FINANCIAL DEVELOPMENT AND THE ATTAINMENT OF INCLUSIVE GROWTH IN AFRICA

ENEMONA JOSEPH
Department of Economics, Veronica Adeleke School of Social Sciences,
Babcock University, Ilishan Remo, Ogun State, Nigeria.
Corresponding Author:
joseph0116@pg.babcock.edu.ng, +2348086296890

SHERIFFDEEN TELLA+
Department of Economics, Faculty of Social Management Sciences,
olabisi Onabanjo University, Ogun State, Nigeria.
satellang@gmail.com +2348033190791

ROWLAND OBIAKOR
Department of Economics, Veronica Adeleke School of Social Sciences,
Babcock University, Ilishan Remo, Ogun State, Nigeria
tochukwurowland@gmail.com +2348060792785

ABSTRACT
This study investigated the nexus between Financial Development (FD) and Inclusive Growth (IG) in Africa. Unlike the extant literature whose concentration has been on using gross domestic product per capita as an indicator for inclusive growth, this study used the inclusive growth index. The study employed 18-year panel data collected from across 27 African countries in the dynamic estimations of the FD-IG nexus using the mean group (MG) estimator. The results showed that all financial development indicators exhibited only a significant impact on the inclusive growth index in the long run with mixed nexus except atm. It was established that financial development. The findings underscored the need for policymakers to develop innovative, sustainable, and inclusive financial systems capable of distributing growth benefits equitably.

Keywords: Financial development, inclusive growth, mean group inclusive growth index
JEL CLASSIFICATION: O43 O47 O55

1. INTRODUCTION
The relationship between financial development and economic growth has sparked intense debate among economists and policymakers. Central to this debate is the extent to which the financial sector can fulfil its mediating role, fostering sustainable investment to enhance socioeconomic well-being. Within this context, opposing viewpoints have emerged from theoretical literature regarding two primary issues. On one hand, proponents argue that financial development plays a pivotal role in economic growth and overall development, emphasising that the financial system's capacity to efficiently acquire and process information, thereby increasing investment levels and optimizing fund allocation (Anthony-Orji et al.,2023; Appiah et al., 2023; Latif et al., 2023)

Conversely, some view financial development as either subordinate to industry and commerce or as a relatively marginal factor (Ge et al.,2023; Yuan & Zeng, 2023). According to this perspective, economic development generates specific demands for certain financial services, and the financial system merely responds to these demands (Levine, 2003). Regarding the second issue, there is a divergence of opinions regarding the nature of the effect. While some

studies highlight that the linkage primarily operates through improved investment efficiency (Jalil & Feridum, 2011; Kose et al., 2010), others contend that the linkage mainly functions by boosting savings and investment (Udeagha & Breitenbach, 2023). The financial sector constitutes a significant driver of economic development in any nation, as fundamental transactions such as bill payments are facilitated through the financial sector, and more intricate activities like business transactions and investments also heavily rely on it (Ali et al.,2022; Haryono et al., 2023; Mpofu,2022). The financial sector's development holds the greatest potential impact on economic growth, as post global financial crisis (GFC) crash and the subsequent threat of more turmoil compelled national governments to act (Maclennan & O'Sullivan, 2011; Chowdhury & Żuk, 2018). Unprecedented bailouts were provided to avert further financial market catastrophes that could have spilt over into domestic and international economics (Ivashina & Scharfstein, 2008: Oshota, 2023). These governmental actions underscore the importance of acknowledging the financial sector's potential impact on a country's economy. Developing the financial sector can mitigate its limitations and prevent adverse effects on domestic economies (Ali et al.,2023; Claessens et al., 2013). This significance was evident in developed countries experiencing post-global financial crisis recessions (Reinhart & Rogoff, 2009). Despite the shared path of inclusive growth, the level of financial development differs between developed and developing countries, contributing to variations in the relationship between financial development and economic growth. To this end, our contributions to the literature on the financial development-inclusive growth nexus are threefold.

Firstly, in terms of methodology, we employ the nonstationary heterogeneous panel data technique which involves estimating a Panel Autoregressive Distributed Lag model that produces both the long- and short-run estimates for the connection being examined. This technique is particularly suitable for panel data with large cross-sections (N) and periods (T), and given the coverage of our sampled units of twenty-seven (27) African countries with yearly observations spanning 2005 to 2021, our choice of the nonstationary heterogeneous panel data technique is justified. Note that the nonstationary term in the technique nomenclature is derived from the fact that with increasing time observations inherent in large N, and large T dynamic panels, nonstationary is usually a concern. Therefore, as part of our preliminary analyses, we need to establish that while nonstationary is expected there is no evidence of an order of integration higher than one (i.e., the maximum order of integration is one). Similarly, the heterogenous term enables us to account for any inherent heterogeneity across these African countries since the assumption of homogeneity may be too restrictive for country-level inclusive growth where their peculiar economic conditions can influence the level of inclusive growth in respective countries.

