

# REGIONAL GROWTH HETEROGENEITY: A COMPARATIVE ANALYSIS OF FDI, INSTITUTIONS, UNEMPLOYMENT AND HUMAN CAPITAL IN AFRICA AND ASIA

## DAVID UMORU

Department of Economics, Edo State University Uzairue, Iyamho, Km 7 Auchu-Abuja Expressway, Iyamho, Edo State, Nigeria. Email: david.umoru@yahoo.com/david.umoru@edouniversity.edu.ng;  
ORCID: <https://orcid.org/0000-0002-1198-299X>

## MALACHY ASHYWEL UGBAKA

Department of Economics, University of Calabar, Nigeria. ORCID: 0000-0002-2236-6420

## TANGBAN EGBE EBAGU

Department of Social Works, University of Calabar. ORCID: 0000-0001-7738-5680

## LINUS ODUMOGBAN INYANG

Department of Sociology, University of Calabar, Nigeria. ORCID: 0009-0003-5858-1469

## BEAUTY IGBINOVIA

Department of Economics, Edo State University Uzairue, Iyamho, Nigeria, Km 7 Auchu-Abuja Expressway, Iyamho, Edo State, Nigeria. Email: beauty.igbinovia@edouniversity.edu.ng;  
ORCID: <https://orcid.org/0009-0005-6820-1110>

## ANTHONY AZIEGBEMIN EKEOBA

Department of Economics, Edo State University Uzairue, Iyamho, Km 7 Auchu-Abuja Expressway, Iyamho, Edo State, Nigeria. Email: tonyekeoba2000@yahoo.com; ORCID: <https://orcid.org/0009-0006-7766-8967>

## Abstract

This study has offered an extensive comparative beyond the mean analysis of the growth effects of foreign direct investment, institutional quality, human capital development, and unemployment in Africa and Asia. Incorporating recent data and employing a quite robust dual-methodological framework of Two-Step, GMM and Quantile Analysis, the research has examined both the average impacts and the deeply non-linear threshold effects along growth paths. The results obtained from GMM suggest that FDI is a natural growth driver across the continent. Nonetheless, the much higher impact of 0.289 observed in Asia compared to that in Africa points to the sharp capital market absorption contrast between the two regions. The analysis shows that the two regions' approaches to converting foreign capital into economic growth are fundamentally different. FDI is a consistent growth engine in Asia; even the slowest-developing Asia country exhibits the required absorptive capacity to effectively turn FDI into growth. Africa, experiences an acute threshold effect that is concentrated at the median quantile (Q0.50). Below the threshold (Q0.25), systemic deficiencies in infrastructure and skilled human resources hinder the internalization of foreign capital, so FDI inflows fail to produce appreciable growth. Only after a mid-tier momentum is reached, which is estimated to be a GDP growth rate of 3.8% to 4.2% (based on 2024 averages), does FDI start to accelerate growth in Africa. An interesting divergence is witnessed in the institutional scenario where Asian institutions effectively drive growth; while African institutions are more like constraints to growth. Human capital has been discovered as a critical growth driver to both regions, with results showing more pronounced returns in higher growth quantiles in Africa imply more significance towards the need for skilled labor. The results revealed unemployment and population growth to be major growth inhibitors, whereby the latter poses a potential population trap risk in particular within Africa. A Wald test has emphasized that

growth drivers differ widely across Africa, thus necessitating quantile-specific policy interventions rather than the more homogenous regional strategies suitable for Asia. For Africa to internalize the sort of structural stability realized in Asia, it has to prioritize institutional reforms that are needed to ease administrative complexities and promote an advantageous environment capable of crossing the FDI-growth threshold.

**Keywords:** Foreign Direct Investment, Institutional Quality, Human Capital, Unemployment, Two-Step GMM, Quantile Regression, Africa, Asia.

