Review Article
Volume 10:10, 2021

International Journal of Economics & Management Sciences

ISSN: 2162-6359 Open Access

Wagner's Theory of Ever-Increasing State Activities and Public Health Expenditures in Nigeria

O Saheed Olayiwola[1*], Fuein Vera Kum[2], and Tunde Abubakar Bakare-Aremu[3]

[1]*Department of Economics, Federal University of Technology, Akure, Nigeria*

[2]*Department of Economics, University of Bamenda, Bamenda, Cameroon*

[3]*Department of Economics, National Open University of Nigeria, Abuja, Nigeria*

Abstract

Purpose: Wagner hypothesized a bi-causal relationship between public expenditure and economic growth. But, extension of this theory to public health expenditure and economic growth remains unsettled. This study re-examined the connection between public health expenditure and GDP in Nigeria within the context of Wagner's theory of ever-increasing State activities.

Design/Methodology/Approach: The study used time series data from 2000-2016 sourced from World Development Indicators. Unit root tests were used to test the stationarity of the data. Causality between public health expenditure and GDP was done with the granger causality test while the co-integration test was used to examine the existence of a long-run relationship between public health expenditure and GDP.

Findings: The study found a long-run relationship between public health expenditure and GDP, but, neither uni-directional nor bi-directional relationship between public health expenditure and GDP from the granger-causality test. Hence, it was concluded that Wagner's theory does not explain the relationship between public health expenditure and economic growth in Nigeria.

Research Limitation: The government's capital expenditure on social community services was used for capital health expenditure due to unavailability of data on the government's capital health expenditure.

Practical Implication: Economic growth is beyond a mere increase in public health expenditure.

Social Implication: Increased public health expenditure improves health and life expectancy but does not automatically translate to increase the productivity of labour.

Originality/value: The re-examination of the dynamics of public health expenditure and economic growth.

Keywords: Wagner's theory • Public health expenditures • Economic growth

Introduction

Wagner, in examining the growing importance of government activity postulated a law of expanding state activities. According to Wagner, there is a fundamental connection between economic growth and public expenditure. The important idea supporting this relationship is the fact that increases in public spending are an inevitable consequence of economic growth. This means that the share amount of public spending rises with an increase in the rate of output growth. Public health expenditures refer to the expenditures of Federal, State, and Local governments in the health sector. It constitutes a significant part of government social spending and hence, government expenditures. The multiplier effect of increased public health expenditures may lead to an increase in total expenditures and aggregate demand. As an indication of commitment towards improving the performance of the health sector in its fiscal operation, the Nigerian government took the responsibility of providing good healthcare facility by increasing her expenditure on health. Available data shows that on the average about 2.1% to 5.8%of total government expenditure was allocated to the health sector

***Address to correspondence:** Dr O Saheed Olayiwola, Department of Economics, Federal University of Technology, Akure, Nigeria, Tel: +234-706-065-1440; E-mail: saheedolayiwola@yahoo.com*

Received: 29 July, 2021; **Accepted:** 12 August, 2021; **Published:** 19 August, 2021.

between 2000 and 2017 while the country's public expenditure on health as a percentage of GDP is about 4.1% against 4.6% African average and 6.3% in developed countries. However, the multiplier effect of increasing government health expenditure in Nigeria is still marginally low and the level of its impact on economic growth is transitorily small. This is particularly worrisome given the hypothesized relationship between public expenditure and economic growth by the Wagner theory [1].

