

Foreign Aid, Governance and Life Expectancy in Nigeria

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Abstract

There is great disparity among economists as to whether foreign aid is effective and why or why not, it is against this background that this paper examined the mediating role of governance in foreign aid – life expectancy nexus in Nigeria. Foreign aids as used in this paper centred on foreign aids inflow into the health sector. Governance is proxied by control of corruption, government effectiveness and voice and accountability and life expectancy is proxied by life expectancy at birth. The variables were subjected to stationarity test using the Philip-Peron test and the result shows that all the variables are stationary at first difference 1(1). This justify the use of the Johansen cointegration and the error correction mechanism techniques in analyzing the data. The trace statistic indicated that there is three cointegrating equations, while the maximum Eigen value statistic indicated two cointegrating equations. Thus, buttressing the fact that there is long run relationship among the variables. The short-run result shows that foreign aids to the health sector promote life expectancy in Nigeria. Government effectiveness and control of corruption (proxies for governance) also promote life expectancy. The paper concludes that foreign aids to health sector and governance promote life expectancy in Nigeria. Hence, the paper recommends that government should but policy measures in place to attract more aid to the health sector.

Keywords: Foreign Aids, Governance and Life Expectancy

Introduction

One of the major indicators that helps capture long-term improvements in health and welfare in developing countries is the level of life expectancy. Developing countries have received considerable foreign aid over the last five decades or so. Surprisingly, however, relatively higher aid receiving regions (Sub-Saharan Africa, for example) have experienced much lower growth, lower poverty reduction, and lower health standards than relatively low aid receiving regions (like East Asia). This has led to much skepticism and scrutiny into the effectiveness of foreign aid. Despite the vast literature considering the effects of foreign aid on economic growth, and poverty, there is little systematic empirical evidence on how overall aid affects health, and even less on how health-aid affects health outcomes.

Foreign aid becomes increasingly important for many countries. According to the 2014 Millennium Development Goals Report, only in 2013, total official development assistance to developing countries targeting on health care was more than US \$18 billion. However, some experts believe that in reality very little was done to achieve the Millennium Development Goals. For example, despite the numerous programmes of the Global Fund in Sub Saharan Africa, according to the World Health Organization data, Sub Saharan Africa has one of the lowest rates of life expectancy. This raises the question of whether health assistance is effective in improving health condition of the population and whether other factors, such as the level of transparency of the institutions (governance indicators) for example, are important determinants of health programmes effectiveness.

The issue of foreign health assistance comes along with the great amount of literature on foreign aid. While the link between foreign aid and economic growth has received significant attention on the part of researchers, there is little done on effectiveness of foreign aid in specific areas. Several studies concentrated on the influence of foreign aid on education (Michaelowa & Weber, 2007); the relationship between foreign aid and environment (Arvin, Dabir-Alai & Lew, 2006); the effectiveness of health aid in infant mortality reduction (Mishra &

Newhouse, 2009). The latter paper and also Easterly (2006) reveals that foreign aid leads significantly to the decrease of infant mortality.

The link between foreign aid and economic development has received significant attention on the part of researchers and so far with mixed results. While some researchers, for example Ali and Hodan (2005) and Brautigam and Knack (2004) doubt the beneficial effects of international aid, as it may lead to poor governance and may slow down growth and can be even destructive if it is allocated to the political allies (Bobba & Powell, 2007), others show that foreign aid has positive impact on economic growth in developing countries (Fayissa & El-Kaissy, 1999). The relationship between foreign aid and economic growth is complex and may not be direct. In addition, the problem of endogeneity may be present as long as aid effectiveness depends significantly on the level of development in the society: richer societies are likely to allocate aid more effectively (Svensson, 2000).

Fewer studies are devoted to the analysis of foreign aid to specific targeted sectors. The previous studies include the research on influence of foreign aid on education (Michaelowa & Weber, 2007); the relationship between foreign aid and environment (Arvin, Dabir-Alai & Lew, 2006); effectiveness of foreign aid on the democratization in developing countries (Boone, 2011). The literature on financial assistance to improve health outcomes plays important role in the discussion concerning aid effectiveness.

