

ANALYSIS OF THE INSTITUTIONAL DRIVERS OF DEFENSE EXPENDITURE IN SUB-SAHARA AFRICAN COUNTRIES

Anthony Orji¹, Anthony Edache Eyimoga², Peter Ngozi Amah³, Jonathan E. Ogbuabor⁴, Asidok Nsikhe Okon⁵, Effiong, Charles Efeiom⁶, Onyinye I. Anthony-Orji^{7*}

¹*Department of Economics, University of Nigeria, Nsukka, Nigeria (anthony.orji@unn.edu.ng)*

²*Department of Economics, University of Nigeria, Nsukka, Nigeria (eyimoga.anthony@gmail.com)*

³*Department of Finance, University of Lagos, Lagos State (pamah@unilag.edu.ng)*

⁴*Department of Economics, University of Nigeria, Nsukka, Nigeria (jonathan.ogbuabor@unn.edu.ng)*

⁵*Department of Economics, University of Calabar (asidoknsikheokon2016@gmail.com)*

⁶*Department of Economics, University of Calabar, Calabar (effiongcharles77@gmail.com)*

^{7*}*Department of Economics, University of Nigeria, Nsukka, Nigeria*

Corresponding E-mail: onyinye.anthony-orji@unn.edu.ng

ABSTRACT

Sub Saharan African (SSA) countries are ranked low below 40 out of 100 when compared with other regions in terms of institutional quality. These institutional qualities include voice and accountability, perception of corruption, regulatory quality, rule of law etc. These factors measure government's response to public demand. Institutions are seen as the driving force of any economy. They dictate how the economy is organized. North America and Europe have very high ranking in institutional quality. SSA countries have an average of less than 40 in institutional quality (International Country Risk Guide. This suggests that for SSA, these institutions are not in tandem with other region. This study examined the influence of institutional determinants of defense expenditure in Sub-Saharan Africa (SSA) countries. The study period covered the year 2000 to 2015. The Generalized

method of moments was used as the econometric technique for estimation. Variables such as previous defense spending, rule of law, political stability, and government effectiveness were used. The findings revealed that institutional factors such as past defense spending, government effectiveness, rule of law and political stability were statistically significant. The study therefore recommends that policy makers should allow institutions to work so as to avoid wasteful spending by the governments in SSA countries.

Keywords: Institutional, determinants, defense, Sub-Saharan Africa

JEL Classification: H5, H41

1. INTRODUCTION

Sub Saharan African (SSA) countries are ranked low below 40 out of 100 when compared with other regions in terms of institutional quality (Hammadi et al, 2019). These institutional qualities include voice and accountability, perception of corruption, regulatory quality, rule of law etc. These factors measure government's response to public demand. Institutions are seen as the driving force of any economy (Siba, 2007). They dictate how the economy is organized. North America and Europe has very high ranking in institutional quality (above 45 out of 100). SSA countries have an average of less than 40 in institutional quality (International Country Risk Guide [ICRG] 2017). This suggests that for SSA, these institutions are not in tandem with other region.

Defense expenditure on the other hand in SSA countries has been divided into three phases which are between 1966-1977, 1977-1996 and 1997 to 2014 (SIPRI, 2017). These three periods saw different causes for different expenditure. For example, the second phase (that is 1977 -1996) saw the International Monetary Fund (IMF) and the World Bank advising SSA countries to observe democratic practices and apply the

structural adjustment program. During this period, defense expenditure in SSA reduced from \$14.7 billion to \$7 billion. This is almost a fifty percent reduction as a result of the recommendations by IMF and World Bank. In other words, institutions have some level of influence on defense expenditure.