Under the Abuja Declaration of 2001, West African nations resolved to expand public health expenditure to 15% of total government expenditure. Therefore, a key issue in the health expenditure argument is whether nations are veering to the Abuja declaration target or not. In Nigeria, public health expenditure as a percentage of government expenditure has been fluctuating over the years. It fluctuated between 5.72% and 9.19% from 2008 to 2014. As a percentage of GDP, it recorded 0.91%, 1.15%, 1.03%, 0.88%, and 0.92% from 2010 to 2014. The highest value has been recorded in 2011. While the increase in budgetary allocation to the health sector is highly desirable, it is not sufficient to guarantee economic growth. This is because there is a transmission mechanism between increased government health expenditure and economic growth. And this transmission mechanism works through the overall health performance of a country. Nigeria's overall health performance was ranked still ranked 187th among the 191 Member States by the World Health Organization (WHO) as of 2017. Available statistics from World Bank reveal that although infant mortality fell from 140 in the 1970s to 87.8and 80.4 per 1000 birth in 2008 and 2011 respectively, the rate is still higher than the regional average for Sub Saharan Africa of 70.2 and 65.8 for 2008 and 2011 and 57.3 in 2010 for all developing countries. Life expectancy is about 49.8 years compared with 53.5 years for Sub Saharan Africa, 65.4 years for developing countries in 2007, and the country only managed to achieve marginal improvement with a value of 51.7 in 2011. Also, the maternal mortality ratio of 1,500 - 2,000 per 100,000 live births is among the highest in the world. From the above, it shows that increased government expenditure may be important to economic growth and vice versa according to Wagner's theory of ever-increasing State activities but the connection between increased public health expenditure and economic growth remains ambiguous. Though previous studies have examined the impact of health expenditure on economic growth, the results are inconclusive, raising the importance of reexamining the linkage between public health expenditure and economic growth under Wagner's theory of ever-increasing State activities [2].

Size, Composition of Public Health Expenditure and Economic Growth in Nigeria

The total government health expenditure in Nigeria, like most nations, comprises the health capital expenditure and the health recurrent expenditure. The health capital expenditures include government expenditures on health care infrastructures, health facilities, investment and development expenditure. This kind of expenditure involves physical asset as well as intangibles such as education, health, research and development and every other expenditure that improves the functionality of the assets, distinct from repairs. Alternatively, the health recurrent expenditure consists of government health expenditures that the benefits are not expected to be consumed within a year. This kind of expenditure reoccurs on an annual basis, implying that the government engaged in this kind of expenditure on an annually [3].

Government health expenditure is composed of both the recurrent and capital expenditure on health. Data available for Nigeria indicates that the health capital expenditure of government decreased from N7.3 million in 1970 to N4.88 million in 1972 before it rose again to N126.75 million in 1974. It dropped sharply to N79.2 million in 1982. From 1982 to 1987, capital expenditure on health declined from N79.2 million in 1982 to an all-time low of N1.2 million in 1987. This development is occasioned by the fact that the government was more preoccupied with the business of paying workers' salaries with less attention being paid to health capital expenditure. In 1988 there was a significant rise to N297.96 million. By 1991, the statistic dropped to N137.3 million but plummeted to N33.72m in 1992. The figure again rose steadily from N586.2 million in 1993 to N17.7 billion, N33.39 billion and N34.64 billion in 2003, 2005 and 2007 respectively. The capital expenditure on health stood at N64.92 billion in 2008 and N79.32 billion in 2011. The recurrent expenditure on health in Nigeria also follows a similar trend. It rose gradually from N12.48 million in 1970 to N59.47 million in 1977 but fell to N40.48 million in the successive year. The pattern of health expenditure at this period is a reflection of both the product of the disposition of government policy towards health issues and the determination of the Federal Government to improve the health care system with the windfall of oil revenue. Recurrent expenditure droppedtoN15.32 million in 1979 before it rose to N52.79 million, N84.46 million, and N82.79 million in 1979, 1987, and 1983 respectively. From 1984 to 1986, recurrent expenditure rose from N101.55 million to N134.12 million when the recurrent expenditure as a percentage of total public health expenditure stood at 77.4 percent. The value of recurrent health expenditure reduced in 1987 to N41.31 million before it rose steadily from N422.80 million in 1988 and N24.52 billion in 2001. This figure rose from N40.62 billion in 2002 to N44.55 billion, N58.68 billion, and N72.29 billion in 2005, 2006, and 2007 respectively. Recurrent expenditure on health stood at N18.20 billion in 2008 and N21.54 billion in 2011 (Figure 1) (Table 1) [4].

