# Impact of Public Health Expenditure on the Nigerian Health Sector Performance: Empirical Investigation

**[1]Ebhotemhen, Wilson & [2]Hezekiah, Olawale**
[1,2]Department of Economics, Edo State University, Iyamho – Uzairue Edo State, Nigeria.
Corresponding Email: harlyns1974@gmail.com , Phone N0:08023477157

## Abstract
*Health is a vital and crucial factor which determines the quality of human capital that enables the government to take the challenge in the areas of providing affordable and good healthcare for the citizenry through health expenditure. On the basis of this, the study examines the impact of public health expenditure on the Nigeria health sector performance beginning from 1981 to 2020 by employing Autoregressive Distributed Lag. The study ascertained stationarity of the time series properties of the variables where Augmented Dickey-Fuller (ADF) was applied. Besides, the ARDL Bounds Test results confirmed the rejection of no long-term equilibrium relationship among the variables. The results of the Error Correction Mechanism (ECM) accentuated the connection between Public Healthcare Expenditure and Health Sector Performance in Nigeria through establishment of stable long-term equilibrium relationship among the variables employed in the model. Therefore, this study recommends not only increase in the budgetary allocation to the health sector but also establish a platform that will ensure probity and accountability in the Health Sector. This in turn leads to achieve improvement in the health sector performance necessary for building human capital in Nigeria.*

**Keywords**: Healthcare Expenditure, Health Sector, Per Capita Income, Number of Physicians, Literacy Rate.

## Introduction

Health is regarded as a relevant and crucial factor that determines the quality of human capital and also a vital factor for economic growth and development which remains the basic factor for any activity undertaken by man (Olarinde & Belolo 2016). World Health Organization (2010), pointed out that the importance of healthcare to our economy cannot be overemphasized. It was not until recently that the importance of healthcare as a substantive predictor to economic growth and capital development came to limelight in the international growth (Ben & Oved, 2011). In fact, when one considers the popular African saying "Health is wealth" this is important because the first wealth of a nation is health (Peretovsky, 2016). In line of this, a consensus has been established among the empirical researchers taking health to be public good, in which the supply and demand must not be allowed at the mercy of the profit maximizers. The government needs to play a key

role in bringing about better health services that are affordable by the Nigeria populace.

As noted by Thomas (2013), a healthy population would contribute more to the growth of any economy as well as to the productivity of a nation compared to an unhealthy one. Put differently, the quality of human labour is a monotonic function of its health status through the performance of the health sector. When a population is unhealthy, a greater numbers of man-hours will be lost as a result of the inability of the sick ones to be productively engaged. It is important to add here that, without good health condition, it becomes impossible to carry out any economic activity (Cremieus & Pilon, 2009).

In addition, it is noted in the literature, that improvement in health care is an important requirement needed for Human Capital Development (HCD) in the economy. Afridi (2015), noted that improvement in healthcare of a nation warrants outward shift in labour supply curve and increase productivity of labour with resultant increase in the productivity in investment. Thus, the level of government expenditure on health determines the level of human capital development which leads to efficient and productive investment (Muhammed, 2007).

Consequently, World Health Organization (WHO) and United Nation International Children's Emergence Fund (UNICEF) held a conference in 2008 at Alma-Ata USSR on the issue of the Primary Health-Care as a major key for growth and social justice. (Lucas, 2010). On the basis of this, various governments in developed and developing countries allocated a significant part of their entire budget to health sector in the economy. Considering the desire of the government towards the health sector, this study seeks to investigate the impact of government expenditure on the health sector performance in Nigeria within the period under study. This study consists of five sections. Next is literature review, follows by Section three where methodology of this study is discussed. The results and discussion of findings are discussed in section four while conclusion and policy recommendations contain in the last section.

