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The Tripartite Dynamic Relationship between Poverty, Unemployment and Construction Sector: Empirical Evidence from Nigeria

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Abstract: The increasing rate of poverty and unemployment in Nigeria has necessitated further efforts towards alternative means of reducing the trend, outside the government's microeconomic mechanisms. As a sector with multiplier effects on other sectors of economy through its numerous activities, the construction sector is expected to reduce both poverty and unemployment. This study, therefore, examined the relationships between construction sector variables, poverty and unemployment rates in Nigeria. Using socio-economic data published by the Central Bank of Nigeria, National Bureau of Statistics, United Nations Development Program and World Bank from 1981-2019, the study deployed an Autoregressive Distributed Lag (ARDL) approach to analyze the relationships between construction sector variables, poverty, and unemployment rates. It also used Granger causality test to determine the direction of causation between the variables under investigation. The results showed that there are both long-run and short-run dynamic relationships between poverty rate and construction sector variables (F-stat. (3.93) > upper (3.67) and lower (2.79)) bounds. It showed that no long-run balanced relationship exists between the unemployment rate and construction sector variables (F-stat. (2.01) < lower (2.79) and upper (3.67)) bounds. The result further revealed that there are significant and positive linear correlations between construction sector variables, poverty, and unemployment rates; except between construction output and poverty rate, where an insignificant linear relation was established. Nevertheless, the relationships could not result to direct causal effect, except a unidirectional Granger causal relationship that flows from government capital expenditure to construction service recurrent expenditure and construction output, and from construction service recurrent expenditure to construction output. Consequently, the study suggested that construction sector expenditure and output should be directed towards poverty and unemployment reduction. This could be done through the diversification and integration of all construction sub-sectors, particularly the private sector into the nation's economic equation. Thus, this study would direct the paths of policy makers and construction planners towards the right construction policies and plans that would lead to reduction in unemployment and poverty rates with a long-term economic transformation in Nigeria.

Keywords: construction sector; poverty; unemployment; construction output; construction expenditure.

Introduction

After the 2008 global financial and economic crisis, Nigeria had suffered a twin relapse in economic growth due to dwindling oil production amidst higher but volatile international crude oil prices. This began in 2015 and became more prominent in the first quarter of 2018. The current Coronavirus (COVID-19) pandemic has worsened the economic misfortune of Nigeria. The result is ~~a~~ manifested poverty and unemployment. These fundamental socioeconomic challenges are, therefore, effecting the nation in various depths and breadths (Muhammad & David, 2019; Siyan, Adegoriola & Adolphus, 2016). Several national and international reports (International Monetary Fund (IMF), 2020a; 2020b; National Bureau of Statistics (NBS), 2018a; 2018b; 2019; 2020a; 2020b; Calderon Kambou, Korman, Kubota & Canales, 2019) have confirmed the veracity of these

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Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

problems. Particularly, IMF (2020b) and NBS (2020a) highlighted the adverse impacts of COVID-19 pandemic on the poverty level, especially, the low-income households. Jaiyeola and Bayat (2020) stated the existence of deepening poverty in Nigeria, particularly in the Northern part. Oxfam International (2017) also painted the picture of poverty level in Nigeria, while noting that negligible number of elites enjoy the wealth of the nation, whereas a greater percentage of the people clout in abject poverty.

In spite of many government programs and policies towards minimizing poverty and unemployment, the problems still subsist and are becoming more complex and difficult for economic policy makers to handle (Action Aid Nigeria, 2015; Oaikhenan & Aigheyisi, 2015; Onifadde, Ay, Asongu, & Bekun, 2019). Bello and Roslan (2010) revealed that both economic growth and Millennium Development Goals (MDGs) spending have -> has not significantly reduced poverty rate in Nigeria. The launching of Sustainable Development Goals (SDGs) is yet to impact significantly on poverty and unemployment reduction. Even with consistent increase in the government expenditure, the rate of poverty in Nigeria keep growing instead of decreasing (Adegboyo, 2020). Juxtaposing the current socioeconomic indices vis-à-vis the poverty and unemployment rates in Nigeria, the end seems not to be near. For example, the NBS (2012) reported that in 1980 the percentage of people living in poverty was 27.2%. In 1985, it increased to 46.3% and in 1992, it dropped to 42.7%. Then, in 1996 it increased to 65%, dropped back to 54.5% in 2004 and in 2010 it was 69%. The report further showed that about 112.47 million Nigerians are living below the poverty line NBS (2012).

Over the same period, the report of NBS (2014a) also showed that unemployment rate increased. On this note, Action Aid Nigeria (2015, p.9) described Nigeria as "a paradox of poverty in the midst of plenty". Consequently, Corral, Molini and Oseni (2015) and World Bank (2016) noted that poverty reduction rate is not commensurate with the growth rate; rather a substantial number of non-poor Nigerians who live near the poverty line are susceptible to slipping back into poverty. As a result, Jaiyeola and Bayat (2020) argued that policies that bring about improvements in the living standards of poor people in Nigeria need to be implemented. Salisu and Arshad (2019) suggested a higher share of benefits of economic growth to the poor that requires an employment-centered strategy.

Therefore, the construction sector seems to be at the center of this strategic economic agenda. It was however, reported that one of those sectors that received a higher share in estimates of the rebased Nigerian national account was the construction sector (World Bank, 2014); and has remained strong through the country's recent macroeconomic instability (Oxford Business Group, 2020). The industry has also benefited from the mid- and long-term economic development policies that underscore the infrastructure investment and opportunity creation in the transport, energy and real estate sectors (Oxford Business Group, 2020). Furthermore, the growth rate of the construction sector is even more unpredictable than the Gross Domestic Product (GDP) growth rate in the period of economic volatility (Okoye, Ngwu, Ezeokoli, & Ugochukwu, 2016). This implies that there is instability in the activities of construction sector that may affect the aggregate economic activities in the period of economic uncertainty (Okoye et al., 2016).

While construction is a key sector of national economy, its socioeconomic significance is more apparent wh4en viewed from a global perspective. It is a prime source of employment generation, which offers job opportunities to millions of unskilled, semi-skilled, and skilled workers (Alhowaish, 2015). It is a major source and an area of significant financial commitment (European Commission as cited in Ortiz, Castells, & Sonnemann, 2009). As the world's leading employer of industrial labor, the sector accounts for more than half of the total capital investment and about 10% of the GNP in most countries (du Plessis, 2001). It is also one of the largest fragmented industry with an estimate of annual global output of $4.5 trillion (Khan, 2008). It plays a key role in generating income in both formal and informal sectors of the national economy (Alhowaish, 2015). Above all, the construction sector is responsible for provision of physical infrastructure that determines the level of country's socioeconomic

development; human welfare, economic activities and level of poverty (Taye & Dada, 2012). These signify that the construction sector is extensively connected to other sectors of economy through its network of linkages (Osei, 2013).

In Nigeria, the role of the construction sector in the nation's economic development is conspicuously glaring. Its annual contribution to GDP stood at 3.71% in 2016, 3.72% in 2017 (NBS, 2018a), 3.73 % in 2018 (NBS, 2019). and 3.72 in 2019 (NBS, 2020c). Although its contribution to real GDP falls below expectations, it employs about 1.75 million people and contributes 2.3% of the total employment in Nigeria (NBS, 2018b; Nigeria Economic Summit Group (NESG), 2020). Between 0.20% and 0.83% of total households in Nigeria were engaged in the construction activities from 2001 to 2005 (NBS, 2010a). A recent report (NBS, 2020d) showed that 11% and 1.3% male and female respectively are engaged in a construction-related wage employment in Nigeria. The recent Nigerian annual budget also showed that the capital expenditure was about 31.73%, 31.50% and 30% of total Federal Government of Nigeria (FGN) expenditure in 2017, 2018 and 2019 respectively (Udoma, 2018a). In 2018 and 2019, about ₦344 billion and ₦280.44 billion respectively were budgeted for the construction related projects alone (Udoma, 2018b).

Since infrastructure development requires large capital and investment outlay (NBS, 2014b), there is a tendency that these investments would translate to economic developments in terms of poverty and unemployment reduction if sustainably applied (Ismail, 2018). Unfortunately, the reverse seems to be the case. Hence, this study contends that whether the investments and expansion of government spending on the construction sector activities in Nigeria offers great opportunity for poverty and unemployment reduction remains a subject of investigation. According to Ali and Pernia (2003), public policy reforms and investment in physical infrastructure will significantly contribute to the pursuit of socially inclusive development. It is in the course of providing answers to the forgoing contending issues that this study was aimed at analyzing the relationships between the construction sector variables, and poverty and unemployment rates in Nigeria. It is expected that the result of this study will awaken the consciences of the policy makers, and construction and economic planners towards appropriate policy making and planning on the construction sector in Nigeria.

Meanwhile, this work is organized into different subheadings. The introduction establishes the background and aim of the study, while highlighting its rationale and relevance. The literature review synthesizes the extant literature from which the literature gaps this study intended to fill is established. The methodology sets out the methodological procedures adopted in this study to achieve the aim of the study. The findings generated through the methodological processes are presented in the result section, whereas the discussions of the findings are presented in the discussion section. The summary of the findings, implications and recommendations arising from the study are contained in the conclusion.

