

PUBLIC SPENDING AND INCLUSIVE GROWTH IN AFRICA: DO GOVERNMENTAL INSTITUTIONS MATTER?

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Abstract

This study conducted an empirical analysis of the relationship between public spending, inclusive growth, and governmental institutions in 32 Sub-Saharan African (SSA) countries from 1991 to 2019. The research utilized a two-stepwise Generalized Method of Moments (GMM) estimation approach. The findings indicated that education expenditure and government consumption expenditures had a negative and significant association with inclusive growth, while health expenditure had a positive but insignificant impact on growth inclusiveness. When considering governance as a moderator, without any interacting variables, the effects of the expenditure variables remained largely unchanged. Furthermore, the results demonstrated that the different dimensions of governance had a positive and significant influence on inclusive growth. However, when incorporating interaction terms between public expenditure components and governance dimensions, the findings suggested that regardless of the aspect of governance measured, governmental institutions in SSA countries did not enhance inclusive growth. The paper concluded with a discussion of policy implications based on the research findings.

Keywords: Public Spending; Inclusive Growth; Governance; Sub-Saharan Africa

1. INTRODUCTION

A useful metric adopted in summarising the effects of public spending on the growth of an economy is the so-called public spending multiplier (Konstantinou & Partheniou, 2019). This implies the amount of additional output generated by an extra dollar of spending (Ramsey, 2011). Although different expenditure components may produce different multipliers, a question that may arise is whether the economy responds differently to public spending depending on the state of governance and institution.

Institutions are critical in fostering economic development and inclusive growth. Economies with efficient institutional structure and good governance have been argued to be making more remarkable progress towards attaining sustainable and inclusive growth (Monticelli, et al. 2016; Castro-Gonzales & Espina, 2016; Dzhumashev, 2014; Yang & Stoltenberg, 2014; Urban & Hwindingwi, 2016; Puffer, McCarthy & Jaeger, 2015;). Thus, the role of institutional quality in driving the course sustainable economic progress and welfare cannot be overemphasized. Their contribution to inclusive growth transcends resource mobilization and public spending. Thus, transparency, accountability, and

corruption in the public and private sectors, quality of budgetary and public financial management, and government capacity in implementing policy and services delivery are critical in determining the distributional effects of public expenditure.

The fewness of empirical studies on the SSA integrating institutional quality and governance factors into the expected inclusive growth outcomes of government spending only leaves us with more questions as to whether they really matter. The above contention appears even more persuasive at a time when there are growing concerns that the most SSA countries are predisposed to administrative and political corruption, government partiality, poor policy coordination, maldistribution of resources, and bureaucratic bottlenecks which have been considered undermining factors to growth, development and social progress (Ahlerup et al. 2016; Batzilis, 2020; Awdeh & Hamadi, n.d; Shi & Ji, 2020; Bigsten & Tengstam, 2015; Agoba et al. 2018).

Rogof (2009) asserts quality of governance is critical for growth. And nations and regions with effective governments are more likely to make public spending decisions that foster sustainable growth and development (Morozumi & Veiga, 2016; Butkiewicz & Yanikkaya, 2011). For instance, in times of high rate of unemployment, increased public spending is often encouraged to stimulate aggregate spending. Given the same macroeconomic framework, the long-term growth path of the economy is assumed to be dependent upon resources, technology, and governance the factors listed above, and not basically on the level of public expenditure. Even as these expenditures prove to be effective means of providing stimulus in the short-run, their long-term growth effects are very important (Shen, Yang & Zanna, 2018; Butkiewicz & Yanikkaya, 2011; Wu, Tang & Lin, 2010). The impact of public expenditure on growth has been examined extensively, largely with conflicting results. This, in fact, is the case for total expenditure, the disaggregation between consumption and capital expenditures, and several components of public spending.

The primary focus of the analysis is how governance dimensions complement public spending in fostering growth inclusiveness. Inclusive growth can be attained through improvements in human capital which can be enhanced through expenditures on education and health care, and gross national expenditure otherwise called government consumption expenditure. Inclusive growth-related public expenditures are expected to increase the level of productivity of citizens, enhance equitable distribution of opportunities and other benefits associated with economic growth prosperity. Further, in theory, a strong governmental institution is expected to bring about increase in well-being and shared prosperity (Oyinlola et al., 2019) by enhancing equity and efficiency of public resource use. Thus, institutional strength analyses the government's capacity to conduct sound economic policies, which foster growth and prosperity by the delivery of sustainable public finances (Mutize & Nkhalamba, 2020). Examining these linkages in the context of the SSA countries by emphasizing how broad dimensions of governance and institutional structures influence the distributional effects of public spending is the major contribution of this study.