According to Ravishankar et al. (2010), health assistance volumes increased from \$5.6 billion in 1990 to \$21.8 billion in 2007, which together with the adoption of the Millennium Development (MDG) goals and the Paris Declaration and Accra Agenda for Action aroused considerable interest in effectiveness of "health" aid among researchers. Recently, a number of studies have incorporated cross-sectional dimension of the aid effectiveness on health outcomes.

In his book, Easterly (2006) reveals that foreign aid contributed significantly to the reduction of infant mortality despite his skepticism about the foreign aid in general. In her study for developing countries, Williamson (2008) finds that foreign aid to health is ineffective in addressing health issues. She employs fixed

effect methodology and also corrects for possible endogeneity using lagged aid as an instrument. Both fixed effect and instrumental variable estimation show that health targeted aid is ineffective.

Two recent studies on impact of aid on infant mortality include Gebhard et al. (2018) and Mishra and Newhouse (2019). The former study concentrates on 118 countries for the period from 1973 to 2018 and stresses that increase in per capita health aid by 100% is associated with a 2 percent reduction in the infant mortality rate. However, to achieve MDG targets, the 15-fold increase of current level of foreign aid is needed. The authors of the latter paper test the hypothesis about the relationship between health-targeted aid, infant mortality and life expectancy in recipient countries. Using data on non-OECD countries between 1975 and 2019, they find that, on average, aid does not lead to the improvements of the health outcomes and when it does improve health outcomes it happens under conditions of good governance which includes democracy, sanitation and transparency.

Conventionally, literature suggests that good governance facilitates aid effectiveness in promoting economic growth (Burnside & Dollar, 2000; Bearce, 2009). However, Dietrich (2018) in her study on role of corruption in efficient aid allocation to health sector came to a surprising result. She shows that health aid performs better in corrupt states. She suggests that each recipient country compares compliance costs with benefits of allocating aid effectively. Unlike industry, trade or infrastructure aid, health aid is associated with low compliance costs and hence rent-seeking is not so attractive as in other sectors. Moreover, since health aid is channeled usually through non-governmental organizations, it is less dependent on the institutional factors like corruption. Finally, the other factor that explains this finding is that donors seem to pay more attention not to the country-level institutional development but rather to the sector-specific progress (Dietrich, 2018).

Previous research was concentrated on infant mortality as the health outcome to measure influence of "health" aid on the quality of medical care. But this study examines the mediating effect of governance on health aid-life expectancy nexus. This has six subsections, and it is as follows: Section one is the introduction, while

section two is conceptual clarifications. Section three encompasses theoretical and empirical literature review, and section four the method of study. Section five is the data analysis and discussion of results, while section six is conclusion and recommendation.

2. Conceptual Clarifications

For ease of understanding, we define the following concepts to be used in this study:

Life Expectancy at Birth: This is the average period a person is expected to live from birth.

- (i) **Governance:** There is no generally accepted definition of governance by scholars. World Bank (2010c) defines governance as "...the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and state for the institutions that govern economic and social interactions among them". To evaluate the quality of governance, the World Bank has developed a methodology used to rank countries of the world according to their governance quality. World Bank employs six categories of variables as an input into their evaluation of governance quality: (i) Voice and Accountability; (ii) Political Stability and Absence of Violence; (iii) Government Effectiveness; (iv) Regulatory Quality; (v) Rule of Law; and (vi) Control of Corruption (Kaufmann et al., 2010; & Kaufmann, et al., 2009). Among these categories of variables, political stability and absence of violence, voice and accountability and control of corruption were chosen to capture governance in this research. The justification for the choice of these three selected variables is based on their relevance to the subject matter under investigation.

- (ii) **Voice and Accountability:** Captures, inter alia, the extent to which citizens can participate in elections, freedom of expression and liberty to form a free association and to run free media.

- (iii) **Control of Corruption:** Captures the extent to which public power is exercised for private gain and the influence on states by elites and private interests.
- (iv) **Government effectiveness:** This encompasses perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government commitment to such policies.
- (v) **Foreign Aid:** This refers to the international movement of money, services or goods from governments or international institutions for the benefit of the receiving country or its citizens.

