GOVERNMENT HEALTH EXPENDITURE AND INCLUSIVE GROWTH IN NIGERIA: THE ROLE OF INSTITUTIONS

ABANEME ESTHER NGOZI
Department of Economics, Babcock University
Ilishan Remo, Ogun State, Nigeria.
Email: estherabaneme@gmail.com, Phone: +2347066452294

AJIBOLA JOSEPH OLUSEGUN
Department of Economics, Babcock University
Ilishan Remo, Ogun State, Nigeria.
Email: ajibolao@babcock.edu.ng**,** Phone: +2348034409494

ABSTRACT
The study empirically examined the effect of government health expenditure on inclusive growth and the role of institution in Nigeria from 1990-2023. The data were sourced from Central Bank of Nigeria Statistical bulletin (2023) and World Development Indicators database. Unit root test was conducted using Augmented Dickey Fuller (ADF) and Phillip Perron Statistics. Result from these tests indicated that the variables were integrated in order I (0) and I (1). Autoregressive Distributive Lag Model (ARDL) was employed. The result indicated that government health expenditure had positive significant effect on inclusive growth in the long run. The interaction of government health expenditure and institutional quality had positive insignificant effect on inclusive growth both in the short and long run. The study therefore concluded that institutions in Nigeria limit government effort in achieving inclusive growth. Based on the findings, we recommend that there should be total reform of Nigerian institutions by the government.
Keywords: Inclusive growth, Government health expenditure, institutional quality
JEL Codes: H51, OI5, H11, O55

1 INTRODUCTION

National and international agencies have recently focused on inclusive growth, but what does it mean and how can we measure its presence or absence (Suryanarayana, 2008)? Despite lacking a universally clear definition and measure, people generally understand inclusive growth as growth that simultaneously increases and equitably distributes household consumption (Ayeni & Omobude, 2018). The concept underscores the active involvement of the poor in economic activities, aiming to prevent social conditions from deteriorating into violence and unrest. Without inclusive growth, a nation's social fabric can degrade, potentially leading to violence and social disturbance. Inclusive growth actively addresses income distribution mismatches and mitigates gross class income disparities, benefiting the disenfranchised through the widespread sharing of benefits across the population (Ayeni & Omobude, 2018). The concept and need for inclusive growth discussions have been prevalent among scholars, policymakers, and academics for decades, so much so that multinationals have made several briefings and reports, the International Monetary Fund (IMF), the World Bank, and the Organization of Co-operation and Development (OECD), beckoning economies to pursue growth that is more inclusive.

The World Inequality Report 2018 underscored the concern as regards growth exclusion, revealing that the top 10% of the world's wealthiest captured 60% of income growth, leaving only 10% for approximately 50% of the world's poorest. Scholars, such as Aransi, (2019), emphasize the urgency of addressing the growing issue of growth exclusion, which occurs when a nation's economic growth disproportionately benefits a select few, leaving the majority excluded. Inclusive growth acts as a catalyst, lifting people out of poverty by ensuring productive employment and income generation for a broader population. As a result, the global rise in income inequality led to a consensus among economic and political leaders in favour of inclusive global growth (Koob, 2019). The GDP per person employed stands as a pivotal measure of inclusive growth. According to Bhalla (2007), employment income is the primary source of income for the poor. Therefore, fostering employment growth is central to achieving inclusive growth. Poor health funding in developing countries like Nigeria has the consequences of draining the income and savings of households, and these out-of-pocket health expenditures escalate poverty in these countries. According to the World Poverty Clock, the consequences of poor health funding included Nigeria overtaking India in 2018 as the country with the largest number of people living below the poverty line. In 2023, the World Poverty Clock again estimated that about 103 million Nigerians live in extreme poverty. Nigeria's government consistent low annual budgetary allocation to the health sector (15% recommended by the African Union in 2001) could be attributed to her weak institutional quality. However, the attribution of this shortfall to weak institutions creates challenges in aligning budgetary commitments with sector needs, thereby raising concerns about overall human capital outcomes. The gaps between recommended and actual allocations underscore the urgent need for concerted efforts to prioritise and invest adequately in human capital.

Effective institutional quality is crucial to maximizing returns on investments in human capital (Acemoglu & Robinson, 2005). High-quality institutions proficiently guide human capital towards its most productive applications (Dias & Tebaldi, 2012; Rodriguez & Loomis, 2007). Indicators of institutional quality encompass government effectiveness, accountability, political stability, the rule of law, corruption control, and regulatory quality (Acemoglu & Robinson, 2005). Evidence from Olanrewaju, Aremo and Binuyo (2020) and Omoke & Opula (2021), indicates that high-quality institutions influence inclusive growth. Even though Africa has been associated with underdevelopment, chronic poverty, and dependence on natural resources, its GDP exhibited rapid and consistent growth from the early 2000s up until 2020 due to COVID-19, when it had a 2.1% contraction. Despite the overall growth, there has been significant variability, as not everyone is benefiting. In response to this variability in the share of benefits, inclusive growth further gained attention, acknowledging that despite a reduction in absolute poverty, benefits have remained concentrated among a few elites (Aslam, 2020). Given the potential benefits of human capital investment and institutions on inclusive growth separately, it is vital to harvest the effect of human capital investment on inclusive growth in Nigeria as well as the interactive effect of institutional quality.

Empirical review has exposed that studies on human capital investment and inclusive growth in Nigeria are limited, therefore posing a gap that needs filling. There are more investigations on economic growth than on inclusive growth in Nigeria specifically. This study has expanded scope by viewing the inclusive growth. the recognition of the importance of achieving inclusive growth in Nigeria underscore the need for government support on initiatives prioritize human development such as government investment in health sector. On this bedrock, this study investigated the effect of government health expenditure on inclusive growth in Nigeria as well as the moderating role of institutional quality for a 34year period. The study captured inclusive growth proxied by GDP per person employed (GDPPPE) while institutions was viewed via an institutional quality index employing Principal Component Analysis (PCA) to simplify the data

set while minimizing information loss. Specifically, the study seeks to avail answers to the following research questions: what is the effect of government health expenditure on GDP per person employed? What is the interactive effect of institutions and government health expenditure on GDP per person employed?