YEAR	Public Health Recurrent Expenditure (N' Billion)	Public Capital Expenditure on Social Community Services (N' Billion)	Total Public Health Expenditure(N' Billion)
2000	15.22	27.97	43.18
2001	24.52	53.34	77.86
2002	40.62	32.47	73.09
2003	33.27	55.74	89
2004	34.2	30.03	64.23
2005	55.66	71.36	127.02
2006	62.25	78.68	140.93
2007	81.91	150.9	232.8
2008	98.22	152.17	250.39

2009	90.2	144.93	235.13
2010	99.1	151.77	250.87
2011	231.8	92.85	324.65
2012	197.9	97.4	295.3
2013	179.99	154.71	334.69
2014	195.98	111.29	307.27
2015	257.72	82.98	340.7
2016	202.36	79.63	281.99

Table 1. Size and composition of public health expenditure in Nigeria (N' Billion) 2000 – 2016.

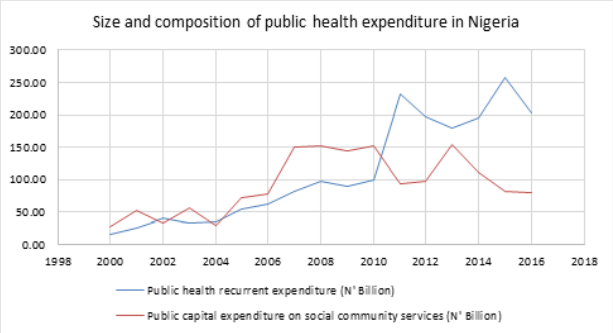

Figure 1. Size and composition of public health expenditure in Nigeria (N' Billion) 2000 – 2016.

Table I illustrates the volume and composition of government health expenditure in Nigeria (measured in local currency unit –Naira, N) for the period 2000 - 2016. Data on government's capital expenditure on health is unavailable; hence, data on the government's capital expenditure on social community services was used because capital health expenditure is a subset of expenditure on social community services. Therefore, from Table, I, the health recurrent expenditure of the Nigerian government was initially lower than the capital health expenditure but later remained higher than the capital expenditure. This is especially from 2011 onward. From this period, there was a distinct gap between the capital and recurrent expenditure on health. In 2002, there was a slight gap between both expenditures, as the government health recurrent expenditure (N40.62 billion) was somewhat more than the capital health expenditure (N32.47 billion). In 2007, there was a reversal in the trend as government capital health expenditure (N150.90 billion) rose above recurrent health expenditure (N81.91 billion). The capital health expenditure was steadily higher than recurrent health expenditure until 2010. After this period, government recurrent health expenditure has been on the increase. In 2011, recurrent health expenditure became more than twofold capital health expenditure. In 2012, government recurrent health expenditure was N197.90 billion, while capital health expenditure was N97.40 billion. In 2013, the value of recurrent health expenditure decreased to N179.99 billion and was still greater than capital health expenditure which was N154.71 billion. A similar trend was observed until 2016. It should be noted that economic growth requires more capital expenditure than recurrent expenditure based on the fact that expenditure that boosts development are those directed to infrastructural development, research and development equipment, and energy [5].

The growth rate of public health expenditure is plotted against the growth rate of gross domestic product (GDP) for trend analysis. This is to examine the behaviour of both variables within the context of Wagner's theory. Wagner's theory hypothesizes that government expenditure increases as the economy grows. In this context, GDP is expected to increase as public health expenditure grows, and vice versa. The public health expenditure growth rates and the GDP growth rates were characterized by several fluctuations from 2000 to 2016 (Table 2) (Figure 2).

YEAR	Public health expenditure growth rate (%)	GDP per capita growth rate (%)
2000	-	-
2001	80.30	3.29
2002	-6.13	12.46
2003	21.78	4.66
2004	-27.83	6.49
2005	97.76	3.72
2006	10.95	3.33
2007	65.19	3.82
2008	7.56	3.97
2009	-6.10	5.20
2010	6.70	5.16
2011	29.41	2.53
2012	-9.04	1.47
2013	13.34	3.85
2014	-8.19	3.51
2015	10.88	-0.03
2016	-17.23	-4.17

Table 2. Growth rates of public health expenditure and GDP per capita for Nigeria 2000-2016.

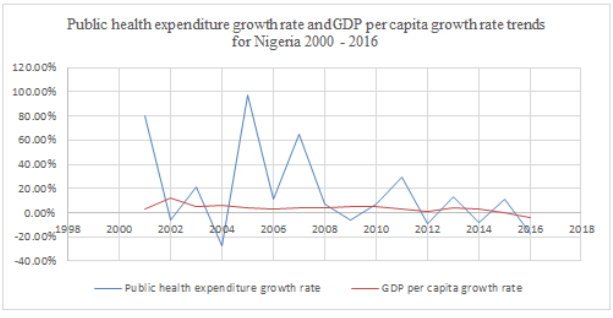

Figure 2. Trends of public health expenditure and GDP per capita for Nigeria 2000-2016.