2.1 Theoretical Literature

2.1.1 Modernization Theory

Modernization theory was propounded by Rogers in 1950. It has a close affinity with the neoclassical “theory. Both theories view economic development as a bridging of the gap between the north and south (developed and developing nations) through an imitative process (Shen & Wiliamson, 1999). According to demographic transition theory derived from modernization theory, fertility and mortality go together. In societies where fertility is high, maternal mortality rate tends to be high. This is because multiple pregnancies affect the health of mothers and increase the risk of maternal mortality. In a country where maternal mortality is high infant mortality is also high and life expectancy at birth low. Economic development leads to higher standards of living and advanced medical technology, which in turn brings about lower mortality, fertility and improvement in life expectancy at birth. Maternal mortality and infant mortality as indicators of the health status of the population decreases as the level of economic development increases *ceteris paribus*. This process allegedly requires greater levels of industrialization, education and urbanization (Inkeles & Smith, 1974; Kelly & Cutright, 1980; Vandewalle & Knodel, 1980; Shen & Williamson, 1999). Modernization theorist also emphasized the importance of capital for the development of the less developed countries (LDCs) (Rostow, 1971). Inadequate capital is seen as a major factor militating against the development of the LDCs

(IMF, 1985; Grieco, 1986). They believe that investment from the core-industrialized countries and international trade promote development in the LDCs by providing external capital, new technology and management experience, which are crucial to the economic and social development of LDCs. Indicators mostly used by proponents of this theory include gross national or domestic products, education, health care services, economic growth rate and urbanization”.

2.2 Foreign Aid, Governance and Life Expectancy

Musa et al (2021) examined the impact of foreign aid on education and health outcome in Nigeria: A disaggregated analysis, using the vector autoregressive model. Foreign aid is decomposed into two, foreign aid inflow to education sector and health sector. Education is proxy by primary school enrolment rate and school completion rate, while health outcome is proxy by life expectancy. Their findings revealed that foreign aid to the educational has significant positive impact on primary school enrollment and completion rates. Similarly, foreign aid to the health sector significantly exerts positive impact on life expectancy rate in Nigeria. Thus, the paper concluded that foreign aid increases the rate of school enrolment and life expectancy in Nigeria, hence, the paper recommended increase in the inflow of foreign into the sectors.

Atienne (2017) investigated foreign aid allocation and its impact in Latin America and the Caribbean: Across-country analysis of foreign aid, using a panel dataset of 19 countries from 1996 to 2014 to perform two distinctive regressions using the OLS method. The impact of foreign aid was examined on economic growth and life expectancy. The findings show that foreign aid has a positive and significant effect on GDP per capita a proxy for economic growth. The finding also established that foreign aid has a positive and significant effect on life expectancy. It is also established that GDP per capita is strongly correlated with increased life expectancy. Thus, the paper concluded that foreign aid has a positive effect on economic growth and life expectancy. The paper recommended more inflow of foreign aid into the education sector for human capital development and to spur economic growth and improve life expectancy at birth.

Muhammad and Ahmed (2021) examined the relationship between health aid and health outcomes in Nigeria: The role of governance. The study used the autoregressive distributed lag method in analyzing the data. Health aid is proxy by foreign aid inflow to the health sector, health outcome is proxy by life expectancy. The governance indicators are government effectiveness, control of corruption, accountability and voice, rule of law, and regulatory quality.

3. Method of Study

3.1 Research Design

This study adopts the quasi-experimental research design because it deals with the manipulation of the independent variables to observe their effect on the dependent variables, but it lacks the basic elements of a true experimental design which are randomization and control to mention but two.

3.2 Foreign Aid, Governance and Life Expectancy Model

The equation below helps to capture the objective of the study and the model specification is based on the human capital theory.

The mathematic form of the equation is given as:

$$LEX = f(FAH, COC, VOA, GOE, PKT \text{ and } DOP) \quad (3.1)$$

Equation 3.7 above can be transformed, into econometric form as follows:

$$LEX = a_0 + a_2FAH + a_3COC + a_4VOA + a_5GOE + a_6PKT + a_7DOP + \mu$$

Where:

LEX = Life expectancy at birth

(3.2)

3.3 Description of Variables and Apriori Expectations

Dependent Variable

Life Expectancy at Birth (LEX): This is the period a person is expected to live from birth.