A number of studies that attempted to account for governance in the public spending-inclusive growth relationship looked at sub-component of governance like regulatory quality (Gnangoin, et al. 2019), government effectiveness (Butkiewicz & Yanikkaya, 2011) and corruption (Dzhumashev, 2014). While Oyinlola et al., (2019) analysed a broader dimension of good governance as interacting variables, the study focused on resource mobilization rather than public spending. Although D'agostino, Dunne & Pieroni (2016) analysed the interaction between corruption and public spending, the study focus was not on inclusive growth whereas the component of expenditure analysed was military spending. The motivation for this paper arises from the need to fill the gaps in literature. Thus, this paper reports the results of the augmenting role of governance in the inclusive growth effects of public spending in the SSA countries by accounting for broader facets of governance namely political stability, economic stability and institutional foundation. The rest of paper is organized as follows; In Section 2 we reviewed related literature. Section 3 describes the data and our empirical methodology. Our results and discussion are presented in Section 4 and Section 5 contains an extension for social benefits. Section 5 presents our concluding remarks and policy implications.

2. LITERATURE REVIEW

Generally, findings from extant empirical literature on public spending and economic growth have been largely contradictory and most of the studies are mainly reported in the context of developed economies (see Irandoust, 2019; Halkos & Paizanos, 2013; Getachew & Turnovsky, 2015; Forni & Gambett). Some argue that total public spending is positively related to economic growth (Sattar, 1993; Oyinlola & Akinnibosun, 2013; Bose, Haque & Osborn, 2003) while others contend that the growth responds positively to aggregate government expenditures (Schaltegger & Torgler, 2006; Folster & Henrekson, 2001; Levine & Renelt, 1992).

In theory, proper public spending is expected to be effective in stimulating economic growth within an endogenous growth context (Stokey & Rebelo, 1993; Jalles, 2020; Jones, Manuelli, & Rossi, 1993). Since governments are responsible for the provision of wide range of goods and services such as public infrastructure, basic education, national defense, etc., proper allocation of government expenditure largely determines whether the government spending is productive or not (Dissou, Didic & Yakautsava, 2016; Devarajan, Swaroop, & Zou, 1996; Zhang & Li, 2016). Measuring the effect of public spending on inclusive growth allows us to ascertain the effectiveness of certain government expenditure strategies (Kim, 2019; Almanzar & Torero, 2017; Konstantinou & Partheniou, 2019; Ifa & Guetat, 2018; Dvarajan, Swaroop & Zou, 1996).

Dzhumashev (2014) explored how the quality of governance, the size of public spending, and economic development influence the relationship between bureaucratic corruption and growth. The analysis shows that the efficiency of public spending is shaped by the interaction between corruption and governance. In a related study, D'agostino, Dunne & Pieroni (2016) contend that the interactions between investment and corruption and

military spending and corruption exerted strong negative influence on economic growth. Focusing instead on resource mobilization, Oyinlola et al. (2019) analyzed the role of governance in the resource mobilization and inclusive growth relationship in the SSA countries using the Generalized Method of Moments (GMM) estimation the results show that the aggregate tax and disaggregated taxes did not have a significant impact on inclusive growth while a positive direct impact of governance indicators on inclusive growth was found. In a related study, a panel dataset of 23 OECD countries and a sample of 60 countries was analysed by Gwartney et al. (1998) who argued that there exist a strong negative effect of government spending on economic growth, even after the effects of investment, and institutional quality were taken into account.

Wu, Tang and Lin (2011) re-assessed the causal relationship between public expenditure and economic growth using the Dumitrescu-Hurlin panel granger causality approach for 182 developing countries. The results strongly support both Wagner's law that government spending promotes to economic growth irrespective of how government size and economic growth are measured. When the countries were disaggregated by levels of income and the degree of corruption, our results confirmed the bi-directional causality between government activities and growth for the different income levels of countries except for the low-income countries. In related study, Anderson et al. (2017) conducted a meta-regression analysis of the linkages between public expenditure and income poverty in low and middle-income countries. Based on 19 cross-country empirical studies and 169 estimates of this association, their finding showed that no clear evidence that higher public spending played a significant role in reducing income poverty in low- and middle-income countries. In addition, the impact of government expenditure on poverty was on average less negative the Sub-Saharan Africa countries.

