The Nexus between Poverty and Corruption: The Case of Nigeria

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Abstract

The paper investigated the nexus between poverty and corruption with evidence from Nigerian data from 1998 to 2018, and using the Granger causality method of analysis. In the model we used poverty measures from three alternative sources as the independent variables while one measure was used for corruption as the dependent variable. The empirical result showed that a uni-directional causality exists between corruption and two of the three measures of poverty which indicates that corruption causes poverty in Nigeria. Based on the findings, the paper recommended that corruption can be curbed by strengthening the anti-corruption agencies and ensuring their autonomy and transparency, and leaders be held accountable with stiff penalties for people caught in corrupt activities to serve as a strong deterrence to others. It was also recommended that government should pass into law the principle of 'Death by Hanging' for anyone found guilty of corruption and corrupt practices no matter highly or lowly placed in the society – the Chinese example, amongst other recommendations.

Keywords: Corruption, Poverty, Unemployment, Granger Causality Method
JEL Code: D78, D82, I3, I32, I38

Contribution/Originality to Knowledge:
The paper's contribution is finding that there exists a uni-directional relationship between corruption and poverty in Nigeria; implying that corruption Granger causes poverty with far reaching policy implications for anti-corruption measures and poverty reduction strategies to enhance development in the country in line with the ideals of development economics.

1.0   Introduction

Global development and prosperity are exceptional today in many countries especially in developed nations of the world but Nigeria's economic stagnation; immense corruption and widespread poverty have become a matter of increasing concern. It is most unlikely that the United Nations' Sustainable Development Goal of ending Poverty by 2030 is feasible in Nigeria.

Researchers have not found a common ground when describing poverty due to its complex nature. Nigeria started 2018 as the poverty capital of the world overtaking India; a country with a population of 1.376 billion (Worldometer, 2021). Popular beliefs suggest that corruption and poverty are closely related in developing countries, poverty in these countries is usually viewed as an aggravating condition of corruption in the public sector (Chetwynd, Chetwynd & Spector, 2003). Corruption is a global phenomenon and one of the greatest problems that hinder progress and development in Nigeria, which was ranked the 144th most corrupt country out of 180 countries by Transparency International

in 2018. Corruption in Nigeria has persisted and grown in magnitude, it has almost become an indispensable way of life because it pervades all facets and strata of the Nigerian society. Corruption flourishes in Nigeria because all the expected benefits outweigh the penalties and chances of being caught (Ogege, 2014).

It is worrisome that Nigeria has generated and spent billions of dollars since independence in 1960, and in spite of the huge resource allocations to various sectors of the economy, poverty has persisted in the country, and corruption has largely been pointed as the major cause of this unfortunate situation (Buhari, 2015). These issues have motivated the paper to investigate the causal relationship and the impact of corruption on poverty in the country. Where poverty and corruption co-exists, development becomes not only suppressed but elusive. The problem of poverty and corruption has hindered development in Nigeria and efforts made by anti-corruption and anti-poverty agencies to get rid of these twin problems have remained unsuccessful. It is against this background that the paper sought to investigate the relationship between corruption and poverty to achieve the following specific objectives:

(i)   Investigate the direction of causality between poverty and corruption in Nigeria
(ii)   Examine the impact of poverty and corruption on economic growth in Nigeria

The paper is divided into six sections. The foregoing is the introductory section one. Section two explains the concepts of poverty and corruption. Section three gives the theoretical framework and reviews relevant literature. Section four describes the methodology of the paper including the model specification and estimation technique. While section five discusses the results and findings of the paper, section six concludes with policy recommendations.

2.0   Concept of Poverty and Corruption

Poverty is a concept that has several meanings because it manifests itself differently in various places. Poverty is the denial of opportunities, a violation of human dignity and the lack of ability to meet basic needs (United Nations, 1998). Poverty can be absolute or relative. Absolute poverty is when even the basic standard needs of living cannot be met while relative poverty is when only the minimum standard of living is met and nothing else above the basic needs can be afforded. Poverty is set as the first goal in Sustainable Development Goals (SDGs) adopted by the United Nations to be achieved in 2030, progress has been revealed in countries such as China and India but not much in Sub-Sahara Africa, including Nigeria. Many factors cause poverty and some of the causes are lack of income and assets to attain basic necessities such as food, clothing, shelter and acceptable level of education and health amongst others.