Independent Variables

Foreign Aid to Health Sector (FAH): This refers to the total amount of foreign aids that flow to the health sector. As more FAH flow into the health sector more medical doctors will be trained, modern gadget installed, early sickness symptom will be identified and early treatment will commence leading to long life expectancy. Thus, a positive relationship exists between foreign aid to the health sector and life expectancy at birth.

Control of Corruption (COC): The more the country controls her level of corruption the utilization of her financial resource in the health sector will lead to improvement in life expectancy at birth. Thus, a direct relationship exists between COC and life expectancy at birth.

Government Efficiency (GOE): The efficiency of government in utilizing foreign aid inflow to the health sector and other financial resource committed to health will lead to improvement in the life expectancy at birth. Thus, a positive relationship exists between VOA and life expectancy at birth.

Voice and Accountability (VOA): The level of accountability of the government and political officer holders, determine the judicious use of state resources. This will lead adequate utilization of foreign aid and other financial resources available to the health sector, leading to improvement in life expectancy. Thus, a direct relationship exists between VOA and life expectancy.

4. Data Analysis

Descriptive statistic and stationarity tests were performed and the result presented below.

Table 4.1 Descriptive Statistic Result

	LER	FAH	COC	GOE	VOA	PKT	DOP
Mean	49.84376	2.22E+09	10.82242	7.033089	25.30439	69.04960	48.77851
Median	49.91300	1.95E+09	11.00515	5.476191	27.40385	69.41000	52.22000
Maximum	54.49000	1.14E+10	19.41748	26.59575	35.46798	75.43000	81.81000
Minimum	45.88000	1.52E+08	0.505050	2.415459	0.000000	60.48000	21.12000
Std. Dev.	2.919273	2.19E+09	3.738361	4.970567	9.804468	4.234319	19.47350

Skewness	0.022341	1.938945	-0.351085	2.162522	-1.230551	-0.222051	-0.214777
Kurtosis	1.497543	7.736914	3.194101	7.162031	3.527469	1.723870	1.564614
Jarque-							
Bera	9.131634	157.7131	2.233432	151.6200	26.66083	7.683296	9.447080
Probability	0.010401	0.000000	0.327353	0.000000	0.000002	0.021458	0.008884
Sum	4834.845	2.24E+11	1093.064	710.3420	2555.743	6974.010	4926.630
Sum Sq.							
Dev.	818.1268	4.79E+20	1397.535	2470.654	9612.759	1792.946	37921.71
Observatio							
ns	97	101	101	101	101	101	101

4.2 Stationarity Test

Table 4.2 Stationarity Test Result

The variables in the model specification were subjected to stationarity test using the Philip-Perron test, the result shows that all the variables were integrated of order one $i(1)$. This justify the use of Johansson cointegration techniques in analyzing the data.

4.3 The Johansson Cointegration Test

Table 4.3 Johansson Cointegration Result

Trend assumption: Linear deterministic trend

Series: LER LOG(FAH) COC GOE VOA PKT DOP

Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.565594	211.9077	125.6154	0.0000
At most 1 *	0.455717	133.5328	95.75366	0.0000
At most 2 *	0.289832	76.35391	69.81889	0.0137
At most 3	0.224781	44.18200	47.85613	0.1062
At most 4	0.116726	20.24873	29.79707	0.4061
At most 5	0.083053	8.581445	15.49471	0.4055
At most 6	0.004576	0.431104	3.841466	0.5114

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.565594	78.37485	46.23142	0.0000
At most 1 *	0.455717	57.17891	40.07757	0.0003
At most 2	0.289832	32.17191	33.87687	0.0787
At most 3	0.224781	23.93327	27.58434	0.1371
At most 4	0.116726	11.66729	21.13162	0.5807
At most 5	0.083053	8.150341	14.26460	0.3636
At most 6	0.004576	0.431104	3.841466	0.5114

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The result of the Johansson cointegration shows that the trace statistic has three cointegrating equations, while the maximum Eigenvalue statistic has two cointegration equations, indicating that long run relationship exists among the variables. So, we proceed to estimate both the short run over parametrized and parsimonious results, but for constraint of space we present only the parsimonious result.