2. LITERATURE REVIEW

2.1 Theoretical Literature

New Growth Theory/ Endogenous Growth Theory

The New Growth Theory commonly referred to as endogenous growth theory, has several prominent economists accredited with contributing to its formulation. Among them are Paul Romer (1980s), Robert Lucas (1988), Robert Barro (1990s), and Charles Jones (1995). Paul Romer is particularly recognised in formulating the concept of endogenous technological change. This concept implies that internal factors within the economy, namely research and development (R&D) and human capital development, play a crucial role in influencing technological progress. While the theory places considerable weight on these endogenous factors, it also acknowledges that certain elements of growth, such as knowledge spill-overs and external shocks, may be exogenous or influenced by global factors. Robert Lucas played a pivotal role in introducing the concept of human capital accumulation and its integral role in fostering economic growth and innovation.

Robert Barro, on the other hand, contributed significantly to new growth theory by examining the intricate relationship between economic growth, government policy, and political institutions. His work also highlighted the impact of public investment on influencing economic growth. The basic equation of the Barro model builds on the Cobb-Douglas production function, with government spending explicitly included as a productive input that affects output. The model assumes that government expenditure enhances productivity and that the growth rate of an economy can be influenced by government policies. Charles Jones, another notable contributor, emphasized the critical importance of education levels and research and development (R&D) in driving technological progress within the framework of endogenous growth theory. Together, these economists have enriched the theory by exploring various dimensions of how internal factors, particularly human capital, government policies, and knowledge accumulation, shape sustained economic growth.

Additional proponents such as Lin (2017) and Jorgenson and Fraumeni (1992) assert that a nation's economic growth primarily stems from its human capital. They argue that the extent of education investment can gauge the developmental status of human capital (Lin, 2017; Jorgenson and Fraumeni, 1992). Jorgenson and Fraumeni (1992) assert that investments in education facilitated a substantial portion of the post-war economic growth in the United States. This perspective has led many nations to adopt policies granting free education to their citizens, underscoring the view that education is an investment in human capital. This New Growth Theory, however, faces criticism from notable economists, including Robert Solow, Paul Krugman, Tyler Cowen, and William Baumol.

Robert Solow criticized endogenous growth theory for overlooking the role that physical capital accumulation plays in economic growth. Another critic, Paul Krugman, takes issue with the theory's assumption of endogenous growth, particularly questioning the spill-over effects from technological innovation. Tyler Cowen also criticizes the new growth theory, arguing that investments in research and development (R&D) and human capital do not universally drive technological progress. Additionally, Robert Gordon argues that it is an overstatement to assert that technological progress is the sole driver of sustainable economic growth. These critiques

highlight the diverse perspectives and challenges faced by endogenous growth theory from respected economists in the field. For example, the new growth theory failed to provide a satisfactory explanation for the extraordinary growth and convergence of the sudden industrialization of economies in Asia in countries such as Taiwan, Hong Kong, Japan, South Korea, China, and Singapore during the last three decades of the twentieth century (Pack, 1994; Grossman & Helpman, 1994).

It was noticed that during the catchup process, the level of investment made by these newly developed Asian countries was much lower than that of the developed countries, yet they were able to catch up. This therefore led many economists to believe that what makes the developing countries fail to catch up with the developed ones is their bad institutions and not their failure to invest in factors that facilitate technological innovation. The bad institutions include government interventions and regulations, including the escalation of corruption, the inability to properly protect investors, and excessive social conflicts (Shleifer et al., 1998; Rodrick, 1998; Acemoglu et al., 2001; 2002; Djankov et al., 2003). According to Rodrick (2003), the reason institutions have received significant attention in the growth theory is because it has been clear that institutions are of utmost significance in initiating and sustaining economic growth.

Theory of Institutions

Douglas North (1991) is an economist who made significant contribution to the understanding of economic institutions. Douglas emphasized the vital role of institutions on developmental economics. He stresses that institutions are the structure that human impose on human activities in attempt to define choices made by individuals and society at large. North emphasized the significance of an institutions for its effectiveness. This perspective emphasizes the importance of strong institutions, property rights, and rule of law in ensuring that economic growth benefits all segments of society. Well-functioning institutions can mitigate corruption and promote equitable economic opportunities.

According to North, 'institutions are the humanly devised constraints that structure political, economic and social interaction'. Institutions include both formal rules (constitutions, laws, property rights) and informal constraints (sanctions, taboos, customs, traditions, and codes of conduct). He opined that institutions are formed by humans to create order and reduce uncertainty in exchange. He went further to explain that institution work together with the standard constraints of economics to define the choice set to determine transaction and production costs as well as the profitability and feasibility of engaging in economic activity. North also infer that institutions evolve incrementally, connecting the past with the present and the future. Maintaining that history as a result is largely a story of institutional evolution in which the historical performance of economies can only be understood as a part of a sequential story. Institutions was also said to provide the incentive structure of an economy and shapes the economic direction as the institution evolves, change in pursuit of growth, stagnation or even decline.

2.2 Empirical Review

Karaçor et al. (2017), using the panel data method, analyzed the relationship between expenditures on education and economic growth for selected 20 OECD countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Iceland, Ireland, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, and the and the UK) using panel data estimations (models) based on annual data for the period between 1998 and 2012. The study went ahead to highlight the element of health as a significant factor that

determines the value of a country, even though the study topic did not state so. The study concluded that there existed a correlation between educational expenditure and economic growth in the countries. The study results, however, revealed that education expenditure had no significant effect on the GDP of the OECD countries. The weakness found in this study is around its Abstract', which did not contain the five essential sentences, which are the problem to be investigated, the methodology, the findings, the conclusion, and the recommendations. It only contained the problem to be investigated, but in the last paragraph instead of being in the first paragraph. The article was, as a matter of fact, poorly arranged. Another weakness of the article is the time gap between the paper's publication and the scope of the scope of the research work. It took a whole seven years for the work to be published, which made the paper less relevant. The study did not extend to inclusive growth.

Diebolt & Hippe (2019) employ a large dataset to investigate the long-run relationship between human capital, innovation, and economic development in the European region, covering the 19th and 20th centuries. In the study, human capital was measured by literacy, numeracy, and economic development by GDP per capita, while innovation was measured by patent application per million inhabitants. The control variables used were fertility, nuptiality, infant mortality, population density, and share of employment for the non-agricultural sectors, while agricultural productivity and dummy variables were used for capital regions and the regions of the new European countries. The finding of the study was that a significant positive relationship existed between historical human capital on one side and innovation and economic development on the other side. The study also concluded that past regional human capital was a key factor in explaining regional disparities in innovation and economic development. Despite the contributions these studies have made to existing literature, they all ignored the vital role institutions play in the development of any nation. The relationship between educational expenditure and economic growth in Turkey was investigated by Keçili and Ethem (2020) employing an econometric model, and the study covered a period between 1998 and 2019. The study findings showed that education expenditures had a significant impact on economic growth in Turkey.