In Nigeria, determinants of poverty can be traced to low or declining level of unemployment, income, inequalities, corruption, fund embezzlement, increasing crime rates, epileptic power supply and lack of enabling environment for infant industries (Omoniyi, 2018). Corruption is a relative term and can be defined differently depending on the region or area where it is being felt. During the deliberations of the United Nations Convention Against Corruption (UNCAC), it was considered that corruption should not be defined per-se but rather the conduct should be described and classified as corrupt. These are some of the descriptions given during the convention. According to the World Bank Group (2018), corruption is the abuse of power for private gains. It was also seen as the misuse of power for private benefits or advantages; this power may not reside in public domain besides money, but the benefit can come in the form of promotion, special treatment, commendations or favours. It simply means asking, giving or taking a fee for performance of an assigned responsibility (Ogege,

2014).Corruption manifests itself in many forms such as abuse of position and privileges, low level of transparency and accountability, inflation of contracts, bribery/ kickbacks, misappropriation or diversion of funds, under and over invoicing or collection of illegal tools (Ogbonnaya, 2018). It implies that corruption affects a society developmentally, economically, politically and environmentally.

3.0   Theoretical Framework and Empirical Review

3.1   Theoretical Framework

There are multifarious theories that seek to provide explanation on the prevalence and causal relationship between Poverty and Corruption. It is important to know how the relationship between poverty and corruption affects the economy; an understanding of this relationship could help in planning and policy formation in governance.

3.1.1   Theories of Poverty

Theory of Individualism of Poverty

This theory of poverty is influenced by individual factors. Individual factors are part of human capital and are associated with making utmost use of an individual knowledge, education, hard work, and ability to achieve goals, and avoid poverty (Dube, 2019). This theory believes that people are responsible for being poor because of their characters such as laziness, lack of skills and lack of intelligence. Individualism of poverty theory focuses on the idea that free market can provide more basic needs to the more hardworking and less to the lazy. Although the idea behind individualism of poverty is more applicable in developed countries such as United States of America than developing countries because developed countries are seen as a land where individuals are provided with vast opportunities including employment opportunities and skills and talent improvement opportunities amongst others. Danaan (2017) claims that this is applicable in Nigeria as individuals are in poverty because of their failure to take responsibilities of their destinies, like acquiring necessary skills and training needed to prevent or exit from poverty.

Marx's Capitalist Perspective Theory of Poverty

The Marxian theory was propounded by Karl Marx who viewed that poverty is caused by social exploitation and exclusion of certain classes. He argued that exploitation of workers was contributed by the growth of industrialisation, because of exploitation through working for low or no wages and exclusion from certain entitlement such as work benefits, the workers conditions can deteriorate leading to poverty. The Marxian theory of poverty has four main dimensions of workers exploitation or alienation:

a.   Alienation from his product
b.   Alienation from himself
c.   Alienation from fellow human beings
d.   Alienation from the process of production

Because of the exploitation and exclusion of the workers by the capitalist system, this   theory argues that people are discouraged from participating in any form of work leading to high unemployment and poverty.

The Opportunity Theory

According to this theory, the poor have limited human capital and suffer lack of opportunities compared to the rich. Opportunity theory of poverty posits that the social system is structured in a way that favours certain group of people like the rich, men and politicians within the society to succeed. The favoured group prosper while the excluded ones fail to break away from poverty. Disadvantaged and marginalised groups have limited access to economic resources to achieve their goals. In developed countries like Nigeria, this is found to be true because individuals with access to better opportunities such as education, infrastructures etc are less likely to be poor than individuals without access to it. Opportunity theory holds water in addressing poverty in both the developed and developing countries because many people lack opportunities of critical assets and opportunities to make informed choices and decision, opportunities to advance their standard of living amongst others (Dube, 2019)

Cultural Belief Theory

The cultural belief theory of poverty suggests that poverty is socially generated from one generation to another because of beliefs and values which are held by individuals, which is generational in nature. The people who hold on to such unnecessary cultural beliefs become poor. For example, cultures that support a 'full time house wife' believe that a woman should not work but stay at home taking care of the children and her husband. Individuals may not be responsible for poverty but may hold on to cultural beliefs and values which make them poor. This theory of Culture of poverty is a pattern of life that operates in a community due to the acceptance of the people and makes people inferior, helpless and poor (Oluyombo, 2018).According to this theory, the source of poverty can be traced to the location where people reside and also into different strata such as rural poverty, third world poverty and urban poverty. This theory claims that individuals will do better in life but they are constrained to the type of poverty in their location, they must overcome the poverty in their location to do better in life. This theory is applicable in Nigeria because poverty is prevalent is mostly rural areas, slums, areas prone to natural disaster and people in these areas continue to live in disadvantaged condition. The neglect of the rural areas by past and present governments has led to a widening gap between the rural dwellers and urban dwellers.