The Parsimonious Test**Table 4.4 Parsimonious Test Result**

Dependent Variable: D(LER)

Method: Least Squares

Date: 03/04/23 Time: 21:23

Sample (adjusted): 1996Q4 2018Q3

Included observations: 48 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.041072	0.020494	2.004051	0.0524
D(LER(-1))	0.390334	0.116137	3.360975	0.0018
DOP(LER(-2))	-0.001645	0.000317	-5.183573	0.0000
LOG(FAH)	0.003521	0.001269	2.775136	0.0086
D(COC)	0.001129	0.000908	1.243400	0.2215
D(GOE)	0.001793	0.000819	2.189649	0.0349
D(GOE(-1))	0.000790	0.000824	0.958824	0.3439
D(VOA(-2))	6.89E-05	0.000190	0.362863	0.7188
D(PKT(-1))	-0.000721	0.000796	-0.906400	0.3706
D(DOP(-1))	0.000378	0.000267	1.417333	0.1648
ECM(-1)	-0.562368	0.161036	-3.492191	0.0013
R-squared	0.890118	Mean dependent var	0.088854	
Adjusted R-squared	0.787447	S.D. dependent var	0.047246	
S.E. of regression	0.005294	Akaike info criterion	-7.446610	
Sum squared resid	0.001037	Schwarz criterion	-7.017793	
Log likelihood	18.97186	Hannan-Quinn criter.	-7.284559	
F-statistic	3.707049	Durbin-Watson stat	2.257675	
Prob(F-statistic)	0.000000			

Source: Authors Computation using Eviews 10

The short run result shows that the error correction mechanism (ECM) has the correct sign (negative) and it is significant at 5 per cent level of significant because its probability value is less than 0.05. The ECM value is -0.562, showing a moderate

speed of adjustment of about 56 per cent. The explanatory variables explained about 79 per cent of the variation in the dependent variable (infant mortality), the remaining 21 per cent is explained by other variables not included in the model specification. The F- statistic value of 5.9 with its probability value of 0.00 shows that the model is well specified.

Foreign aid (FAH) inflow into the health sector at level has a positive coefficient 0.0035 and it is significant given that its probability is less than 0.05 at 5 per cent level of significance. This implies that FAH bring about improvement in life expectancy in Nigeria all things being equal. A per cent increase in FAH will lead to 0.0035 per cent increase in life expectancy in Nigeria. As more FAH flow into the health sector more medical doctors will be trained, modern gadget installed, early sickness symptom will be identified and early treatment will commence leading to improvement life expectancy.

Control of corruption (COC) one of the proxies for governance has a positive coefficient 0.0011 at level but it is not significant given that its probability value is greater than 0.05 at 5 per cent level of significance. This indicate that control of corruption leads to improvement in life expectancy in Nigeria, all things being equal. As the rate of corruption decline the foreign aid inflow into the health sector will be judiciously utilize leading to an increase in life expectancy all things being equal.

Government effectiveness (GOE) another proxy for governance has a positive coefficient 0.00179 at level and it is significant at 5 per cent level of significance. This implies that government effectiveness brings about improvement life expectancy in Nigeria all things being equal. An increase in government effectiveness will lead to 0.00179 per cent improvement in life expectancy all things being equal. Government effectiveness at lag period one has a positive coefficient 0.0007, but it is not significant because the probability value is greater than 0.05 at 5 per cent level of significance.

Voice and accountability (VOA) another proxy for governance at lag period two has a positive coefficient, but it is not significant at 5 per cent level of significance.

This implies that voice and accountability lead to improvement in life expectancy in Nigeria all things being equal.

Out of pocket health expenditure (PKT) a control variable at lag period one has a negative coefficient -0.00072, but it is not significant because its probability value is greater than 0.05 at 5 per cent level of significance. This shows that out of pocket health expenditure lead to a decline in life expectancy in Nigeria, all things being equal. This, may be attributed to the high level of poverty in the country that affect negatively their ability to pay user fee.

