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EXAMINING THE EFFECTS OF GOVERNANCE INDICATORS ON ECONOMIC GROWTH IN NIGERIA: AN ARDL APPROACH

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ABSTRACT

The effects of certain governance indicators on economic growth in an African country (Nigeria) have been researched in this study. Governance indicators such as institutional quality, and rule of law are analysed to understand their effect and direction on economic growth. The data are from the World Development and Governance Indicators (WDI & WGI) and cover the years 1996 to 2016. Using the autoregressive distributed lag (ARDL) approach to estimate the relationship, we discovered that the coefficient of governance indicators produces mixed results, even though the index of governance has a negative influence on economic growth. Furthermore, uni-directional causality was evident between certain governance indicators and trade openness. Significant policy implications suggested by the findings include the government of this African country should put in more effort into improving the general governance structure toward stability. Hence, this will lead to increased investor confidence in the countries' economies.

Keywords: Governance, Economic Growth, Autoregressive Distributed Lag, Africa, Nigeria.

INTRODUCTION

According to past research, there has been a set of necessary and key institutions that were essential for the growth of an economy (Acemoglu et al., 2012; Cooray, 2009; Fayissa & Nsiah, 2013; Gradstein, 2003; Islam & McGillvray, 2020; Mahmood, 2021; Robinson & Acemoglu, 2012; Samarasinghe, 2018). Despite the Solow and new growth model (as examples of theoretical models) have given a concrete clarification on the issue of economic growth and the specific geographic boundaries, comprehending this term (economic growth) is nonetheless accurate (Sissoko & Sloboda, 2020; Thach, 2020). In addition, these models (growth models) failed to or were unable to give or supply the total rationale behind the developmental variations among cross-nation in line with the fundamental institutions (Thach, 2020). Though in these principal models where technological progress, physical and human accumulation were essential and indispensable determining growth factors (Acemoglu et al., 2012), the significance of social infrastructures, institutions and policies by authorities cannot be ignored. For example, some of these establishments consist of well-explained rights on the property, independent enforcing agencies and stable macroeconomic conditions towards good governance among others.

Governance was an extensive and multi-faceted thinking that describes the way or nation in which strength is exercised to manipulate its monetary and social elements (Bercu et al., 2019; World Bank, 2020). The manner in which the country's economy improves has a hyperlink to a set of government establishments that have interaction as keys to economic growth. The thought and importance of governance as one of the quintessential elements to financial increase has been raised in Nineteen Nineties the place governance is a wide notion with amazing complexity to its most important pillars. Governance used to be referred to as traditional mores and establishments used for exercising the energy of supremacy with six (6) primary scopes of governance which are: political balance and no presence of terrorism or violence, responsibility and voice, authorities' effectiveness, controlling quality, corruption management and the rule of regulation (Benlahcene et al., 2019; Fraj et al., 2018; Kaufmann et al., 2010). These governance traits may additionally affect a number of crucial establishments that were imperative for monetary growth. These key establishments consisted of well-defined property rights, impartial contract enforcement,

decreased facts holes and secure macroeconomic prerequisites (Rodrik & Subramanian, 2003).

Thus, governance indicators impact the decisions of countries on their economic growth in various manners. These involved good governance creating arrays of critical institutions that can upsurge the efficiency of human and physical capital. Likewise, fascinates investment for evolving capital which is in line with the growth theories earlier mentioned. In addition, good governance advances the main institutions of the country and creates an advantageous set of control measures for the nation's economic growth. By improving establishments and making better governmental measures and policies, a striking atmosphere for high investment both in physical and human capital will lead to improvement toward actualizing nations' economic growth and likewise development (Chand et al., 2020; Fraj et al., 2018; Romer, 2001).

Even though researchers have shown that governance can have an effect on the growth of nations, there was nonetheless tons to discover to make sure governance-related measures and policies are attractive to policymakers. Most essentially, as past studies revealed the linkage between governance and growth has not been proved to some extent and way of sufficient evidence. For advantageous policies or measures of intervention, it was necessary to become aware of the necessary governance indicators that affect country's growth. In accordance with this discussion, this study thereby analysed an African country's (Nigeria) economic growth performance through some governance indicators such as rule of law, political stability, control of corruption, voice and accountability (Institutional quality) among others. The study is to shed light on the significance of governance quality for economic growth in Nigeria. Likewise, the direction and magnitude of the relationship between governance indicators and economic growth.