Butkiewicz and Yanikkaya (2011) investigated the impact of government spending on economic growth with emphasis on government effectiveness and sub-categories of government spending. The results revealed that total expenditures had negative growth effects for some developed nations. Consumption expenditures were observed to have a negative growth effect in developing countries with ineffective governments. Based on the robust difference-GMM approach, Gnangoin, et al. (2019) analysed the relationship between public spending, income inequality, and growth in 19 Asian countries between 2002 and 2017. The findings revealed that gross domestic investment and regulatory quality exerted positive influence on economic growth whereas current government consumption was found to have detrimental impact on economic growth. Bleaney et al. (2001) found that government consumption expenditure and expenditures on social welfare had no effect on the rate of growth, whereas public investment was found to exert positive influence. A dataset on 43 developing countries examined by Devarajan, Swaroop and Zou (1996) showed that only current government expenditures had a growth impact whereas effects of public spending on infrastructure, education and education were insignificant or negative. They argued that this outcome could be an indication that developing countries spend too much on capital and little on current expenditures, and that quality of government expenditures may have to be closely

observed. In contrast, Turnovsky and Fisher (1995) proposed a theoretical model to assess the effects of government consumption and infrastructure spending. They found that consumption expenditures are less likely productive compared to infrastructure expenditures, but suggested that consumption expenditures could prove to be more productive under certain conditions. Folster and Henrekson (2001) contend that the composition of public expenditure varies considerably between high and low income economies, and that the growth negative effects of public expenditures or consumption arise mostly after a government gets to a certain threshold size.

3. DATA AND METHODOLOGY

3.1 Data and Methodology

In this analysis, we use panel dataset of 32 SSA countries from 1991 to 2019. The main data sources are provided by the World Development Indicators 2019 (World Bank 2019a) and the World Governance Indicators 2019 (World Bank 2019b) of the World Bank. The estimation approach employed in this study is the generalized method of moments (GMM). Existing empirical studies contend that the dynamic panel model is specifically fashioned for a situation where time period “T” is small and number of cross sections “N” is large (i.e. $N > T$) so as to control for possible dynamic panel bias (Roodman, 2006; Baltagi, 2008; Bond, 2002). One of the major advantages of dynamic estimations over traditions models is in their ability to address potential endogeneity issues caused by time-invariant and country-specific effects by internally generating valid instruments (Baltagi, 2005; Hsiao, 2003). In order to solve the problem of endogeneity, we adopt Arellano and Bover (1995), and Blundell and Bond (1998) two-step system generalized method of moments (SGMM) which is considered more robust compared to the one step-wise method. The SGMM estimator comprises the first-differenced equation based on appropriate instruments as the lagged levels, with a further level equation which takes into account appropriate instruments as the lagged first-differences. The instrument validity for over-identifying restrictions could be tested using the Hansen test, while the AR(1) and AR(2) tests checks for the presence of serial correlation (Shi & Ji, 2020). The coefficients’ standard errors are robust to heteroscedasticity (Roodman, 2009).

3.2 Model

This study seeks to assess the level and nature of association between public spending components, governance indicators, and inclusive growth. To do this, we will adopt the Barro (1990) endogenous growth model which highlights the linkages between government policy and the growth rate of an economy. The empirical specification of the model is a panel data form expressed as:

$$\gamma_{it} = \varphi_1^J + \chi_{it}^1 + \varepsilon_{it} \quad (1)$$

Where i denotes each country, t represents time period (with $t = 1, 2 \dots T$), γ_{it} is the log of GDP per person employed and proxy for inclusive growth. χ_{it}^1 Represents the vector of J covariates of public spending components, expressed in ratio of GDP. The public

spending components include:

- Government education expenditure into $EDUXP_{it}$; which comprises current and capital public expenditure on education. It also includes expenditure funded by transfers from international sources to the government.
- Health Expenditures $HEEXP_{it}$; representing healthcare goods and services consumed during each year.
- Current government consumption expenditure, (i.e., the gross national expenditure) in GDP $GNEXP_{it}$. This consists of general government final consumption expenditure, private consumption, and gross capital formation.

When adjustment variables enter the Equation (1) exogenously, we have the following baseline model:

$$\ln GDP_{it} + \beta_0 \ln GDP_{it-1} + \beta_1 GEXP_{it} + \beta_2 INVT_{it} + \beta_3 LFPR_{it} + \beta_4 TOPN_{it} + \varepsilon_{it} \quad (2)$$

(+) (+) (+) (+) (+)

In (Eq. 2), $\ln GDP$ is the natural logarithm of gross domestic product per person employed and the proxy for inclusive growth. This follows the argument of Oyinlola, et al. (2019) and Raheem et al. (2018) among other studies on the usage of natural logarithm of GDP per capita as a proxy for inclusive growth. GDP per person employed is a representation of increased average opportunities in an economy and how these available opportunities are distributed among the population (Oyinlola, et al. 2019). $GEXP$ is the vector of public spending, which is proxy by three indicators of public expenditures; government education expenditure as a share of GDP ($EDUXP$), government health expenditure as a share of GDP ($HEEXP$) and government consumption expenditure as a share of GDP ($GNEXP$).

