education sector by the FGN (1960-2023) significantly fall below the three UNESCO's benchmarks of 15%, 20% and 26%.

The Z-test for equality of two population means was conducted in order to test for significant difference between the annual percentage budgetary allocations to the education sector by the FGN during the Pre-Recent Democratic Regime (PRDR) and the Recent Democratic Regime (RDR) for the period, 1960 to 2023. The results show that the average percentage budgetary allocation to the education sector of Nigeria during the Recent Democratic Regime (1999-2023) was significantly higher than in the Pre-Recent Democratic Regime (1960-1998).

Furthermore, for the period, (1999-2021), the average annual percentage budgetary allocations for Nigeria, Ghana, South Africa, Senegal, Kenya and Morocco were 7.81%, 24.37%, 19.49%, 21.32%, 21.70% and 17.61%, respectively; and these figures, no doubt, imply that the level of adherence to the UNESCO's 15%, 20% and 26% recommended minimum benchmarks was highest in Ghana, followed closely by Kenya, and then Senegal, South Africa, Morocco and lastly, Nigeria. As a matter of fact, Nigeria was unable to meet up with adhering to any of the UNESCO's 15%, 20% and 26% recommended benchmarks for the period, (1999-2021). However, for the same period, South Africa, Senegal and Kenya were able to meet up with adhering benchmarks; Ghana could not so for 1999 and 2000, but succeeded for the period, (2001-2021). Morocco succeeded in 2003, 2004 and (2006-2021).

REFERENCES

- Babatunde, S. A. (2018). Government spending on infrastructure and economic growth in Nigeria. *Journal of Economic Research, EkonomskaltraZivanja*, 31(1), 997-1014.
- Callaway, A., & Musone, A. (1968). Financing of education in Nigeria. *African Research Monographs-15*, UNESCO: International Institute for Educational Planning.
- Ekaette, S. O., Owan, V. J., & Agbo, D. I. (2019). External debts and the financing of education in Nigeria from 1988-2018: Implication for effective educational management. *Journal of Educational Realities (JERA)*, 9(1), 55-68. Retrieved from https://www.researchgate.net/publication/335703366_External_Debts_and_the_of_Education_in_Nigeria_from_1988_-_2018_Implication_for_Effective_Educational_Management.
- Odigwe, F. N., & Owan, V. J. (2018). Trend analysis of the Nigerian budgetary allocation to the education sector from 2009 to 2018 with reference to UNESCO benchmark. *International Journal of Education Benchmark*, 14(1).
- Ojewumi, J. S., & Oladimeji, O. W. (2016). Effect of public spending on the growth of the education sector in Nigeria. *Journal of Education and Industry*, 14(2).

- Omotor, D. G. (2017). Analysis of Federal Government Expenditure in the education sector of Nigeria: Implications for national development. *Journal of Social Sciences*, 9(2), 105–110.
- Oriakhi, D. E. (2014). Government expenditure and the development of the education sector in Nigeria: An evaluation. *Journal of Public Administration and Management*, 3(5).
- UNESCO (2015a). *Comprehensive sexuality in teacher training in Eastern and Southern Africa*. Paris.
- UNESCO (2015d). *Education for all 2000-2015-achievements and challenges*. EFA Global Monitoring Report, Paris.
- World Bank (1999). *The state of education in a changing world*. World Development Report, New York, Oxford University Press.