Literature review

Several studies (Oke, Ogungbile, Oyewobi, & Tengan, 2016; Okoye et al., 2016; Oladinrin, Ogunsemi & Aje, 2012; Olatunji, Oke, & Aghimien, 2016) have examined the impact of construction sector on the general economic development. Other studies (Auwal, 2012; Bidemi, 2016; Isa, Arham, & Dai, 2019; Omodero, 2019) have analyzed the relationships between government spending and poverty and unemployment reduction; and infrastructural development and poverty reduction (Chotia & Rao, 2017a; Ogun, 2010). Some others (Adelowokan, Maku, Babasanya, & Adesoye, 2019; Agbasi, Edoko, & Ezeanolue, 2018; Bello & Roslan, 2010; Njoku, 2011; Sodipe & Ogunrinola, 2011) focused on the relationship between economic growth and poverty and unemployment rates; and between public expenditure and economic growth (Babatunde, 2018; Eregha, Sede, & Onotaniyohwo, 2012). However, studies such as (Ewubare & Maeba, 2018; Oaikhenan & Aigheyisi, 2015) that dealt specifically with the relationship between the construction

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

sector investment and output, poverty and unemployment in Nigeria are droughty and superficial. Akanbi (2015) observed that the existing literature focused on the macroeconomic determinants of poverty, and left out non-economic factors that could be more important. Nwosa (2016) stated that previous studies have not considered the extent of the effects of macroeconomic policies on unemployment and poverty rate and its implication to the attainment of inclusive growth in Nigeria.

For instance, Ogun (2010) investigated the impact of infrastructural development on poverty reduction in Nigeria. The study revealed that poverty reduction is resulted from the infrastructural development. Ogun's finding was corroborated by Chotia and Rao (2017a), whose study revealed that, in the long- and short-run, poverty is reduced by the infrastructure development and economic growth. It further established that positive and unidirectional causality that runs from infrastructure development to poverty reduction also exist. Analogous study by Chotia and Rao (2017b) in the BRICS (Brazil, Russia, India, China and South Africa) nations confirmed the existence of a long-run relationship between infrastructure development, poverty and rural–urban inequality in which poverty reduction is occasioned by the infrastructure development and economic growth and poverty is propelled by the rural–urban income inequality. Another related study by Ewubare and Okpani (2018) indicated that poverty and unemployment have a positive significant relationship with inequality.

In sub-Saharan Africa, Akanbi (2015) verified the relationship between governance, physical infrastructure, and the level of poverty; whereas Marinho, Campelo, França, and Araujo (2017) analyzed the impact of infrastructure investments in the reduction of poverty in Brazil. These results found that governance and infrastructure are significant determinants of poverty in the regions. A cross-sectional study conducted by Anderson, d'Orey, Duvendack, and Esposito (2018) revealed that there is no clear evidence that higher government spending has played a significant role in reducing income poverty in low- and middle-income countries. They also found that the relationship between government spending and poverty is on average less negative for countries in Sub-Saharan Africa, and more negative for countries in Eastern Europe and Central Asia, compared to other regions. Furthermore, Nwosa (2014) examined the impact of government expenditure on unemployment and poverty rates in Nigeria from 1981 to 2011. Okungbowa (2014) examined the impact of globalization on poverty rate in Nigeria from 1981 to 2009. A later study by Nwosa (2016) on the effect of macroeconomic policies on unemployment and poverty rates in Nigeria from 1980 to 2013 with implication to achieving inclusive growth, confirmed that among macroeconomic policy variables, only the exchange rate significantly influenced unemployment rate while only fiscal policy significantly influenced-the poverty rate.

Similarly, Omodero (2019) examined the role of government sectoral expenditure on poverty alleviation in Nigeria using data from 2000 to 2017. The study revealed that government expenditure on agriculture, building and construction, education and health do not have any significant impact on poverty alleviation in Nigeria due to insufficient government budget and spending on these sectors. Yahaya (2019) revealed that there is an existing significant negative relationship between poverty trend and the education, health and agriculture expenditures in Nigeria. Dankumo, Ishak, Bani, and Hamza (2019) corroborated that there is a long-run negative relationship between expenditures and poverty, with only expenditures on the economic sector having a significant impact, whereas those of the social sector do~~es~~ not. Adegboyo (2020) investigated the impact of government spending on poverty reducing in Nigeria between 1981 and 2017 and found that economic service recurrent expenditure, social and community recurrent expenditure, and transfer recurrent expenditure reduce poverty; while transfer capital expenditure and administrative recurrent expenditure escalate poverty.

Contrarily, Nduka, Ananwude, and Osakwe (2019) revealed that government expenditure has significant effect on the standard of living of her citizens, against the reality of high level of poverty in country and suggested the re-channelization of government resource

to social sector that will lead to poverty reduction which reflects higher per capita income and better standard of living. This view is shared by Omari and Muturi (2016) who found that there was a stable long run relationship between poverty level and sectoral government expenditure in Kenya. However, while agriculture sector and health sector expenditures have a positive and significant effect on poverty level, infrastructure sector expenditure has a negative and significant effect on poverty level. Whereas the effect of education sector expenditure on poverty level was not significant. In Pakistan, Mehmood and Sadiq (2010) also showed that there exists short run as well as long run negative relationship between the poverty and government expenditure.

Study by Akeju and Olanipeun (2014) showed the existence of short- and long-run relationships between unemployment rate and output growth in Nigeria. It also revealed that unemployment and economic growth were positively related. Similar study by Akutson, Messiah and Araf (2018) showed that there was no long-run relationship between unemployment rate and economic growth in Nigeria. The study posited that with effective policies, the long-run increase in unemployment has a growth enhancing mechanism on economic growth which is statistically significant. Adelowokan et al. (2019) also revealed that there is no causal and long-run relationships between unemployment, poverty and growth in Nigeria; rather on a short-run, unemployment has a negative and significant relationship with growth. They then argue that in absolute terms, Nigeria's economy will continue to grow even with the increasing poverty. Another study by Ilugbusi, Ajala, Nkire, and Ojo (2019) revealed the existence of both short- and long-run relationships between unemployment and economic growth and an inverse insignificant relationship between unemployment and economic growth. In view of this, Olawunmi and Adedayo (2017) recommended an increase in the government expenditure for enhancement of individual skills, unemployment and inflation reduction.

On the other hand, the relationship between fiscal policy and unemployment was examined by Bidemi (2016) using co-integration and Error Correction Model (ECM). Study conducted in the Gorontalo Province of Indonesia in 2010-2016 period by Isa et al. (2019) revealed that capital expenditure has a positive and significant influence on the poverty level, whereas unemployment has a positive and insignificant effect on the poverty level. A related study by Babatunde (2018) investigated government spending on infrastructure and economic growth in Nigeria. Babatunde's result was corroborated by Darma (2014) and Eregha et al. (2013) who found that the total capital expenditure, capital expenditure on administration, capital expenditure on social community services and capital expenditure on transfers had positive impact on economic growth in Nigeria. Another related study conducted by Iheanacho (2016) presented a more complex result where a negative and significant long-run relationship between economic growth and recurrent expenditure coexists with a positive short-run relationship. This signifies the dual effects of recurrent expenditure on economic growth in Nigeria. In this case, capital expenditure exerts a negative and significant long-run effect on economic growth and recurrent expenditure becomes a major driver of economic growth.

Ewubare and Maeba (2018) examined the relationship between public expenditure and employment in Nigeria from 1980 to 2017 using cointegration and ECM. The study showed that there was long-run dynamic equilibrium between the variables. A study by Charles, Nenbee, and Krama (2018) revealed that government expenditure on education has a positive and significant relationship with employment generation, while government expenditure on health and other social and community services has negative and significant relationship with employment generation. Another study in agriculture sector by Enilolobo, Mustapha, and Ikechukwu (2019) revealed that change in agriculture output in the current period was negative and significant for the current unemployment level in Nigeria, while the change in one period lagged agriculture output was positive and significant for the current unemployment level in Nigeria. Elsewhere in Egypt, Abouelfarag and Qutb (2020) revealed that increasing government expenditure causes an increase in the unemployment rate in the long run. While the discretionary expenditures and nondiscretionary expenditures increase the growth of unemployment, investment

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

expenditure has an insignificant effect because of its minor percentage in government expenses.

Although the link between public expenditure and economic growth has attracted considerable interest on the part of economic and government policy scholars both at the theoretical and empirical levels (Ukwueze, 2015); the results of these studies are at variance with each other and there is need for further insight (Timilsina, Hochman, & Song, 2020). Besides, most of these studies were on industrialized and/or foreign economies, whereas others focused on the relationship between public investment and economic growth. None has holistically examined the relationship between construction sector expenditure and poverty and unemployment rates in Nigeria using updated and rebased construction sector data (construction output, federal government capital expenditure and construction services recurrent expenditure). Since there is no consensual empirical evidence from the literature over the impact of construction sector expenditure on poverty and unemployment reduction in Nigeria; the preponderance of the contradictory results arising from the existing literature, therefore, requires further enquiry, using current economic indices. This, thus, gives rise to the following hypotheses:

- There is no significant relationship between construction sector variables expenditure and poverty rates in Nigeria; and
- There is no significant relationship between construction sector variables and unemployment rates in Nigeria.