Theoretically, traditional determinants of growth include labour and capital stock. Accordingly, these variables represent our variables of control and thus are accounted for in our empirical model. Labour is proxied by labour force participation rate in ratio of total population ages 15–64 ($LFPR$) while capital stock is represented by gross fixed capital formation as a ratio of GDP ($INVT$). Trade openness ($TOPN$) is also included in the model and reflects the inward or outward orientation of a given nation's economy. Outward orientation describes economies that take substantial advantage of the opportunities to trade with other economies. Inward orientation refers to such economies that are unable to take significant advantage of the opportunities to trade with other countries (Gnangoin, et al. 2019). The inclusion of trade openness is predicated on its aptitude in explaining the extent of country's receptiveness to foreign businesses (see Oyinlola, et al. 2019). When governance variables and regional time-trends were accounted for, we have the following final extended model:

$$\ln GDP_{it} + \beta_0 \ln GDP_{it-1} + \beta_1 GEXP_{it} + \beta_2 INVT_{it} + \beta_3 LFPR_{it} + \beta_4 TOPN_{it} + \beta_5 GOV_{it} + \varepsilon_{it} \quad (3)$$

(+) (+) (+) (+) (+) (+)

GOV is a vector of governance indicators captured by four indicators; Political index, (average of political stability and voice and accountability); Economic index, (average of regulatory quality, quality of public resource use, and government effectiveness); Institutional index, (average of rule of law and control of corruption) and the aggregate index (average of the sum of all the seven individual indices). Note that quality of public resource use is largely left out or ignored in the construction of institutional quality index. We deem it relevant in this construct since it measures the extent to which the pattern of public expenditures and revenue collection affects the poor and is consistent with national poverty reduction priorities hence, inclusive growth (World Bank, 2019a).

To account for the moderating role of governance in public spending-inclusive growth relationship, we introduced an interaction term in Eq. 3 to generate Eq. 4:

$$\begin{aligned}
 \ln GDP_{it} + \beta_0 \ln GDP_{it-1} + \beta_1 GEXP_{it} + \beta_2 INVT_{it} + \beta_3 LFPR_{it} + \beta_4 TOPN_{it} + \beta_5 GOV_{it} + \beta_6 GOV * GEXP_{it} + \varepsilon_{it} \quad (4) \\
 (+) \quad \quad \quad (+) \quad \quad \quad (+) \quad \quad \quad (+) \quad \quad \quad (+) \quad \quad \quad (+) \quad \quad \quad (+/-)
 \end{aligned}$$

4. RESULTS AND DISCUSSION

This section starts with the analysis of preliminary checks on the variables as presented Table 1. It shows that average values of all the series are positive average except governance indicators (political, institution, economic and aggregate) with negative mean values. This suggests the all the variables have increasing trend while governance indicators have decreasing trends. Among the components of public spending, general consumption expenditure has the highest variation as shown by the wide dispersion in the standard deviation, whereas, government education expenditure is the most stable among public spending components. It can also be observed that the standard deviation of governance indicators displayed varying but relatively stable volatility. Political indicator is shown to be least volatile while the institutional indicator appears to be the most volatile. Based on the mean of the governance indicators, it can be inferred that political index in the sample is the best indicator as indicated while the institutional index ranks behind other behind other aspects of governance index.

Table 1: Descriptive Statistics

Variables	Mean	Min.	Max.	Std. Dev.	Obs.
GDP per capita	11.564	114	16,390	16,112	736
EDUXP	3.52	1.11	10.68	1.78	736
HEAXP	4.98	1.57	12.24	2.08	736
GNEXP	13.5	2.06	30.1	5.54	736
INVT	20.78	2.1	59.72	8.69	736
LFPR	70.2	42.38	88.37	10.19	736
TOPN	68.13	20.96	165.65	33.95	736
Political index	-0.503	-2.054	0.98	0.696	736
Economic index	-0.577	-1.81	1.1	0.578	736
Institutional index	-0.581	-1.73	0.96	0.591	736
Aggregate governance index	-0.553	-1.78	0.87	0.597	736

Source: Authors' compilation. Note: EDUXP: Education expenditure in ratio of GDP. HEAXP: Health expenditure in ratio of GDP: GNEXP: Gross national expenditure as

a ratio of GDP: INVT: gross domestic investment as a share of GDP. TOPN: Trade openness. LFPR: Labor force participation rate, total (% of total population ages 15-64).