Degree of openness (DOP) a control variable at lag period one has a positive coefficient 0.000378, but it is not significant at 5 per cent level of significance, given that its probability value is greater than 0.05. This indicates that degree openness of result in improvement in life expectancy in Nigeria all things being equal.

Post Diagnostic Test

The diagnostic test result is presented in table.

Table 4.5: Post Diagnostic Result

Serial correlation LM Test	F(2,35)	6.964616	0.0728
Heteroskedasticity	F(20, 37)	3.641726	0.2319
Normality test	1.689084		0.4297

Source: Author's computation using E-views

The empirical estimations in table 5.5 are used for autocorrelation, heteroskedasticity and normally are used to test the below stated hypotheses:

There is no serial or autocorrelation

There is no heteroskedasticity

There is no non-normal error

The result of the short-run model shows that it passed the post-diagnostic tests. The result in table 5.5 indicated that there is no serial correlation, given that the probability value is higher than the threshold value of 0.05. There is no heteroskedasticity in the model this is because the probability value is greater than

the threshold of 0.05. The error term is normally distributed, given the result of the Jarque-Bera test and the probability value that is greater than the threshold of 0.05.

Stability Test

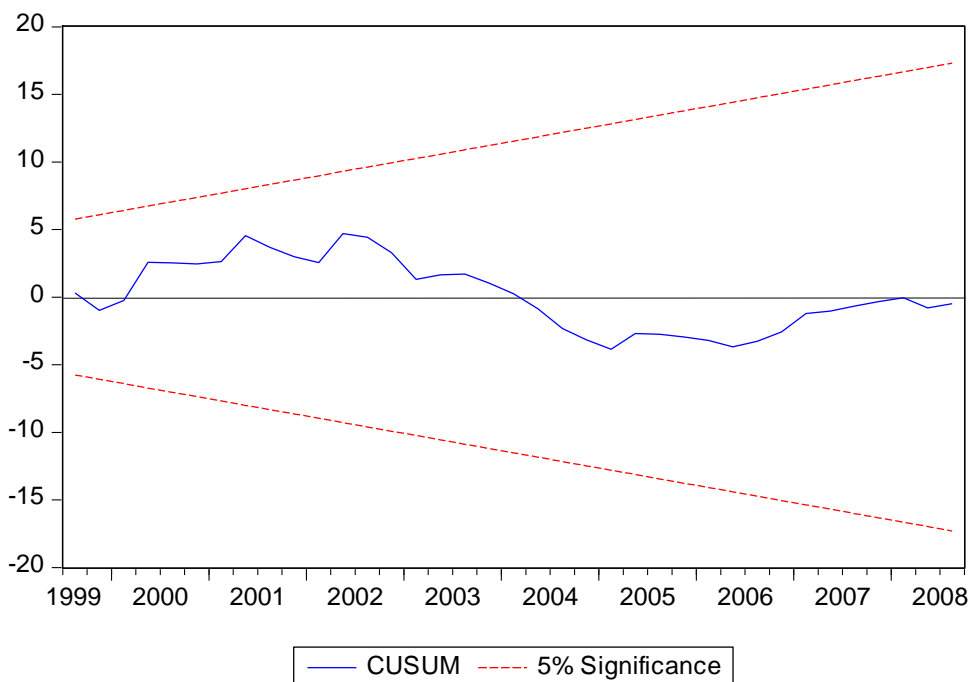


Figure 4.1: CUSUM Graph

In testing the stability of the long-run coefficients with the short-run dynamics cumulative sum of squares is used. The graphic illustration of the cumulative sum of squares is shown in figure 5.1. As shown by the graph, the cumulative sum of squares (CUSUM) line lies within the 5 percent critical bound. This shows that the stability of the long-run coefficients of the regressors have an effect on life expectancy in Nigeria.

5. Conclusion and Recommendation

This paper investigated the mediating effect of governance on foreign aid- life expectancy in Nigeria. The requisite data were collected and analyzed and based on the results from the data analyzed the paper concluded that foreign aid and

governance are major determinants of variation in life expectancy, because both contribute to improvement in life expectancy in Nigeria.

5.1 Recommendations

Based on the findings from the paper and the conclusion deduced the following recommendations were put forward.