The rationale for studying the effect of financial development and private investment on inclusive growth in this region streamlines the gap created by previous studies because the majority primarily focus on economic growth (Bauto et al., 2018; Ibrahim & Alagidede, 2019; Odhiambo, 2010; Rufai et al., 2022). While it is not gainsaying that the region has witnessed rapid improvement in its growth rate, it is equally apparent that the growth is not inclusive due to the high rate of unemployment, poverty, and income inequality. Thus, a major rationale for considering this empirical study for sub-Saharan African countries.

The research focuses on Sub-Saharan Africa and it is motivated by several factors. There are fifty-four (54) Sub-Saharan African countries considered for the period 2005-2022 out of which 27 countries were chosen based on data availability. Sub-Saharan African countries were chosen for the following reasons; first, African countries are one of the regions with the highest population growth (2.59% growth rate) in the world, which is even expected to double

to around two billion by 2050 (Amponsah et al., 2021 Thomas et al., 2023); second, the region is faced with domestic and external factors such as inappropriate economic policies, inadequate human capital development, and low levels of private investment which contributed to its poor overall economic performance in the 1980s and early 1990s (Abeka et al., 2021; Ashogbon et al., 2023). Thus, it is important to see how financial development and private investment can lead to inclusive growth in the region.

The rest of the paper is organised in the following order: Section 2 presents the literature review; Section 3 describes the methodology cum theoretical issue; Section 4 provides details of empirical results and discussion therefrom; and finally, Section 5 concludes the paper.

2.   LITERATURE REVIEW
2.1 Theoretical Review
2.1.1   The Hausman- Rodrick and Valesco (2005), HRV framework

The HRV inclusive growth is an extension of the standard endogenous growth model that identifies the cost of finance accumulation as a major constraint to the return of capital and economic growth (Hausman-Rodrick & Valesco, 2005). HRV approach provides three main considerations. First, while development is routed in capital accumulations, access to finance is critical for people to unblock their potential and make viable contributions through improved returns on economic activity and job creation. Second, low domestic saving behaviour and poor financial intermediation are the possible causes of poverty and inequality in many countries. Thus, there are need for strategies that will provide opportunities to spur investment and improve the contribution of people to growth. Third, uneven distribution and the widening gaps between the rich and poor are the most responsible causes of inequality and poverty. The HRV proposes that equal access to finance for investment will close the gaps of uneven resource distribution and allow equal opportunity among the people. They presented a diagnostic framework to explain the relationship among various causes of slow growth in an economy.

2.1.1.2 Endogenous Growth Theory

Endogenous growth theory holds that investment in human capital, innovation, and knowledge significantly contributes to economic growth. Romer (1990) argued that the rate of improvement in technology falls if the elasticity of substitution between physical capital and a composite of workers and managers is higher than the elasticity of substitution between workers and managers. He further asserted that an increase in the rate of accumulation of physical capital may not affect the rate of technological change.

Romer (1990) asserted that there exists a negative correlation between the growth rate of the labour force and productivity growth rate. Hence, capital accumulation may not be the driving force behind technological change. Hence some other endogenous factors could be responsible for economic freedom. This study shall therefore investigate the endogenous factors that impact human capital investment based on the six models formulated.

The basic assumption of this theory is that there is a high elasticity of substitution between capital goods, physical labour and skilled human capital. Hence, an increase in the labour force can reduce the rate of technological change, which depends on the amount of educated human capital devoted to applied research. However, these assumptions shall be investigated in this study.

Romer incorporated knowledge as an input in the production function of the following form:

$$Y = A(R)f(R_i\, K_i\, L_i \qquad\qquad (1)$$

Where Y is aggregate output; A is the stock of knowledge from research and development (R& D); R_i is the stock of results from expenditure on research and development by firm i; and K_i and L_i are capital stock and labour stock of firm i respectively. He assumes the function 'F'

is homogeneous of degree one in all its inputs R_i, K_i, and L_i, and treats R_i as a rival good. Romer (1990) took three key elements in his model, namely: Externalities; increasing returns in the production of output and diminishing returns in the production of new knowledge. According to Romer, it is spillovers from research efforts by a firm that leads to the creation of new knowledge by other firms. In other words, new research technology by a firm spills over instantly across the entire economy.

In his model, new knowledge is the ultimate determinant of long-run growth which is determined by investment in research technology. Research technology exhibits diminishing returns which means that investments in research technology will not double knowledge. Thus the production of goods from increased knowledge displays increasing returns and competitive equilibrium is consistent with increasing aggregate returns owing to externalities. Thus Romer (1990) took investment in research technology as an endogenous factor in terms of the acquisition of new knowledge by rational profit-maximization firms.