## Literature Review

### Theoretical Literature

Healthcare expenditure and Health Sector Performance have generated a lot of debate between medical scientists and health economists culminating into different

schools of thought with diverse ideas. However, public expenditure must be reasonable enough to meet the short fall arising from the Health Sector Performance in order to achieve the target rate necessary in an economy. The interest is to know the size of the gap in the area of healthcare expenditure that is necessary to be filled to warrant good health sector performance, hence the study uses Mosley-Chen Model of Mortality developed in 1984. The model is developed using the transmission mechanism given as follow:

Socio-Economic-Status→ Proximate Determinants → Risk of Diseases → Mortality Outcomes

The point here is that the social economic status affects the determinants of health and this further affects health performance. This has to do with the degree of hygiene and environmental sanitation. Based on this analogy, the model explains that health should not be treated with laisse- fare altitude and hence it is important to specify the order of causality as well as the socio-economic determinant. The model further explains that the child mortality and child growth occur as a result of the nutritional and infectious conditions, such that weight-for-age can be regarded as a measure of health status rather than solely nutritional status. Therefore, the health status was defined by using the Gumez classification: Healthy (90% above of a standard weight-for-age); Grade I (75 – 89% of standard); Grade II (60 – 74% of standard, Grade III (below 60% of standard). The index of health status is preoccupied by the benefits of analytical technique. These lists of proximate determinants are exhaustive believing that there will be a change in a child health if there is a change in any of the component above. Therefore, increase in healthcare expenditure is necessary to stimulate the 90% needed for a healthy child.

## Empirical Literature

Public expenditure on healthcare has in recent time becomes a thing of general concern, because of its relevance to human life and the economy. Budget deficit is a demonstration of excess of government spending over its revenue and deficit occurs when there is misappropriation of government revenue, being that as it may, the primary concern is the question of whether or not public healthcare expenditure enhances the health sector performance. Various researchers such as Rahman and Bassey (2018), Yaqub (2014) do not see to have a consensus.

Baldacci (2014) investigated the relationship between healthcare expenditure and health sector performance for one hundred and twenty (120) developing countries covering the period of 1975 to 2012 using, the panel data approach. The result found out that expenditure on healthcare within the period under investigation enhances growth. He identified in the results that the positive effect of healthcare spending on growth is great in the economy. Other studies: such as Greiner (2015), Strauss and Martins (2015), also examined the same using different countries and affirmed that healthcare expenditure has a positive relationship with economic growth.

In a similar study, Filmer and Pritchtee (2010) investigated the impact of public healthcare expenditure and the health sector performance for the period of thirty-five (35) years i.e. 1974-2008. Multivariate regression model was used with double log specification. Income was used as a control variable, because of its universally acknowledged impact on health, which indirectly warrants a better living condition. The study found that healthcare expenditure affects child mortality rate (CMR), but it appears not statistically significant given by the result.

Rahman and Bassey (2018) investigated the impact of government healthcare expenditure on the Nigeria health sector covering the period of 1980 - 2015. The study employed the Error Correction Mechanism (ECM) regression technique. The results indicate that health sector performance proxies by life expectancy and literacy rate were inversely correlated with health sector expenditure. The recommendation given by the author is that government should increase its spending on the healthcare delivery, as this could warrant improvement in the health sector performance in the economy.

Yaqub (2014) examined the effectiveness of public healthcare expenditure on the health sector performance in Nigeria beginning from 1985 - 2012, using 2 Stage Least Squares (2SLS). The study found out that public healthcare expenditure has an inverse relationship with the infant mortality. Therefore, the study concludes that one of the objectives of Millennium Development Goal (MDG) which is to reduce infant mortality by $\frac{2}{3}$ in 2016 should be adopted.

Rahman and Bassey (2018) investigated the impact of public healthcare expenditure on the health sector in Nigeria, covering the period of 1980 to 2015.

The results revealed that public healthcare expenditure enhances health sector performance in Nigeria.

Bidani and Ravallion (2020), in their study, they examined the impact of public healthcare expenditure on the health sector performance beginning from 1981-2015 being the period of thirty-five years using cross country regression analysis. The results obtained indicate that per capita health expenditure was positively related to the life expectancy of the poor, but it had no significant link to the life of the rich. From the results, it is evident that the public healthcare expenditure had a larger impact on the poor ie those living below two dollars per a day than the rich.