3.1.2   Theories of Corruption

Principal-agent theory

This principal-agent theory assumes that agents (public officials) serve to protect the interest of the principals (whether the public, parliament, or supervisors). However, in reality the interest of the supervisor is often different from the interest of the principal. In this context an agency problem occurs where the agents choose to engage in a corrupt transaction, in furtherance of their own interest and to the detriment of the principal. To limit the agency problem, the principal can design incentives and schemes to curb the agent's potential abuses (United Nations Office on Drugs and Crime and Education for Justice, 2019).

Collective Action theory

This theory emphasises the importance of factors such as trust and how individuals perceive the behaviour of others. When corruption becomes a social norm, everybody starts seeing it as the way to get things done. People are aware of the negative consequences of widespread corruption but they still

engage in it because they believe it doesn't make sense to be the only honest person in a corrupt society.

An institutional culture of corruption leads to the normalization of corrupt practices at a societal and individual level, and to freedom from punishment for violating formal anti-corruption rules. To combat corruption in these circumstances, there is a need for collective and coordinated approaches, such as reform or proactive alliances of like-minded organizations (United Nations Office on Drugs and Crime, 2019).

Institutional theory

This theory examines the processes and mechanisms by which structures, rules, and routines become established as authoritative guidelines for social behaviour, it is also known as institutionalism. This theory considers that corruption is influenced by the character, structure and transparency of the political system and its institutions (United Nations Office on Drugs and Crime and Education for justice, 2019).

Game theory

This theory suggests that individuals face a 'prisoner's dilemma' which illustrates a conflict between individual and group rationality. The individual fears a disadvantage if they refuse to participate in corrupt practices while other individuals' take part in it. As a result, all individuals obtain some kind of benefit which is less than the benefit they will have received if they refused to engage in corrupt practices (United Nations Office on Drugs and Crime and Education for justice, 2019).

The Anomie Theory

This theory tries to explain the pressures that a society exerts on its members as many of the major reason's individuals are inclined to engage in unacceptable or unlawful behaviours. This theory argues that society set goals for groups and individuals and it also prescribes the attainment of those goals. The individuals without enough means to attain the goal set for them by the society, which may lead them to breed behaviour of corruption (Ijewereme, 2015).

The Elite Theory and Policy-Oriented Theory of Corruption

The Elite theory which posits that a small group of minority (consisting of members of the ruling class or members of economic and policy planning) establishes an exploitative prosperity system through which the allocation of income, wealth and opportunities are determined relying on the use of elite power including oppressive agents like the armed forces. So people are poor because certain structures have been imposed on them to be poor and not that they are lazy or choose to be poor.

Important advocates of this theory are Vilfredo Pareto, Roberts Michels, James Burnham, Joseph Schumpeter, Giovanni Sartoni amongst others. Few people in position of authority create and implement policies for the people in Nigeria (Ikharehon and Omaregie, 2015), and these privileged individuals may most likely divert the resources without reaching the end users or the society at large. The second theory used was Policy-Oriented theory of corruption which was developed by Teveik Albert and Charles in 1986. It states that the high-level of corruption in a country whether developed or developing would not allow the country's economy to grow (Odi, 2014). It explains the role of government in fighting corruption which therefore suggests that corruption in Nigeria can affect the economy by raising the level of poverty because of resource mismanagement (Gamba, Gimba & Babali, 2021).

Relevance of the Theories

Although each of the theories discussed above has its own place and relevance in this paper, the argument presented is in conformity with Elite and Policy-Oriented Theories of Corruption and the Marxian and the Opportunity Theories of Poverty, which form the theoretical background and the basis of analysis in this paper.

3.2 Empirical Review

A substantial number of studies have been carried out to determine the relationship between corruption and poverty; an understanding of which could help in planning and policy formation in governance. Azwar and Saragth (2018) applied Autoregressive Distributed Lag (ARDL) and Dynamic Error Correction Model (ECM) and determined that corruption affects poverty level especially in the long run because corrupt practices deprives the poor of the resources that would have been used to improve their lives through provision of social amenities and infrastructural facilities. Sule, Ibrahim and Ibrahim (2018) used unemployment rate, corruption perception index and poverty index as variables to determine the impact of political corruption on rising level of poverty in Nigeria, a direct correlation was found between them which shows that as corruption incidence goes higher, so also does poverty levels which is in consonance with the study done by Ajisafe (2016) who found that corruption has a significant and adverse effect on the welfare of citizens by reducing expenditure on health and education thereby increasing poverty levels in Nigeria.