2.1.1.3 Finance-Led Growth Hypothesis (Supply Leading Theory)

Supply-leading theory can be described as the finance-led hypothesis. It postulates that the existence of "financial institutions and the supply of their financial assets, liabilities, and related financial services in advance of demand for them. This would provide efficient allocation of resources from surplus units to deficit units, thereby leading the other economic sectors in their growth process" (Patrick, 1996). The supply–leading phenomenon performs two functions: first, it transfers resources from traditional (non-growth) sectors to modern sectors; and second, it promotes and stimulates an entrepreneurial response in the modern sectors.
One of the most significant effects of the supply-leading approach is that, as entrepreneurs have new access to the supply–leading funds, their expectations increase and new horizons as to possible alternatives are opened, thereby making the entrepreneur "think big". Several studies have argued in favour finance-led growth approach (Cameron, 1963; Lawal, 2023; Levine, 1997). It should however be emphasized that the rationale for the supply–leading approach to the development of a country's financial system and hence overall economic development, lies in its potential benefits to the economy in stimulating real economic development. Otherwise, if the use of resources (especially entrepreneurial talents and managerial skills) in supply–leading finance generates more cost than benefits to the economy, then the objective of the approach is far from being achieved, and the entire supply–leading financial theory results in an exercise in futility. It can also be argued that while supply–leading finance is not a necessity for launching a country to the path of "self-sustained economic development", it presents an opportunity to induce real growth by financial means. Its use, analysts believe, is more result-oriented at the early level of a country's development than later. Gerschenkron (1962) suggest that the more backward the economy relative to others at the same time, the greater the emphasis on supply-leading finance"

2.2 Empirical Literature

Financial development is widely expected to stimulate investment, thus contributing to long-term economic growth. However, the literature on the relationship between financial development and sustainable growth remains inconclusive and subject to substantial debate. Anwar and Sun (2011) empirically investigated the connection between financial development, foreign investment, and economic growth in Malaysia from 1970 to 2007. Their study employed structural models based on the generalized method of moments (GMM) and the vector error correction model, revealing a significant impact of financial development on Malaysia's domestic capital stock, thereby contributing to economic growth. Samargandi et al.,

(2015) revisited the empirical analysis of the link between financial development and economic growth in middle-income countries from 1980 to 2008. Utilizing the pooled mean group estimator of the panel autoregressive distributed lag (ARDL) technique, they found an insignificant short-run relationship between financial development and economic growth, while a U-shaped relationship existed between these variables in the long run. This suggests that high levels of financial development could potentially impede economic growth in middle-income countries, emphasizing the need for well-designed financial policies to ensure a positive impact.

Shahbaz et al., (2017) extended the financial development-economic growth nexus in the Indian economy from 1960: Q1 to 2015: Q4 by incorporating energy consumption. Their study utilized the nonlinear autoregressive distributed lag model and asymmetric causality tests, revealing an asymmetric cointegration between the variables. They found that negative shocks to both energy consumption and financial development contributed to economic growth, highlighting the role of capital formation as a driver of economic growth. Tursoy and Faisal (2018) analyzed the relationship between financial sector depth and economic growth in North Cyprus. Using banking sector deposits as a measure of financial development, they employed the autoregressive distributed lag (ARDL) model and the vector error correction model (VECM) Granger causality test. Their findings indicated a long-run relationship between financial development and economic growth, with financial development exhibiting a positive impact on short-term growth while inflation had a negative effect on economic growth in North Cyprus.

Siddik (2019) investigated the impact of financial permeation on economic growth in South Asian Association for Regional Cooperation (SAARC) countries from 2004 to 2016. Employing various measures of financial permeation, the study revealed that increased financial inclusion positively contributed to economic growth in these nations, while the global financial crisis negatively affected growth. The study highlighted the importance of government involvement in promoting financial permeation for economic growth. Khan et al. (2019) assessed Pakistan's economic growth response to financial sector development using the maximum entropy bootstrap technique. They discovered bidirectional causality between financial development and economic growth in Pakistan. Nawaz et al. (2019) explored the impact of natural resource abundance on the relationship between financial development and economic growth in Pakistan. Applying bootstrapping autoregressive distributed lag and vector error correction model Granger causality tests, they found a long-run cointegrating relationship among natural resource abundance, financial development, and economic growth. Additionally, financial development positively influenced domestic productivity, subsequently enhancing economic growth. The study concluded that natural resource abundance could be beneficial for economic growth when accompanied by financial development.

Afolabi (2020) investigated the role of financial inclusion in inclusive growth in the Nigerian economy from 1981 to 2017 using the Autoregressive Distributed Lag Model. The study demonstrated a short-run and long-run relationship between financial inclusion and inclusive growth, suggesting that financial inclusion indices positively influenced inclusive growth over time. However, interest rates were found to have a negative impact on inclusive growth. Also, Khalid and Shafiullah (2021) examined the impact of institutional quality on financial development in 101 emerging and growth-leading economies. Employing two-stage least squares analysis and cross-sectional tests, they revealed that institutional quality significantly improved financial development, with trade openness, national culture, and economic growth moderating this relationship.