Table 2: Correlation matrix

	lnGDP	INVT	LFPR	TOPN	EDUXP	HEAXP	GNEXP	POL.	ECON.	INST.
lnGDP	1									
INVT	0.0829	1								
LFPR	-0.1268	-0.0956	1							
TOPN	0.0934	0.6952	0.0879	1						
EDUXP	-0.0270	0.0105	0.0098	0.0793	1					
HEAXP	0.0398	0.6765	-0.0529	0.4616	0.0812	1				
GNEXP	-0.1315	-0.0513	0.1145	-0.0497	0.0346	-0.0595	1			
POL.	0.1071	-0.0595	0.0930	0.4550	0.1639	-0.4325	0.0556	1		
ECON.	0.1203	-0.0216	0.1130	0.0118	-0.0166	0.0111	0.0294	0.0145	1	
INST.	0.0278	0.7339	0.0392	0.6474	-0.0381	0.7126	0.0023	-0.1916	0.1424	1

Source: Authors' compilation. Note: lnGDP: natural logarithm of GDP per person employed. EDUXP: Education expenditure in ratio of GDP. HEAXP: Health expenditure in ratio of GDP. GNEXP: Gross national expenditure as a ratio of GDP. INVT: gross domestic investment as a share of GDP. TOPN: Trade openness. LFPR: Labor force participation rate, total (% of total population ages 15-64). POL: Political index. ECON: Economic index. INST: Institutional index.

The correlation matrix in Table 2 shows a positive association between GDP per person employed and every other series except trade labour force participation rate (LFPR), education expenditure (EDUXP) and gross national expenditure (GNEXP). To avoid problems associated with multicollinearity, the explanatory variables are checked for high level correlation where variables with correlation above 0.90 should not be part of the same model (Asumadu-Sarkodie & Owusu, 2017). Evidence from Table 2 indicates that there is no strength of relationship among the independent variables that exceeds the 0.90 threshold. Therefore, we can state that no multicollinearity problem exist between the variables.

Table 3: Fisher ADF panel unit root test for the full sample

Variable	Inverse chi-square	Inverse normal	Inverse logit	Modified Inverse chi-square	Inference	Order of integration
lnGDP	410.34***	-10.46***	-10.43***	12.17***	Stationary	I(0)
INVT	432.98***	-9.85***	-10.51***	13.48***	Stationary	I(0)
LFPR	426.88***	-10.03***	-11.33***	15.25***	Stationary	I(0)
TOPN	385.09***	-9.46***	-11.86***	13.59***	Stationary	I(0)
EDUXP	497.45***	-10.75***	-11.55***	12.88***	Stationary	I(0)
HEAXP	391.11***	-11.61***	-10.95***	13.06***	Stationary	I(0)
GNEXP	437.74***	10.67***	-10.47***	13.93***	Stationary	I(0)
POL.	389.29***	-9.29***	-10.81***	14.72***	Stationary	I(0)
ECON.	473.32***	-10.41***	-10.54***	14.03***	Stationary	I(0)
INST.	408.33***	-10.38***	-10.22***	13.11***	Stationary	I(0)

Source: Authors' compilation. Note: LnGDP: natural logarithm of GDP per person employed. EDUXP: Education expenditure in ratio of GDP. HEEXP: Health expenditure in ratio of GDP: GNEXP: Gross national expenditure as a ratio of GDP: INVT: gross domestic investment as a share of GDP. TOPN: Trade openness. LFPR: Labor force participation rate, total (% of total population ages 15-64). POL: Political index. ECON: Economic index. INST: Institutional index. ***, **, and * represents 1%, 5% and 10% significance level, respectively.

For appropriateness of a dynamic panel estimation devoid of spuriousness, Chen et al., (2017) argue that determining the unit root properties of the series is important. This is mainly to ensure that none of the series is stationary in second differencing. Thus, as a requirement for our estimation method, we explored the unit root standing using the panel Fisher ADF test which is considered robustness when analyzing unbalanced panel series. Evidence from Table 3 reveals that all the variables are stationary in level at 1% significance level.

Table 4: Public Spending and Inclusive Growth

Variables	Model 1	Model 2	Model 3
L.lnGDP	0.6083*** (0.0725)	0.6486*** (0.0763)	0.6227*** (0.0758)
INVT	0.2651** (0.0374)	0.2866** (0.0366)	0.2812** (0.0358)
LFPR	-0.0387*** (0.0064)	-0.0381*** (0.0058)	-0.0376*** (0.0053)
TOPN	0.00101 (0.0003)	0.00226 (0.0002)	0.00029 (0.0003)
EDUXP	-0.0447*** (0.0182)		
HEEXP		-0.0014 (0.0002)	
GNEXP			-0.0112** (0.0025)
Observations	681	681	681
Number of crossid	31	31	31
Hansen_test	18.23	21.71	21.42
Hansen Prob	1	1	1
AR(1)_test	-2.425	-2.263	-2.284
AR(1)_P-value	0.022	0.025	0.028
AR(2)_test	-1.463	-1.51	-1.485
AR(2)_P-value	0.132	0.127	0.125
No. of Instruments	208	208	208

Source: Authors' compilation. Note: LnGDP: natural logarithm of GDP per person employed. EDUXP: Education expenditure in ratio of GDP. HEEXP: Health expenditure in ratio of GDP: GNEXP: Gross national expenditure as a ratio of GDP:

INVT: gross domestic investment as a share of GDP. TOPN: Trade openness. LFPR: Labor force participation rate, total (% of total population ages 15-64). ***, **, and * represents 1%, 5% and 10% significance level, respectively.