Institutions are operated by individuals called civil servants who are thorough professionals and have the role of planning, organizing and executing government's daily activities. They belong to the executive, legislature and judicial arms of government. They ensure that government's spendings are properly planned based on available information from the public. Without these institutions, governance will be very difficult. In SSA countries, the institutions are also operated by individuals. However, there is a situation where adherence to the rule of law is ignored. In fact, World Governance Index ICRG (2017) ranked SSA low (below 40) in institutional quality. This explains the reason why there is low or weak institution. As a result of this, expenses are carried out without due process and this will lead to high cases of corruption. No wonder, the WGI (2018) ranked SSA as the second most corrupt region in the world. When institutions are weak, corruption creeps into the government and scarce resources are either

wasted or not used for the right purpose. As a result, some sectors that are in need of funds are starved or denied. This will in turn reduce the quality of services enjoyed by the public. Some studies have been done to investigate the nexus between institutional quality and other macroeconomic variables but none to the best of our knowledge investigated the institutional drivers of military expenditure in SAA within the period under review. Such studies include Ogbuabor, et al (2020a), Ogbuabor, et al (2020b), Ogbuabor, et al (2020c), Anthony-Orji, et al (2019).

This study therefore, investigates institutional variables that drive military expenditure in SSA. This is because institutions are supposed to dictate how government activities are carried out daily. The rest of the study is structured as follows, sections 2 and 3 discuss the literature review and methodology. Sections 4 and 5 are analysis of findings and conclusion

2.1 LITERATURE REVIEW

2.1.1 Institutional Factors

Molina-Morales, Amate-fortes and Guarnidi-Rueda (2013) argue that institutional factors consist of index of economic freedom, globalization index, civil liberties, political rights, corruption index, voice and accountability, political stability,

effectiveness of government, quality of regulation, rule of law and control of corruption. Hammadi et al (2019) narrated two perspectives of governance or institutional quality into two perspectives which are by ICRG and World Governance Index (WGI). To Hammadi et al (2019), ICRG identified military in politics, religious tension, ethnic tension, law and order, democratic accountability and bureaucratic quality while WGI identifies voice and accountability, government effectiveness, regulatory quality and rule of law as institutional features.

2.1.2 Defense Spending

The definition of defense spending as by North Atlantic Treaty Organization (NATO) as cited by Tekeoglu (2008), is seen as all current and capital spending of the military used in operating the defense ministry and other agencies of government that are engaged in military activities and space projects. The expenses incurred to cater for the police and other paramilitary such as immigration, customs etc and also the spending made on military research and development. The International Monetary Fund [IMF] (2007), defined military spending as all expenditure meant for the maintenance of the armed forces which

include buying of military supplies and equipment, military construction, recruiting, training, equipping transporting, welfare of the military organizations such as the Army, Navy, Air Force, National Guard, marines etc.

2.2 Theoretical Literature

2.2.1 Institutional theory

Institutional theory can be classified into three main categories namely Sociological institutionalism (Skocpol 1985; Wuthnow 1985 and Skocpol 1992) as cited by Amenta and Ramsey (2010) which is seen as a theory that derived its functions from political organizations and world society viewpoint. This theory was made as a response to vacancies in state centered and world system theories in political sociology and neo-realist theories in international relations. They concluded that policies and actions are from the selfish interest of political actors. Also identified is historical institutionalism where institutions are formed and sustained on the basis of history. Political Institutionalism is the third category of institutional theory. This theory identifies large political party system that has stayed over the years such that its behavior will influence all government activities and even affect how governance is operated.

2.2.2 Defense Expenditure theory

The public expenditure theories are the Adolph Wagner theory (1883), Samuelson's public expenditure theory (1954) Maynard Keynes public expenditure theory (1953), Wiseman and Peacock theory of public finance (1961) amongst others. The theory that is of interest to this model is the Wagner's (1883) theory which sees increase in the economy as a cause of increase in government expenditure. Wagner posits that as an economy experiences growth, public expenditure will also increase. Wagner also classified government's spending into social spending, administrative and defense spending and welfare of the citizens.