Evidence from Emerging Countries

Rumbogo et al. (2021), adopting a generalized least squares (GLS) panel regression on 33 provinces over a 5-year period (2011–2015), investigated the role financial inclusion plays in the inclusive development of Indonesia. The study found that financial access had a significant positive effect on regional economic development in Indonesia when accounting for the influence of broader economic conditions and the development level of the region. Lapinskas et al. (2021) examined the impact of a country's resource wealth management (in the context of environmental agreements, green growth, sustainable development, and resource use intensification) on the level of inclusive growth in Russia. According to the empirical study, an increase in sustainable development had a significant positive effect on inclusive growth. Employing fixed effects regression with panel annual data for 68 countries (which include 31 high-income countries, 24 upper middle-income countries, 12 lower middle-income countries, and 1 low-income country) from 1990 to 2015, Kang & Martinez-Vazquez (2022) identified conditions under which FDI can successfully lead to inclusive growth. The finding of the study was that with a high level of manufacturing and infrastructure, FDI affected inclusive growth more positively.

Evidence from Trans-national Studies.

Agyei & Idan (2022), using the General Method of Moment Estimation technique, investigated the trade openness and inclusive growth nexus in Sub-Saharan Africa (SSA), employing

institutions as the moderating variable. The study covered the period the period from 1996 to 2017.The study found that trade openness had a positive relationship with inclusive growth in the SSA. Another finding was that institutions enhanced the positive relationship that existed between trade openness and inclusive growth in Sub-Saharan African countries. With the aid of the two-step system generalised method of moments (Sys-GMM), Nketia et al. (2022) investigated how institutional quality, income inequality, and foreign aid impact inclusive growth in about 48 countries in Africa, covering a period between 2002 and 2018. The finding of the study was that, apart from government effectiveness, the other indicators of institutional quality all had a positive impact on inclusive growth. If there is an improvement in the rule of law by a unit, inclusive growth will rise by 0.57% in the short run. The study maintained that if the implementation of the rule of law maintains the same trajectory, its impact on inclusive growth will not be significant in the long run, but if the reverse is the case, a significant effect will be experienced in inclusive growth.

The negative impact of institutional quality on inclusive growth may be due to, though strongly written policies, poor implementation of the policies. Properly implemented policies would contribute to inclusive growth in Africa. The study further showed that a negative relationship existed between inclusive growth and foreign aid in all the models, as holding all other things constant, a 1% rise in foreign aid would cause inclusive growth to decline by between -0.013% and 0.04% in the short run for all the models. However, the study found that the model involving rule of law interacting with inclusive growth and the model involving control of corruption also interacting with inclusive growth found that foreign aid had a positive impact on inclusive growth in both the short-run and long-run. This implies that in Africa, foreign aid alone does not impact inclusive growth positively unless it interacts with strong institutional quality. On the part of gross capital formation, the study discovered that gross capital formation had a significant positive impact on inclusive growth in both the short-run and long-run.

It was also found that negative government expenditures impacted inclusive growth which implied that African governments of African countries misappropriated funds by spending heavily on sectors that do not necessarily generate income. The government wastes spending on matters like debt servicing, high infrastructural costs, and high remuneration for government appointees. Kwilinski et al. (2023) conducted a panel study across 26 EU countries, utilising fully modified ordinary least squares (FMOLS) and canonical cointegrating regression (CCR) techniques. Their aim was to explore the correlation among energy, governance efficiency, and inclusive growth. The study's focal variable was energy consumption, while the independent variables comprised institutional quality (IQ), gross domestic product per capita (GDP), electronic government (eGov), and trade openness (TO). GDP and TO serve as control variables.

The primary focus of the study was the composite measure of institutional quality (IQ), which encompassed dimensions such as voice and accountability, political stability, government effectiveness, regulatory quality, the rule of law, and control of corruption. Additionally, government efficiency was approximated by individual indicators of electronic government (eGov). Using FMOLS, the study uncovered both linear and nonlinear connections among the variables under scrutiny. It was revealed that institutional quality (IQ) exhibited a statistically significant positive influence on energy consumption. Specifically, a 1% increase in IQ corresponded to a 0.087% uptick in energy usage. Similarly, electronic government (eGov) demonstrated a significant positive impact on energy consumption, with a 1% rise in eGov leading to a 0.06% increase in energy consumption at a 10% significance level.

Moreover, trade openness (TO) was found to exert a significant effect on energy consumption, with a 1% increase in TO associated with a 0.17% enhancement in energy consumption at a 1% significance level. Additionally, the study revealed a nonlinear relationship between eGov and energy consumption. This nonlinearity suggested that while eGov initially had a positive effect on energy consumption, a further increase in eGov led to a negative impact on energy consumption. Specifically, a 1% increase in eGov resulted in a 0.09% reduction in energy consumption. Furthermore, the study highlighted that trade openness (TO) had a significant positive impact on energy consumption. Specifically, a one percent increase in TO correspond to a 0.17% rise in energy consumption. This positive relationship between TO and energy consumption persisted in both the linear and non-linear models, with a 1% increase in TO resulting in a 0.17% increase in energy consumption at a 1% significance level. The study's findings regarding the negative relationship between electronic government (eGov) and energy consumption suggest potential adverse implications for Sustainable Development Goal 7 (SDG7). This implies that the digitization of eGov could lead to a reduction in energy consumption. In the linear model, a 1% increase in eGov was associated with a 0.002% decrease in energy consumption, while in the non-linear model, the reduction was more pronounced at 0.30%.

This has broader implications, potentially exacerbating the digital divide and hindering inclusive growth. Owepetu et al. (2024) employed General moment (GMM) and Feasible Generalized Least square estimation method to investigate the effect of human capital development on inclusive growth in Sub-Saharan African countries covering the period between 2000 and 2021. The study had inclusive growth index and GDP per person employed as the dependent variables while the independent variables were health aspect of human capital development and life expectancy at birth. The moderating variables were; control of corruption and rule of law while the control variable was gross capital formation.