Also, Wallack and Erbill (2020) examined the relationship between healthcare expenditure and the health outcomes in Nigeria using annual time series data for the period of 30 years beginning from 1985–2015. They adopted the Ordinary Least Squares technique. The results revealed that healthcare expenditure is directly related with the health outcome. The study recommends increase in the public healthcare expenditure to enhance the health performance outcome.

The study proceeds to add value to knowledge by way of bridging the gap in the literature, using Auto-Regressive Distributed Lag (ARDL).and their model was adapted subject to modification to robust the study. The research is hinged on the model of Rahman and Bassey (2018) as shown in equation (1). Therefore, the outcome of this study would constitute a vital knowledge to literature.

## Methodology

### Sources of Data

The study relies on secondary sources of annual time series data beginning from 1981 to 2020, forty (40) years. The data for life expectancy and literacy rate were obtained mainly from the National Bureau of Statistics, while urban population was obtained from Central Bank of Nigeria statistical bulletin. Annual Report and Statement of Accounts and other documents from the Central Bank of Nigeria were equally used.

## Model Specification

In order to examine the impact of public healthcare expenditure on the health sector performance in Nigeria and following the extant literature as identified in the work of Rahman and Bassey (2018) in which their model was adapted subjected to modification to explain the specific impact of public healthcare expenditure on the health sector performance, the model is stated below:

$$HSP = f(GEXP, TNMW, INST, X_i \ldots.n) \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where: HSP = Health Sector Performance, GEXP = Government Healthcare Expenditure, TNMW = Total Number of Nurses and Midwives, INST = Institutional Quality, and $X_i$ …n represents vector of other health exogenous variables

The study however modified the empirical model of Rahman and Bassey (2018) by introducing the variables of interest that are considered relevant to health sector performance in Nigeria. The model is further specified as:

$$HSP = f(GEXP, PC1, NPHY, UPOP, LITR) \ldots\ldots\ldots\ldots (2)$$

Where: PCI = Per Capita Income, NPHY = Number of Physicians, UPOP = Population of People in the Urban Area, and LITR = Literacy Rate

However, health sector performance can be measure by Life Expectancy Rate, hence the model is stated below:

$$LnLER_t = \varphi_0 + \varphi_1 lnGEXP_t + \varphi_2 lnPCI_t + \varphi_3 lnNPHY_t + \varphi_4 lnUPOP_t + \varphi_5 lnLITR + \vartheta_t \ldots(3)$$

$$\varphi_1 - \varphi_5 > 0$$

Where:

LER = Life Expectancy Rate, $\varphi_0$ = intercept, $\varphi_1 - \varphi_5$ = parameters estimates, $\vartheta_t$ = error term

The general form of ARDL is presented in equation (4) below;

$$\Delta Z_t = \varphi + \sum_{i=1}^{K} э_t + \Delta z_{t-1} + \Psi_{t-1} + \emptyset_t \ldots\ldots\ldots\ldots\ldots (4)$$

Where:

$Z_t$ = vector of stationary variable, $\varphi$ is a constant vector, э is the coefficients of the parameter estimate in the model, K represents the numbers of lags, while Ψ is the long-run variable and ∅ stands for the vector of error term.

Equation (5) below presents the operational model of the ARDL

$$\Delta lnLER_t = \varphi + \sum_{j=1}^{k} \partial i \Delta lnLER_{t-1} + \sum_{j=1}^{i} \omega i \Delta lnGEXP_{t-1} + \sum_{j=1}^{m} эi \Delta lnPCI_{t-1} +$$

$$\sum_{j=1}^{n} €i\Delta lnNPHY_{t-1} + \sum_{j=1}^{p} \Psi i\Delta lnUPOP_{t-1} \sum_{j=1}^{q} \varphi i\Delta lnLITRC_{t-1}$$

$$+ \ \ə_1 \ lnLER_{t-1} + \ə_1 \ lnGEXP_{t-1} + \ \ə_1 \ lnPCI_{t-1} + \ə_1 \ lnNPHY_{t-1} + \ə_1 \ lnUPOP_{t-1} + \ə_1 \ lnLITR_{t-1} + E_{t\ldots}(5)$$