Table 4 presents the empirical results from two-step system GMM estimation without the inclusion of governance and interactive terms. The result is the baseline model specified in Eq. 2, and show that the lagged coefficients of inclusive growth variable are positive and statistically significant across all the models. This entails that the initial level of inclusive growth in the SSA strongly influences the current level of inclusiveness in the region. It can also be observed that the level of persistence, which is the lagged coefficient of the dependent variable, range between 0.61 and 0.65, suggesting that initial inclusiveness is a good foundation critical to the shared prosperity in the SSA region (Oyinlola et al. 2019).

Expectedly, the coefficient of the gross domestic investment is positive and statistically significant across the models. This implies that gross domestic investment has significant positive influence on inclusive growth. Further, coefficients of labour force participation rate (LFPR) are negative and statistically significant indicating that labour is negatively associated with inclusive growth in the SSA region. This outcome contradicts the theoretical expectation that labour drives inclusive growth. The significantly low contribution of vast labour force in the region can be attributed to predominantly underemployed and low-skilled labour (Oyinlola et al. 2019).

From the public spending standpoint, the results show that the coefficients of education expenditure are negative and significant. Thus, government expenditure on education is negatively related to inclusive growth. This is concerning since education expenditure should reflect in the growth of human capital which is expected to translate to increase in the level of productivity and equitable distribution of benefits associated with economic growth prosperity.

Similarly, the coefficient of health expenditure aspect of human capital is positive and statistically insignificant. This raises questions on the extent of development of the region's healthcare system. The SSA countries like most developing economies still struggle with the provision of inclusive and efficient primary healthcare system. This outcome highlights the implication of poor healthcare system on the level productivity of the workforce in the region which may impede growth inclusiveness. The result also reveals that coefficient of gross national expenditure is negative and statistically significant at 5% probability level. Gross national expenditure comprises private consumption, government current spending for purchases of goods and services (including compensation of employees), and gross capital formation. Theoretically, increase in gross national expenditure is expected to drive growth and well-being through improvement in infrastructural development, employees' compensation and purchases of goods and services. However, the result suggests that gross national expenditure has not contributed meaningfully to the inclusive growth process in the SSA region.

Table 5: Public Spending, Governmental Institutions and Inclusive Growth

Variables	Model 1	Model 2	Model 3	Model 4
L.InGDP	0.5448*** (0.0611)	0.5692*** (0.0651)	0.5827*** (0.0758)	0.5630*** (0.0651)
INVT	0.2534** (0.0362)	0.2548** (0.0322)	0.02812** (0.0368)	0.02603** (0.0342)
LFPR	-0.0430*** (0.0071)	-0.0751*** (0.0062)	-0.0376*** (0.0061)	-0.0339*** (0.0047)
TOPN	0.00213*** (0.0403)	0.00356*** (0.0513)	0.00435*** (0.0003)	0.00121*** (0.0002)
EDUXP	-0.0465*** (0.0193)	-0.0461*** (0.0189)	-0.0468*** (0.0197)	-0.0466*** (0.0191)
HEEXP	-0.0523*** (0.0545)	-0.0486*** (0.0521)	-0.0279** (0.0367)	-0.0445*** (0.0502)
GNEXP	-0.0110*** (0.0025)	-0.0115*** (0.0037)	-0.0120*** (0.0031)	-0.0122*** (0.0022)
Political index	0.0606** (0.0324)			
Economic index		0.110* (0.0443)		
Institutional index			0.102** (0.0317)	
Aggregate Gov. Index				0.148** (0.0522)
Observations	681	681	681	681
Number of crossid	31	31	31	31
Hansen_test	19.22	20.08	22.58	19.17
Hansen Prob	1	1	1	1
AR(1)_test	-2.372	-1.954	-2.205	-2.288
AR(1)_P-value	0.045	0.024	0.019	0.026
AR(2)_test	-1.418	-1.476	-1.501	-1.345
AR(2)_P-value	0.133	0.125	0.120	0.129
No. of Instruments	208	208	208	208

Source: Authors' compilation. Note: InGDP: natural logarithm of GDP per person employed. EDUXP: Education expenditure in ratio of GDP. HEEXP: Health expenditure in ratio of GDP: GNEXP: Gross national expenditure as a ratio of GDP: INVT: gross domestic investment as a share of GDP. TOPN: Trade openness. LFPR: Labor force participation rate, total (% of total population ages 15-64). ***, **, and * represents 1%, 5% and 10% significance level, respectively.