LITERATURE REVIEW

The extent of the growing economy as a result of the high quality of establishments can be at once direct and indirect ways defined with the usage of the Solow model, the new theory of growth principles and the perception of social infrastructure. In regard to principle, the more suitable establishments would contribute to Solow's model by means

of increasing the available technology. Thus, it was apparent that any structure of terrible governance, such as excessive political violence, terrorism and tremendous corruption harms residents both emotionally (intellectually) and bodily through lowering of the output. Then, it was considerably good to expect that improved governance gets rid of the bodily and intellectual (emotional) constraints, resulting in improved labour productivity. Romer (2001) explained that Solow's model no longer provides a precise explanation for the phrases of technological enhancement or improvement, therefore, the upward movement in the productivity of labour is subject to a comparable explanation as the technological enhancement in the economy (Romer, 2001). Thus, technological enhancement expanded nations' economies through the accumulation of wealth.

Likewise, the emerging growth ideas signified the position of technology as a riding pressure for the growth of nations (Thach, 2020; Samarasinghe, 2018). The accumulation of knowledge will increased alongside with technological growth. Thus, this work generated its idea in line with Solow's model based on the stated theory, that good governance can pave the way for favourable economic stipulations for technological improvement, coupled with capital formation both physical and human as key to the growth of economies (Romer, 2001).

Liu et al. (2018) investigated the impact of governance value on growth: based totally on China's provincial panel information for the length 2001–2015. Employing the variables per capita GDP which eliminates the inflation factor, governance finds the usage of the world aspect evaluation method, which displays the multi-dimensional governance viewpoint of horizontal allocation of power, governance potential and supervising power, as properly as different manage variables to include: change openness, schooling development, urbanization, funding proportion, and human capital; and estimating the constant impact model, the findings of the learn about confirmed that governance satisfactory has a widespread fantastic impact on financial increase in China's provincial regions. However, it is viewed from the find out about that the place distinction in governance satisfactory leads to the location distinction in the transformation impact of precise governance on financial increase pattern; being that in the jap region, greater governance best drives extended monetary improvement pattern, while, in the western region, greater governance best drives expanded financial boom pattern. A study also analysed institutional

great and monetary growth using the evidence of rising countries, overlaying the duration 2002 - 2015. Nguyen et al. (2018) have made use of the Generalized Method of Moments (GMM) system. Thus, findings from the learn about showed an enormous advantageous institutional excellence effect on financial growth. Similarly, Sissoko and Sloboda (2020) analysed the determinants of monetary increase in ECOWAS Countries from 1996-2016. A core determinant of a monetary boom is the governance indicator as captured by means of Political Participation and Accountability, Government Effectiveness, Political Stability, Regulatory Quality, Rule of Law, and Corruption Control. Using a Dynamic Panel Regression analysis, the end result is such that Rule of Law and Control of Corruption exert a good-sized influence on financial growth.

In Africa, Epaphra and Kombe (2017) studied the impact of establishments on growth for the duration of 1996 to 2016. They find out about published that political balance as an indicator of institutional fine stood out as the most substantial issue that debts for financial boom as measured through GDP Per Capita in Africa; the usage of the models of Generalized Methods of Moment (GMM); and Fixed and Random Effects. Yahyaoui and Bouchoucha (2020) investigated a pattern of forty-eight African international locations consisting of 23 low-income nations and 25 middle-income nations for the length of 1996–2014. Using modified regular least squares and gadget generalized technique of moments to consider the variables GDP per capita, alternate openness, populace to measure workforce, inflation and the group as computed by using the foremost element analysis; the end result of the learn about with reference to the function of establishments confirmed that establishments have a superb and especially good sized influence on each low and centre profits countries, although a decrease in centre profits countries. More specifically, in low profits countries, governance symptoms such as rule of law, government effectiveness and voice and accountability are considered to enhance resource effectiveness; whilst in the centre earnings countries, the rule of regulation is the sole indicator viewed to enhance resource effectiveness which is an indicator for increase in an economy.

Asongu and Odhiambo (2019) investigated no longer a direct relationship between governance and productivity by way of analysing Governance, capital flight and industrialisation in Africa. Investigating

on a panel data of 36 African international locations for the years 1996 to 2010, they learned about employing the principal element evaluation and GMM and discovered that in order to raise industrialization in Africa which similarly increases financial growth, accelerated efforts closer to bettering exact governance is indispensable to decrease the bad impact capital flight has on industrialization. In like manner, the learn about of Sarpong and Bein (2021) on the results of correct governance, sustainable improvement and useful resources on first-class of life: proof from Sub-Saharan Africa, 2000 to 2017 confirmed that with emphasis on the governance indicator, governance is a considerable aspect to decorate first-class of existence as measured with the aid of Human Capital index, which is a component viewed to resource increase in the Sub Saharan African economy. Likewise, Iheonu et al. (2017) examined the impact of institutional indicators on the overall economic performance of selected nations. The learn about makes use of a Panel dataset ranging from 1996 – 2015 for West African nations. Findings expose that manipulation of corruption, authorities' efficacy, regulatory fines and rule of regulation influenced productivity.