3. METHODOLOGY
3.1.   Theoretical Framework

The theoretical foundation of this research is based on Hausman-Rodrick and Valesco's (2005), HRV framework. The HRV inclusive growth is an extension of the standard endogenous growth model that identifies the cost of finance accumulation as a major constraint to the return of capital and economic growth (Hausman-Rodrick & Valesco, 2005). HRV approach provides three main considerations. First, while development is routed in capital accumulation, access to finance is critical for people to unblock their potential and make viable contributions through improved returns on economic activity and job creation. Second, low domestic savings and poor financial intermediation are possible causes of poverty and inequality in many countries. Thus, there are need for strategies that will provide opportunities to spur investment and improve the contribution of people to growth. Third, uneven distribution and the widening gaps between the rich and poor are the most responsible causes of inequality and poverty. The HRV proposes that equal access to finance for investment will close the gaps of uneven resource distribution and allow equal opportunity among the people. Figure 1 indicates some possible causes of slow growth which has increased inequality and poverty identified by the HRV diagnostic framework. These possible causes are shown diagrammatically below:

Figure 1: Decision Tree
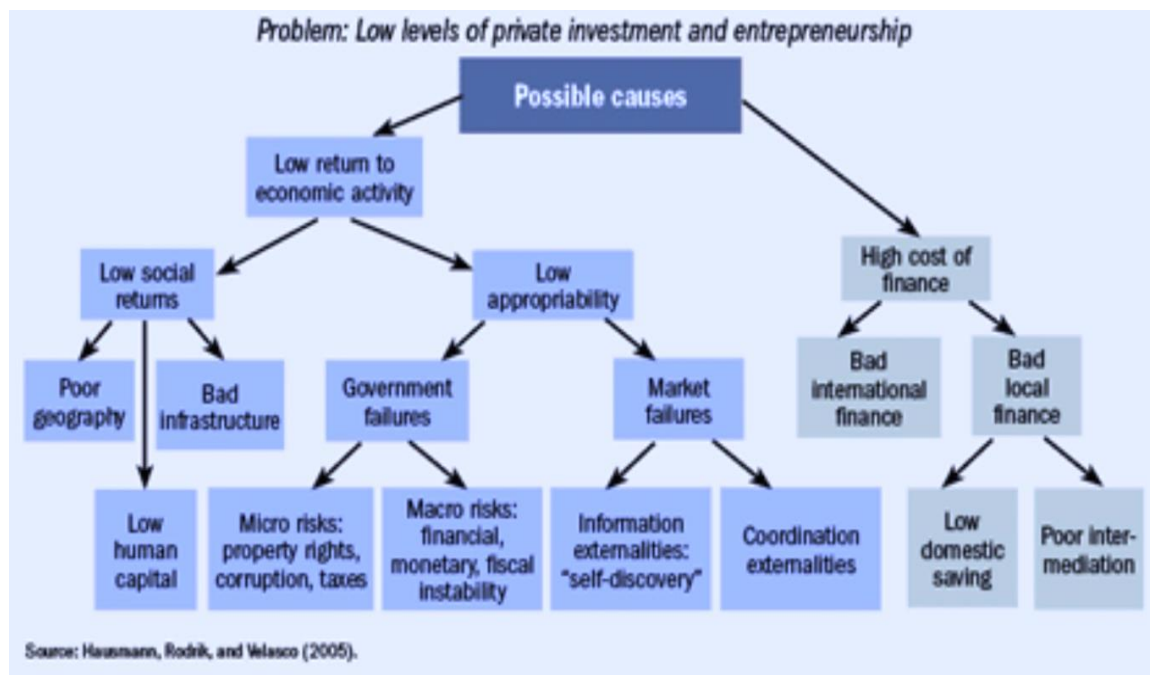
Source: Hausman-Rodrick and Valesco, 2005

Figure 1 shows the link between financial development and inclusive growth. It identifies some obstacles that make it possible for society to eradicate poverty and inequality. Rodrick and Valesco (2005) suggest that lack of access to capital reduces the contribution of society to the overall growth trajectory. Also, the high cost of finance and low human capital development is a consequence of low return to economic activity. They contend that people need to have access to capital and the ability to save money to be able to contribute to the process of economic progress. This will help remove these barriers and promote equal possibilities.

Inclusive growth theory emphasizes the importance of economic progress to benefit all segments of society, especially those who are marginalized or disadvantaged. The central goal is to reduce disparities in opportunity and outcomes, as well as reduce inequality and poverty.

Financial development, which refers to the expansion and complexity of a country's financial system, plays a central role in achieving inclusive growth. There are many links between financial development and inclusive growth.

The modelling framework of the financial development-inclusive growth nexus developed by Mitra and Das (2018), Jiang et al. (2022), and Sharafutdinov et al. (2018), where they developed an inclusive growth index by incorporating expansion of economic opportunities, sustainability of economic activity, equity in access to socio-economic opportunities and efficiency of economic institutions within a panel data framework was reformulated in our study. The model is formulated as:

$$Y_{it}^* - Y_{it-1}^* = \alpha_0 + \beta_1^0 \overline{Y}_{it} + \beta_1^0 X_{it} + \eta_c + \gamma_t + \vartheta_{ct} \tag{2}$$