Methodology

This study employed a quasi-experimental design due to its analytical nature where it made use of secondary data obtained from different official publications of the Central Bank of Nigeria (CBN), NBS, United Nations Development Program (UNDP) and World Bank. The annual statistical data from 1981 to 2019 on construction sector output (CTPT), national poverty rates (NPR), national unemployment rate (NUPR), federal government capital expenditure (GCEXP) and construction services recurrent expenditure (CSREXP) were extracted from (NBS, 2010b; 2014b; 2015; 2016a; 2016b; 2016c; 2017a; 2017b; 2018a; 2018b; 2019; 2020b; 2020c; UNDP, 2019; CBN, 2019; World Bank, 2016). These data were used to analyze the dynamic relationship between poverty rate (NPR), unemployment rate (NUPR) and construction sector variables (total capital expenditure (GCEXP), construction recurrent expenditure (CSREXP) and construction output (CTPT)). A Contemporaneous correlation was examined while the evidence of Granger causality of all the variables was checked.

A unit root test was performed to check the stationarity or integration of the data series (Kwiatkowski, Phillips, Schmidt & Shin, 1992; Shrestha & Bhatta, 2018) using Dickey-Fuller with GLS Detrending (DF-GLS) (Elliott, Rothenberg & Stock, 1996), Augmented Dickey- Fuller (ADF) (Dickey & Fuller, 1979), and Phillips-Perron (PP) (Phillips & Perron, 1988) unit root tests. These unit root models were chosen due to their commonness and simplicity among other models. Particularly, the robustness of PP and its capacity to remove autocorrelation from the model (Arltová & Fedorová, 2016; Engle & Granger, 1987) was also considered. Subsequently, the data series were transformed into their natural logarithm for uniformity because they were not of the same unit. The logarithm values were then used to test the existence of unit root. The unit root test model is represented in Equation 1:

$$\Delta Y_t a_0 + a_1 T + a_2 Y_{t-1} + \sum_{i=1}^{n} \gamma_i \Delta Y_{t-1} + \mu_t \qquad (1)$$

Where $\Delta Y_t = Y_t - Y_1$, α_0 is a drift term, T is the time trend with the null hypothesis, H_0: $\alpha_2 = 0$ and alternative hypothesis H1: $\alpha_2 \neq 0$, n is the number of lags needed to obtain white noise, and μ_t is the error term.

Furthermore, ARDL cointegration technique (bound cointegration testing technique) (Pesaran & Shin, 1999; Pesaran, Shin, & Smith, 2001) was used to investigate the stable long-term relationships between the variables in this study because the time series have a mix of ordered integrations (Nkoro & Uko, 2016; Shrestha & Bhatta, 2018). In addition, the ARDL model was used because it captures the dynamic effects from lagged dependent variables and lagged explanatory variable(s), by eliminating error serial correlation and avoiding the problem of spurious regression through inclusion of sufficient lags (Ghouse, Khan, & Rehman, 2018). Generally, the ARDL model is represented in Equation 2:

$$\phi(L)y_t = \delta + \theta(L)x_t + \mu_t \quad (2)$$

where φ(L) = an order-p polynomial that, for stability, has roots lying outside the unit circle, and θ(L) = an order-q polynomial.

The F-statistic was then employed to ascertain the joint effects of the coefficients of the lagged variables. The hypothesis that the coefficients of the lag level variables are zero was tested. The null of the non-existence of the long-term relationship is defined by:

H0. $\delta_1 = \delta_2 = 0$ (null, i.e., the long-term relationship does not exist)
H1. $\delta_1 \neq \delta_2 \neq 0$ (alternative, i.e., the long-term relationship exists)

This was tested in each of the models as specified by the number of variables and can be represented in Equations 3 and 4.

$$F_x(X_1 \mid Y_1, \ldots Y_k) \quad (3)$$
$$F_y(Y_1 \mid X_1, \ldots X_k) \quad (4)$$

The hypotheses represented by Equations (3) and (4), were tested using the F-statistic (Wald test). The distribution of F-statistics is non-standard, regardless of whether the variables in the system are I(0) or I(1).

Finally, a Granger causality test was conducted to determine the direction of causation between the variables under investigation. The Granger causality test is represented in Equations 5 and 6.

$$Y_t = \alpha_0 + \sum_{i=1}^{n} \alpha_{1i} Y_{t-1} + \sum_{i=1}^{n} \alpha_{2i} X_{t-i} + V_t \quad (5)$$

$$X_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i} X_{t-1} + \sum_{i=1}^{n} \beta_{2i} Y_{t-i} + U_t \quad (6)$$

where U_t and V_t = the uncorrelated and white noise error term series, respectively. Causality may be determined by estimating Equation (1) and testing the null hypothesis that $\sum_{i=1}^{n} \beta_{2i} = 0$ and $\sum_{i=1}^{n} a_{2i} = 0$ against the alternative hypothesis that $\sum_{i=1}^{n} \beta_{2i} \neq 0$ and $\sum_{i=1}^{n} a_{2i} \neq 0$ for Equations (5) or (6), respectively.

If the β_{2i} coefficients are statistically significant and those of α_{2i} are not, or vice versa a unidirectional causality occurs in either way. However, if both α_{2i} and β_{2i} are statistically significant, then causality is bi-directional. The Granger causality test was fitted with annual data from 1981 to 2019 to test the direction of causation between:

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

- The federal government capital expenditure (GCEXP) and the national poverty rates (NPR),
- The construction services recurrent expenditure (CSREXP) and the national poverty rates (NPR),
- The construction sector output (CTPT) and the national poverty rates (NPR),
- The construction services recurrent expenditure (CSREXP) and the federal government capital expenditure (GCEXP), and
- The construction sector output (CTPT) and the construction services recurrent expenditure (CSREXP).

In each case, the test also determines the feedback effects that occur between the comparable variables. The whole analysis was computed using EViews, version 10.

Results

Descriptive statistics

Table 1. Summary of descriptive statistics and normality test

	LNPR	LNUPR	LGCEXP	LCSREXP	LCTPT
Mean	3.980622	2.152563	4.991628	1.704027	13.66929
Median	3.998201	2.476538	5.733406	1.974081	13.50423
Maximum	4.234107	3.310543	7.644919	5.277604	14.80141
Minimum	3.691376	0.587787	1.410987	-2.407946	12.72415
Std. Dev.	0.145452	0.829039	2.013766	2.521850	0.676157
Skewness	-0.165003	-0.189042	-0.570066	-0.178121	0.497428
Kurtosis	2.210603	1.680601	1.823001	1.647746	1.896948
Jarque-Bera	1.189584	3.061110	4.363493	3.177685	3.585499
Probability	0.551677	0.216415	0.112844	0.204162	0.166502
Sum	155.2443	83.94994	194.6735	66.45706	533.1022
Sum Sq. Dev.	0.803944	26.11760	154.0996	241.6697	17.37315
Observations	39	39	39	39	39

L = Logarithm

Source: Author's Eviews 10 computation

Stationarity test results using DF-GLS, ADF and PP approaches

In Table 1, the statistical and econometric characteristics of the study variables is explained. It shows the mean, standard deviations, skewness, kurtosis, and Jarque-Bera test for normality of the variables under investigation. The result indicates that, on the average, the poverty rate is 3.98% with a standard deviation of 0.15%. Unemployment rate, federal government capital expenditure, construction services recurrent expenditure, and construction total output averaged 2.15%, 4.99%, 1.70% and 13.67% respectively. The indication peaked at 2.21%, 1.68%, 1.82%, 1.65% and 1.90% respectively. It implies that there is no excess kurtosis (k>3.0) in the data series. The result also reveals that, with the exception of construction total output (LCTPT), all other variables of study are negatively skewed. However, normality description of the variables as estimated by Jarque-Bera statistics (*J-B stat.* = 2.053; p = 0.2061 > 0.05) confirms that all the variables are normally distributed and are statistically different from zero. In addition, there is no excess Kurtosis (K>3.0) which states that the datasets are normally distributed. The estimate of the standard deviations reveals that the dataset is not highly volatile.

From the unit root tests using DF-GLS approach, Table 2 showed that with an intercept and trend in the model, all the variables were stationary at first differencing. In the model with intercept only, construction total output (LCTPT) refused being stationary even at first differencing, but with an intercept and trend in the model, all the variables under

investigation were stationary at first differencing. That is to say, they were integrated of order one (I(1)). The implication is that, the best DF-GLS unit root test model for the research variables is the model with constant and trend.

As shown in the ADF unit root test in Table 3, the research variables were non-stationary at level form using the three-unit root models. However, at first differencing, they were all stationary at 5% level, using the unit root model with constant only, and with no constant and no trend. In the model with constant and trend, only the construction total output (LCTPT) was non-stationary after first differencing at 5% level. The implication is that, unit root test model with constant and trend is not the best for the study variables using ADF approach. Considering the models with constant only, and with no constant and no trend, the variables are said to be integrated of order one (I(1)).