2.3 Empirical Literature

Gupta, De Mello and Sharam (2000) studied 120 countries within 1985-1998 and employed Panel Regression approach. Their findings suggest that corruption is very much associated with higher defense spending and it forms a share of GDP and entire public spending. Their evidence is however, suggestive evidence and not a conclusion. In his quest to find out why some states or countries spend more on defense than others Goldsmith (2013) used a Fixed panel data model to explain the roles of local political

and economic factors. Obtaining data from a long period; 1886 – 1989, the results showed that the type of government has a “robust effect” on defense spending, while democratic institutions spend less than other states on the military.

Bove and Nistico (2014) examined how institutional platforms change in political institution through coup d’etat can influence how defense spending is determined. The counterfactual approach and the synthetic control method were employed using 40 countries that have experienced coups. Results showed that countries that have experienced military intervention with success have large increment in defense spending.

Gandhi (2013) studied the effects of institutions on public good having defense spending as one of the dependent variables. The study covered the period 1946 – 1996. The study focused on 138 countries in the world that at one time had dictatorial leadership. Though method of estimation was not stated clearly, the results showed that when dictators are limited by institutions, they are mandated to start allocating more resources to goods that will serve public interest for example, education and fewer resources are devoted to defense spending.

Bel and Elias-Moreno (2009) collected data for the period 1988 – 2006 on 157 countries to check electoral rules, concentration of parliamentary parties and ideology influence defense spending. Using Ordinary Least square method, they discovered that presidential democracies spend more on military than parliamentary democracies and also institutional factors do not have the same impact on defense spending. Countries practicing plurality voting system spend less than countries practicing proportional representation.

In his report, Lee (2010) examined the impact of ideology and military experience on Military Spending in the United States, for the period 1952 to 2000. The author used Multivariate Ordinary Least square technique to discover that both ideology and experience in military do not have any significant impact on defense expenditure. The researcher also discovered that US federal government led by the democrats spends more on defense rather than their republican counterparts. The author therefore, recommends further study on the implications of the gap between civil and military experience.

Albalade, Bel and Elias (2012) obtained data from 1988 -2006, in a cross section of 157 countries and compared two major types of

governments; that is; Presidential and Parliamentary systems of government. The study found out that countries practicing presidential system of government spend more on defense expenditures than countries practicing parliamentary system of government. Again, the researchers found that most countries have different impacts on public good. Bove and Brauner (2011) observed that the institutional set of a society's dictatorship affects the nature of leader-elite relationship, which in turn affects the share of government budget on military spending. They had data divided into 5 groups from 1960 to 2000. They applied the Fixed Effects model. Their results opined that monarchies and single party systems shows median spending pattern while military and single ruler-system have the highest and lowest levels of defense expenditure.

Tongur, Hsu and Elveren (2015) examined the factors affecting military spending with emphasis on democratic institution covering 130 countries globally from 1963 to 2000 using dynamic panel data method and the results showed that one, democratic government with social ideology tend to make little expenditure on defense with other anti-social democratic government making higher expenditures on defense. It means therefore that democratic ideology influences

defense spending. Secondly, the findings also suggest that countries with higher income inequality tend to spend more on defense.

With regards to organizational influence on military spending, George and Sandler (2017) used a two-step Dynamic Panel technique to find out the factors affecting military spending in NATO. Data used were for the period 1968 – 2015. Their results reveal spatial considerations leads to a decrease in defense spending among NATO members. While GDP and population influence military spending among NATO members, terrorist activities in the international space also have a positive influence on defense spending by NATO members. The policy recommendation of this research work to policy makers is that if terrorist activities reign in NATO member state, then defense spending must increase.

In another study, Gul and Torusdag (2019) analysed the link between democracy, economic growth and military spending. They saw democracy and economic development as institutional causes of military spending. Using panel model for the period 1995 – 2017 with a cross section of 34 OECD countries, the result showed that there was a unidirectional causality from democracy to military spending. They further

opined that where democracy is practiced, chance of war reduces as well as military expenditures. In other words, institutional determinants influence military expenditure positively.