Below is the error correction model for the ARDL

$$\Delta lnLER_t = \Phi_0 + \sum_{j=1}^{k} \partial i\Delta lnLER_{t-1} + \sum_{j=1}^{p} \omega i\Delta lnGEXP_{t-1} + \sum_{j=1}^{y} \ə i\Delta lnPCI_{t-1} + \sum_{j=1}^{m} €i \ \Delta lnNPHY_{t-1} + \sum_{j=1}^{i} \Psi i\Delta lnUPOP_{t-1} + \sum_{j=1}^{n} \varphi i\Delta lnLITR_{t-1} + \alpha e_{t-1} + \sigma \ldots (6)$$

where $e_{t-1}$ represents the error correction term and this accounts for the ordinary least squares residual series emanating from the long run co-integration output.

Where

$e_{t-1} = (LER_{t-1} - \Phi_o - \omega_i GEXP_{t-1} - \ə_i PCI_{t-1} - €i \ NPHY_{t-1} - \Psi i UPOP_{t-1} - \varphi i \ LITR_{t-1}$ …… (7)

Equation (7) expresses the fact that the linear combination of all variables used in the model have to be stationary at level for the stochastic error term to be statistically significant.

**Decision Rules**

(i) If the computed F-statistic is > the upper bound, the null hypothesis of no long-run relationship is rejected.

(ii) If the computed F-statistic is < the lower bound, the null hypothesis of no long-run relationship is however accepted

(iii) If the computed F-statistic falls between the lower and the upper bound values, the result is inconclusive or uncertain.

**Table 1: Lag Order Selection Criteria**

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | -41.5843 | NA | 24.3021 | 21.7711 | 12.1991 | 21.0341 |
| 1 | - | 31.6622* | 0.4211* | 13.0123* | 14.6112* | 13.1526* |
| 2 | 116.4001 | 26.3214 | 0.5342 | 13.5344 | 15.7791 | 14.2251 |
| | - | | | | | |
| | 194.4421 | | | | | |

* indicates lag order selected by the criterion

The lag order selection criteria in table 1 indicates the appropriate lag length for this study as revealed by the Final Prediction Error showing the lag selection of minimum values among the competing lag length criteria, hence the lag length is 1 (one).

## Results and Discussion

### Unit Root Results

Most often, macroeconomic data are associated with the non-stationary time series properties. Unfortunately, a regression conducted with such non-stationary time series leads to spurious results '(Alemayehu, & Daniel 2012). In order to do away with such non-stationary regression, the time series data used in this study were checked to ascertain the presence of unit root using Augmented Dickey-Fuller test statistic at 5 per cent critical value. Therefore, the results are given in table 2.

**Table 2: Augmented Dickey Fuller (ADF) Unit Root Results (Intercept)**

| Variables | ADF Test at level | 5% C.V | ADF Test At 1st Diff. | 5% C.V | Order of Integra. |
|---|---|---|---|---|---|
| LER | -3.2444 | -2.9390 | - | - | I(0) |
| GEXP | 2.4241 | -2.9604 | -5.8484 | -2.9266 | I(1) |
| PCI | 2.7818 | -2.9238 | -6.8537 | -2.9252 | I(1) |
| NPHY | -0.5073 | -2.9266 | -8.9455 | -2.9266 | I(1) |
| UPOP | -0.6449 | -2.9266 | -9.3063 | -2.9266 | I(1) |
| LITR | -0.1243 | -2.9238 | -6.8434 | -2.9252 | I(1) |

Source: Author Regression Output.

ADF test confirmed that some of the series in the research model are of the same order of integration i.e. I(1), but that of Life Expectancy Rate (LER) is stationary

at level. i.e. I(0). So, the null hypothesis, 'that the variables possess unit root is however rejected at 5 per cent level of significance (Jenkin, 1978).