Table 2. Summary of DF-GLS unit root test

		@level form		**@1st Differencing**	
Model	**Variable**	**DF-Stat.**	**Stationarity**	**DF-Stat.**	**Stationarity**
Intercept & Trend	LNPR	-1.463	NS	-6.620*	S
	LNUPR	-1.822	NS	-5.390*	"
	LGCEXP	-1.475	NS	-6.355*	"
	LCSREXP	-2.698	NS	-6.894*	"
	LCTPT	-1.613	NS	-3.221**	"
Intercept only	LNPR	-1.483	NS	-6.061*	S
	LNUPR	-0.628	NS	-5.008*	"
	LGCEXP	0.400	NS	-6.202*	"
	LCSREXP	-0.573	NS	-6.613*	"
	LCTPT	-0.738	NS	-1.585	NS

Critical Value	**1%**	**5%**	**10%**
Intercept & Trend	-3.770	-3.190	-2.890
Intercept only	-2.627	-1.950	-1.611

*, ** and *** Indicate stationary at 1%, 5% and 10% level of significance respectively; NS = Non-stationary; S = Stationary; L = Logarithm

Source: Author's extract from E-views 10 output

Table 3. Summary of Augmented Dickey-Fuller (ADF) unit root test

		@level form			**@1st Differencing**		
Model	**Variable**	**DF-Stat.**	***p*-value**	**S/NS**	**DF-Stat.**	***p*-value**	**S/NS**
Constant & Trend	LNPR	-1.123	0.9117	NS	-6.562*	0.0000	S
	LNUPR	-2.969	0.1548	NS	-5.348*	0.0005	"
	LGCEXP	-1.392	0.8472	NS	-6.331*	0.0000	"
	LCSREXP	-2.372	0.3877	NS	-7.016*	0.0000	"
	LCTPT	-3.500***	0.0541	NS	-3.525***	0.0512	NS
Constant only	LNPR	-1.890	0.3333	NS	-6.073*	0.0000	S
	LNUPR	-0.734	0.8260	NS	-5.423*	0.0001	"
	LGCEXP	-0.834	0.7977	NS	-6.363*	0.0000	"
	LCSREXP	-1.453	0.5464	NS	-6.940*	0.0000	"
	LCTPT	-0.224	0.9264	NS	-3.532**	0.0125	"
No constant, No trend	LNPR	-0.141	0.6284	NS	-6.168*	0.0000	"
	LNUPR	0.560	0.8328	NS	-5.362*	0.0000	"
	LGCEXP	2.288	0.9937	NS	-2.898*	0.0050	"
	LCSREXP	-0.374	0.5432	NS	-6.486*	0.0000	"
	LCTPT	1.403	0.9573	NS	-2.500**	0.0139	"

Critical Value	**1%**	**5%**	**10%**
Constant & Trend	-4.227	-3.537	-3.200
Constant only	-3.621	-2.943	-2.610
No constant, No trend	-2.629	-1.950	-1.611

*, ** and *** Indicate stationary at 1%, 5% and 10% level of significance respectively; NS = Non-stationary, S = Stationary; L = Logarithm

Source: Author's Extract from E-views 10 output

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

The unit test using Phillips-Perron (PP) approach with various possible models as shown in Table 4 indicated that the study variables were all non-stationary at level form with exception of the construction total output (LCTPT) which was found stationary at level form with constant and trend in the model. However, at first differencing, they were all stationary at 5% level, using the unit root model with constant only, and with no constant and no trend. In the model with constant and trend, only the construction total output (LCTPT) was non-stationary after first differencing at 5% level. The implication is that, using the Phillips-Perron (PP) unit root test approach, it is more appropriate to use either the unit root model with constant only or with no constant and no trend.

Table 4. Summary of Phillips-Perron (PP) unit root test

		@level form			**@1st Differencing**		
Model	**Variable**	**PP-Stat.**	***p*-value**	**S/NS**	**DF-Stat.**	***p*-value**	**S/NS**
Constant & Trend	LNPR	-1.123	0.9117	NS	-6.623*	0.0000	S
	LNUPR	-2.140	0.5080	NS	-5.331*	0.0005	"
	LGCEXP	-1.525	0.8031	NS	-6.330*	0.0000	"
	LCSREXP	-2.325	0.4108	NS	-11.269*	0.0000	"
	LCTPT	-5.193*	0.0008	S	-3.319***	0.0790	NS
Constant only	LNPR	-1.876	0.3396	NS	-6.073*	0.0000	S
	LNUPR	-0.817	0.8027	NS	-5.409*	0.0001	"
	LGCEXP	-0.831	0.7985	NS	-6.358*	0.0000	"
	LCSREXP	-1.630	0.4580	NS	-7.326*	0.0000	"
	LCTPT	0.152	0.9656	NS	-3.421**	0.0165	"
No constant, No trend	LNPR	-0.142	0.6283	NS	-6.168*	0.0000	"
	LNUPR	0.509	0.8210	NS	-5.354*	0.0000	"
	LGCEXP	2.049	0.9889	NS	-5.498*	0.0000	"
	LCSREXP	-0.254	0.5880	NS	-6.489*	0.0000	"
	LCTPT	1.057	0.9210	NS	-3.118*	0.0027	"

Critical Value	**1%**	**5%**	**10%**
Constant & Trend	-4.227	-3.537	-3.200
Constant only	-3.616	-2.941	-2.609
No constant, No trend	-2.627	-1.950	-1.611

*, ** and *** Indicate stationary at 1%, 5% and 10% level of significance respectively; NS = Non-stationary; S = Stationary; L = Logarithm

Source: Author's Extract from E-views 10 output

Generally, the stationarity test results in Tables 2, 3 and 4 indicated that the variables were stationary at first differencing (I(1)); for which cause, the ARDL estimation is chosen over the Ordinary Least Squares (OLS) regression analysis technique. Appropriately, ARDL mechanism is best when (a) all variables are I(1), and (b) when we have a mixture of I(1) and I(0) variables [83]. This dynamic model is then, employed in estimating the interlinkages between the dependent and independent variables.

Furthermore, since the stationary variables were not modelled by any special cointegrating vector; the ARDL approach, which has the additional advantage of yielding consistent estimates of the long-term coefficients, that are asymptotically normal regardless of whether the underlying regressors are I(1) or I(0) (Shrestha & Bhatta, 2018) was employed. Thus, the maximum order of integration of the series in the system is I(1); that is, the time series of the system in that study was integrated in order d such that $0 \leq d \leq 1$, although they may not be of the same order of integration. This provides further justification for the use of the bounds testing ARDL approach in this study.

Cointegration test and correlation

Table 5 showed the ARDL bound test result between national poverty rate and construction sector investment variables. The ARDL (4, 4, 4, 4) result above showed that using Akaike information selection criterion, Capital expenditure (LGCEXP) at lag 4 with a coefficient value of 0.176, t-statistic value of 2.113 and associated probability value of 0.0517 has a slightly insignificant positive long-run and short-run effect on poverty rate growth in Nigeria. Meanwhile, government expenditure on recurrent construction services (LCSREXP) and the construction output (LCTPT) with coefficient values of -0.089 and -0.260 respectively, had negative long and short-run effect on national poverty rate in Nigeria. The effect of expenditure on recurrent construction services was significant (p=0.0390<0.05), while the construction output is negligible (p=0.2203>0.05). In summary, the national poverty rate has been on increase and nurtured by capital expenditure.

Table 5. Long-run and short-run estimate for national poverty and construction sector investment

Dependent Variable: LNPR					
Method: ARDL					
Date: 08/24/20 Time: 00:35					
Sample (adjusted): 1985 2019					
Included observations: 35 after adjustments					
Number of models evaluated: 500					
Selected Model: ARDL(4, 4, 4, 4); AIC of the selected model = -1.858907					
Variable	**Lag length**	**Coefficient**	**Std. Error**	**t-statistic**	**Probability**
LNPR	4	0.534142	0.230757	2.314737	0.0352
LGCEXP	4	0.175784	0.083179	2.113323	0.0517
LCSREXP	4	-0.088815	0.039273	-2.261459	0.0390
LCTPT	4	-0.260420	0.203584	-1.279175	0.2203
C		5.019630	2.904312	1.728337	0.1045
ECM(-1)		-0.599819	0.320471	-4.992082	0.0002
R-squared		0.664362			
Adjusted R-squared		0.399384			
F-statistic		3.718910			
Prob(F-statistic)		0.006442			
Durbin-Watson stat		2.487889			
Long-run bound test estimate					
F-statistic		3.93			
Lower bound I(0) @5%		2.79			
Upper bound I(1) @5%		3.67			

Source: Author's extract from Eviews 10 result

The F-test result measuring joint influence (F-stat. = 3.719, p=0.0064) indicated a joint significant influence of explanatory variables on national poverty rate growth in Nigeria. In other words, the ARDL long-run bound estimate with F-stat. = 3.93>3.67 and 2.79 for upper and lower bounds respectively, confirmed a long-run equilibrium relationship between national poverty rate and construction sector variables. The R^2 estimate of 0.825 indicated that the model was a good one since about 82.5% of the total variations in Nigeria national poverty rate could be explained by the construction sector variables. The remaining 17.5% could be attributed to other relevant variables not present in the model. Durbin-Watson statistic value of 2.487889 that follows the rule of thumb indicated that the model is free from the first order autocorrelation problems. Implicitly, the result indicated that construction sector variables have potentials for determining the poverty rate in Nigeria. This could be attributed to the construction industry multiplier effects on other sectors of the economy.