Table 5 presents the dynamic estimation result of public spending, governance and inclusive growth nexus. The results for adjustment variables are not significantly different from the patterns observed in Table 4 both in direction and magnitude except for trade openness that is statistically significant. Similarly, the signs of expenditure components remain largely unchanged. Moreover, coefficients of health expenditure are found to be statistically significant across all the models.

Governmental institution indices show a positive and significant influence of governance on growth inclusiveness. This highlights the pivotal role of governance is advancing inclusive growth in SSA countries by creating opportunities for the growing population in region. The direction and magnitude of each of the governance indices as well as the aggregate governance index conform to theoretical proposition that strong governmental institutions bring about increase in well-being and shared prosperity (Cardenas, Garcia & Salas, n.d). Oyinlola et al. (2019) contend that a strong governance structure is essential in fostering productivity as well as engaging more labour force in the production process thereby allowing for a more inclusive growth. The next discussion focuses on the results reported in Table 6 with governance and interactive terms. This is to determine whether governance facets enhance the impact of public spending on inclusive growth. Given the complementary role of governance, it is important to find out the conditions under which public spending promotes growth inclusiveness. Specifically, we interact different aspects of public spending with different governance dimensions. From the results in Table 6, models 1-4 report information on the results for the interaction between education expenditure and governance dimensions. Models 5-8 conveys the results based on the interaction between the dimensions of governance and health expenditure while models 9-12 follow the same where governance is interacted with gross national expenditure.

With the introduction of education expenditure models 1-4, the results show that the directions of the interaction are negative and statistically insignificant except under economic stability in model 2 where the coefficient is positive but statistically insignificant. Models 5-8 show that augmenting role of governance in fostering inclusive growth through health expenditure has largely yielded poor result as can be observed from the signs of the individual coefficients which are negative and insignificant across the respective models with the exception of model 8 where the aggregate governance interacting coefficient is found to be positive but insignificant. This narrative slightly changes when public spending is measured in terms of gross national expenditure in models 9-12 as its coefficient is only negative in model 9 even though not statistically significant for political instability. However, the rest of the interacting terms are positive but statistically insignificant. We can conclude from the results in Table 6 that governmental institution in SSA does not enhance inclusive growth irrespective of the facet of governance measured. Thus, governance could play augmenting role in promoting the equity of public resource use thereby improving the outcomes of public spending, particularly growth inclusiveness, if countries in the region enhance their governance and institutional structure.

The study went further to assess the validity of the statistical inferences of the estimated parameter estimates in Tables 4-5 by considering Arellano and Bond test for second-order autocorrelation ((i.e. AR(2)) and Sargan test which checks for over-identification restrictions. The z-statistic for the AR(2) test for second-order autocorrelation in the residuals shows that there is no second-order autocorrelation. The results of the Sargan test indicate that the instruments in the estimations are not correlated with the error term. This is an indication that the instruments used the estimates are valid.

Table 6: Public Spending, Governance and Inclusive Growth with interaction

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
L.InGDP	0.4673***	0.54420***	0.5801***	0.5633***	0.4653***	0.4928***	0.5121***	0.5201***	0.6351***	0.6053***	0.5673***	0.5618***
	-0.0543	-0.0523	-0.07	-0.0651	-0.0445	-0.0567	-0.0672	-0.0683	-0.0747	-0.222	-0.112	-0.0885
INVT	0.3647**	0.2016**	0.02552**	0.02197**	-0.0025*	-0.00125	-0.00104	-0.00172**	-0.00141*	-0.0018**	-0.0013**	-0.00221**
	-0.0276	-0.0242	-0.03388	-0.031	-0.0045	-0.00154	-0.0011	-0.0011	-0.00785	-0.000806	-0.000521	-0.000739
LFPR	-0.0174***	-0.0665***	-0.0363***	-0.0354***	0.0108	-0.00498*	-0.00689**	-0.00496***	-0.00592**	-0.0117***	-0.00223	-0.00610***
	-0.0033	-0.0054	-0.0054	-0.0042	-0.0273	-0.00213	-0.00182	-0.00177	-0.00248	-0.00424	-0.0154	-0.00224
TOPN	0.00246	0.00186	0.0002	0.00023	0.0598***	0.0642***	0.0628***	0.0552***	0.0720***	0.0711***	0.0642***	0.0653***
	-0.0002	-0.0003	-0.0002	-0.0003	-0.0207	-0.0166	-0.0227	-0.0138	-0.0155	-0.0197	-0.0181	-0.0133
EDUXP	0.0351***	0.0411***	0.0376***	0.04659***								
	-0.0184	-0.0195	-0.0172	-0.0185								
Political index	0.1251				0.1347				0.0811			
	-0.0692				-0.2075				-0.0995			
POL*EDUXP	-0.0045											
	-0.00402											
Economic index		0.1553***				0.1894*				-0.0102		
		-0.0696				-0.103				-0.183		
ECO*EDUXP		0.00023										
		-0.00074										
Institutional index			0.161				0.2661**				0.0412	
			-0.082				-0.1341				-0.0985	
INST*EDUXP			-0.00021									
			-0.00017									
Aggregate index				0.151**				0.2012**				0.1767
				-0.0754				-0.0833				-0.1932
AGGR*EDUXP				-0.00033								
				-0.00048								
HEEXP					0.00032	-0.007	-0.0027	-0.0025				
					-0.0003	-0.0011	-0.0003	-0.0003				
POL*HEEXP					-0.00606							
					-0.0001							