Odi (2014) explored the impact of Corruption on Economic Growth in Nigeria using Granger causality, co-integration test and Ordinary least square (OLS) method the analysis revealed a long run negative relationship between the level of corruption and economic growth in the country. Ogbonnaya (2018) examined the effect of corruption on the Nigerian economy and using multiple regression analysis and t-test and the findings showed that corruption has a serious negative impact on the economy. Azwar and Saragth (2018) investigated the extent of poverty and corruption in Indonesia and analysed the connection of corruption to increasing poverty in Indonesia. The study used Autoregressive Distributed Lag (ARDL) model and dynamic Error Correction Model (ECM). It was found that corruption affects poverty by reducing income and lowering social spending for education and health.

Action-Aid Nigeria (2015) used qualitative and quantitative research methods to examine the relationship between corruption and poverty in Nigeria. Questionnaires were administered to 2,105 respondents in 11 states across six geopolitical zones of the country. The result drawn from the study showed that there is a strong correlation between corruption and poverty. It implies that corruption contributes to poverty in Nigeria specifically in two ways. First is by aggravating income inequality. According to the report lower income households spend significant amount of their income on bribes to access basic services. Second is by eroding institutional capacity of government to deliver quality services to the public as corruption by government officials drained public funds for private purposes.

Danaan (2017) analysed poverty in Nigeria through theoretical lenses and paradigms by examining various poverty theories such as the culture of poverty, individual deficiency theory, progressive social theory, geographical disparities theory, cyclical interdependence theory, poverty individualisation and theory of social exclusion and its prevalence in the Nigerian economy. The paper corroborated the fact that poverty is complex and multidimensional because it covers social, cultural, economic, psychological and cultural indicators.

Ajisafe (2016) studied the effect of corruption and poverty in Nigeria with evidence from ARDL bound test and error correction model. Autoregressive Distributed Lag model was used in analysing the data. The result of the study showed that corruption has an adverse effect on the welfare of citizens by reducing expenditure on health and education thereby increasing the level of poverty in country. The result from the analysis indicated that corruption affects poverty levels in the same direction in short run and exhibits no direct relationship in the long run. Enofe, Oriaifoh & Omagbon (2016) investigated the effect of poverty and unemployment and corruption in Nigeria public sector. The analysis was carried out using the Ordinary Least Square (OLS) regression technique. The study concluded that there was an insignificant positive relationship between corruption, unemployment and poverty in Nigeria. Shabbir et al (2019) explored the link between poverty and corruption from less developed countries and found that a strong and positive relationship existed between poverty and corruption in poor countries.

Sule, Ibrahim & Ibrahim (2018) examined the impact of political corruption and rising poverty level in Nigeria. The corruption perception index, poverty index and unemployment rate were used as variables under study. The study revealed that political corruption influenced the increase in the level of poverty in Nigeria because corruption causes poverty and accompanied bad governance. The result showed that there was a direct correlation between corruption and increasing poverty level in Nigeria and recommended that corruption must be addressed squarely and political office should be made less attractive to ward off corruption. Okafor (2016) examined the existing relationship between economic growth, poverty and income inequality in Nigeria using the Engle-Granger technique and vector Auto-regressive model. It was revealed that economic growth had an impact on poverty reduction and income distribution in Nigeria due to Non-inclusive nature. Evidence of unidirectional causality from income inequality to increased poverty was found. So it was concluded that inequality would lead to increase in poverty in Nigeria.

Agbasi, Edoko &Ezeandu (2018) investigated the impact of economic growth on poverty reduction in Nigeria. The study employed poverty, unemployment, population, mortality rate, life expectancy rate, corruption, consumption, per capita income, illiteracy rate and gross domestic product (GDP) as macroeconomic variables using the Ordinary Least Square (OLS) to ascertain the relationship between the variables. It was revealed that there was a significant relationship between the variables. Gangas (2017) explored economic growth and the relationship between poverty reduction in Nigeria. The Ordinary Least Square (OLS) techniques were used and it was determined that initial level of economic growth is not prone to poverty reduction. Shabbir et al. (2019) explored the link between poverty and corruption from less developed countries (LDCs) and found that a strong and positive relationship exists between poverty and Corruption in the LDCs.

From the available literature reviewed, most of the studies dwelled on poverty and economic growth, and none of the studies investigated the causality between poverty and corruption in recent years in Nigeria. This study has covered the gap.