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

The error correction coefficient (ECM(-1) = -0.599819, p=0.0002<0.05) appeared with expected (negative) sign. The result showed that about 60.0% of the disequilibrium between national poverty rate and construction sector variables can be corrected in one year. It implies that the equilibrium state between the research variables can be attained in two years. This result aligned with the prevailing reality because poverty rate increases as construction outputs and government expenditure on construction increase. Consequently, construction sector ought to have a positive influence on poverty rate reduction in Nigeria. Unfortunately, the reverse is the case. Inasmuch as the government expenditure on recurrent construction services and the construction output were pointers to this fact, the capital expenditure showed otherwise. However, the result indicated that the overall construction sector activities do not improve poverty rate rather increases it. It further implied that both the construction output growth and government commitment on construction have not been directed towards reducing poverty in Nigeria despite showing some potentials.

Table 6. Long-run and short-run estimate for national unemployment and construction sector investment

ARDL Long Run Form and Bounds Test				
Dependent Variable: D(LNUPR)				
Selected Model: ARDL(4, 0, 0, 0)				
Case 2: Restricted Constant and No Trend				
Date: 08/7/20 Time: 10:33				
Sample: 1981 2019				
Included observations: 35				
Conditional Error Correction Regression				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
LGCEXP	0.300743	0.524756	0.573110	0.5713
LCSREXP	0.105145	0.356304	0.295099	0.7702
LCTPT	0.090296	1.042102	0.086648	0.9316
C	-0.820314	12.77120	-0.064232	0.9493
ECM(-1)	-0.207714	0.061193	-3.394383	0.0021
Model summary				
R-Squared = 93.8%				
F-statistic = 58.693				
Prob.(F-statistic) = 0.0000				
Durbin-Watson stat. = 2.214941				
Long-run bound test estimate				
F-statistic = 2.01				
Lower bound I(0) = 2.79				
Upper bound I(1) = 3.67				

Source: Author's extract from Eviews 10 result

Contrarily, Table 6 showed that the ARDL bounds estimate with F-statistic (2.01) < lower (2.79) and upper (3.67) bounds estimate indicated that there was no long-run relationship between the national unemployment and construction sector variables. However, the ARDL regression results with unemployment rate as the dependent variable showed that federal government capital expenditure (LGCEXP), construction services recurrent expenditure (LCSREXP) and construction total output (LCTPT) interacts positively and insignificantly with unemployment rate in Nigeria in both long and short run. Likewise, this result depicted that the overall construction sector activities have not been directed towards reducing unemployment in Nigeria despite showing some potentials. This could be seen in the percentage of labor for engaged through construction activities in Nigeria. However, the short-run adjustment coefficient (ECM(-1) = -0.207714) showed that about 20.8% of the disequilibrium between unemployment rate and construction sector variables can be corrected in one year, hence, the total disequilibrium can be corrected in about 5 years' time. This could be traced from the fact that the construction industry has not performed optimally in terms of employment generation.

From the result of Table 7, poverty rate related positively with the unemployment rate in Nigeria. It implies that, an increase in unemployment rate would equally increase the rate of poverty. The degree of linear association was negligible (p=0.1807>0.05). This is because there are many other factors accountable for poverty in Nigeria. However, the link between national poverty rate and construction expenditure (Capital and Recurrent expenditure) was positive and significant (p<0.05), while the interaction between poverty rate and construction output was also positive but statistically insignificant (p>0.05). In a similar way, unemployment rate interacted positively and significantly with construction sector investments for the period (p=0.0000<0.05).

Correlation result

Table 7. Correlation result

Covariance Analysis: Ordinary					
Date: 08/25/20 Time: 21:04					
Sample: 1981 2019					
Included observations: 39					
Correlation					
t-Statistic					
Probability	LNPR	LNUPR	LGCEXP	LCSREXP	LCTPT
LNPR	1.000000				

LNUPR	0.218856	1.000000			
	1.364321	-----			
	0.1807	-----			
LGCEXP	0.563826	0.698133	1.000000		
	4.152615	5.931239	-----		
	0.0002	0.0000	-----		
LCSREXP	0.468453	0.808782	0.944586	1.000000	
	3.225274	8.365179	17.50326	-----	
	0.0026	0.0000	0.0000	-----	
LCTPT	0.146132	0.833635	0.784244	0.851903	1.000000
	0.898535	9.180979	7.688526	9.894819	-----
	0.3747	0.0000	0.0000	0.0000	-----

Source: Author's Eviews 10 Result

Also, the capital expenditure interacted positively and significantly with the recurrent expenditure and construction output in Nigeria (p<0.05). This is to show that construction sector investment has potential to taming the incidences of poverty and unemployment in Nigeria. But as it stands, government expenditure on construction and construction output increase, as both poverty and unemployment increase. This indicated that economic growth in Nigeria is never equated to development. It further implied that there might be some misplacement of priority, because under an ideal situation, increase in government expenditure in real sectors should have brought about reduction in poverty and unemployment.

Causality test

Table 8. Causality estimate

Pairwise Granger Causality Tests Date: 08/24/20 Time: 00:39 Sample: 1981 2019 Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
LGCEXP does not Granger cause LNPR	37	0.39896	0.6743

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

LNPR does not Granger cause LGCEXP		0.10634	0.8994
LCSREXP does not Granger cause LNPR	37	0.96613	0.3914
LNPR does not Granger cause LCSREXP		1.56025	0.2256
LCTPT does not Granger cause LNPR	37	1.54418	0.2290
LNPR does not Granger cause LCTPT		1.13694	0.3334
LCSREXP does not Granger cause LGCEXP	37	0.45298	0.6397
LGCEXP does not Granger cause LCSREXP		3.46515*	0.0434
LCTPT does not Granger cause LGCEXP	37	0.28720	0.7523
LGCEXP does not Granger cause LCTPT		4.08899*	0.0262
LCTPT does not Granger cause LCSREXP	37	0.92913	0.4053
LCSREXP does not Granger cause LCTPT		7.50346*	0.0021

Note: * indicates significant at the 5% significance level. The null hypothesis of no causality is rejected if the probability is less than 0.05.

Source: Author's Eviews 10 result

The Granger causality test result in Table 8 indicated no causal interaction between capital expenditure and poverty rate, between construction services recurrent expenditure and poverty rate, and between construction output and poverty rate in Nigeria (p>0.05). However, there is unidirectional causality running from capital expenditure to construction services recurrent expenditure, from capital expenditure to construction output, and from construction services recurrent expenditure to construction output in Nigeria (p<0.05). The implication is that, investment in capital projects drives construction services recurrent expenditure and construction output without a feedback, while investment in construction services recurrent expenditure drives construction output without a feedback by two years. This result further implies that there is no causal influence either from poverty rate to construction sector variables or vice versa, rather a unidirectional influence from capital expenditure to construction services recurrent expenditure and construction output, and from construction services recurrent expenditure to construction output in part and without return in a short term.

Discussion

Ideally, expenditure and investment on construction sector ought to have brought about reduction in poverty and unemployment rates (Enilolobo et al., 2019). However, this study demonstrated that despite showing potential as a means of reducing poverty and unemployment rate, an increase in construction expenditure increases poverty and unemployment rate in Nigeria. This result is consistent with that of Anderson, d'Orey, Duvendack and Esposito (2018), who found out that there is no clear evidence that higher government spending plays a significant role in reducing income poverty in low- and middle-income countries. It, however, opposes the results of Adegboyo (2020), Dankumo, Ishak, Bani, and Hamza (2019), Yahaya (2019). It also went contrary to the results of Mehmood and Sadiq (2010) in Pakistan, as well as Sasana and Kusuma (2018) in Indonesia. Thus, the fact that there is a long-run equilibrium relationship between poverty rate and construction sector variables suggested that greater percentage (82.5%) of Nigeria poverty rate can be explained by the construction sector variables. This is in line with the result of studies such as (Akanbi, 2015; Marinho et al., 2017; Nwosa, 2014). In specific term, it disagreed with Omari and Muturi (2016) who showed that infrastructure sector expenditure has a negative and significant effect on poverty level against other sectors in Kenya.

However, this is not the case with unemployment rate where there is no long-run relationship between the national unemployment and construction sector variables. In this case, the result showed that only a small percentage (20.8%) of unemployment rate can be explained by the construction sector variables. This equally corroborated the results of (Chotia & Rao, 2017a, b; Ogun, 2010). It also agreed with Adelowokan et al. (2019) but contrary to Bidemi (2016) and Abouelfarag and Qutb (2020) in Egypt. This

implies that construction sector expenditure and government commitments on construction have not been directed towards reducing poverty and unemployment in Nigeria despite showing some potentials against the result of Chotia and Rao (2017a). This is in agreement with Jaiyeola and Bayat (2020) and Salisu and Arshad (2019) who suggested for the need for employment-centered strategy for poverty and unemployment reduction in Nigeria.