Adegboye et al. (2020) examined investment coming directly from overseas/abroad and the quality of institutions on growth (GDP) in Sub-Sahara Africa for a pattern of 30 SSA international locations over the length of the years 2000 to 2018. Using the fixed and random effect method, the end result of the learn about confirmed that political balance and absence of violence increased the influx of FDI to the international locations underneath the study, which in flip drives monetary development. Also, Salawu et al. (2018) discussed how governance influences Sub-Saharan Africa's economies. It was recorded that governance has a fine and does have an impact on the monetary increase of South Africa and Ghana, and the poor influence Nigeria's financial growth. The three international locations had been understudied between 1996 and 2015, as they contributed the most to the GDP of the region. They learn about adopting the use of regular least rectangular regression to estimate an easy constant results mannequin of the variables: GDP increase rate, alternate openness, the share of the working population, get right of entry to sanitation, share of working age population, foreign direct investment, access to enhance sanitation and a mixture of governance symptoms the use of the Principal Component Analysis to include: Voice and accountability, Political stability, Government effectiveness, Rule of

law, Regulatory fantastic and Control of corruption. The end result confirmed that Political steadiness and manipulation of corruption pressure governance which in flip drives monetary boom in South Africa and Ghana. On the other hand, in Nigeria, Government effectiveness enhances growth; however, manipulation of corruption, voice and accountability impedes this authority's effectiveness thereby resulting in terrible governance and monetary growth. The find out about consequently recommends that international locations must embody accountability, corruption, and freedom of expression, as these assist in power growth.

However, research was not left out on individual studies on countries in Africa. For instance, Jibril (2017) studied the relationship between governance and financial boom in Ethiopia. Using the governance index, GDP Per Capita, labour force, authorities training expenditure, change openness and overseas direct investment, the end result confirmed that governance exerted a high-quality effect on the overall productivity performance of the country. More specifically, free election, freedom of faith and affiliation are considered to enhance growth, whereas freedom of the press and freedom of expression no longer enhance productivity boom in the country. Also, whilst labour pressure had a good-sized impact, authorities training expenditure, exchange openness and FDI had an insignificant effect on the productivity and investment increase of the country. Likewise, Abubakar (2020) examined institutional quality and growth in Nigeria for the length of 1979 to 2018. Employing the Johansen Cointegration and Ordinary Least Square strategy in estimated constant impact mannequin on GDP and a vector of unbiased factors included are governance efficacy, voice and accountability, corruption manipulation, quality by regulatory, contract-intensive money and political steadiness and lack of violence. The end result suggests that a tremendous governance index for institutional satisfaction exerts a high quality even though insignificant relationship with monetary growth.

Thus, primarily based on these numerous studies proved that there is a relationship between governance indicators and the growth of nations, this crucial area must be examined in most African countries individually for dynamic and strategic policy recommendations such as Nigeria. Likewise, to contribute to the existing literature on governance and economic growth, the study employs rigorous

empirical methods that differ from other studies. The time series data being made available for the methodology for specific examination of this country, differ from panel data used by other studies entailing countries.

METHODOLOGY

Econometric techniques were employed for the quantitative analyses of the chosen or selected variables. The study was conducted in a country in Africa (Nigeria). Thus, this model was designed in an econometric manner to reflect the link between the dependent variable (GDP) and independent variables (Trade openness, Inflation rate, Rule of law and Institutional quality). The model is specified as:

$$YN_t = \lambda_0 + \lambda_1 Top_t + \lambda_2 Inf_t + \lambda_3 Rul_t + \lambda_4 IQ_t + \mu_t$$

where YN_t is the GDP of Nigeria respectively, Top_t, Inf_t, Rul_t and IQ_t are Trade Openness, Inflation rate, Rule of law and Institutional quality; λ = parameters, μ_t = error term.

This study analysed the relationship between GDP growth and the independent variables in the developing nation of Nigeria. All series of data were based on the annual data and the sample period of observation from 1996 to 2016, which are obtained from the World Bank database. Thus, this research characterised the theories in line with the expressed model to accomplish the objective, of whether some governance indicators would affect the country's growth for the period examined.