**Table 3: ARDL Bounds Test**

| Test Statistic | Value |
|---|---|
| F-statistic | 2.77 |
| Critical Value Bounds | |
| Significance | Upper Bound |
| 5% | 2.03 |

Source: Author Regression Output

The long-run equilibrium relationship is found among the variables used in this study, as the calculated F-statistic of 2.77 exceeds the critical value of 2.03 at 5 per cent significance level, hence the Null Hypothesis ($H_0$) of no long-run relationship is however rejected

**Table 4: The Long-run ARDL Estimates after the bound Test having Life Expectancy Rate (LER) as dependent variable.**

| Variables | Coefficient | t-value | p-value |
|---|---|---|---|
| C | 112.6632 | 9 4421 | 0.0000* |
| LnGEXP | 0.0027 | 0.0232 | 0.0021* |
| LnPCI | -0.0131 | 0/44211 | 0.0041* |
| LnNPHY | -1.3352 | 1.1229 | 0.0144* |
| LnUPOP | 0.0334 | 3.5221 | 0.0210* |
| LnLITR | -0.3462 | -1.5112 | 0.0053* |

Source: Author Regression Output

Note * shows that the results are statistically significant at the 5 per cent level.

## Discussion of Findings

The findings established that the long-run relationship between Life Expectancy Rate (Healthcare Performance) and Public Healthcare Expenditure is direct and significant at the 5 per cent level. This result contradicts the findings particularly with Yaqub (2014) and that of Rahman and Bassey (2018), whose findings established inverse relationship between the Life Expectancy and Public Healthcare Expenditure. We believe that public healthcare expenditure enhances life expectancy rate. The significant of public healthcare expenditure in explaining the systemic change in life expectancy in Nigeria remains the basic fact for achieving good healthcare performance.

In line with our a priori prediction, per capita income and number of physicians are directly related with life expectancy, meaning that a rise in public healthcare expenditure leads to an increase in the life expectancy rate. The results therefore, indicates that public healthcare expenditure is insignificant in explaining changes in the healthcare performance. Healthcare performance proxy by life expectancy is however affected by misappropriation and corruption in the use of public funds allocated to the health sector, hence our findings violated the a priori expectation.

The coefficient of literacy rate shows an inverse relationship with life expectancy rate but statistically significant at 5 per cent level in explaining systemic variation in healthcare performance in Nigeria. The result is however contrary to our a'priori expectation, because most of the educated populace in Nigeria do not take the responsibility of providing correction where in fact public funds for health sector are not properly spent. However, the impact appears insignificant.

**Table 5: The short-run Dynamics after the Bounds test with Life Expectancy Rate (LER) as Dependent Variable.**

| **VARIABLE** | **COEFFICIENT** | **STD. ERROR** | **T-STATISTIC** | **PROB.** |
|---|---|---|---|---|
| D(INGEXP) | 0.0261 | 0.0292 | 0.1133 | 0.7652 |
| DLNPCI(-1) | -3.4659 | 1.5546 | -2.3440 | 0.0156 |
| D(LNNPHY) | 0.0815 | 0.0431 | 3.6253 | 0.0027 |
| D(LNUPOP) | 0.0447 | 0.0204 | 2.5522 | 0.0522 |
| DLNLITR(-1) | 0.0541 | 0.0251 | 3.2201 | 0.0251 |
| ECM01(-1) | -0.79642 | 0.3152 | -3.1923 | 0.0216 |
| Durbin-Watson = 1.9722 | | | | |

Source: Author Regression Output.

In the short-run dynamics, all the variables except per capita income fails to conforms to our a' priori expectation. But they are all statistically significant at the five per cent level. The coefficient of government expenditure on the healthcare (GEXP) and that of population of people living in the urban area (UPOP) remain consistent with the long-run result. In fact, government revenue spent on healthcare, warrants life expectancy in Nigeria. The coefficient of parameter estimates of other variables in the model did not conform with the long-run findings.

The coefficient of the number of health personnel indicates direct relationship with the life expectancy, explaining that there exist high quality of medical doctors and nurses discharging their responsibility in the health sector. This result agrees with the findings of Filmer and Pritchtee (2010), who used income as control variable to induced the medical doctors and nurses because of its universally acknowledged impact on health by way of creating a better living condition for the medical personnel.

The coefficient of the literacy rate in the first period conforms with our a'priori prediction. This is so for the reason being that the educated Nigerians, particularly the health personnel abide by the rules of proper hygiene, environmental sanitation and also providing counselling on the needs for doing so.