The study found that life expectancy at birth when moderated with control of corruption had significant negative effect on inclusive growth index such that a unit increase in life expectancy at birth leads to a 0.4% decline in inclusive growth index. On the flip side also, the study found that life expectancy at birth when moderated with rule of law still had significant negative effect on inclusive growth index such that a unit increase in life expectancy at birth leads to a 0.4% decline in inclusive growth index. The study further found that an increase in public expenditure on health had significant raised the log of inclusive growth by 4.45%. Gross capital formation was found to show significant positive effect on inclusive growth index such that a unit rise in gross capital formation would have 0.03% increase on inclusive growth index.

Another finding was that labour force had significant negative effect on inclusive growth index in that a unit increase in labour force participation decreases inclusive growth index by 0.28. The control of corruption was found to have a significant positive effect in inclusive growth index such that a unit increase in control of corruption would increase inclusive growth index by 2.86%. Concerning GDP per person employed, the study finding was that both life expectancy at birth and public expenditure on health had significant impact on it. Finally, improvement in life expectancy requires that strong institutional quality be in place. Increase in public investment allocation will foster the achieving inclusive growth in the Sub-Saharan Africa.

Evidence from Nigeria

Raji, (2021) investigated the relationship that exists among financial inclusion, institutional quality, and inclusive growth in Nigeria, employing quarterly time-series data for the sample period between 2003Q1 and 2018Q4. The study incorporated government effectiveness and

regulatory quality as measures of institutional quality. The empirical finding was that a bi-directional causal relationship was identified between financial inclusion and inclusive growth in the long run.

In the short run, a negative bi-directional causal relationship was found between financial inclusion and government effectiveness, while a negative bi-directional causal relationship existed between inclusive growth and regulatory quality. The implication of this outcome is that despite improved financial development, the government has continued to ignore the persistent widening income gap and poverty increase. The study, therefore, recommends that for the existence of financial inclusion, institutional quality, and inclusive growth, it must be suggested that for the authorities of this economy to achieve and sustain equitable growth, there must be full discipline in the implementation of the institutional policies, which will therefore promote and enhance financial inclusion and inclusive growth. Using the Johansen co-integration technique, Ajayi & Oburota (2022) employed social opportunity methodology to investigate how inclusive growth had been achieved over time as it relates to the equitable distribution of opportunity in the education, health, and employment sectors of Nigeria.

The study found that about 43% of the population had access to employment opportunities, with a higher rate of females than males employed. This was attributed to the rise in female education and their shift from being full-time housewives and carers to working in the formal and informal sectors of the economy. Another finding of the study was that, though significant progress was made in the utilisation of government health facilities, only about 22% of the of the population of the poor had access to a government hospital, while over 70% of the population patronised private health facilities. Furthermore, even though the study found that there was an equitable distribution of primary school enrolment, less than 50% of children were enrolled for the period of the study. The study therefore asserts that from the results there are indications that the poor may not attain beyond primary school in education, thereby concluding that inclusive growth had not been achieved for sthe period of the study in Nigeria.

Ifeakachukwu and Fagite (2024) chose to investigate the connection between macroeconomic policy, institutional quality, and inclusive growth in Nigeria employing a fully modified Ordinary Least Square, considering a study period between 1996 and 2021. The variables of the study included inclusive growth (proxied by per capita real gross domestic product (RGDP)), broad money (M2), government expenditure (GOV) proxied by fiscal policy, institutional quality (INSTQ), exchange rate (EXR), and inflation rate (INFL). The study employed the principal component analysis (PCA) technique in deriving the institutional quality. The measures are six in number, which include control of corruption, rule of law, political stability and absence of violence or terrorism, voice and accountability, government effectiveness, and regulatory quality. These variables were subjected to PCA, and the index scores were obtained, which served as a proxy for aggregate institutional quality.

According to the results of the study, a negative relationship was found to exist between fiscal policy and inclusive growth. It was noted that a 1% rise in government expenditure led to a 0.07% reduction in inclusive growth in Nigeria. This negative relationship was attributed to the poor allocation that the government gave to human capital like education and health. When it came to the interaction between broad money supply and inclusive growth, the study found that M2 had a significant positive effect on inclusive growth, as a 1% increase in M2 caused a 0.25% increase in inclusive growth. Concerning exchange rate influence on inclusive growth, the result was a negative relationship, as a 1% depreciation in the exchange rate decreased inclusive growth by approximately 0.02%. This was attributed to the over dependence of the real sectors of the country on inputs that are imported.

In addition, the study found that the inflationary rate had a negative effect on inclusive growth. It was noticed that a 1% increase in inflation led to a 0.05% depletion in inclusive growth. The consequences of this are the high cost of accessing good healthcare, quality education, a good diet, and all other good things that make life comfortable. When government expenditure was interacted with institutional quality, the result showed a positive relationship. A 1% rise in fiscal policy caused a positive 0.09% effect on institutional quality, which indicates that good institutions will favourably influence government expenditure in Nigeria. Again, the interaction between M2 and institutional quality had a positive effect, as a 1% rise in monetary policy had a 0.073% rise in institutional quality, which indicates that sound institutions will influence monetary policy and contribute to a rise in inclusive growth. My opinion, therefore, is that macroeconomic policy can only have a positive impact on inclusive growth if there is a sound institutional quality in Nigeria.

3 METHODOLOGY

3.1 Theoretical Framework

The Robert Barro Endogenous Growth Model, often referred to as the Barro Model, which incorporates government policy, particularly focusing on the role of productive government expenditures in fostering long-run economic growth was adapted in this study. The basic equation of Robert Barro model is built on the Cobb-Douglas production function, where government expenditure is explicitly included as a productive input that affects output. The model assumes that government expenditure foster productivity and that government policies enhances an economy's growth rate. The Cobb-Douglas Production function with government expenditure as a productive input is written typically as:

$$Y(f) = A * K(t)^{\propto} * \left(G(t)\right)^{\beta} * L(t)^{1-\alpha-\beta}$$

The justification for choosing Barro model as framework for this study is because Robert Barro model explicitly focuses on government expenditure as a propeller of growth. Barro model is also a valuable tool for understanding the impact of public policy on economic development. In summary, Barro model aligns well with our focus on the effect of human capital investment on inclusive growth, and the role of institutions in Nigeria.