4.0 Methodology

The causality between poverty and corruption level was investigated using three poverty indicators and one corruption indicator. The period interval under study is between 1998 and 2018. The dependent variable; corruption was measured by corruption perception index (COR) while the independent variable; poverty was measured by Poverty Headcount (PHC), Unemployment rate (URT) and Global Hunger Index (GHI). The Augmented Dickey- Fuller (ADF) unit root test was used to determine the stationarity of the data set. It was used to test the null hypothesis that a unit root is

present in a time series. The Augmented Dickey-Fuller (ADF) test of the null hypothesis of no unit root test was carried out as follows: considering the equation with trend, Ho: $\beta = \gamma = 0$, F-test was used and considering the equation without trend, Ho: $\gamma = 0$, the t-test was used. Thus, if the null hypothesis is accepted, then, there is a unit root and the need to difference the data before running a regression. If the null hypothesis is rejected, the data is said to be stationary and can be used without differencing.

Then the Co-integration test was carried out to ascertain the long run equilibrium relationship between variables under study. The Johansen co-integration test was applied for this purpose. The two tests statistics used to determine the number of co-integrating vectors (or the rank of Γ) were the trace (λ-trace) and the maximum eigen-value (λ-max) statistics. This technique was used to determine whether one-time series is useful in forecasting the variable under study. The basic empirical question in this study is whether or not corruption has a significant effect on poverty in Nigeria. The Granger causality test was employed to ascertain the direction of causal relationship between the poverty and corruption in Nigeria.

4.1 Type and Sources of Data

The study used time series data collected from secondary sources. These data were obtained from publication of National Bureau of Statistics (NBS), Transparency International (TI), World Bank, Global Hunger Index and other documentary sources. .

4.2 Model Specification

The study adopted the work of Odi (2014) which investigated the impact of corruption on the growth of the Nigerian economy. The functional specification of the relationship between poverty and corruption is written as:

$$COR_t = f\left(URT_t, PHC_t, GHI_t\right) \tag{1}$$

$$COR = \beta_0 + \beta_1 URT_t + \beta_2 PHC_t + \beta_3 GHI_t + \mu_t \tag{2}$$

Where;

COR_t = corruption perception index

URT_t = unemployment rate

PHC_t = poverty headcount index

GHI_t = global hunger index

μ_t = stochastic error term

β_i = parameters to be estimated

4.3 Estimation Techniques and Justification

The paper used Granger causality technique to determine the direction of causality between poverty and corruption in Nigeria. The justification for the choice of Granger causality method is the fact that the technique remains the best and most popular econometric technique in determining the direction

of causal relationship between variables with time series characteristics. The ordinary least square (OLS) technique was employed to measure the impact of corruption on poverty in Nigeria. The use of OLS method becomes most appropriate if a unidirectional causal relationship is reported without reverse causation or bi-directional relationship between variables. Otherwise, auto-regression technique would be adequate.

5.0   Results and Discussion of Findings

Table 1 shows the result of the descriptive analysis which revealed a mean of 9.705, 63.914, 31.619 and 4.395 for corruption perception index (COR), Poverty headcount (PHC), Global Hunger Index (GHI) and Unemployment Rate (URT) respectively. COR and URT were positively skewed with a skewness of coefficient of 0.786 and 2.045 which means that the tail on the right side of the distribution is longer or fatter, while PHC and GHI were negatively skewed with skewness coefficient of -0.317 and -2.121. However, the kurtosis result showed COR, PHC, GHI and URT with kurtosis coefficient index of 1.694, 1.350, 9.194 and 5.468 respectively which mean that GHI and URT were mesokurtic in nature while COR and PHC were leptokurtic. The Jarque-Bera and probability values indicated that GHI and URT were statistically significant in examining the relationship between COR and POV in Nigeria.