RESULTS AND DISCUSSIONS

Stationary Test

The Augmented Dickey Fuller (ADF) test was used to carry out the order of integration (stationarity test). According to Table 1, the stationarity test revealed that ADF of the variables was at level I (0) and first differences I (1). According to the unit root test method (ADF), it was revealed that the variables (GDP), examined for the selected country (Nigeria) is stationary at I (0) and I (1). Therefore, it supported the use ARDL for the estimation of the models based on Pesaran and

Shin's view that ARDL can be employed for analysing long and short run relationship of variables at mixed order of stationarity either I(0) or I(1) (Pesaran & Shin, 1995). Thus, various studies have supported this method including Habibullah et al., 2014; Pesaran et al., 2001.

Table 1

ADF Unit Root Test

Variable	Nigeria		
	Constant	**Trend and Constant**	**Result**
GDP	5.622***	5.966***	I(1)
Inf	5.389***	5.236***	I(0)
IQ	4.554***	5.458***	I(1)
Rul	2.9201*	5.864***	I(0)
Top	6.218***	3.838**	I(1)

Source: Authors' computation (2022).

Notes: ***, **, * indicated dismissal of the invalid speculation of a unit root at the 1%, 5%, and 10% centrality level; thus, denotes significant at 1%, 5% and 10% levels respectively.

Bound Test

The Autoregressive distributed lag (ARDL) (1,1,0,0,1) estimate was chosen for the model with an unadjusted R of 85.1% and adjusted R of 74.3 percent respectively. The estimation of '*F* ' statistics for GDP with the selected governance indicators for the country Nigeria is given in Table 2. Thus, the hypothesis of no cointegration was rejected because the presence of the long-run link is confirmed. The latter part of cointegration was obtained from Narayan's (2005) table for the separate autonomous factors (k= 4) and number of observations (n = 17) for lower and upper limits at 1 percent and 10 percent critical level. Hence, it can be concluded that GDP was co-integrated with some governance indicators of the examined countries, indicating the presence of a long-run relationship among the variables. Likewise, the Error Correction Model (ECM) result portrays the evidence of short-run relationship changes in the long-run.

Table 2

ARDL Bound Test Statistics and Critical Value (Unrestricted Intercept; Unrestricted Trend)

Computed F-statistic (N) = 9.449718 (lag structure, k=4)		
Bounds Level	**Lower I (0)**	**Upper I (1)**
Critical Bounds Value (1%)	5.856	7.578
Critical Bounds Value (5%)	4.154	5.54
Critical Bounds Value (10%)	3.43	4.624

Source: Authors' computation (2022)

Narayan (2005) critical value for 1% significance level is I (0) =5.856, I (1) = 7.578 and for 5% significance level is I (0) = 4.154, I (1) = 5.540.

In line with Table 2, the results obtained for the ECM estimation for the model were revealed to be significant and adjusting accordingly long run that there is short-run relationship among the variables. This is due to the ECT co-efficient - Cointeq (-1) = -0.807079 (0.0000) having a negative sign and significance at 1 percent respectively, indicating the speed of adjusting in the short-run. It suggests that convergence to equilibrium of Nigeria's economic growth in a year is corrected for about 81 percent in the preceding year. Thus, the Pairwise Granger causality result presented in Table 3 shows the causal relationship between indicators and GDP. This was to achieve the objective of knowing the direction and magnitude of the relationship between the explained variables. The results revealed that the null hypothesis is rejected in some cases, this implies that some indicators only cause economic growth.

Table 3

Granger Causality Results between Governance Indicators and GDP for the Country

Null hypothesis	**P-value at level of Significance (F-test)**	**Results**
Nigeria		
Top (DNGC) GDP	0.0628	rejected

(continued)

Null hypothesis	P-value at level of Significance (F-test)	Results
Inf Top (DNGC)	0.0773	rejected
Top Rul (DNGC)	0.0373	rejected

*DNGC: Does Not Granger Cause

Nigeria

Top GDP

Inf TOP

Top RUL

Source: Authors' computation (2022)

*: Arrows denote the direction of granger causality between the variables. The result in Table 3 suggests that there is a predictive relationship between the variables according to the indication of the arrows. In other words, past values of a variable will provide useful information for predicting future values of other variable based on the level of significance.

Diagnostic Tests

Various tests such as serial correlation, normality, heteroscedasticity and Ramsey reset test were carried out and presented in Table 4 to make sure the model used is in line with the standard assumptions of OLS. These tests were to ensure the reliability and validity of the model's results and conclusions. Normality test was to ascertain whether the residuals follow a normal distribution. Serial correlation checks whether there were missing important explanatory variables and patterns of connection among the residuals of the model. While heteroscedasticity is conducted to assess whether the error in the model is constant across all levels of the independent variables. Thus, identification of problems like omitting important variable and incorrect functional forms in the model were detected by Ramsey test. Hence, the results in Table 4 revealed that these tests didn't violate any of the assumptions of the linear regression model used since the values weren't statistically significant.