5.1.1 For Policy

To reduce the level of infant mortality in Nigeria the following recommendations were made for policy implementation:

- Government should create conducive environment for the inflow of foreign aid into the health sector.
- Government effectiveness should be improved upon true transparency.
- Corrupt public office holders should be sentenced to life imprisonment and their asset confiscated.

References

- Arvin, M., Dabir-Alai, P. & Lew, B. (2006). Does foreign aid affect the environment in developing economies. *Journal of Economic Development* 3(11), 63-87.
- Bearce, D. H. (2009). Foreign and effectiveness and the strategic goals of donor governments. *The Journal of Politics* 72(3), 837-851.
- Boone, P. (2011). Politics and the effectiveness of foreign aid. *European Economic Review* 40, 289-329.
- Brautigam, D. A. & Knack, S. (2004). Foreign aid, institutions and governance in sub-Saharan Africa. *Economic Development and Cultural Change* 52(2), 228-235.
- Burnside, C. & David, D. (2000). *Aid, the incentive regime, and poverty reduction*. The World Bank. (Policy Research Working Paper No. 1937).
- Dietrich, S. (2018). The politics of public health aid: Why corrupt governments have incentives to implement aid effectively. *World Development* 39(1), 55-63.
- Fayissa, B. & El-Kaissy, I. (1999). Foreign aid and the economic growth of developing countries (LDCs): Further evidence. *Studies in Comparative International Development* 34(3), 37-50.

- Gebhard, H., Sarnthein, M., Grootes, P. M., Kiefer, T., Kühn, H., Schmieder, F., & Röhl, U. (2018). Paleonutrient and productivity records from the subarctic North Pacific for Pleistocene glacial terminations I to V. *Pale Oceanography*, 23(4), 42-51. <https://doi.org/10.1029/2007PA001513>
- Grieco, J. M. (1986). *Cooperation among nations: Europe, America and nontariff barriers to trade*. Cornell University Press.
- Inkeles, A. & Smith, D. H. (1975). Modernization, modernity and perceptions of aging: A cross-cultural study. *Journal of Gerontology* 30(6), 688-695.
- Kaufmann, D., Kraay, A. & Mastruzzi, M. (2010). The Worldwide Governance Indicators: Methodology and Analytical Issues (September 2010). *World Bank Policy Research Working Paper*, No. 5430. <http://ssrn.com/abstract=1682130>.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2009). Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996-2008. SSRN eLibrary
- Kelly, W. R. & Cutright, P. (1980). Modernization and the demographic transition: Cross-sectional and longitudinal analyses of a revised model. *Sociological Focus* 13(4), 315-329.
- Michaelowa, K. & Weber, A. (2007). Aid effectiveness in the education sector: A dynamic panel analysis. In: S. Lahiri (Ed). *Theory and practice of foreign aid*. Amsterdam, 357-385.
- Mishra, P., & Newhouse, D. (2009). Does health aid matter? *Journal of Health Economics*, 28(4), 855–872. <https://doi.org/10.1016/j.jhealeco.2009.05.004>.
- Mishra, P., & Newhouse, D. (2019). Does health aid matter? *Journal of Health Economics*, 28(4), 855–872. <https://doi.org/10.1016/j.jhealeco.2009.05.004>
- Ravishankar, N., Gubbins, P. & Cooley, R. J. (2010). Financing of global health: Tracking development assistance for health from 1990 to 2007. *Lancet*, 373, 2113-2124.
- Rostow, W. W. (1971). *Politics and the stages of growth*. Cambridge University Press.
- Shen, C. & Williamson, J. B. (1999). Maternal mortality, women's status, and economic dependency in less developed countries: A cross-national analysis
- Svensson, J. (2000). When is foreign aid policy credible? Aid dependence and conditionality. *Journal of Development Economics* 61(20), 61-84.

- Vandewalle, E. & Knodel, J. (1980). Europe's fertility transition: New evidence and lessons for today's developing world. *Population Bulletin* 34(6), 3-44.
- Williamson, C. R. (2008). Foreign aid and human development: The impact of foreign aid to the health sector". *Southern Economic Journal*, 75(1), 188–207.