Table 1: Descriptive Analysis of Result

Statistical Measure	COR	GHI	PHC	URT
Mean	9.7048	31.6191	63.9143	4.3945
Median	2.4000	29.9000	69.0000	3.7780
Maximum	28.0000	40.8000	72.4000	8.3890
Minimum	1.0000	0.0000	54.7000	3.5390
Std. Deviation	11.4844	8.7706	6.6748	1.5004
Skewness	0.7861	-2.1217	-0.3174	2.0451
Kurtosis	1.6941	9.1945	1.3799	5.4682
Jarque-Bera	3.6549	49.3312	2.6491	19.9694
Probability	0.1608	0.0000	0.2659	0.0000
Sum	203.8000	664.0000	1342.2000	92.2850
Sum Sq. Dev.	2637.8100	1538.4520	891.0657	45.0219
Observations	21	21	21	21

Source: Authors' Computation using Eviews 11

Table 2: Correlation Matrix Results

Variable	COR	GHI	PHC	URT
COR	1.0000	-0.6192	0.3808	0.7028
GHI	-0.6192	1.0000	-0.4788	-0.1839
PHC	0.3808	-0.4208	1.0000	0.4394
URT	0.7028	-0.1839	0.4394	1.0000

Source: Authors' Computation using Eviews 11

The correlation matrix in Table 2 revealed that Corruption Perception Index (COR) correlated positively with Poverty Headcount (PHC) and with Unemployment rate (URT) with correlation coefficients of 0.38 and 0.70 respectively while COR and Global Hunger index (GHI) were negatively correlated with correlation coefficient of -0.62. The PHC was positively correlated with URT and negatively correlated with GHI with coefficients of 0.43 and -0.42 respectively. GHI and URT were negatively correlated with a coefficient of -0.18. It implies that any continuous improvement in poverty headcount (PHC) and reduction in unemployment rate (URT) would enhance the corruption perception index (COR) in Nigeria which is identical to the result obtained by Onchari (2019) who examined the relationship between corruption and unemployment in Kenya which concluded that in the long run increase in corruption leads to increase in unemployment rate.

Table 3: Unit Root Test Result

Variable	ADF test statistic	5% Critical value	Integration	Rename
COR	-4.8104	-3.0404	I(2)	Stationary
PHC	-3.9232	-3.0299	I(1)	Stationary
GHI	-7.0334	-3.0299	I(1)	Stationary
URT	-0.5915	-3.0810	I(2)	Non Stationary

Source: Authors' Computation using Eviews 11

The ADF unit root result in table 3 revealed that most of the variables were stationary, Corruption Perception index (COR) was stationary at second difference, Poverty headcount (PHC) and Global Hunger Index (GHI) were stationary at first difference only Unemployment rate (URT) was not stationary. This was evidenced as the Augmented Dickey-Fuller test statistic of each variable in absolute term were 4.810 greater than 3.040; 3.923 greater than 3.030; 7.033 greater 3.030; and 0.591 less than 3.081 at 5% critical value for each of the variables. The result implies that a short run equilibrium relationship exists between COR and PHC and GHI. The unit root test revealed that the regression model was also appropriate and consistent for determining the impact of poverty on corruption in Nigeria.

Table 4: Co-integration Rank Test using Trace Statistic

Eigen value	Trace Statistic	5% Critical Value	Prob.Value	Hypothesized No. of CE(s)
0.9777	111.1120	47.8561	0.0000	None *
0.8379	38.836	29.7971	0.0035	At most 1 *
0.1767	4.2686	15.4947	0.8807	At most 2
0.0298	0.5739	3.8415	0.4487	At most 3

Source: Authors' Computation using Eviews 11

Table 5: Co-integration Rank Test using Maximum Eigen Value Statistic

Eigen value	Maximum Eigen Value Statistic	5% Critical Value	Prob. Value	Hypothesized No. of CE(s)
0.9777	72.275	27.5843	0.0000	None *

0.8379	34.567	21.1316	0.0004	At most 1*
0.1767	3.6946	14.2646	0.8901	At most 2
0.0298	0.5739	3.8415	0.4487	At most 3

Source: Authors' Computation using Eviews 11

The co-integrating rank test was estimated using Johansen method. Johansen approach derived two likelihood estimators for the co-integrating rank: a trace test and a maximum Eigen value test. Tables 4 and 5 showed the co-integration rank using the Trace and the Maximum Eigen value statistics. These test statistics indicated two co-integrating vectors at 5 percent level of significance as presented in the tables 4 and 5. Thus, it implies that a long run equilibrium relationship exists among the variables under study. Hence, the stability of poverty captured by poverty head count (PHC) and global hunger index (GHI) in examining the growth and stability of corruption perception index (COR) in Nigeria both in the short-run and the long run.