3.2 Model specification:

Regression Model

$$LnGDPPPE_t = \alpha_0 + \alpha_1 GOVEH_t + \alpha_2 Inf + \alpha_3 Unemp + \varepsilon_t \qquad (3.1)$$

Based on the results of the ADF, PP unit-root tests result which showed that our variables are integrated of mixed order (which is I(0) and I(1)) and bound test results showing that the variables were co-integrated, ARDL model of co-integration was therefore specified to show the short-run and long-run effects of GOVEH and on GDPPPE. Therefore, equation 3.2 was re-specified as the following error correction model:

$$\Delta \ln G\, DPPPE_t = \alpha_0 + \alpha_{1t} \sum_{i=1}^{p} \Delta \ln G\, DPPPE_{t-1} + \alpha_{2i} \sum_{i=1}^{p} \Delta \ln G\, OVEH_{t-1} +$$
$$\alpha_{3t} \sum_{i=t}^{p} \Delta INF_{t-1} + \alpha_{5t} \sum_{i=1}^{p} \Delta UNEMP_{t-1} + \beta_1 \ln G\, OVEH_{t-1} + \beta_2 INF_{t-1} + \beta_3 UNEMP_{t-1} + \varepsilon_t$$

(3.2)

where Δ denoted change in the short-run changes, α_j (1, 2, 3, 4) are the short-run parameters and β_j (1, 2, 3, 4) are the long-run parameters, while ε_t is the error term. $\ln GDPPPE_t$ represented lag value of GDP per person employed, $\ln GDPPPE_{t-1}$ depicted one-period lagged value of GDP per person employed, $ln\ G\ OVEH_{t-1}$ stood for one-period lagged value of government expenditure on health,, INF_{t-1} represented one-period lagged of inflation rate and $UNEMP_{t-1}$ represented one-period lagged of unemployment rate. α_j (0, 1, 2, 3, 4) denoted vector of the parameter of the model while α_j (1, 2, 3, 4) depicted vector of the coefficient of the explanatory variables in the model. α_0 was the intercept of the model and it stood for the level of Nigeria GDP per person employed when human capital investment and the control variables were absent. Each of the coefficients represented the nature and magnitude of the effect of the associated explanatory variable on the explained variable.

$$LNGDPPPE_t = \varpi_0 + \varpi_1 GOVEH_t * INSq + \varpi_2 Inf * INSq + \varpi_3 Unemp * INSq + \varepsilon_t \quad (3.3)$$

In ascertaining the interactive effect of institutions and human capital investment on GDP per person employed, equation 3.3 was re-specified as the following:

$$\Delta \ln G\ DPPPE_t = \alpha_0 + \alpha_{1t} \sum_{i=1}^{p} \Delta \ln G\ DPPPE_{t-1} + \alpha_{2i} \sum_{i=1}^{p} \Delta \ln I\ NSQ * GOVEH +$$

$$\alpha_{3t} \sum_{i=t}^{p} \Delta INF_{t-1} + \alpha_{5t} \sum_{i=1}^{p} \Delta UNEMP_{t-1} + \beta_1 \ln I\ NSQ * GOVEH_{t-1} + \beta_2 INF_{t-1} + \beta_3 UNEMP_{t-1} + \varepsilon_t$$

3.3b

where $\ln INSQ*GOVEH_{t-1}$ is institutional quality interacted with government expenditure on health. α_0 remained the intercept of the model and it stood for the level of Nigeria GDP per person employed when human capital investment and the control variables were zero. Each of the coefficients represented the nature and magnitude of the effect of the associated explanatory variable on the explained variable.

3.3 Data and Sources

In this study, inclusive growth was the dependent variable measured by GDP per person employed (*GDPPPE*) while the independent variable was government health expenditure measured by government expenditure health (GOVEH).

Institutional quality was used as the interactive variable and it was proxied by control of corruption (*Cc*), rule of law (*Rl)*, voice and accountability (*Va*), government effectiveness (*GovEf*), political stability (*PS*), and regulatory quality (*RegQt)* following Neketia et al. (2022), and Ifeakachukwu & Fagite (2024) for which also used PCA. PCA is a statistical technique use for dimensionality reduction and data compression while preserving the most important

information or pattern in the data set. The data were sourced from World Bank World Development Indicator (WDI) database. The data source is a very authoritative therefore the data is considered authentic and reliable. The study covers the period 1990-2023 and the period was constrained based on the data availability.

Furthermore, the data used was a time series data, and because time series data is known for lack of stationarity, we employed ADF and Philip Peron tests tools to treat the unit root. The presence of unit root can lead to spurious regression results whereby apparent relationships are detected between variables even when none exist. The unit test result showed that the variables were stationary at levels 1(0) and first difference, meaning that the variable were integrated at mixed order. ARDL model of cointegration was therefore employed to identify the short and long-run relationships of the variables. ARDL model is highly flexible; as it can handle regressors that are integrated of order I (0), or I (1), or a combination of both. Additionally, the ARDL model effectively addresses potential endogeneity issues in regression analysis (Pesaran et al.2001).

3.4 Principal Component Analysis

Eigenvalues

Table 4.1 presents the eigenvalues of the correlation matrix of the six different indicators that constitute institutional quality (INSTQ). The sum of the eigenvalues is equal to the number of individual indicators.

Table 4.1: Eigenvalues

Number	Value	Difference	Proportion	Cum Value	Cum Proportion
1	3.532515	1.667692	0.5888	3.532515	0.5888
2	1.864823	1.476621	0.3108	5.397339	0.8996
3	0.388203	0.234931	0.0647	5.785541	0.9643
4	0.153271	0.108547	0.0255	5.938813	0.9898
5	0.044725	0.028262	0.0075	5.983537	0.9973
6	0.016463	---	0.0027	6.000000	1.0000

Source: Authors' computation (2025) using E-Views 10

The first principal component explains the maximum variance (59%) in all the individual indicators (eigenvalue of 3.53). The second principal component explains the maximum amount of the remaining variance (31%), with an (eigenvalue of 1.86). The third principal component explains 0.6% of the variance with an (eigenvalue of 0.39), the fourth principal component explains the remaining (0.03%) of the indicators at (eigenvalue of 0.15) of the variance, the fifth principal component explains (0.008%) of the indicators at (eigenvalue of 0.04) of the variance while the sixth principal component explains the remaining (0.003%) of the indicators at (eigenvalue of 0.016) of the variance. Therefore, the first two principal components are more relevant measures of institutional quality as they explain over 89% of the variance.