Dizaji, Farzanegan and Naghavi (2015) x-rayed the impact of political activities influence on defense spending in Iran's budget from 1960-2006. Using the Vector Auto-Regressive (VAR) model to estimate, the results showed that the influence of democratic apparatus on military spending is negative. As democratic institutions are becoming better, emphasis on military expenses are decreasing. And more emphasis is placed on expenditure on education rather than military spending.

Saxon (2018) investigated female participation in research and development while studying the role of government and defense spending in the United States of America. The author used the difference-in-difference technique to show how changes in defense spending as a result of research and development can cause a shift in the gender composition of engineers in America. They discovered that as a result of research, more militaristic inventions are made causing females to be discouraged from following the military path. Williams (2018) further

investigated the impact of institutional factors on military spending using regression analysis. The result showed that government workers like to look at defense spending and social spending as complementary rather than competitive. This shows that it is persons under government employment would suggest that defense spending goes hand in hand with social expenditure.

Conrad and Souva (2020) investigated the interests, institutions on defense spending. Using countries that are operating democratic practices and countries that are operating on autocratic basis, they discovered that countries that practice democracy have low military burden while countries with autocratic leaders have higher defense burden. Çuhadar and Özbey (2020) evaluated the responsibility of institutions in defense spending. They used the Factor analysis of the mixed data (FAMD) technique that uses the logic of principal component analysis (PCA). Findings revealed that defense expenses of authoritarian governments are way above the expected average while countries that obey the rule of law and practice democracy have their defense expenditure below the expected average.

Blum (2021) investigated the third wave of democracy and its influence on national

defense expenditure with a panel data of 110 countries for the period 1972 to 2013. The findings from the estimates showed that democracy's third wave caused a reduction in defense spending relative to national income by 10% for nations that practice democracy.

Summarily, studies from Gupta et al (2000), Goldsmith (2013), Gandhi (2013) among others were reviewed. These studies used a combination of different regions but none was specific on sub-Saharan Africa. This study focuses on sub-Sahara and the years involved begin from 2000 to 2019 which is the beginning of the new millennium. This period also marks the period of wide scale democratic practices in most parts of Sub-Saharan Africa. Also variables such as law and order, voice and accountability and

bureaucratic quality were used as proxy for institutional quality.

3. METHODOLOGY

This research adopts the Wagner(1883) public expenditure approach where Wagner suggests governments increased role in the economy as a result of growth of the economy. Data from International Country Risk Guide (ICRG) will be employed. The dynamic panel technique by Arrellano and Bond (1990) and Arrellano and Bover (1995) will also be used in estimating the model. Data will be collected from 20 SSA countries due to availability of data for these countries and the year spans from 2000 to 2019. Descriptive statistics and panel unit root of Levin et al (2002) will also be conducted. This is to ensure that spurious regression is avoided.

3.1 Model Specification

Using the Adolph Wagner's (1883) public expenditure theory, where Wagner saw that the economy is a factor that affects public expenditure, and posited that some factors are determinants of public expenditure, the equation is stated as follows;

$$Defexp = f(GOVTEFF, POLSTBLTY, R_of_Law) ..$$

Where

Defexp = Defense expenditure

GOVTEFF = Government effectiveness

POLSTBLTY = Bureaucratic quality

R_of_Law = Rule of Law

The Dynamic panel model is shown thus;

$$\ln Defex_{it} = \beta_0 + \beta_1 \ln Defex_{it-1} + \beta_2 GOVTEFF_{it} + \beta_3 POLSTBLTY + \beta_4 R_of_Law_{it} + \mu_{it}$$

The subscripts i and t shows the individual country and time respectively. While the ln shows the natural logarithm of a variable. Then again, the μ_{it} is the error term which contains the unobserved country effect and all other variables. Also, Albalate, Bel and Elias (2012) used variables such as effectiveness of government, corruption, form of government as explanatory variables to estimate their impact in military spending. The results showed that countries practicing presidential system of government have higher budgetary allocation for defense than countries practicing parliamentary system of government.