ECO*HEXP						-0.00016						
						-0.0008						
INST*HEXP							-0.00035					
							-0.0002					
AGGR*HEXP								0.006176				
								-0.0085				
GCONXP									-0.0118***	-0.0216***	-0.0148***	-0.0134***
									-0.0045	-0.0055	-0.0069	-0.0048
POL*GNEXP									-0.00052			
									-0.000163			
ECO*GNEXP										0.00283		
										-0.000347		
INST*GNEXP											0.00281	
											-0.000194	
AGGR*GNEXP												0.00275
												-0.00089
Observations	681	681	681	681	681	681	681	681	681	681	681	681
Number of crossid	31	31	31	31	31	31	31	31	31	31	31	31
Hansen_test	20.92	19.22	20.64	18.52	19.38	20.9	19.15	19.3	20.01	20.83	19.21	18.43
Hansen Prob	1	1	1	1	1	1	1	1	1	1	1	1
AR(1)_test	-2.403	-1.561	-1.197	-2.05	-1.97	-2.096	-2.022	-1.241	-2.14	-2.209	-2.115	-2.318
AR(1)_P-value	0.0512	0.0758	0.0629	0.0376	0.0654	0.016	0.0411	0.0119	0.0263	0.0224	0.0201	0.0164
AR(2)_test	-1.577	-1.554	-1.494	-1.613	-1.379	-1.488	-1.354	-1.352	-1.444	-1.51	-1.553	-1.422
AR(2)_P-value	0.136	0.125	0.137	0.142	0.168	0.163	0.127	0.188	0.147	0.133	0.164	0.137
No. of Instruments	208	208	208	208	208	208	208	208	208	208	208	208

Source: Authors' computation. Values in parenthesis are standard errors while *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: lnGDP: natural logarithm of GDP per person employed. EDUXP: Education expenditure in ratio of GDP. HEEXP: Health expenditure in ratio of GDP. GNEXP: Gross national expenditure as a ratio of GDP. INVT: gross domestic investment as a share of GDP. TOPN: Trade openness. LFPR: Labor force participation rate, total (% of total population ages 15-64). POL: Political index. ECON: Economic index. INST: Institutional index. ***, **, and * represents 1%, 5% and 10% significance level, respectively.

5. CONCLUSION AND POLICY IMPLICATIONS

The study specifically assessed the role of governmental institution in the relationship between public spending and inclusive growth in 32 SSA countries between 1991 and 2019. We utilized system GMM in analysing the interrelationship. From our dynamic estimation, expenditures on education and health appear to reduce growth inclusiveness, and government consumption expenditures is also observed to negatively associated with inclusive growth in the region while public investment spending exert strong positive inclusive growth effects. This is in line with the findings in Wahab (2011) that public consumption spending does not have significant output growth effects, but government investment expenditure is positively related to output growth effects (See also Tesfaselassie, 2013; Narayan, Rath & Narayan, 2012). By interacting various dimensions of governance with public spending variables, the results reveal the complementarities between good governance and institutional quality in driving inclusive growth. In addition, with improvement in governance structure, the distributional effects of public spending would be enhanced. Although, this is in line with the finding in (Montes, et al. 2018) that good governance foster inclusive growth through public spending while fiscal transparency enhances public spending efficiency and outcomes (Montes, Bastos & Oliveira, 2018), Morozumi and Veiga (2016) contend that accountability as a measure of good governance does not to play a significant role in the economic growth effects of current spending. Channeling revenue for general inclusive growth-related expenditures, such as health and education, which may have no direct link with human capital development, is key to attaining growth inclusiveness (Caspary, 2008). Moreover, building strong governmental institutions and reducing government consumption policies will potentially improve economic growth prosperity in the region (Laumer, 2020; Gngoin, et al. 2019). Governments must therefore ensure the flexibility of government expenditure and the rigours of the budget allocation system to achieve growth related objectives especially as it affect the well-being of the citizens (Flavine, 2018; Nakata, 2017) as well as their active participation in the production process.

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