Where $Y_{it}^* - Y_{it-1}^*$ is the log-difference of $\overline{y}^*$ or inclusive growth in country i at time t, X_{it} represents a set of growth and inclusive growth determinants measured at a 5-year average panel period. η_c captures the disturbance term in the regression consisting of an unobserved country effect that is constant over time and an unobserved period effect (γ_t) that is common across countries with the component ϑ_{ct} that varies across countries and years assuming uncorrelation over time. To measure the broadness of inclusive growth, Kraay (2004) and Anand et al. (2014) developed an inclusive growth index (IGI) which is the sum of changes in growth of gross domestic product per capita (GDPPC) and GINI coefficient thereby incorporating all the components – social opportunity and welfare functions – as envisaged earlier. Hence the reformulated model we arrived at from equation (2) is:

$$igi_{it} = \alpha_0 + \beta_1 X_{it} \tag{2}$$

Where *igi* is the inclusive growth index and *X* is the vector of explanatory variables

3.2. Estimation Technique

The panel Autoregressive Distributed Lag (PARDL) approach is utilised in examining the impact of financial development on inclusive growth in selected African countries. Since the variables deployed are characterised by large cross-sectional units (N) and time series (T), the non-stationary heterogeneous panel is considered appropriate. The usage enables us to capture the various characteristics of studied countries by estimating various short-run and long-run dynamics in the relationship between financial development and inclusive growth, such that the specifications regarding cross-sectional slope coefficients are easily accommodated. More so, the MG estimator, which captures the inherent heterogeneity across the African countries' financial development and inclusive growth is employed, both in the long and short run, including the error correction estimates. This selection is further premised on its flexibility and capacity to account for more heterogeneous dynamics in the slope coefficients completely. Thus, we specify the generic representation of PARDL, enabling the capturing of the dynamic heterogeneity of financial development and inclusive growth of the examined 27 African countries below.

$$igi_{it} = \sum_{j=1}^{p} \alpha_{1ij} igi_{i,t-j} + \sum_{j=0}^{q} \delta'_{1ij} X_{i,t-j} + \mu_{1i} + \varepsilon_{1it} \tag{4}$$

where ing_{it} denotes inclusive growth index, X_{it} is a $k \times 1$ vector of the independent variables, δ_{ij} is a $k \times 1$ vector of coefficients, α_{ij} are scalars while μ_i is the country-specific effect. Equation (4) is further reparametrised into the error correction equation to capture the short-run dynamics as well as the deviation from the equilibrium state, simultaneously.

$$\Delta igi_{it} = \sum_{j=1}^{p-1} \alpha_{ij}^{*} igi_{i,t-j} + \sum_{j=0}^{q-1} \delta_{ij}'^{*} \Delta X_{i,t-j} + \gamma_{1i}\left(igi_{i,t-1} - \lambda_i' X_{it}\right) + \mu_i + \varepsilon_{it} \qquad (5)$$

The error correction term parameter is $\gamma_i = -\left(1 - \sum_{j=1}^{p} \alpha_{ij}\right)$ establishing any long-run

equilibrium nexus, while $\lambda_i = \sum_{j=0}^{q} \delta_{ij} \bigg/ \left(1 - \sum_k \alpha_{ik}\right)$ captures the long-run estimates; and

$\alpha_{ij}^{*} = -\sum_{r=j+1}^{p} \alpha_{ir}$ $(j = 1,\ldots,p-1)$; and $\delta_{ij}^{*} = -\sum_{r=j+1}^{q} \delta_{ir}$ $(j = 1,\ldots,q-1)$ are the short-run estimates.

The vectors of explanatory variables in the study include ATM capturing the number of ATMs per 10,000 adults; BCIR as bank cost to income ratio; LLG representing the liquid liability to GDP; Z-Score captures Bank Z-Score; DECPS indicating domestic credit to the private sector as a percentage of the GDP; BCBD denoting bank credit to bank deposit ratio, and PINV signifying private investment in the African countries.

3.3. Data and Sources
The dataset used in this study consists of the inclusive growth index (IGI), the number of ATMs per 10,000 adults (ATMs), the bank's expense-to-income ratio (BCIR), liquid liabilities to GDP (LLG), the bank's Z-score (ZSCORE), domestic credit to the private sector as a percentage of GDP (DCPS), and the bank's credit-to-bank deposit ratio (BCBD). Our annual data cover 2005 through 2022 for all the 27 African countries considered. Our choice of countries is anchored on data availability for variables under examination. The inclusive growth index – a proxy for inclusive growth– is constructed as the sum of changes in the growth of gross domestic product per capita (GDPPC) and the GINI coefficient. All these data are from the Global Financial Development (GFD) and World Development Indicator (WDI) online databases via https://globalfinancialdata.com and https://databank.worldbank.org/source/world-development-indicators, respectively.

4. RESULTS AND DISCUSSIONS
The panel unit root presented in Table II was conducted for the model's variables as a pre-requisite for choosing an empirical model involving large N and T panels. We consider both the stationarity test (see Hadri, 2000) and the nonstationary tests (see Harris & Tzavalis, 1999; Breitung, 2000; Levin, Lin and Chu, 2002; Im, Pesaran and Shin, 1997). The unit root test results for Harris and Tzavalis (rho) and ADF Fisher are mixed – [I(0) and I(1)] – while tests are integrated of order zero[I(0)]. Since the underlying framework for estimation allows for the combination of both I(0) and I(1), in so far as the level of stationarity does not exceed I(1); thus, the mixed order of integration for certain variables in the model is not expected to bias our estimates.