From Figure 2 above, the growth rate of public health expenditure and real GDP followed a different path but public health expenditure changes at a faster rate than GDP. This appears to suggest that the growth rates of GDP and public health expenditure had asymmetric movements. For instance, in the year 2001, public health expenditure

growth rate was 80.30%, while the growth rate of GDP was 3.29% and in 2002, public health expenditure growth rate declined with a negative value -6.13% while GDP growth rate rose to 12.46%. Similarly, in 2003, both variables witnessed divergent changes in their growth rate as public health expenditure increased by 21.78%, and GDP reduced by 4.66%. The value further dropped by -27.83% for public health expenditure and rose by 6.49% for GDP in 2004. In 2005, the growth rate of public health expenditure rose sharply by 97.76% while GDP growth rate dropped by 3.72%. This trend persisted over the years as both components followed dissimilar patterns. In 2010, the growth rate of public health expenditure was 6.70% and GDP growth rate was 5.16%. The former rose by 29.41%in 2011 and the latter dropped by 2.53%. The growth rate in 2016 was -17.23% for public health expenditure and -4.17% for GDP. From the figures above, it is obvious that public health expenditure changes at a higher rate than GDP. This means that the rate of changes in public health expenditure is more volatile and higher than that of GDP. These results show that the trend of public health expenditure and GDP in Nigeria though follows a different path, continues to increase according to Wagner's theory [6].

Methodology

Theoretical framework

Many theories discussed the relationship between human capital accumulation as a subset of public expenditure and economic growth of the country. These include Wagner's theory of ever-increasing state activities, Peacock-Wiseman theory, and the Keynesian theory of public expenditure. Wagner theory postulates that government expenditure increases as a result of industrial and economic growth in a country. This theory argued that there is both an absolute and a relative expansion of the public sector at the cost of the growth in the private sector. This is based on the assumption that during an industrialization process, as the real income per capita of a country increases, the share of public expenditure is also expected to increase This suggests that the development in the industrial sector of a country will be accompanied by increased government expenditure. Therefore, increased government expenditure (recurrent or capital) occurs to maintain the growth process. Bird justifies this postulation based on three pieces of evidence: the administrative and protective functions of the government require huge capital expenditure outlay; the need for increased provision of social and cultural goods and services as the industrial sector grows and the need for government expenditure to manage and finance natural monopolies and ensure smooth operation of the market forces.

The Peacock-Wiseman displacement effect hypothesis theory assumed that government expenditure tends to change in a step-like pattern, corresponding with social upheavals, notably wars. It argued that the growth of public expenditure follows a political-economic path. The three basic propositions underlying Peacock and Wiseman analysis are that the government can always find profitable ways to spend available funds; citizens, in general, are unwilling to accept higher taxes, and the government must be responsive to the wishes of their citizens. The occurrence of unexpected social disturbances would necessitate an increase in government expenditures but the inadequacies of revenue position compared with the desired expenditure would cause government to find solutions to the revenue shortage and also motivate the taxpayer to achieve a new level of tax tolerance. This displacement from the previous tax level is known as the displacement effect. Government also tends to take a larger proportion of national economic activities resulting from unexpected occurrences, a phenomenon known as the concentration effect. This study employed Wagner's theory of ever-increasing state activities as a theoretical framework. It is assumed that countries increase their public health spending as a result of an increase in their GDP. The rate of changes in the total output of the economy assumes to be the principal determinant of government health expenditure [7].