Furthermore, the percentage of people that are engaged in construction activities in Nigeria attested to this fact. The result of Omodero (2019) is also supported by the result of this study, which is further substantiated by different reports of NBS (2010a; 2018b; 2020b) and NESG (2020) that showed that the percentage of people engaged through construction activities and services in Nigeria is still very low.

Meanwhile, the correlation result signifies that there are positive linear relations (see Table 7). This could be true because poverty, unemployment, and construction sector are all indicators of economic development. However, while the positive association between construction sector variables and poverty is for both long-run and short-run, the relationship between construction sector expenditure and unemployment is only for a short-run (see Tables 5 and 6 respectively). This result verified the result of Iheanacho (2016), Ewubare and Maeba (2018), Ilugbusi et al. (2019), and Isa et al. (2019). In spite of this, this study shows that there is no causal relationship between poverty rate and construction sector variables, while the same could not be established for unemployment rate since there is no long-run cointegration between the variables. It, therefore, denotes that construction sector variables do not have any direct effect on both poverty rate and unemployment rate in Nigeria under the current economic condition regardless of the linear correlation. It could also be deduced that the effect of construction sector variables on unemployment rate may be observed only in the short-run, during the transition from a long-term equilibrium at one level of construction sector variables to a long-run equilibrium at another level of construction sector variables; but not so for poverty rate. This position runs contrary to the result of Adegboyo (2020), which revealed that transfer capital expenditure and administrative recurrent expenditure increase poverty.

The result presents a complex scenario. It suggests that poverty rate in Nigeria can be predicted in the long run from the construction sector variables, whereas unemployment rate cannot. The overall result presents an interesting picture in the Nigerian economic activities, where there are a lot of conflicting results as to the effects of economic activities and government spending on real sectors on poverty and unemployment reduction. This then, affirmed the submissions of Ukwueze (2015) and Timilsina et al. (2020) who acknowledged the existence of conflicting empirical reports. Although the trend of economic data pointed to this direction, it behooves every reality of any progressive economy looking at the huge amount of resources committed to the construction sector and construction output in Nigeria. Customarily, this would have been transcended into economic development in terms of poverty and unemployment reduction as claimed by Taye and Dada (2012), but this study has proved otherwise.

Conclusions

As a major economic sector with the capacity to reduce both poverty and unemployment rates, this study has examined the relationships between construction sector variables (construction sector output, federal government capital expenditure and construction services recurrent expenditure), poverty and unemployment rates in Nigeria. The study established a complex and interesting result. It found that there are positive and significant linear correlations between construction sector expenditure and poverty rate, but, for the construction output, the linear association was insignificant. It also found that the same positive and significant linear correlations exist between construction sector expenditure and unemployment rate in Nigeria. However, while these linear relationships

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

exist in the long- and short-run for poverty rate, they exist only in the short-run for unemployment rate.

Explicitly, none of the construction sector variables directly influences poverty rate or unemployment rate and vice versa, except for the government capital expenditure that leads construction service recurrent expenditure and construction output in one direction with no return, and construction service recurrent expenditure that leads construction output without feedback. The essence of the linear relationships could be that all the variables are indicators of national development. But while increase in the construction spending and output would have caused reduction in poverty and unemployment, as suggested by the coefficients of government expenditure on recurrent construction services and construction output, this could not be established. It shows that poverty and unemployment increase as construction expenditure and output increases. That is to say that the relationship could not be translated to any improvement in poverty and unemployment reduction in Nigeria. It further denotes that the strength of construction variables is not enough to cause reduction in poverty rate. It then suggests that economic activities on construction sector cannot be relied upon for improvement of poverty and unemployment reduction in Nigeria. It could be deduced from the interplay that the observed long- and short-run contemporaneous relationships between construction expenditure and poverty rate are coincidental.

Since the empirical result suggested that construction variables could not cause any improvement of poverty and unemployment reduction despite showing some potentials, it is incumbent on the economic policy makers to strategize to optimize the potentials of construction sector towards reducing poverty and unemployment. It also states that the current commitments and expenditure on construction sector have not been directed towards reducing poverty and unemployment; rather a misplaced priority, which required much to be desired. In another way, the huge financial resources committed into construction sector activities should be translated to job creation with an accumulated effect on poverty reduction. Nigerian government should re-strategize and refocus their attention to construction sector so as to minimize wastage of resources and increase contribution to the national development.

Conventionally, an increase in construction spending would have been expected to bring about unemployment and poverty reduction. Unfortunately, this study challenged this presumption. It queries the effectiveness of efforts of Nigerian economic managers and policy makers towards reducing poverty and unemployment. Now that the country is still engulfed with precarious economic conditions occasioned by the global pandemic and oil price downturn, this study would serve as a pointer towards directing the economic policy makers in the path of economic transformation that would bring about unemployment and poverty reduction. That is to say that the global relevance of construction sector needs to be reflected in the Nigerian development landscape.

Practically, the result of this study implies that Nigerian populace has not benefited significantly from the huge capital spending on infrastructure and construction sector services in term of gaining employment and poverty reduction. That is to say that unemployment and poverty rate will continue to rise even with increasing construction sector output and government spending on infrastructure and construction sector services. However, it further implies that with the right policy and planning, the construction sector can generate multiple employments through its chain of activities that can reduce poverty rate in Nigeria. To the scholars, this study is a call for further studies into the roles of construction sector towards economic and social development of Nigeria, looking at the scanty scholarly work in this area of research. To the policy makers, construction and economic planners, this study serves a pointer through giving an insight into a way of taming the trends of poverty and unemployment in Nigeria, thus the need for new thinking. To the government, it is a call to action towards proper investment,

proper distribution of resources and re-strengthening of fiscal and regulatory frameworks.

Consequently, the study suggested that construction sector expenditure and output should be directed towards poverty and unemployment reduction. This could be done through the diversification and integration of all construction sub-sectors particularly the private sector, into the nation's economic equation. The Nigerian government needs to redirect its attention to formulating policies that would ensure sustainable economic development rather than misplacing priorities through unnecessary spending on construction sector activities. Since this study shows that an increase in construction expenditure increases poverty rate and unemployment, the country craves for a re-evaluation of economic policies with a refocus on those sectors that would lead to national development in Nigeria.

Although the result of this study could be true from the empirical perspective, narrowing the study to construction sector variables may have only affected the overall result. That is to say that the results could have been influenced by the use of single sector data for analysis which may cause a major drawback in the applicability and acceptability of the result. Primarily, reduction in poverty and unemployment rates would have a multi-sectoral linkage vis-à-vis other micro socio-economic variables. Therefore, it would be implausible for one to expect a single sector of economy to significantly influence the rates of poverty and unemployment reduction in Nigeria. On this basis, this study proposed carrying a confirmatory study to ascertain the true relationship between the construction sector with poverty and unemployment reduction amidst other sectors of the economy, using current and rebased economic data from Nigeria.

References

Abouelfarag, H. A., & Qutb, R. (2020). Does government expenditure reduce unemployment in Egypt?. *Journal of Economic and Administrative Sciences*. ahead-of-print. https://doi.org/10.1108/JEAS-01-2020-0011

Action Aid Nigeria. (2015). *Corruption and poverty in Nigeria: A report.* Gwarimpa, Abuja: Action Aid Nigeria. https://nigeria.actionaid.org/sites/nigeria/files/pc_report_content.pdf

Adegboyo, O.S. (2020). Does government spending reduce poverty in Nigeria? Evidence from auto-regressive distributed lag specification. *Ekonomi Bisnis, 25*(1), 14-25. https://doi.org/10.17977/um042v25i1p14-25

Adelowokan, O. A., Maku, O. E., Babasanya, A. O., & Adesoye, A. B. (2019). Unemployment, poverty and economic growth in Nigeria. *Journal of Economics & Management*, *35*, 5-17. https://doi.org/10.22367/jem.2019.35.01

Agbasi, O. E., Edoko, T. D., & Ezeanolue, U. S. (2018). Economic growth and poverty reduction in Nigeria. *Sumerianz Journal of Economics and Finance*, *1*(1), 31-36.

Akanbi, O. A. (2015). Structural and institutional determinants of poverty in Sub-Saharan African countries. *Journal of Human Development and Capabilities*, *16*(1), 122-141. https://doi.org/10.1080/19452829.2014.985197

Akeju, K. F., & Olanipeun, D. B. (2014). Unemployment and economic growth in Nigeria. *Journal of Economics and Sustainable Development*, *5*(4), 138-44.

Akutson, S., Messiah, A. J., & Araf, Y. D. (2018). The impact of unemployment on economic growth in Nigeria: An application of autoregressive distributed lag (ARDL) bound testing. *Sumerianz Journal of Business Management and Marketing*, *1*(2), 37-46.