4.1 Summary Statistics
Table I present the summary statistics of the time series properties of the financial development and inclusive growth variables in the model between 2005 to 2022.

Table I. Descriptive Statistics

	Igi	atm	bcbd	bcir	dcps	llg	pinv	zscore
Mean	45.26	11.70	68.88	59.71	21.04	32.01	24.55	15.58
Std. Dev.	8.58	15.20	22.52	13.95	19.25	21.83	9.29	5.76

Maximum	68.98	68.96	154.8	202.04	106.26	163.84	81.02	37.35
Minimum	19.52	0.00	17.51	24.75	2.01	6.03	3.46	3.29
Skewness		1.86	0.35	3.94	2.27	2.51	1.53	0.46
Kurtosis	3.21	5.66	3.68	39.10	7.99	10.42	8.64	3.46
Jarq-Bera	16.58	402.9	18.68	261.1	874.8	1537.9	787.9	20.72
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Obs.	459	459	459	459	459	459	459	459

Source: Authors' work

Specifically, the mean value and standard deviations of the Inclusive Growth Index (IGI) are 84.26 and 8.58, respectively establishing that on average, IGI is roughly 84.2 among the examined African countries with an 8.58 deviation. In contrast, it was 11.70 and 15.2 for atm, 68.8 and 22,52 for bcbd, 21.04 and 19.25 for DCPS, 32.01 and 21.83 for LLG, respectively. The probability Jarqua Bera statistics for nearly all the variables suggests evidence of normal distribution.

Table II: Unit Root Tests

Test Method	igi	atm	bcir	llg	zscore	dcps	bcbd
Null Hypothesis: Unit Root with common process							
Harris-Tzavalis [rho]	-13.9***[b]	-17.9***[b]	-9.9***[a]	-7.8***[a]	-7.1***[a]	-2.5***[a]	-23.3***[b]
Breitung [t-stat.]	-11.6*** [b]	-7.7***[b]	-1.9**[a]	-9.3***[b]	-2.3***[a]	-7.3***[b]	-8.1***[b]
LLC [t*]	-1.5* [b]	-10.9***[a]	-4.0***[a]	-3.4***[a]	-4.4***[a]	-6.5***[a]	-3.7***[a]
Null Hypothesis: Unit Root with Individual process							
IPS (*W Stat*)	-5.3*** [b]	-1.4*[a]	-3.0***[a]	-2.5***[a]	-4.3***[a]	-2.4***[a]	-8.5***[b]
Null hypothesis: No unit root with common unit root process							
Hadri [Z-stat.]	18.3*** [b]	40.6***[a]	10.1***[a]	20.1***[a]	26.1***[a]	29.0***[a]	36.2***[a]
Number of Cross-Sections	27	27	27	27	27	27	27
Number of Periods	17	17	17	17	17	17	17
Total Number of Observations	459	459	459	459	459	459	459

Source: Authors' work

Note: a and b denote stationarity at level and first difference, respectively, while ***, **, * indicate statistical significance at 1%, 5%, and 10%, respectively.

Table III: Estimation results for financial development and inclusive growth nexus

	atm	bcir	llg	zscore	dcps	bcbd
δ^{atm}	-0.581 (0.094)					
δ^{bcir}		-0.869 (0.910)				
δ^{llg}			0.207 (0.802)			
δ^{zscore}				1.668 (1.673)		
δ^{dcps}					-0.998 (0.923)	
δ^{bcbd}						0.341 (0.424)
λ^{atm}	-0.036 (0.037)					
λ^{bcir}		0.025* (0.014)				
λ^{llg}			-0.341*** (0.014)			
λ^{zscore}				-0.310*** (0.057)		
λ^{dcps}					0.308*** (0.030)	
λ^{bcbd}						-0.208*** (0.021)
γ^{ECT}	-0.636*** (0.094)					

Source: Authors' work

Note: The values in parentheses are the standard errors. The $\delta s'$ are for the short run while the $\lambda s'$ are for the long run. ***, ** & * imply significance at the 1%, 5% and 10% levels, respectively