Table 4.2: Eigenvectors (loadings):

Variable	PC 1	PC 2	PC 3	PC 4	PC 5	PC 6
CC	0.522141	-0.067580	0.147824	-0.099951	-0.498356	-0.665283
GOV_EFFT	-0.107991	0.632997	0.720049	0.258131	-0.049629	0.009333
PS	0.404530	0.425422	-0.033748	-0.711621	0.372684	0.094519
RL	0.523032	-0.083639	0.069732	0.123465	-0.414404	0.726364
RQT	0.448910	0.294583	-0.389282	0.629356	0.379111	-0.142640
VA	0.277451	-0.565675	0.549668	0.075100	0.542982	-0.020672

Source: Authors' computation (2025) using E-Views 10

As noted in Table 4.2, the positive coefficients for the first principal component (PC1) imply that it represents the overall measure for institutional quality. The maximum weights in PC1 and PC3 are for Government effectiveness (GOV_EFFT) of institutional quality suggesting that there is a strong influence of this variable in these components. Rule of law has the strongest influence in PC1 and PC6 while regulatory quality shows the largest positive weight in PC4. Therefore, this study used PCA to determine an appropriate composite index for institutional quality.

INSQ = 0.487311CC - 0.028480 GOV_EFFT + 0.437385PS + 0.487554RL + 0.468761RQT + 0.336105VA……4.1

Where, INSQ = the first principal component for institutional quality

Cc = control of corruption

Rl = Rule of law

Va = Voice and accountability

GovEf = Government effectiveness

PS = political stability

RegQt = Regulatory quality

4. RESULTS AND DISCUSSION OF FINDINGS

Table 4.1: Descriptive Statistics

	GDP PPE	GOV EH	INF	INSQ	UNE MP
Mean	1300 0.17	133.0 69	18.2 500	-2.0693	4.012 7
Median	1277 3.01	72.08 14	12.9 350	-2.4122	3.827 0
Maxim um	1816 8.91	437.5 21	72.8 300	2.7793	5.712 0
Minim um	8836. 113	0.150 2	5.38 00	-3.5726	3.074 0
Std. Dev.	3341. 655	145.7 066	15.9	1.4569 0	0.570 9
Skewn ess	0.097 9	0.872 2	2.17 99	2.5561	1.606 2
Kurtosi s	1.427 0	2.394 9	6.85 14	8.4879	4.899 9
Jarque- Bera	3.559 3	4.829 4	47.9 419	79.686 9	19.73 22
Probab ility	0.168 7	0.089 4	0.00 00	0.0000	0.000 1
Sum	4420 05.9	4524. 375	620.5 000	- 70.3560	136.4 310
Sum Sq. Dev.	3.68E +08	70060 3.7	8355. 261	70.0447	10.754 5
Observ ations	34	34	34	34	34

Source: Authors' computation (2025) using E-Views 10

Notes: *GDPPPE represent gross domestic product per person employed and GOVEH represent government expenditure on health and were measured in billions of Naira, while INF, INSQ, and UNEMP were in percentage. INSQ was PCA generated indices of institutional quality. INF means inflation, INSQ represent institutional quality and UNEMP denotes unemployment.*

Table 4.2 Unit Root Test Result

	ADF			PHILIP-PERRON		
Variable	Intercept	Trend and intercept	None	Intercept	Trend and Intercept	None
LNGDPPPE	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
LNGOVEH	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
INSQ_GOVEH	1(0)	1(0)	1(0)	1(0)	1(0)	1(0)
INFL	1(1)	1(1)	1(1)	1(0)	1(0)	1(0)
UNEMP	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)

Source: Authors' computation (2025) using E-Views 10

Notes**:** *GDPPPE represent gross domestic product per person employed and GOVEH represent government expenditure on health, INF means inflation, INSQ represent institutional quality and UNEMP denotes unemployment.*

The result presented in table 4.2 represented the summary for unit root test using Augmented Dickey Fuller (ADF) and Phillip Perron (PP). The result showed that GDP per person employed (LNGDPPPE), government expenditure on health (LNGOVEH), and unemployment rate (UNEMP) were all stationary at first difference (I(1) while the interaction of institutional quality and government expenditure on health (INSQ_GOVEH) was stationary at level under ADF and Phillip Perron and inflation rate (INFL) was stationary at levels (I(0) under Phillip Perron but stationary at first difference under ADF. The implication of the result is that the variables are not integrated in the same order of integration. As a result, the best estimation technique is auto- regressive Distributive Lag Model (ARDL) as developed by Pesaran and Shine (2010).

Table 4.3 Lag Length Criteria for objective 1

Lag	LogL	LR	FPE	AIC	SC	HQ
0	30.69138	NA	0.011192	-1.657509	-1.426220	-1.582114
1	71.78375	66.27801*	0.000844	-4.244113	-3.966567*	-4.153640*
2	72.87720	1.693090	0.000842*	-4.250142*	-3.926339	-4.144590
3	73.01638	0.206520	0.000893	-4.194605	-3.824544	-4.073975

Source: Authors' computation using E-views 10.0 (2025)

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final Prediction Error
AIC: Akaike Information Criterion
SC: Schwarz Information Criterion
HQ: -Hannan- Quinn Information Criterion

The result depicts that different lag criteria has their respective lag length. The most commonly use lag criteria is Akaike Information Criterion (AIC). From the result depicted in table 4.3, AIC chose lag 2 as the best lag length for the model.

Table 4.4: Bound test result

Test Statistics	Value	K
F-statistic	6.755661	4
CRITICAL VALUE BOUNDS		
Significance	1(0) Bound	1(1) Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Authors' computation using E-views 10 (2025).

Result in table 4.4 shows that F-statistics value is 6.76 while the upper bound test result is 4.01. As a result, the null hypothesis is rejected. The implication is that there is long run relationship among the variables. Having identified that, both short and long run form ARDL result will be presented.