Alhowaish, A.K. (2015). Causality between construction sector and economic growth: The case of Saudi Arabia. *International Real Estate Review*, *18*(1), 131-147.

Ali, I., & Pernia, E.M. (2003). *Infrastructure and poverty reduction - What is the connection?* ERD Policy Brief Series, 13, Economics and Research Department, Manila, Philippines: Asian Development Bank. http://www.adb.org/Economics/default.asp

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

Anderson, E., d'Orey, M. A. J., Duvendack, M., & Esposito, L. (2018). Does government spending affect income poverty? A meta-regression analysis. *World Development, 103*, 60-71. https://doi.org/10.1016/j.worlddev.2017.10.006

Arltová, M., & Fedorová, D. (2016). Selection of unit root test on the basis of length of the time series and value of AR(1) parameter. *Statistika, 93*(3), 47- 64.

Auwal, U. (2012). Nexus of public expenditure, employment and poverty reduction in Nigeria: An empirical analysis. *The 53rd Annual Conference of Nigerian Economic Society (NES), Youth Employment and Poverty Reduction in Nigeria*, 27th -30th August, 2012, Abuja, Nigeria.

Babatunde, S. A. (2018). Government spending on infrastructure and economic growth in Nigeria. *Economic Research - Ekonomska Istraživanja, 31*(1), 997-1014. https://doi.org/10.1080/1331677X.2018.1436453

Bello, M. A., & Roslan, A. H. (2010). Has poverty reduced in Nigeria 20 years After?. *European Journal of Social Sciences, 15*(1), 7-17.

Bidemi, O. J. (2016). Fiscal policy and unemployment in Nigeria. *The International Journal of Social Sciences and Humanities Invention*, *3*(2), 1887-1891. https://doi.org/10.18535/ijsshi/v3i2.9

Calderon, C., Kambou, G., Korman, V., Kubota, M., & Canales, C. C. (Eds.) (2019). *Africa's Pulse, No. 19, April 2019: An Analysis of Issues Shaping Africa's Economic Future*. International Bank for Reconstruction and Development / The World Bank. https://doi.org/10.1596/978-1-4648-1421-1

CBN. (2019). *2018 Statistical Bulletin: Public Finance Statistics.* Central Bank of Nigeria. https://www.cbn.gov.ng/documents/Statbulletin.asp

Charles, D., Nenbee, S. G., & Krama, I. J. (2018). Public investment in the social sector and employment generation in Nigeria, 1980-2016. *Greener Journal of Social Sciences*, *8*(1), 001-011.

Chotia, V., & Rao, N. V. M. (2017a). An empirical investigation of the link between infrastructure development and poverty reduction: The case of India. *International Journal of Social Economics*, *44*(12), 1906-1918. https://doi.org/10.1108/IJSE-06-2016-0154

Chotia, V., & Rao, N. V. M. (2017b), Investigating the interlinkages between infrastructure development, poverty and rural–urban income inequality: Evidence from BRICS nations. *Studies in Economics and Finance*, *34*(4), 466-484. https://doi.org/10.1108/SEF-07-2016-0159

Corral, P., Molini, V., & Oseni, G. (2015). *No condition is permanent: Middle class in Nigeria in the last decade.* Policy Research Working Paper 7214, World Bank.

Dankumo, A. M., Ishak, S., Bani, Y., & Hamza, H. Z. (2019). The Relationship between Public Expenditure, Corruption and Poverty in Nigeria. *Jurnal Ekonomi dan Studi Pembangunan, 11*(1), 76 –89. https://doi.org/10.17977/um002v11i12019p076

Darma. (2014). Federal capital expenditure and its impact on economic growth in Nigeria: 1980–2010. *Developing Country Studies, 4*(4), 24–33.

Dickey, D. A., & Fuller, W. A. (1979). Distributions of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association 74*(366), 427–431. https://doi.org/10.2307/2286348

du Plessis, C. (2001). Sustainability and sustainable construction: The African context. *Building Research and Information, 29*(5), 374-380. https://doi.org/10.1080/09613210110063809

Elliott, G., Rothenberg, T. J., & Stock, J. H. (1996). Efficient tests for an autoregressive unit root. *Econometrica, 64*(4), 813–836. https://doi.org/10.2307/2171846

Engle, R. F. & Granger, C. W. J. (1987). Cointegration and error correction representation, estimating and testing. *Econometrica, 55*(2), 251–276. https://doi.org/10.2307/1913236

Enilolobo, O. S., Mustapha, S. A., & Ikechukwu, O. P. (2019). Nexus between agriculture and Unemployment in Nigeria. *Journal of Economics, Management & Trade, 22*(5), 1-13. https://doi.org/10.9734/JEMT/2019/v22i530103

Eregha, P. B. Sede, P. S., & Onotaniyohwo, F. O. (2012). Does the composition of public expenditure matter for growth in Nigeria?. *Pakistan Journal of Social Sciences, 9*(3), 125-131. https://doi.org/10.3923/pjssci.2012.125.131

Ewubare, D. B., & Maeba, S. L. (2018). Effect of public expenditure in construction and transportation sectors on employment in Nigeria. *International Journal of Science and Management Studies, 1*(4), 130-136.

Ewubare, D. B., & Okpani, A. O. (2018). Poverty and income inequality in Nigeria (1980-2017). *International Journal of Advanced Studies in Ecology, Development and Sustainability*, *5*(1), 138-151.

Ghouse, G., Khan, S. A., & Rehman, A. U. (2018). ARDL model as a remedy for spurious regression: Problems, performance and prospectus. *Munich Personal RePEc Archive*, 83973. https://mpra.ub.uni-muenchen.de/83973

Iheanacho, E. (2016). The contribution of government expenditure on economic growth of Nigeria: Disaggregated approach. *International Journal of Economics & Management Sciences, 5*(5), 1–9. https://doi.org/10.4172/2162-6359.1000369

Ilugbusi, B. S., Ajala, R. B., Nkire, N. L., & Ojo, O. D. (2019). The nexus between unemployment and economic growth in Nigeria (1986-2018). *International Journal of Innovative Research & Development, 8*(12), 264-270. https://doi.org/10.24940/ijird/2019/v8/i12/DEC19047

IMF. (2020a). *Regional economic outlook, Sub-Saharan Africa: COVID-19: An unprecedented threat to development.* World economic and financial surveys, Washington, DC: International Monetary Fund, April 20. https://www.imf.org/en/Publications/REO/SSA/Issues/2020/04/01/sreo0420.

IMF. (2020b). *World economic outlook update, June 2020: A crisis like no other, an uncertain recovery.* International Monetary Fund. https://www.imf.org/en/Publications/WEO.

Isa, D. P., Arham, M. A., & Dai, S. I. (2019). Effects of capital expenditures, development index and unemployment on poverty in Gorontalo Province. *Jambura Equilibrium Journal*, *1*(1), 23-30.

Ismail, S. (2018). *Developing a framework for sustainable industrialised building systems for infrastructure projects in Malaysia.* PhD. Dissertation, School of Civil Engineering and Built Environment Science and Engineering Faculty Queensland University of Technology.

Jaiyeola, A .O., & Bayat, A. (2020). Assessment of trends in income poverty in Nigeria from 2010–2013: An Analysis Based on the Nigeria General Household Survey. *Journal of Poverty,* 24(3), 185-202. https://doi.org/10.1080/10875549.2019.1668900

Khan, R.A. (2008). Role of construction sector in economic growth: Empirical Evidence from Pakistan economy. In Lodi, S.H., Ahmed, S.M., Farooqi, R.U. & Saqib, M. (Eds.), *First International Conference on Construction in Developing Countries.* August 4-5, 2008, Karachi, Pakistan.

Kwiatkowski, D., Phillips, P. C. B., Schmidt, P., & Shin, Y. (1992). Testing the null hypothesis of stationarity against the alternative of a unit root: How sure are we that economic time series have a unit root?. *Journal of Econometrics, 54*(1-3), 159–178. https://doi.org/10.1016/0304-4076(92)90104-Y

Marinho, E., Campelo, G., França, J., & Araujo, J. (2017). Impact of infrastructure expenses in strategic sectors for Brazilian poverty. *Economia, 18*(2), 244-259. https://doi.org/10.1016/j.econ.2017.01.002

Mehmood, R., & Sadiq, S. (2010). The relationship between government expenditure and poverty: A cointegration analysis. *Romanian Journal of Fiscal Policy*, *1*(1), 29-37.

Muhammad, U. F., & David, J. (2019). Relationship between poverty and unemployment in Niger State. *Signifikan: Jurnal Ilmu Ekonomi, 8*(1), 71-78. https://doi.org/10.15408/sjie.v8i1.6725

NBS. (2010a). *Annual abstract of statistics 2010.* Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2010b). *National manpower stock and employment generation survey, household and micro enterprise (informal sector).* Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2012). Annual Abstract of Statistics, 2012. Federal Republic of Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

NBS. (2014a). *Nigerian capital importation: Summary report 2007-2014.* Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2014b). *Review of definition and methodology for computing unemployment statistics in Nigeria.* Held at Ayalla Hotel, Garki, Abuja, 8th –10th September, 2014, Report of National Stakeholders' Workshop, The National Bureau of Statistics.