4. PRESENTATION AND ANALYSIS OF RESULTS

The descriptive statistics is presented below

Table 1: Descriptive statistics for Dynamic Panel Model

	LNDEFEXP	GOVT_EFF	POL_STBLTY	R_OF_LAW
Mean	0.14779	-0.6866	-0.5739	-0.4484
Median	0.20854	-0.6578	-0.383	-0.3409
Maximum	1.54961	0.64237	0.66096	0.71574
Minimum	-1.647	-1.5534	-2.264	-1.6749
Std. Dev.	0.53866	0.41739	0.69339	0.58604
Skewness	-0.2412	0.59271	-0.6047	0.02035
Kurtosis	3.38674	3.87399	2.39538	2.10418
Jarque-Bera	5.09783	28.9209	24.3733	10.7221
Probability	0.07817	1E-06	5E-06	0.0047
Sum	47.2929	-219.73	-183.66	-143.49
Sum Sq. Dev.	92.56	55.5738	153.37	109.56
Observations	320	320	320	320

Source: Authors' computation using Eviews9

Table 1 is the descriptive statistics of the model. The mean value of defense expenditure is put at 0.1478. The standard deviation is 0.53 while the minimum value - 1.647% and the maximum value is 1.549. For government effectiveness, the average value is -0.68; the standard deviation is 0.41, then the values range from -1.55 to 0.64. For political stability, the mean value is -0.5739; the standard deviation is 0.69 while values range from -2.364 to 0.66. Rule of Law has a mean value of -0.44 and a standard deviation

of 0.58 with a minimum and maximum value of -1.67 and 0.715 respectively.

The skewness values have both positive and negative values for the variables and kurtosis values are also reported in the table, the probability values are also in the table. The Jarque-Berra value for normality test is also in the table which shows that the values are normally distributed. The observations for all the variables complete.

Table 2: Abridged Presentation of unit root test using Levin, Lin and Chu (2002)

variables	t-statistic	p-value	1st difference t-statistic	p-value	order of integration
Indefex	-1.86539	0.0000	-	-	I(0)
Govteff	-3.97647	0.0000	-	-	I(0)
Pol_stblty	-5.75880	0.0000	-	-	I(0)
R_of_Law	-1.80385	0.0356	-	-	I(0)

Source: Authors' computation using Eviews 9.

Table 2 above is an abridged presentation of the panel unit root test using the Levin, Lin and Chu (2002) panel unit root approach. From table 2, it can be observed that government effectiveness, political stability and rule of law are stationary at level form. This means that the data can be used for further estimation having attained the necessary condition for estimation.

Table 3 Summarized Results of GMM estimation

Variable	Coefficient	Standard error	t-statistic	p> t
Llndefexp	0.704764	0.0431664	16.33	0.000
Govteff	-0.1247624	0.0621105	-2.01	0.045
Polstblty	0.0600149	0.0327675	1.83	0.067
RofLaw	-0.247634	0.0364677	-0.68	0.0497
AR(2)			-0.64756	0.5173
Wald	1663.94			0.000
Instruments	108			
Countries	20			
Observations	280			

Source: Authors' computation using Stata

From table 3, the explanatory variable lag of defense expenditure is in its logarithmic form. The coefficient is positive and also statistically significant. This shows that previous values of defense expenditure influences current defense expenditure by 70.5%. This result supports the empirical result of Tambudzai (2003) where he found out that in the short run, previous military expenditure affects current military spending. Furthermore, the table shows that government effectiveness as an institutional variable is in its level form. It shows that if government effectiveness increases by one, then defense expenditure will decrease by

0.12. When institutional quality becomes better, government spending on defense increases, however, in SSA countries, based on the ranking, the level of institutional quality is low and so; its effect on government decision or spending will not be meaningful. The result obtained has proved it. This result is consistent with the research done by Huang and Thornsby (2011) where government effectiveness have a similar result with significant impact. This is because they focused on over 100 countries in the world with more collections from advanced countries. it also shows that when government is effective, there would be no

need to keep on increasing military spending. It can be observed from table 3, that political stability as a variable for institutional quality is negatively related to defense expenditure. The impact is statistically significant. The result further supports the research done by Iyoboyi (2014) whereby as democratic values are entrenched in a country, the level of spending on military hardware, conflicts etc tend to reduce. Again, study carried out by Huang and Thornsby (2011) also indicate that adherence to democratic practices enables reduction in security spending