Table 6: Granger Causality Test Result

Null Hypotheses:	Obs	F-Statistic	Probability	Decision
PHC does not Granger Cause COR	17	0.4473	0.7722	Reject
COR does not Granger Cause PHC	17	0.9386	0.4887	Reject
GHI does not Granger Cause COR	17	0.9117	0.5014	Reject
COR does not Granger Cause GHI	17	31.4628	6.E-05	Do not Reject
URT does not Granger Cause COR	17	3.3653	0.0678	Reject
COR does not Granger Cause URT	17	55.4831	7.E-06	Do not Reject
GHI does not Granger Cause PHC	17	0.4718	0.7559	Reject
PHC does not Granger Cause GHI	17	0.5259	0.7204	Reject
URT does not Granger Cause PHC	17	0.3216	0.8559	Reject
PHC does not Granger Cause URT	17	0.4795	0.7508	Reject
URT does not Granger Cause GHI	17	0.9523	0.4823	Reject
GHI does not Granger Cause URT	17	19.1792	0.0004	Do not Reject

Source: Authors' Computation using Eviews 11

The analysis of the causality test in table 6 has shown that there is a Uni-directional causality between COR and GHI, COR and URT as well as GHI and URT. This is evidenced from estimated probability F-statistic value given as 0.000, 0.000 and 0.000 < 0.05 the probability of error margin respectively. Therefore, corruption perception index (COR) Granger causes global hunger index (GHI) and unemployment (URT). Again, global hunger index (GHI) Granger causes unemployment rate (URT). In other word, level of corruption perception index (COR) determined the global hunger index (GHI) and unemployment rate (URT) in Nigeria. There is no evidence of reverse causation or bi-directional relationship and the application of least square regression has become appropriate.

Table 7: Fitted Least Square Regression Model

Dependent Variable: COR				
Method: Least Squares				
Sample: 1998 2018				
Included observations: 21				
Variable/Statistic	Coefficient	Std. Error	t-Statistic	Prob.
C	26.5559	17.6621	1.5035	0.1510
PHC	-0.2514	0.2481	-1.0135	0.3250
GHI	-0.7314	0.1725	-4.2388	0.0006
URT	5.0847	1.0186	4.9917	0.0001
R-squared	0.7571	Mean dependent var		9.7048
Adjusted R-squared	0.7142	S.D. dependent var		11.4844
S.E. of regression	6.1395	Akaike info criterion		6.6370
Sum squared resid	640.7906	Schwarz criterion		6.8359
Log likelihood	-65.6886	Hannan-Quinn criter.		6.6802
F-statistic	17.6601	Durbin-Watson stat		1.4931
Prob(F-statistic)	0.0000			

Source: Authors' Computation using Eviews 11

The test for the significance of the model also known as the test for the coefficient of determination of the model was carried out using adjusted R-Square statistic. In table 7, the adjusted R-Square value 0.714 implies that 71.4 percent variations or changes in the level of corruption perception index (COR) could be explained by poverty head count (PHC), global hunger index (GHI) and unemployment rate (URT). Thus, the result portrays a policy implication that the need for government to address the problem of poverty and unemployment through employment generation so as to reduce the level of corruption in the country has become necessary. The test for the overall significance of the model also known as the test for the goodness of fit of the model was done using the F-statistic and probability of F-statistic. As indicated in table 7 which showed that F-statistic value $17.66 > F_{tab} = 3.10$, and the probability of F-statistic indicated that $0.000 < 0.05$ being the probability of the error margin allowed in the estimation of the model. Thus, it can be stated based on this evidence that the model was appropriate for determining the corruption perception index in Nigeria. Hence, poverty head count Index (PHC), global hunger index (GHI) and unemployment rate (URT) were good, reliable, desirable and acceptable for investigating the level of corruption perception index (COR) in Nigeria.

From the fitted least square regression model in table 7, it was discovered that a negative linear relationship exists between the poverty head count index (PHC), global hunger index (GHI) and corruption perception index (COR) in Nigeria. While a positive linear relationship exists between unemployment rate (URT) and corruption perception index (COR) in Nigeria. The result showed that one percent increase in the poverty head count index (PHC) and global hunger index (GHI) would lead to a decline of 0.25 and 0.73 percent respectively in the level of corruption perception index in Nigeria. On the other hand, it was discovered that one percent increase in unemployment rate (URT)

would lead to increase in corruption perception index (COR) in Nigeria to the turn of 5.08 percent. The implication of this result is that poverty through the instrument of poverty head count index (PHC) and global hunger index (GHI) have contributed to the decline or reduction in corruption perception index (COR) in Nigeria during the period under investigation.