Table 4.5: Regression Output without Interaction of Institutional Quality

PANEL A: SHORT RUN MODEL				
VARIABLE	COEFFICIENT	STANDARD ERROR	T-STATISTICS	PROBABILITY
lnGDPPPE(-1)***	0.889895	0.041256	21.56996	0.0000
lnGOVEH	0.024048	0.023655	1.016606	0.3191
INF	-0.000394	0.000378	-1.044151	0.3064
UNEMP***	-0.045140	0.009059	-4.982912	0.0000
C	1.243937	0.382174	3.254894	0.0032
CointEq(-1)**	-0.110105	0.041256	-2.668801	0.0132
PANEL B: LONG RUN FORM				
lnGOVEH**	0.664127	0.230354	2.883069	0.0080
INF	-0.003580	0.003852	-0.929405	0.3616
UNEMP**	-0.409975	0.192739	-2.127098	0.0435
C	11.297764	0.890341	12.689249	0.0000
Post Estimation Test				
Panel A: Breusch-Godfrey Serial Correlation LM Test				

F-statistic	0.433317	Prob. F (2,23)	0.6535
Obs*R-squared	1.198280	Prob. Chi-Square (2)	0.5493
Panel B: Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.950949	Prob. F (7,25)	0.4867
Obs*R-squared	6.939117	Prob. Chi-Square (7)	0.4352
Scaled explained SS	4.945623	Prob. Chi-Square (7)	0.6666
Panel C: Ramsey RESET Test			
	Value	Df	Probability
t-statistic	0.680343	24	0.5028
F-statistic	0.462866	(1, 24)	0.5028

Source: Authors' computation using E-views 10 (2025).

Note: *, ** and *** denote significant at 10%, 5% and 1% respectively.

As seen in the result of table 4.5, the sign of the coefficient of government expenditure on healthcare was consistent with the *a priori* expectation, which was expected to have a positive sign. One percentage increase in government expenditure on healthcare led to 0.02% increase in GDP per person employed in the short run and to 0.66% increase in the long run. This showed that government expenditure on health is a significant factor in increasing GDP per person employed in Nigeria in the long run. Consequently, the null hypothesis that government health expenditure had no significant effect on GDP per person employed was rejected both in the short-run and long-run. The long-run outcome corroborated the finding of Olayinka (2016) for Nigeria.

Table 4.6: Lag Length Criteria for objective 2

Lag	LogL	LR	FPE	AIC	SC	HQ
0	18.71692	NA	0.024234	-0.884963	-0.653675	-0.809569
1	66.75303	77.47759*	0.001168*	-3.919550*	-3.642004*	-3.829077*
2	67.20884	0.705770	0.001213	-3.884441	-3.560638	-3.778889
3	67.23462	0.038261	0.001297	-3.821589	-3.451527	-3.700958

Source: Researchers' computation using E-views 10 (2025).

The result in Table 4.6 depicted that different lag criteria has their respective lag length. The most commonly used lag criteria is Akaike Information Criteria (AIC). From the result depicted in table 4.6, AIC chose lag 1 as the best lag length for the model.

Table 4.: 7 Bound Test result for objective 2

Test Statistics	Value	K
F-statistic	5.234319	4
CRITICAL VALUE BOUNDS		
Significance	1(0) Bound	1(1) Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Researchers' computation using E-views 10 (2025).

Result in table 4.7 showed that F-statistics value is 5.234319 while the upper bound test result was 4.01. As a result, the null hypothesis is rejected. The implication was that there is long run relationship among the variables. Having identified that, both short and long run form ARDL result will be presented similar to that of Table 4.5.

Table 4.8: Regression Output with Interaction of Institutional Quality

PANEL A: SHORT RUN FORM				
VARIABLE	COEFFICIENT	STANDARD ERROR	T-STATISTICS	PROBABILITY
LNGDPPPE(-1)***	0.893688	0.062189	14.37047	0.0000
INSQ_GOVEH	0.000149	0.000128	1.165909	0.2542
INF**	-0.000815	0.000344	-2.368949	0.0256
UNEMP	-0.027788	0.018855	-1.473762	0.1526
CointEq(-1)**	-0.106312	0.062189	-1.709501	0.0093
C	1.287135	0.621900	2.069679	0.0486
PANEL B: LONG RUN FORM				
INSQ_GOVEH	0.001403	0.001590	0.882153	0.3858
INF	-0.007667	0.005367	-1.428576	0.1650
UNEMP**	-0.700645	0.319568	-2.192477	0.0375
C	12.107096	1.347608	8.984141	0.0000
Post Estimation Test				

Panel A: Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.008073	Prob. F (1,25)	0.9291
Obs*R-squared	0.010653	Prob. Chi-Square (1)	0.9178

Panel B: Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.895952	Prob. F (6,26)	0.1196
Obs*R-squared	10.04392	Prob. Chi-Square (6)	0.1228
Scaled explained SS	5.800748	Prob. Chi-Square (6)	0.4459

Panel C: Ramsey RESET Test			
	Value	Df	Probability
t-statistic	1.733917	25	0.0953
F-statistic	3.006468	(1, 25)	0.0953

Source: Authors' computation using E-views 10 (2025). Note: Note: *, ** and *** denote significant at 10%, 5% and 1% respectively

Furthermore, as shown on Table 4.8, the interaction of government expenditure on health and institutional quality had positive but insignificant effect on GDP per person employed both in the short and long run ($\beta_3 = 0.0001$, p-value = 0.2542 > 0.05; $\alpha_2 = 0.001$, p-value = 0.3858 > 0.05). Therefore, the null hypothesis that the interactive effect of institutions and government expenditure on healthcare has no significant effect on GDP per person employed was not rejected. This insignificant positive effect on inclusive growth result conforms to the findings of Nketia et al. (2022) on 48 countries in Africa, Ogundipe et al. (2021) for Nigeria, and Ifekachukwu, & Fagite (2024) for Nigeria. The insignificant positive outcome is an indication that Nigeria has weak and ineffective institutions which consequently hampered the positive effect health expenditure on inclusive growth of Nigeria.

It is a known fact that developing countries like Nigeria, even if the government invests hugely, the presence of weak institutional would definitely dampen the outcome. This has been the challenge Nigeria is facing because of her corruption, lack of accountability. Furthermore, the government of Nigeria had refused to comply with agreement made at the African Union Abuja Declaration in 2001 that every member country should allocate 15% of the annual budget to the health sector of the country. This misallocation of budget has continued to keep Nigeria in a state of economic unsustainability which had caused more poverty, income and wealth inequality and lack of equal opportunity for all. The implication is that Nigeria has consistently experience human capital flight and brain drain.