Model specification

The theoretical model of this study assumed a functional relationship between gross domestic product and public health expenditure. The model allows for the identification of the channels through which gross domestic product affects public health expenditure over time. In the specific case of public health expenditure, three groups of independent variables are important is health stock variables, demographic variables, and economic variables. Anyanwu and Erhijakpo noted that the health stock variables explain the supply factors while the demographic and economic variables emphasize the demand for health expenditure. Based on previous studies with modification, the determinants of public health expenditure given the budget constraints can be expressed as a function of the health stock, demographic, economic and political variables. Public health expenditure (PHEX) like any other good (tangible or otherwise) is mainly determined among other factors by the aggregate level of income (GDP per capita). According to economic theory, the amount of public health expenditure depends on aggregate spending and the implication of this is that a priori the coefficient is expected to be positive. Health expenditure as a share of total government expenditure is another factor that determines public expenditure on health. Health expenditures cover the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid. The a priori expectation is a negative relationship with public health expenditure as an increase in health expenditure leads to a decrease in public health spending. Population size is hypothesized to be another determinant of public expenditure on healthcare. High population size is expected to exert more pressure on existing facilities and thus higher expenditure requirements. Consequently, all things being equal, health expenditure is expected to be an increasing function of the population size (POP). This theoretical background gives the following specification of the modified health expenditure regression equation as:

$$PHEX_t = f(GDPPC_t, HSTGEX_t, POP_t) \quad (1)$$

Where $PHEX_t$=public health expenditure (the outcome or dependent variable);

$GDPPC_t$=Gross Domestic Product per Capita;

$HSTGEX_t$=Health expenditure share in total government expenditure;

POP_t=Population;

Explicitly and in econometric form, equation (1) can be written as:

$$PHEX_t = \beta_0 + \beta_1 GDPPC_t + \beta_2 HSTGEX_t + \beta_3 POP_t + \mu_t \quad (2)$$

β0=a constant; β1–β3= Coefficients of the independent variables and μt is the residual

Causality between public health expenditure and GDP was tested with the granger causality test. For this purpose, the causal direction framework developed by Granger and Sims was used. The systematic testing and determination of the causal direction framework of Granger and Sims are based on the assumption that past and present may cause the future, but the future cannot cause the past.

Data sources and measurement of variables

The variables under consideration are measured in growth rates to eliminate the effects of trend and irregular movements. This is because most macro-economic time series follows an upward trend over the years. Data for this study are annual time series data from 2000 - 2016 sourced from the World Development Indicators. The total value of expenditures is used to measure GDP per capita (Table 3).

	Mean	Standard deviation	Minimum	Maximum	Observations
PHEX	204.07	103.79	43.18	340.7	17
GDPPC	2059.08	378.60	1383.66	2563.9	17
HSTGEX	3.44	0.54	2.14	4.45	17
POP	151.74	19.56	122.28	185.96	17
LPHE	5.14	0.66	3.77	5.83	17
LGDPPC	7.61	0.19	7.23	7.85	17
PHEGR	9.96	34.35	-27.83	97.76	17
GDPPCGR	3.70	3.28	-4.17	12.46	17

Table 3. Descriptive statistics of the variables used.

Results and Discussion

Descriptive analysis of variables

Table 3 above shows the descriptive statistics of the variables used in the analysis. According to the table, the mean value of public health expenditure (PHEX) in the period was N204.06 million, and that of GDP per capita (GDPPC) was N2059.08 which ranges from N1383.666 to N2563.9 with a standard deviation of 103.79 and 378.60 respectively. Also, the health expenditure share in total government expenditure (HSTGEX) has a mean and standard deviation of N3.438 and 0.54 respectively. The total population (POP) has a minimum value of 122.28 and a maximum value of 185.96 with mean and standard deviation of 151.74 and 19.56 respectively. The Public health expenditure growth rate (PHEGR) ranges from -27.83% to 97.76% with mean value of 9.9604 and a standard deviation of 34.35. Also, the growth rate of GDP per Capita (GDPPCGR) ranges from -4.17% to 12.46% with a mean and standard deviation of 3.70 and 3.28 respectively. Finally, the log of GDP per Capita (LGDPPC) has a mean of 7.61 with a standard deviation of 0.19 and ranges from 7.23 to 7.85 while log of public health expenditure has a mean of 5.14 with standard deviation 0.66.