Rule of law is used as an explanatory variable to determine its influence on defense expenditure. From the coefficient above, when rule of law increases by one, defense expenditure decreases by 0.247. This impact is statistically significant at 5% level of significance. This suggests that when there is prevalence of democratic practices such as periodic elections, free and credible polls, and respect for the law, there will be less concern for military spending. This research is in agreement with the study done by Asal, Conrad and Toronto (2008) wherein they used democracy as an explanatory variable to determine military conscription and discovered that countries practicing democracy have less conscription while countries that have dictators as leaders have

more military conscriptions. Also Gul and Torusdag (2019) carried out a causality analysis between military expenditure and democracy and the results showed that democracy causes military expenditure and vice versa. This shows that when there are democratic practices such as respect for the rule of law, military expenditure is decreased and when there is no democracy military expenditure is increased.

From table 3, it can also be observed that AR (2) shows that there is absence of autocorrelation in the estimate. The AR (2) is a second order test for autocorrelation which is meant to show that the panel data is free from autocorrelation. The decision rule is that where the p-value is greater than 5% level of significance, we cannot reject the null hypothesis. The null states that; there is no autocorrelation. Looking at the result, the value is greater than 5%. This means that there is no autocorrelation in the data. Also the Wald test is statistically significant which means that the variables are appropriate for use. The number of instruments adopted is 108 and the number of countries used is twenty countries.

5. CONCLUSION AND POLICY RECOMMENDATION

Having investigated the institutional determinants of defense expenditure in SSA countries, the result showed that only previous defense expenditure and bureaucratic quality affect defense expenditure. Previous defense expenditure has a positive impact on current defense expenditure which is statistically significant while bureaucratic quality has a negative impact. It therefore means that not every institutional fact influences defense expenditure. In other words, in SSA countries, there is neglect of institutions when defense expenditure is done. As a result, the study concludes the following; First, previous expenditure should be considered before carrying out defense spending. Second, there is need to strengthen institutions so as to avoid excess use of executive power. Third, there is need to develop policy that will promote establishment of defense industries in SSA. Finally, respect to rule of law is important to avoid abuse of office.

REFERENCES

- Albalade, D., Bel, G., & Elias, F. (2012). Institutional Determinants of military expenditure. *Journal of Comparative Economics*, 40(2), 279-290.
- Anthony-Orji, O.I., Orji, A., Ogbuabor, J.E. and Nwosu E.O. (2019) "Do financial stability and institutional quality have impact on financial inclusion in developing economies? A new evidence from Nigeria", *International Journal of Sustainable Economy*, 11(1), 8-40. DOI 10.1504/IJSE.2019.096541.
- Available
Online: <https://www.inderscienceonline.com/doi/pdf/10.1504/IJSE.2019.096541>
- Bel, G., & Elias-Moreno, F. (2009). Institutional Determinants of Military Spending. *Research Institute of Applied Economics*. working paper 2009/22
- Bove, V., & Brauner, J. (2011). The Demand For Military Expenditures in Authoritarian Regimes. *Defence and Peace Economics*, 27(5), 609-625.
- Bove V. & Nistico R. (2014). Coups d'état and defense spending: a counterfactual analysis. *Public Choice* 161 (3-4), 321-344.
- Conrad J. & Souva M. (2020). Interests, Institutions and defense spending. *Oxford University Press*. Retrieved October 20, 2021, from <https://doi.org/10.1093/acrefore/9780190228637.013.1881>
- Blum, J. (2021). Democracy's third wave and national defense spending. *Public Choice*, 189, 183-212.
- Dizaji, S. F., Farzanegan, M. R., & Naghavi, A. (2015). *Political Institutions and Government Spending Behaviour: Theory and Evidence from Iran*. Munich: Center for Economic Studies & Ifo Institute. CESIFO working paper No.5505
- Gandhi, J. (2003). *Dictatorial Institutions and their Impact on Policies*. Paper presented at the Department of Politics, New York University, New York.
- George, J., & Sandler, T. (2018). Demand for Military Spending in NATO, 1968-2015. *European Journal of Political Economy*, 58, 222-236.
- Gul, E., & Torusdag, M. (2019). The Relationship Between Military Expenditures Democracy And Economic Development. *International Journal of Contemporary Economics and Administrative Sciences*, 9(2), 405-427.
- Gupta, S., De Mello, L., & Sharan, R. (2001). Corruption and Military Spending. *European journal of political economy* 17(4), 749-777.
- Hammadi, A., Mills, M., Sobrinho, N., Thakoor, V. & Velloso R. (2019). *A Governance Divident for Sub-Saharan Africa*. (WP/19/1). New York. International Monetary Fund, African Department.
- International Monetary Fund. Government Financial Statistics. Retrieved