5. CONCLUSION AND POLICY RECOMMENDATIONS

Based on the results from our analyses, we can draw conclusion regarding the effects of government expenditure on health, as well as the role of institutional quality in Nigeria's inclusive growth. From the findings, we can conclude therefore that the institutions of Nigeria are ineffective and weak. This means that the quality of the institutions is not strong or adequate to harness the economic potential embedded in the human capital of Nigeria.

Given the findings that the interaction of institutions and government investment in health did not promote inclusive growth in Nigeria, this study recommended that government should immediately enforce relevant laws to strengthen the capacity of the institutions to be able to enforce the right annual budget allocation of 15% as recommended by African Union for the health sector. The government of Nigeria should be able to enforce policies that will ensure that financial assistance from international, local donors, and philanthropic bodies in the country are properly channeled to the purpose of human capital development. In addition, the government of Nigeria should leverage on TETFund grant as well as the National Research Fund (NRF) to ensure that our human capital is developed.

The government of Nigeria should also strengthen the law of the Nigeria through the appropriate anti-corruption agencies like the Economic and Financial Crime Commission (EFCC) and the Independent Corrupt Practice and Other Related Offences Commission (ICPC). This will strengthen the general participation of workers in the entire economy. If these recommendations are considered, then the institutions and human capital investment of Nigeria will concurrently stimulate greater significance in the inclusive growth of Nigeria.

REFERENCES

Acemoglu, D., Johnson, S., & Robinson, J. A. (2005). Institutions as a fundamental cause of long-run growth. *Handbook of economic growth*, *1*, 385-472.

Ali, I., & Son, H. H. (2007). Measuring inclusive growth. *Asian Development Review*, *24*(1), 11.

Aransi, W. O. (2019). Direction of causality between human capital investment and economic growth in Nigeria: Lesson For policy makers. *International Journal of Academic Management Science Research*, *3*(2), 19-26.

Aslam, A. (2020). The hotly debate of human capital and economic growth: why institutions may matter? *Quality & Quantity*, *54*(4), 1351-1362.

Ayeni, A. O., & Omobude, O. F. (2018). Educational expenditure and economic growth nexus in Nigeria (1987-2016).

Babasanya, A. O., Oseni, I. O., & Awode, S. S. (2018). Human capital development: A catalyst for achieving SDGs in Nigeria. *Acta Universitatis Danubius.Oeconomica*, *14*(4). 25-41

Bhalla, S. (2007). Inclusive growth? Focus on employment. *Social Scientist*, 35(7/8): 24–43.

Dias, J., & Tebaldi, E. (2012). Institutions, human capital, and growth: The institutional mechanism. *Structural change and economic dynamics*, *23*(3), 300-312.

Diebolt, C., & Hippe, R. (2019). The long-run impact of human capital on innovation and economic development in the regions of Europe. *Applied Economics*, *51*(5), 542-563.

Ejemeyovwi, J. O., & Osabuohien, E. S. (2018). Investigating the relevance of mobile technology adoption on inclusive growth in West Africa. *Contemporary Social Science*.

Ianchovichina, E., & Lundström, S. (2009). Inclusive growth analytics: Framework and application. *World Bank Policy Research Working Paper*, (4851).

Ifeakachukwu, N. P., & Fagite, B. A. (2024). Macroeconomic Policy, Institutional Quality and Inclusive growth in Nigeria. ,*The Pakistan Development Review*, *63*(1), 89-10

.Kang, H., & Martinez-Vazquez, J. (2022). When does foreign direct investment lead to inclusive growth? *The World Economy*, *45*(8), 2394-2427.

Karaçor, Z., Güvenek, B., Ekinci, E., & Konya, S. (2017, October). Relationship with education expenditure and economic growth in OECD countries: A panel data analysis. In *DIEM: Dubrovnik International Economic Meeting; 3(1); 255-269.*

Keçili, M. Ç., & Ethem, E. S. E. N. (2020). The Relationship between Educational Expenditure and Economic Growth: The Case of Turkey. *Equinox Journal of Economics Business and Political Studies*, *7*(2), 114-126.

Koob, S. (2019). Inclusive Economic Growth: Are we talking about the same thing? *New Societal Contract. https://www.oecd-forum.org/users/297466-sigrid-koob/posts/52681-*

Kwilinski, A., Lyulyov, O., & Pimonenko, T. (2023). Inclusive economic growth: Relationship between energy and governance efficiency. *Energies*, *16*(6), 2511.

Lapinskas, A., Makhova, L., & Zhidikov, V. (2021). Responsible resource wealth management in ensuring inclusive growth. *Polish Journal of Management Studies, 23(2), 288-304.*

Lehne, J., Mo, J., & Plekhanov, A. (2014). What determines the quality of economic institutions? Cross-country evidence.*European Bank for Reconstruction and Development, Working Paper 171*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3121122#

Nketia, E. B., Kong, Y., Korankye, B., & Ampon-Wireko, S. (2022). The influence of inequality, institutional quality, and foreign aid on inclusive growth in Africa. *African Review of Economics and Finance*, *14*(2), 160-182.

Ogundipe, A. A., Mobolaji, O., & Ogundipe, O. M. (2021). An Analysis of the Effect of Human Capital Investment on Economic Development in Nigeria: Does a New Indicator Alter Existing Evidence? *Asian Economic and Financial Review*, *11*(1), 17-29

Olanrewaju, G. O., Aremo, A. G., & Binuyo, B. O. (2020). Inclusive growth effects of institutional quality in Nigeria. *European Scientific Journal, ESJ*, *16*(1), 85-105.

Oluwadamilola, O., Akinyemi, O., & Adediran, O. (2018). Human capital development and inclusive growth: Implications for achieving SDG-4 in Nigeria. *African Population Studies*, *32*(1), *4088- 4096.*

Pouw, N., Rohregger, B., & Schüring, E. (2018). *Social protection in Kenya and Ghana through an inclusive development Lens: complexity, risks and limitations* (No. 18/3). IZNE Working paper series.

Rodriguez, J. P., & Loomis, S. R. (2007). A new view of institutions, human capital, and market standardisation. *Education, Knowledge & Economy*, *1*(1), 93-105.

Rumbogo, T., McCann, P., Hermes, N., & Venhorst, V. (2021). Financial inclusion and inclusive development in Indonesia. *Challenges of Governance: Development and Regional Integration in Southeast Asia and ASEAN*, 161-181.

Suryanarayana, M. H. (2008). What Is Exclusive about 'Inclusive Growth'? Economic and Political Weekly, 93-101.