The results also indicate that per capita income lagged by one-year period fails to have the expected sign. However, the result is statistically significant at the 5 per cent level. The reason for not conformity to our expected prediction may be caused by inadequate capita for a better medical care which would have warranted high life expectancy rate in Nigeria.

The value of Durbin-Watson (DW) statistic in this study is 1.9722. This demonstrates no serial correlation as DW value can be approximated to 2.0. It also shows that the rule of thumb of D\W is equal to 2.0 being the case of no autocorrelation because 1.9722 being the value for DW can be approximated to 2.0. The study therefore rejects the hypothesis of presence of serial autocorrelation in the model

The coefficient of the error correction mechanism (ECM) is negatively signed and the prob. Value is statistically significant at the 5 per cent level. The ECM value shows that the speed of adjustment is 79.6 per cent and is statistically significant at the 0.05 per cent level. The meaning of this is that the short-run model will adjust back to the long-run equilibrium at the speed of 79.6 per cent. More importantly, the significance of the Error Correction Mechanism indicates the existence of a long-run equilibrium relationship between life expectancy and its determinants used in the study.

**Diagnostic Test**

For the purpose of ascertaining the robustness of the model, the study established diagnostic tests given in table 6 below:

Table 6

| | | | |
|---|---|---|---|
| R-squared | 0.90 | Mean dependent var. | 4933.05 |
| Adjusted R-squared | 0.88 | S.D dependent var. | 2252.44 |
| S.E. of regression | 431.04 | Akaike info. Criterion | 13.42 |
| Sum squared resid. | 658371 | Schwarrz criterion | 12.69 |
| Log likelihood | -315.31 | Hannan-Quinn criter. | 12.04 |
| F-statistic | 41.63 | Durbin-Watson | 1.97 |
| Prob (F-statistic) | 0.0000 | | |

Serial correlation F(2, 38) = 0.025
Heteroscedasticity F(8,36) = 0.0135
ARCH Test F(1,43) = 0.0025

From the diagnostic test conducted indicates that the independent variable used in the model accounts for 90 per cent of the variation in the life expectancy in Nigeria. Thus, the over-all goodness of fit is relatively okay, though some of them are not correctly signed as expected in the a'priori expectation. From the Akaike information criterion and Schwarz criterion, the model is correctly specified. The F-statistic that determined the joint significant of all parameters employed in the model is statistically significant at the 5 per cent level. In addition, Durbin-Watson which is 1.97 given the result can be approximated to 2.0 being the case of no serial correlation in our model.

**Stability Test**

In order to establish the robustness of the model, a stability test was conducted using the Cusum and Cusum of Squares Test as shown in figure 1 and 2 respectively:

Fig. 1: Cusum Test

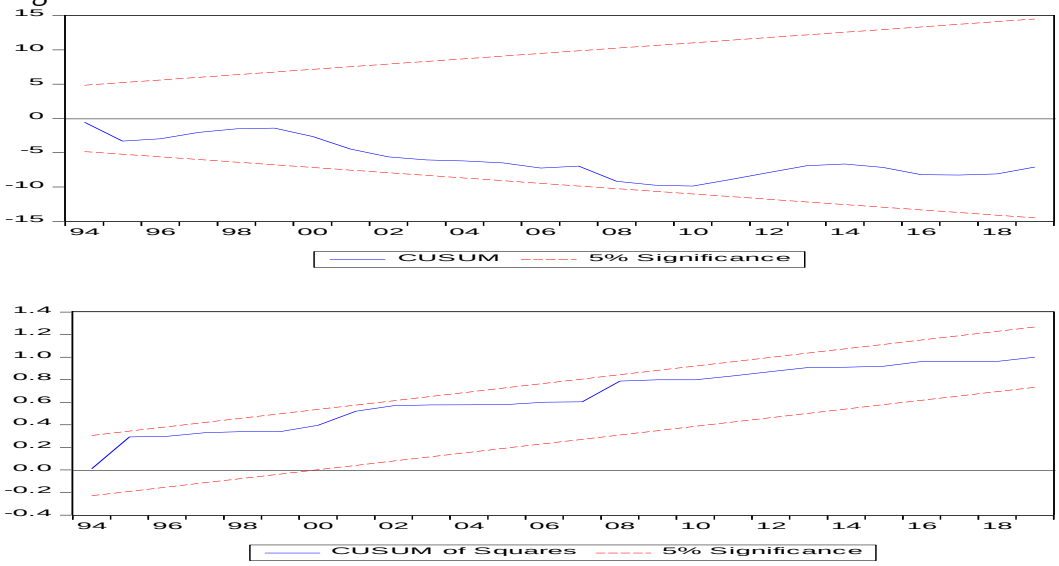


Fig.2: Plot of Cumulative Sum of Square of Recursive Residual Results

The stability test performed using Cusum and Cusum Sum of Square test as shown in figure 1 and 2 above indicate stability. The reason being that the observed bound is found lying between the critical bound lines, hence it can be stated that the model is stable at 5 per cent level of significance

## Conclusion and Policy Recommendations

Having examined the impact of public healthcare expenditure: a case study of the health sector in Nigeria using the ARDL approach, our findings shown that there exist long-run equilibrium relationship between the public healthcare expenditure and the health sector performance (life expectancy rate).

In line with the results obtained, the following recommendations are provided:

1. The government should increase the amount of its expenditure on the health sector as discovered in the result that it enhances improvement in the life expectancy rate. As this is a major way to guarantee tremendous improvement in the life expectancy and also warrants reduction in the mortality rate in Nigeria.
2. There is also the need for government to increase its annual budget to education, based on the fact that educated household are likely to be more conscious of

good nutritional intake and this guarantee good healthcare system, the rationale for good environmental sanitation and other hygiene necessary to promote good health.

3. The government should form a synergy with the private sectors in the areas of providing quality and quantitative healthcare facilities as well as qualified number of physicians to meet the demand of Nigerians in providing them good healthcare to facilitate improvement in the life expectancy in Nigeria.

## References

Afridi, A. (2015). Health Expenditure and Health Outcome" African Development Bank Economic Research working paper December, 2015

Alemayehu, O., Njuguna, P. & Daniel, M. (2012). Health Sector Reform: Key Issues in Less Developed Countries. *Journal of International Development* 1(3), 329 – 347.

Baldacci, E. B. (2014). The Impact of Poor Health on Total Factor Productivity. *The Journal of Development Studies*, 42(6), 918 – 938.

Ben, H. & Oved, R. (2011). Public Spending Child Healthcare Outcome. *American Journal of Economics*: 8(2) 23 – 37

Bidani, A. & Ravallion, W. (2020). Gender and Health Outcomes: The Impact of Healthcare System and Their Financing on Life Expectancies of Men and Women. *Journal of Social Sciences and Medicine.* 20(6); 886-895.

Cremieus, P.Y. & Pilon, C. (2009). The Relationship Between Healthcare Spending and Health Outcomes. *International Journal of Economics*, 5(2); 3 – 9.

Filmer, D. & Pritchtee, L. (2010). Child Mortality and Public Spending on Health: How much Does Money Matters? World Bank Policy Research Working Paper. N0 1864 Washing: World Bank.

Olainde, G. & Belolo, F. (2016). Health Expenditure and Economic Growth in Nigeria. *Journal of Energy Trend in Economics and Management Sciences*" 2(2); 83 – 87.

Peretovsky, W. (2016). Health is Wealth, The First Wealth of a Nation. *International Journal of Economics, Business and Finance;* 4(1); 23 – 45.

Rahman, H. & Bassey, J.U. (2018). Healthcare Financing and Health Outcomes in Nigeria. *International Journal of Humanities and Social Sciences*; 2(1), 296 – 305.

Yaqub, J. (2014). Public Health Expenditure and Health Sector Performance in Nigeria. *European Scientific Journal*; 8(13). 189 – 201

Wallack, S.& Erbill (2020). Health Expenditure and Health Outcomes and the Role of Good Governance. *International Journal of Healthcare, Finance and Economics,* 13(1); 33-52.

World Health Organization (WHO), (2008). The World Health Report. Health Systems Improving Performance,