The statistical significance of the parameters of the model was examined using the standard error test and the probability value of the estimated parameters. The result revealed that half of the coefficients of the variables or estimated parameters which was greater than the standard error value for global hunger index (GHI) and unemployment rate (URT) in absolute terms given as $0.365 > 0.173$ and $2.542 > 1.018$ respectively. It implies that the statistical significance of global hunger index (GHI) and unemployment rate (URT) in determining the level of corruption perception index (COR) in Nigeria is evident..The same result was also discovered using the probability value of the estimated parameters; the probability value for global hunger index (GHI) and unemployment rate given as $0.00 < 0.05$ the probability of the error margin allowed in the estimation of the parameters, implying the statistical significance of global hunger index (GHI) and unemployment rate (URT) in examining the level of corruption perception index (COR) in Nigeria during the period under review.

The test for the economic or theoretical significance of the parameters was observed on the basis of the signs of the estimated parameters. It was discovered from the result that both poverty head count index (PHC) and global hunger index (GHI) were negatively signed. Thus, it implies that poverty head count index (PHC) and global hunger index (GHI) contributed to the decline in corruption perception index (COR) in Nigeria. This result also affirmed the stated a *priori* expectation that both the poverty head count index (PHC) and global hunger index (GHI) could lead to reduction in corruption perception index (COR) in Nigeria. However, it was discovered from the result output that unemployment rate (URT) was positively signed implying that unemployment rate has a worsening impact by increasing the corruption perception index (COR) in Nigeria.

Econometrics significance of the model was done using Durbin Watson statistic. This test deals with the test for the presence of positive autocorrelation. The Durbin Watson statistic value $1.49 < 2.0$ showed the absence of positive autocorrelation. The implication of the result was that the estimated parameters were free from autocorrelation problem which means that there was no underestimation or overestimation of the parameters. The standard error values and the probability values are unbiased, sufficient, consistent and efficient. Thus, every decision taking is valid, reliable and acceptable for determining the impact of poverty head count index (PHC), global hunger index (GHI) and unemployment rate (URT) on corruption perception index in the country.

6.0   Conclusion and Policy Recommendations

The paper examined the causality between poverty and corruption in Nigeria from 1998 to 2018. The study employed the co-integration test, Granger causality test and Ordinary Least Square (OLS) method. The results showed that there is a unidirectional relationship between corruption (COR), global hunger (GHI) and unemployment (URT), and global hunger index (GHI) and unemployment rate (URT) which means that corruption determines the level of global hunger index (GHI) and unemployment (URT) as global hunger index (GHI) caused unemployment rate (URT) in Nigeria. This finding is in agreement with the postulation made by Moises (2020), Onchari (2019) and Adjor and Kebalo (2018). This could be attributed to the fact that corruption reduces competition and discourages employment. It means that high rate of corruption is largely responsible for the increasing rate of unemployment and consequently poverty in the country as funds (resources) needed to create

jobs for the people are in the private pockets of few individuals thereby aggravating unemployment and hunger and decreasing the disposable income of the populace in general..

Based on the findings of the paper, the following policy recommendations have become important:

1. Institutions that fight corruption should be strengthened. That is, Anti-corruption agencies such as Economic and Financial Crimes Commission (EFCC) amongst others, should be autonomous from the government and their activities be done without political interference. To achieve this recommendation, the President and all leaders at all levels of government should resolve, with immediate effect, that purposeful, transparent, accountable, responsible, performing, result-oriented and selfless leadership reigns supreme in Nigeria.

2. Nigerian leaders and government officials should completely abstain from corruption and take seriously the fight against corruption and corrupt practices in the country. To achieve this, a positive change in attitude on the part of leaders and the people has become necessary. In spite of United Nations position on capital punishment, government should, as a matter of urgency, pass into law the principle of 'Death by Hanging' for anyone found guilty of corruption and corrupt practices no matter highly or lowly placed in the society – the Chinese example. If passed into law, there should be no discrimination in the implementation of this law. Nobody should be above the law in Nigeria. Thus, the Executive, the Legislature and the Judiciary should articulate this vision and make the law a functional reality. These arms of government should wake up to this challenge if Nigeria is to experience development and growth that reduces poverty. This way, the youth and future leaders of Nigeria would be bequeathed a legacy of positive attitude where leadership is seen as a call to service for economic, technological, physical and social transformation of the country.

3. Government should formulate and implement policies that will strengthen the private sector as the engine of growth and development. To overcome corruption and reduce poverty in Nigeria, every professional and each craftsman, regardless of his social status; should seek to achieve the highest standards of efficiency, integrity, discipline and competence in whatever he has set his hands to do. Let every professional and indeed all Nigerians work with the understanding that it takes a superior spirit to overcome an inferior, demonic and destructive spirit of corruption.

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