NBS. (2016a). *Unemployment/under-employment report Q2 2016.* Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2016b). *Nigerian gross domestic product report. Quarter four 2015,* 8. Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2016c). *Post GDP rebasing revision: 1981-2010.* Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2017a). *Nigerian gross domestic product report (Q4 2016).* Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2017b). *Nigerian gross domestic product report (Q1 2017).* Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2018a). *Nigerian gross domestic product report Q4 and full year 2017.* www.nigeranstat.gov.ng

NBS. (2018b). *Labour Force Statistics vol.2: Employment by Sector Report - Q3 2017.* Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2019). *Nigerian gross domestic product report Q4 and full year 2018*. Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2020a). *Covid-19 impact monitoring, Nigeria COVID-19 National Longitudinal Phone Survey (COVID-19 NLPS) 2020 Baseline*. Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng.

NBS. (2020b). *2019 Poverty and inequality in Nigeria: Executive Summary.* Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2020c). *Nigerian gross domestic product report (Q1 2020)*. Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

NBS. (2020d). Nigeria living standards survey: A survey report by the Nigerian National Bureau of Statistics (in collaboration with the World Bank) 2018/2019. Abuja, Nigeria: National Bureau of Statistics. www.nigeranstat.gov.ng

Nduka, J. A., Ananwude, A. C., & Osakwe, C. I. (2019). Expenditure of the Federal Government of Nigeria: Effect on the standard of living of her citizens. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *9*(4), 57-64. https://doi.org/10.6007/IJARAFMS/v9-i4/6658

NESG. (2020). *Nigeria in a new decade: Priority for accelerated growth, job creation and poverty reduction.* NESG Macroeconomic Outlook 2020, Nigeria Economic Summit Group. https://www.nesgroup.org/download_resource_documents/2020-macroeconomic-outlook-ecopy_1580247818.pdf

Njoku, A. (2011). Unemployment and Nigerian economic growth (1985-2009). In *Proceedings of the 2011 International Conference on Teaching, Learning and Change,* Internal Association for Teaching and Learning (IATEL).

Nwosa, P. (2016). Impact of macroeconomic policies on poverty and unemployment rates in Nigeria, implications for attaining inclusive growth. *Acta Universitatis Danubius. Œconomica, 12*(2), 114-126.

Nwosa, P. I. (2014). Government expenditure, unemployment and poverty rates in Nigeria. *Journal of Research in National Development (JORIND)*, *12*(1), 77-84.

Oaikhenan, H. E., & Aigheyisi, O. S. (2015). Investment, government expenditure and unemployment in Nigeria. *The Nigerian Journal of Economic and Social Studies, 57*(2), 201-223.

Ogun, T. P. (2010). *Infrastructure and poverty reduction: Implications for urban development in Nigeria.* Working Paper No. 2010/43, Helsinki, Finland: United Nations University, World Institute for Development Economics Research (UNU-WIDER).

Oke, A., Ogungbile, A., Oyewobi, L., & Tengan, C. (2016). Economic development as a function of construction project performance. *Journal of Construction Project Management and Innovation, 6*(2), 1447-1459.

Okoye, P. U., Ngwu, C., Ezeokoli, F. O., & Ugochukwu, S.C. (2016). Imperatives of economic fluctuations in the growth and performance of Nigeria construction sector. *Microeconomics and Macroeconomics 4*, 46–55. https://doi.org/10.5923/j.m2economics.20160402.02

Okungbowa, F. O. E. (2014). Globalisation and poverty rate in Nigeria: An empirical analysis. *International Journal of Humanities and Social Sciences, 4*(1), 126-135.

Oladinrin, T. O., Ogunsemi, D. R., & Aje, I. O. (2012). Role of construction sector in economic growth: Empirical evidence from Nigeria. *FUTY Journal of the Environment, 7*(1), 50-60. https://doi.org/10.4314/fje.v7i1.4

Olatunji, S. O., Oke, A. E., & Aghimien, D. O. (2016). Effect of construction project performance on economic development of Nigeria. *Journal of Economics and Sustainable Development, 7*(12), 142-149.

Olawunmi, O., & Adedayo, E. L. (2017). Unemployment and economic growth in Nigeria in the 21st century: VAR approach. *ACTA Universitatis Danubius, Œconomica, 13*(5), 155-168.

Omari, L.V., & Muturi, W. (2016). The effect of government sectoral expenditure on poverty level in Kenya. *Journal of Economics and Sustainable Development,* 7(8), 219-242.

Omodero, C.O. (2019) Government sectoral expenditure and poverty alleviation in Nigeria. *Research in World Economy, 10*(1), 880-90. https://doi.org/10.5430/rwe.v10n1p80

Onifadde, S. T., Ay, A., Asongu, S. A., & Bekun, F. V. (2019). Revisiting trade and unemployment nexus: Empirical evidence from the Nigerian economy. *African Governance Development Institute Working Paper,* WP/19/079.

Ortiz, O., Castells, F., & Sonnemann, G. (2009). Sustainability in the construction industry: A review of recent developments based on LCA. *Construction and Building Materials*. *23*(1), 28-39. https://doi.org/10.1016/j.conbuildmat.2007.11.012

Osei, V. (3013). The construction industry and its linkages to the Ghanaian economy-polices to improve the sector's performance. *International Journal of Development and Economic Sustainability, 1*(1), 56-72.

Oxfam International. (2017). Inequality in Nigeria: Exploring the drivers. Oxfam International. https://www-cdn.oxfam.org/s3fs-public/file_attachments/cr-inequality-in-nigeria-170517-en.pdf

Oxford Business Group. (2020). *The report: Nigeria 2019.* Oxford Business Group. https://oxfordbusinessgroup.com/nigeria-2019/construction-real-estate

Pesaran, M. H., & Shin, Y. (1999). An autoregressive distributed-lag modelling approach to cointegration analysis. In *The Ragnar Frisch Centennial Symposium: Econometrics and Economic Theory in the 20th Century.* Cambridge University Press.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics, 16*(3), 289–326.

Phillips, P. & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika 75*(2), 335-346. https://doi.org/10.2307/2336182

Salisu, A. K., & Arshad, R. (2019). Poverty alleviation strategies: a comparative study between Nigeria and Malaysia. *American Journal of Research*, 1-2, 27-38, https://doi.org/10.26739/2573-5616-2019-1-4

Sasana, H., & Kusuma, P. (2018). Government expenditure and poverty in Indonesia. In *International Conference on Economics, Business and Economic Education 2018, KnE Social Sciences* (pp.142–153). https://doi.org/10.18502/kss.v3i10.3125

Shrestha, M. B., & Bhatta, G. R. (2018). Selecting appropriate methodological framework for time series data analysis. *The Journal of Finance and Data Science, 4*(2), 71-89. https://doi.org/10.1016/j.fds.2017.11.001

Siyan, P., Adegoriola, A. E., & Adolphus, J. A. (2016). Unemployment and inflation: Implication on poverty level in Nigeria. *Munich Personal RePEc Archive,* 79765. https://mpra.ub.uni-muenchen.de/79765/

Sodipe, O. A., & Ogunrinola, O. I. (2011). Employment and economic growth nexus in Nigeria. *International Journal of Business and Social science, 2*(11) (Special Issue-June).

Vol.9 (2021) no.1, pp.17-38 ; DOI 10.2478/mdke-2021-0002

Taye, O. O., & Dada, M.O. (2012). Appraisal of private sector involvement in infrastructure development in Lagos State Nigeria. *Mediterranean Journal of Social Sciences. 2*(2), 399-412.

Timilsina, G. R., Hochman, G., & Song, Z. (2020). *Infrastructure, economic growth, and poverty: A review*. World Bank Policy Research Working Paper No. 9258. https://ssrn.com/abstract=3612420

Udoma, U. U. (2018). *Public presentation of the 2018 FGN budget: 2018 budget of consolidation.* Abuja, Nigeria: Budget Office of the Federation, Federal Republic of Nigeria.

Udoma, U. U. (2019). *Breakdown of 2019 FGN budget approved*. Public presentation of the 2019 budget of continuity. Abuja, Nigeria: Budget Office of the Federation, Federal Republic of Nigeria.

Ukwueze, E. R. (2015). Determinants of the size of public expenditure in Nigeria. *SAGE Open, 3*(4), 1-8. https://doi.org/10.1177/2158244015621346

UNDP. (2019). Human development report 2019. *Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century*. United Nations Development Program. http://hdr.undp.org/en/content/human-development-report-2019

World Bank (2016). *Federal Republic of Nigeria poverty work program: Poverty reduction in Nigeria in the last decade.* Report No. –NGA, World Bank Poverty Global Practice Africa Region, Washington, DC. USA.

World Bank. (2014). *Nigeria economic report*. Washington, DC: Document of the World Bank, World Bank. http://hdl.handle.net/10986/19980

Yahaya, N. (2019). Relationship between government expenditure and poverty: A study of Nigeria (1965-2014). *IOSR Journal of Economics and Finance*, *10*(6), 39-52. https://doi.org/10.9790/5933-1006043952

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