Unit root test

The stationarity of a time series data requires that the statistical features like mean, variance, and standard deviation are constant over time. The time series equation assuming that p and q are non-stationary can be stated as follows:

$$P = +\beta Q + \varepsilon t \quad (3)$$

Pt and Qt represent individual time series. Differencing a time series gives rise to a set of observations such as first-differenced values, second differenced values, third-differenced values, and so forth. Stationary tests were carried out to know if the variables are stationary at the level or first difference or not at all. If the variables become stationary at level, then the variables are integrated of order zero i.e. I(0). However, if the variables become stationary at the first difference, then the variables are integrated of order one i.e. I(1). The decision rule is to reject the null hypothesis if the ADF statistic value exceeds the critical value at a 5% level of significance (Table 4).

Variable	Level ADF Test Statistics	MacKinnon Critical Value at Level at 5% level	First Difference ADF Test Statistic	MacKinnon Critical Value at First Difference at 5% level	Decision
LGDPPC	-3.893124	-3.081002	-4.189510	-3.759743	I(1)
HSTGEX	-2.878047	-3.065585	-5.263071	-3.081002	I(1)
POP	-2.044453	-3.098896	-4.461591	-3.144920	I(1)
LPHE	-2.152337	-3.065585	-5.962711	-3.081002	I(1)

Table 4. Results of augmented dickey-fuller unit root test.

The unit root test results presented in Table 4 show that LGDPPC, HSTGEX, POP, and LPHE are all stationary at first difference. Therefore, the null hypothesis which stated that there is no unit root was rejected at the first difference for GDPPC, HSTGEX, POP, and LPHE, and all variables are integrated of order one i.e. I(1).

Johansen and joselieus cointegration test

The Co-integration test investigates the existence of a long-run relationship between public health expenditure and economic growth. The study employs Johansen and Joselius approach which uses the Maximum Eigenvalue test and the Trace test statistic to determine the number of co-integration vectors. The former tests the null hypothesis of r co-integrating relations between the variables against the alternative of an r-1 number of co-integrating relations for r=0, 1, 2…n-1. This Maximum Eigenvalue test statistic is calculated as:

LRmaximum (r/n+1)=-T*log (1 – λ) Where: (4)

λ=Maximum Eigenvalue

T=Sample size

r=0, 1, 2, n-1 (Table 5).

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Values	Hypothesized No. of CE(s)	Max-Eigen Statistic	0.05 Critical Values
None *	88.0977	47.8561	None *	45.5528	27.5843
At most 1 *	42.5449	29.7971	At most 1	20.1322	21.1316
At most 2 *	22.4127	15.4947	At most 2 *	19.1152	14.2646
At most 3	3.2975	3.8415	At most 3	3.2975	3.8415

Table 5. Long run relationship between public health expenditure and GDP in Nigeria.

In Table 5 above, the Johansen co-integration test result shows evidence of the presence of 3 co-integrating vectors by comparing the trace statistics values with critical values. The result shows that the trace statistics are greater than the corresponding critical value at a 5% significance level. Hence, it is clear that there is at most 3 co-integrating equations in the model with a trace statistics value of 3.2975and critical values of 3.8415at 5% level of significance. This rejects the null hypothesis of no co-integration and implies that there exists a long-run relationship among the variables. Also, the Max-Eigen statistics shows that the variables are co-integrated in the long run and shows the presence of 3 co-integrating vectors like the trace statistics [7].

Granger causality test

When two variables are found to have a long-run relationship, the direction of the causality of that relationship can be investigated using granger causality test. The granger causality test can be expressed in a bivariate (Q, P) format as follows.

$$Pt=\alpha M+\alpha 1Pt-1+.....+\alpha iPt-i+\beta 1Qt-1+.....\beta iQt-i+\mu \quad (5)$$

$$Qt=\alpha M+\alpha 1Qt-1+.....+\alpha iQt-i+\beta 1Pt-1+.....\beta iPt-i+\mu \quad (6)$$

Where M stands for a constant growth rate of P in the equation and Q in the equation, μ is a white noise error whilst subscripts t and t-i represent periods. The first granger causality test investigates the null hypothesis that Q does not Granger-cause P whilst the second granger causality test examines another null hypothesis that P does not Granger-cause Q. According to Gul and Ekinc if the former null hypothesis is not rejected and the latter hypothesis is rejected, the conclusion is that P Granger causes Q. There is uni-directional causality between economic growth and public health expenditure if one of the null hypotheses is rejected whilst a bi-directional causality relationship occurs if both null hypotheses are rejected (Table 6).