- October 20, 2021 from
<https://www.imf.org/external/pubs/ft/gfs/manual/gfs.htm>
- International Monetary Fund. (2017). The role of the Fund in Governance Issues-Review of the Guidance note-preliminary consideration. Policy Paper, Washington D.C
- Molina-Morales, A., Amate-ortez, I., & Guarnido-Rueda, A. (2013). Institutions and public Expenditure in OECD countries. *Review of Public Economics*, 204(1), 67-84.
- Ogbuabor, J.E; Orji A.; Eigbiremolen, G.O; Manasseh, C.O; Onuigbo, F.N (2020a) "The Role of Institutions in the FDI-Growth Relationship in a Developing Economy: A New Evidence from Nigeria" *Studia commercialia Bratislavensia*, 13(4), 348-363. Available online at: <https://scb.euba.sk/index.php/136-jonathan-e-ogbuabor>
- Ogbuabor, J. E, Onuigbo F.N, Orji, A and Anthony-Orji O.I (2020b) "Institutional Quality and Economic Performance in Nigeria: A New Evidence" *International Journal of Economics and Statistics* 8 (2020), 38-49 DOI: 10.46300/9103.2020.8.7. Available online: [https://www.naun.org/main/NAUN/economics/2020/a142015-007\(2020\).pdf](https://www.naun.org/main/NAUN/economics/2020/a142015-007(2020).pdf)
- Ogbuabor, J.E., Orji, A., Manasseh, C.O. and Anthony-Orji O.I. (2020c) Institutional Quality and Growth in West Africa: What Happened after the Great Recession? *International Advances in Economic Research*, 26(4), 343-361 (September, 2020) <https://doi.org/10.1007/s11294-020-09805-0>, Available online: <https://link.springer.com/article/10.1007/s11294-020-09805-0#citeas>
- Siba, E. (2007). Determinants of institutional quality in Sub-Saharan Africa countries. *International Conference on African Development Archives III*. Retrieved October 25th, 2021. From https://scholarworks.wmich.edu/africenter_archive/111
- Saxon T. (2018). *Female participation in research and development: The role of Government and defense spending*. Published Ph.D Dissertation, Colorado State University, Fort Collins. Colorado
- Tekeoglu, E. (2008). *Defense Expenditure and Economic Growth: Empirical Study on Case of Turkey*. Monterey, California: Naval Postgraduate School .
- Tambudzai, Z. (2004). Determinants of Zimbabwe's Military Expenditure. *Journal of Development Perspective*, 2(1), 103-120.
- Wagner A.H (1883). *Finanzwissenschaft* Leipzig Germany. *Winter F.C*, 4(1).
- Williams, L. K. (2019). Guns Yield Butter? An Exploration of Defense Spending Preferences. *Journal of Conflict Resolution*, 63(5), 1193-1221.