From Table III, our result shows a negative nexus between *atm* and inclusive growth index in the long run, as established in the short run, but not statistically significant. We deduce from this that *atm* increases (decreases) bring about a decrease (increase) in inclusive growth index in the long run, *ceteris paribus*. This deduced nexus is also found not to be statistically significant as revealed in Table III. Moving ahead, *bcir* exerted a non-significant negative association with *igi* in the short run but depicted a significant positive association in the long run. This exhibits that the influence of *bcir* on *igi* could only be ascertained in the long run, as it brings an additional 0.025 increase to igi given its unit increase, *ceteris paribus*. This submission was in line with the Sethy (2016) and Ngepah (2017). From another perspective, *llg* failed to influence the inclusive growth index in the short run, but it did impact *igi* effectively and statistically in the long run. The bank *zscore* also portrays a negative long-run nexus with *igi* as against it non-significance in the short-run , the same scenario was played

with *dcps* and *bcbd* where only long-run association with *igi* was established. From the foregoing, it is obvious that all the financial development – via its proxies – has some implications for inclusive growth proxied with the inclusive growth index, as our results across this partial nexus emphasize the only long-run impact of financial development on inclusive growth in the African countries. This is because the financial development indicators' short-run influence on inclusive growth is mixed between positive and negative, even though they are insignificant. However, the long-run impact does not only portray financial development influence to be a pointer to better inclusive growth; the influence is also significant. The study of Bello et al. (2023) Appiah et al. (2023) and Anthony-Orji et al. (2023), who find that other financial development has a significant long-run influence on inclusive growth index, is consistent with our results.

5. CONCLUSION

This study has investigated the role of financial development on inclusive growth fundamentals in Africa. The evidence has indicated that a strong financial system could spur inclusive growth. In the short run, there is no link between financial development indicators and inclusive growth. Meanwhile, in the long run, observing the evolving relationships between financial development, indicators and inclusive growth provides insights into the sustainability and lasting impact of policies. A positive long-term connection between financial development and inclusive growth index would suggest that enhanced access to finance contributes to ongoing employment opportunities and productivity growth. On the other hand, if improvements in the inclusive growth index do not translate into reduced income inequality, this could highlight the need for targeted measures to ensure that the benefits of growth are equitably shared.

In conclusion, the study suggests the development and implementation of financial literacy programs to enhance individuals' understanding of financial concepts and services and the implementation of prudent financial regulations to ensure the stability and integrity of the financial sector.

REFERENCES

Abeka, M. J., Andoh, E., Gatsi, J. G., & Kawor, S. (2021). Financial development and economic growth nexus in SSA economies: The moderating role of telecommunication development. *Cogent Economics & Finance*, *9*(1), 1862395.

Ali, K., Hongbing, H., Liew, C. Y., & Jianguo, D. (2023). Governance perspective and the effect of economic policy uncertainty on financial stability: evidence from developed and developing economies. *Economic Change and Restructuring*, *56*(3), 1971-2002.

Ali, M. S., Swiety, I. A., & Mansour, M. H. (2022). Evaluating the Role of artificial intelligence in the automation of the banking services industry: Evidence from Jordan. *Humanities and Social Sciences Letters*, *10*(3), 383-393.

Amponsah, M., Agbola, F. W., & Mahmood, A. (2021). The impact of informality on inclusive growth in Sub-Saharan Africa: Does financial inclusion matter?. *Journal of Policy Modeling*, *43*(6), 1259-1286.

Anthony-Orji, O. I., Orji, A., Ogbuabor, J. E., & Uka, L. C. (2023). Money matters a lot: empirical analysis of financial development, financial inclusion and economic growth in Nigeria. *International Journal of Economic Policy in Emerging Economies*, *17*(1), 100-117.

Appiah, M., Gyamfi, B. A., Adebayo, T. S., & Bekun, F. V. (2023). Do financial development, foreign direct investment, and economic growth enhance industrial development? Fresh evidence from Sub-Sahara African countries. *Portuguese Economic Journal*, *22*(2), 203-227.

Asante, G. N., Takyi, P. O., & Mensah, G. (2023). The impact of financial development on economic growth in sub-Saharan Africa. Does institutional quality matter?. *Development Studies Research*, *10*(1), 2156904.

Ashogbon, F. O., Onakoya, A. B., Obiakor, R. T., & Lawal, E. (2023). Public Debt, Institutional Quality and Economic Growth: Evidence from Nigeria. *Journal of Economics and Allied Research*, *8*(1), 93-107.

Ayinde, T. O., & Yinusa, O. G. (2016). Financial development and inclusive growth in Nigeria: A threshold analysis. *Acta Universitatis Danubius. Œconomica*, *12*(5),166-189.

Batuo, M., Mlambo, K., & Asongu, S. (2018). Linkages between financial development, financial instability, financial liberalisation and economic growth in Africa. *Research in International Business and Finance*, *45*, 168-179.

Bello, A. A., Renai, J., Hassan, A., Akadiri, S. S., & Itari, A. R. (2023). Synergy effects of ICT diffusion and foreign direct investment on inclusive growth in Sub-Saharan Africa. *Environmental Science and Pollution Research*, *30*(4), 9428-9444.

Cameron, R. (1963). The Bank as Entrepreneur. *Explorations in Entrepreneurial History*, 2(1), 50-55.

Chowdhury, A., & Żuk, P. (2018). From crisis to crisis: Capitalism, chaos and constant unpredictability. *The Economic and Labour Relations Review*, *29*(4), 375-393.

Claessens, S., Ghosh, S. R., & Mihet, R. (2013). Macro-prudential policies to mitigate financial system vulnerabilities. *Journal of International Money and Finance*, *39*, 153-185.