Null Hypothesis	Obs	F-Statistic	Prob.
LGDPPC does not Granger Cause HSTGEX	15	5.22	0.02
HSTGEX does not Granger Cause LGDPPC		0.18	0.83
LPHE does not Granger Cause HSTGEX	15	0.88	0.44
HSTGEX does not Granger Cause LPHE		12.21	0.0021
POP does not Granger Cause HSTGEX	15	0.29	0.75
HSTGEX does not Granger Cause POP		5.39	0.02
LPHEX does not Granger Cause LGDPPC	15	2.78	0.10
LGDPPC does not Granger Cause LPHEX		0.40	0.68
POP does not Granger Cause LGDPPC	15	6.43	0.02
LGDPPC does not Granger Cause POP		6.13	0.02
POP does not Granger Cause LPHE	15	3.53	0.07
LPHE does not Granger Cause POP		0.48	0.63

Table 6. Result of granger causality test.

Table 6 presents the result of the granger-causality test between public health expenditure and other variables. From Table 6, the null hypothesis states that PHEX does not Granger cause GDPPC and GDPPC does not Granger-cause PHEX. The rule of thumb states that the probability of F-statistic must be less or equal to 0.05 to show a causal relationship.

The probabilities for GDPPC and PHEX are 0.10 and 0.68. Therefore, we accept the null hypothesis and conclude that there is neither uni-directional nor bi-directional causal relationship between public health expenditure and economic growth in Nigeria. The results further show that health expenditure as a share of total government expenditure and population has a uni-directional causal relationship with real GDP. The implication of this is that public expenditure pushes public health expenditure.

Conclusion

This study re-examines the dynamics of public health care expenditure within the framework of Wagner's theory of ever-increasing state activities in Nigeria. The study found a long-run relationship between public health expenditure and economic growth, but, the granger-causality test results show neither uni-directional nor bi-directional relationship between public health expenditure and economic growth. Hence, Wagner's theory cannot be said to explain the relationship between the growth of public health expenditure and the growth of GDP in Nigeria. This is in contradiction to studies that had found both the existence of a long-run relationship and causal relationship between public health expenditure and economic growth. This shows that an increase in GDP per capita does not automatically imply an increase in public health expenditure and an increase in public health expenditure does not necessarily lead to economic growth. This suggests that public health expenditure cannot constitute only important components of economic growth. Hence, there may be a need to increase individuals' earning capacity in order to increase income and health expenditure. The government may also need to increase public health expenditure to meet the prescribed allocation of 15% recommendation of government budget to the health sector. This follows from the fact that the absence of

causality between public health expenditure and economic growth may be due to insufficient public health expenditure during the periods considered. Health insurance can also be expanded and strengthen to mobilize more resources for the health sector. These may engender positive and significant impact of health care expenditure on economic growth in Nigeria.

References

1. Abbas, Faisal, and Ulrich Hiemenz. "Determinants of public health expenditures in Pakistan." ZEF-Discussion Papers on Development Policy. (2011).
2. Ajibola, M A. "Innovations and curriculum development for basic education in Nigeria: Policy priorities and challenges of practice and implementation." Res J Int Stud (2008): 51-58.
3. Anyanwu, John C, and Erhijakpor Andrew EO. "Health Expenditures and Health Outcomes in Africa." *African Develop Rev* 21 (2009): 400-433.
4. Babatunde, Adetunji M. "A Bound Testing Analysis of Wagner's Law in Nigeria: 1970–2006." Appl Econ 43 (2011): 2843-2850.
5. Dickey, David A, and Fuller Wayne A. "Distribution of the Estimators for Autoregressive Time Series with a Unit Root." J American Stat Assoc 74 (1979): 427-431.
6. Olisakwe, Oluchukwu. "Public Health Expenditure, Economic Growth and Health Outcomes in Nigeria." Pub Health 6 (2019): 23-32.
7. Granger, Clive WJ. "Some Recent Development in A Concept Of Causality." *J Econom et 39 (1988): 199-211.*

How to cite this article: Olayiwol, O Saheed, Kum Fuein Vera, and Bakare-Aremu Tunde Abubakar. "Wagner's Theory of Ever-Increasing State Activities and Public Health Expenditures in Nigeria ." *Int J Econ Manag Sci*10 (2021) : 15116