Table 4

Robustness Tests

Tests			*Statistics*	*Probability*
1. Jarque-Bera (normality test):				
	N.		0.612029	0.736376
2.	Serial Correlation LM test:			
	N.	F statistics	1.619666	0.2507
		Obs R-squared	5.293314	0.0709
3.	Heteroskedasticity test:			
	N.	F statistics	1.856888	0.1685
		Obs R-squared	11.49104	0.1754
4.	Ramsey test:			
	N.	F statistics	0.039555	0.8463

Source: Authors' computation (2022)

Notes: N denotes the Nigeria

Similarly, the tests for CUSUM and CUSUMSQ for the country were respectively presented as the Figure 1 and 2. The results of the test showed that the model stability since the blue lines lies within the red lines for but cases at 5% significance level.

Figure 1

Test for CUSUM

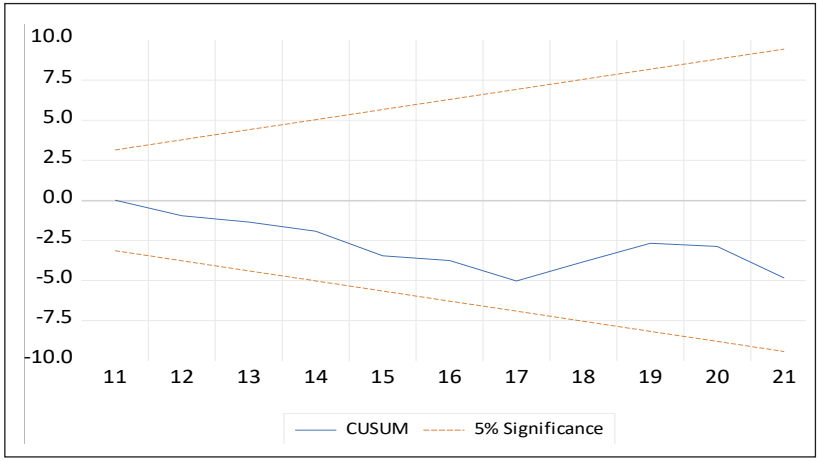
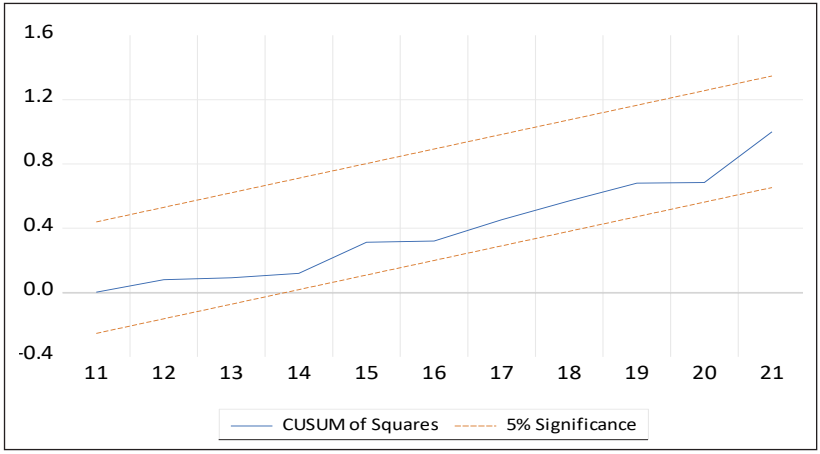


Figure 2

Test for CUSUMSQ



CONCLUSION

The study shed light on the importance of governance quality for economic growth in Nigeria. More so, finds out the relationship from 1996 to 2016 between governance indicators and GDP by using the ARDL approach, in order to provide statistical evidence on the role of governance indicators in shaping the country's growth. This proposes that the effect of governance indicators on economic growth might be more important for making policies in most nations to achieve better economic growth than other factors such as foreign direct investments, government expenditure and universal trade. Institutional quality and the rule of law are the crucial factors of economic growth in the model. The institutional quality shows a significant negative link at a 1% significant level to GDP in the case of Nigeria: likewise the rule of law at a 5% significant level. Therefore, both institutional quality and the rule of law are found to be part of the important mainstays of the countries' economic growth; indicating that economic growth is influenced by national precise physiognomies. Thus, this means that the influence of dire governance factors impends economic growth at a higher rate than other factors mostly examined. The study therefore suggests that this nation needs to improve institutional quality that will encourage political stability, rule of law and control corruption to increase economic growth.

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