Ge, T., Li, C., Li, J., & Hao, X. (2023). Does neighboring green development benefit or suffer from local economic growth targets? Evidence from China. *Economic Modelling*, *120*, 106149.

Gerschenkron, A. (1962). On the concept of continuity in history. *Proceedings of the American Philosophical Society*, *106*(3), 195-209.

Gyamfi, N. M., Bokpin, G. A., Aboagye, A. Q., & Ackah, C. G. (2022). Financial development, institutional quality and inclusive growth in Africa. *Global Business Review*, *23*(3), 584-607.

Haryono, D., Ghafur, A. H. S., & Somantri, G. R. (2023). The Challenges of Digital Banking in Today's Banking Industry. *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)*, *6*(3), 2216-2234.

Hausmann, R., Rodrik, D., & Velasco, A. (2005). Getting the diagnosis right. *Finance and development*, *43*(1), 12.

Ibrahim, M., & Alagidede, P. (2018). Effect of financial development on economic growth in sub-Saharan Africa. *Journal of Policy Modeling*, *40*(6), 1104-1125.

Jiang, A., Chen, C., Ao, Y., & Zhou, W. (2022). Measuring the Inclusive growth of rural areas in China. *Applied economics*, *54*(32), 3695-3708.

Latif, Y., Shunqi, G., Fareed, Z., Ali, S., & Bashir, M. A. (2023). Do financial development and energy efficiency ensure green environment? Evidence from RCEP economies. *Economic research-Ekonomska istraživanja*, *36*(1), 51-72.

Lawal E.O. (2023). Effect of exchange rate and inflation rate on agricultural sector output in Nigeria. *Journal of Economics and Allied Research*, *8* (1), 28-4.

Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. *Journal of economic literature*, *35*(2), 688-726.

Maclennan, D., & O'Sullivan, A. (2011). The global financial crisis: challenges for housing research and policies. *Journal of Housing and the Built Environment*, *26*, 375-384.

Mitra, A., & Das, D. (2018). Inclusive growth: Economics as if people mattered. *Global Business Review*, *19*(3), 756-770.

Mohamed Sghaier, I. (2023). Trade openness, financial development and economic growth in North African countries. *International Journal of Finance & Economics*, *28*(2), 1729-1740.

Mpofu, F. Y. (2022). Industry 4.0 in Financial Services: Mobile Money Taxes, Revenue Mobilisation, Financial Inclusion, and the Realisation of Sustainable Development Goals (SDGs) in Africa. *Sustainability*, *14*(14), 8667.

Ngepah, N. (2017). A review of theories and evidence of inclusive growth: an economic perspective for Africa. *Current Opinion in Environmental Sustainability*, *24*, 52-57.

Odhiambo, N. M. (2010). Finance-investment-growth nexus in South Africa: an ARDL-bounds testing procedure. *Economic Change and Restructuring*, *43*(3), 205-219.

Oshota,S.O. (2023). fiscal policy and sectoral output growth in Nigeria: a new empirical evidence. *Journal Of Economics And Allied Research (JEAR)*,*8*(3), 18-34.

Patrick, H. T. (1966). Financial development and economic growth in underdeveloped countries. *Economic development and Cultural change*, *14*(2), 174-189.

Romer, P. M. (1990). Endogenous technological change. *Journal of political Economy*, *98*(5, Part 2), S71-S102.

Rufai, A. A., Aworinde, O. B., & Ajibola, O. (2022). Impact of FDI on exchange rate in Nigeria: A combined cointegration Approach. *Journal of Economics and Allied Research*, *7*(1), 141-158.

Sethy, S. K. (2016). Developing a financial inclusion index and inclusive growth in India. *Theoretical and applied economics*, *23*(2), 607.

Sharafutdinov, R., Gerasimov, V. O., Akhmetshin, E. M., Yumashev, A. V., Pavlyuk, A. V., & Luzina, T. V. (2018). Inclusive growth index assessment in the regions of the Volga Federal District of the Russian Federation. In *Innovation Management and Education Excellence through Vision 2020* (pp. 3890-3902).

Taddese Bekele, D., & Abebaw Degu, A. (2023). The effect of financial sector development on economic growth of selected sub☐Saharan Africa countries. *International Journal of Finance & Economics*, *28*(3), 2834-2842.

Thomas, O. F., Onakoya, A. B., & Phillip, B. (2023). All-share index in the Nigerian capital market responses to external financial flows shocks. *Journal Of Economics And Allied Research (JEAR)*,*8*(1), 125-150.

Udeagha, M. C., & Breitenbach, M. C. (2023). Revisiting the nexus between fiscal decentralization and CO2 emissions in South Africa: fresh policy insights. *Financial Innovation*, *9*(1), 1-46.

Yinusa, O. G., Aworinde, O. B., & Odusanya, I. A. (2020). Institutional quality, financial development and inclusive growth: Asymmetric cointegration approach. *International Journal of Management, Economics and Social Sciences (IJMESS)*, *9*(3), 182-205.