**JEL Classification:** F21, O43, O47, J24, E24, C23.

## 1. INTRODUCTION

The developing economies in Asian and African regions are presently in a position of paradox with a touch of uniqueness of the developing world. On the one hand, they are the main beneficiaries of the global foreign direct investment (FDI), and developing Asia alone receives over 50% of the global inflows in 2023 (UNCTAD, 2024) and an increase in industrial investment in Africa (IMF, 2025). Conversely, expected spill-over effects on the gross domestic product (GDP) growth are substantially confirmed. In addition, FDI is mostly capital intensive and the emerging markets have mostly unskilled labour which is highly trained. Such misfit is a serious obstacle to the use of FDI as a solution to unemployment. A characteristic aspect of so-called jobless growth has become a reality: despite the positive effect of FDI in the growth of capital-intensive industries in mining and technology, the level of informality and the lack of coincidence between the local supply of education and the qualification requirements of multinational corporations (Obeng-Amponsah & Owusu, 2025) often hinder the decline in aggregate unemployment. Therefore, when there are no stable and reliable institutional settings that safeguard labour rights and encourage technology transfer, FDI is likely to bring about so-called enclave economies that maximize headline growth rates at the expense of increasingly structural problems of unemployment and inequality. As such, there is urgent need to determine the institutional and human-capital levels that should be identified in order to convert FDI into a capital inflow into a true catalyst of inclusive economic growth.

High-quality FDI avoids nations with poor property-rights systems, which makes emerging economies mostly open to the so-called extractive FDI that cannot produce sustainable jobs. Against this background of mixed and situation-specific results, the main issue is that the modern growth models do not effectively reflect the combined impact of the FDI, institutional quality, human-capital development, and unemployment on the economic growth of emerging economies in Asia and Africa. The relative scarcity of the empirical studies that integrate the FDI, institutional quality, human capital and unemployment variables into a single growth model create a significant gap in knowledge about the impact of FDI on job creation and unemployment in addition to the institutional and human-capital factors (Adigun *et al.*, 2025). The literature that provides an overall empirical analysis that integrates simultaneously (1) variation in institutional quality; (2) moderating effect of human-capital accumulation; (3) unequal effects of FDI on unemployment structure; (4) consequential effects on sustainable economic growth is lacking. This gap needs to be filled in because it will enlighten policymakers on how they

can tap FDI in a better way through development of strong institutional mechanisms, directing proper investments in the human-capital industries and managing the dynamics of unemployment to facilitate inclusive growth.

The relevant research questions include: Are there systematic variations in Asian and African emerging countries with regard to the combined effects of FDI, institutions, and human capital to the unemployment and growth? Comparative data have been limited; however, differences are consequential due to the institutional settings and labour-market conditions in both the continents. Is the relationship between FDI inflows and unemployment non-linear such that positive effects only take place once there is a given level of industrialization? Do the interaction of FDI and the labour-market situation (largely unemployment and labour quality) result in different growth implication among developing economies?

Resolving this research problem would enable policymakers to have the ability to come up with specific solutions that could reap the full benefits of FDI in terms of increasing the contribution of growth through institutional strengthening, aligning education and skills development with labour-market demands, and facilitating the labour-market transition out of unemployment.

Moreover, it would be part of the wider discussion as to whether FDI can act to promote inclusive growth in a wide range of emerging economies and to what degree. Focusing on Asian and African emerging economies, the paper is able to capture the complexities in the region and give a holistic view of the nexus of FDI and growth. The introduction of interacted variables, including FDI in combination with domestic investment, extensive money supply, human capital, and institutional quality, offers a new concept of the discovery of synergies and threshold that determine growth effects.

This study will provide practical information to policymakers who are keen on improving the contribution of FDI to the growth of emerging economies by offering endogeneity solutions via effective testing and using the after 2020 data. In real sense, the research provides practical policy advice to the up and coming economies.

Through this analysis of these countries, it will be able to establish comparative advantages and challenges hence shaping the formulation of specific strategies to attract FDI and financial reforms. As an example, African policymakers can focus on governance reforms in order to curb the dynamics of resource-curse. The fact that the study is focused on global shocks, which occurred after 2020 and included Covid-19 and supply-chain disruptions, makes it relevant in an ever-changing economic environment.

## **2. THEORY AND PREVIOUS FINDINGS**

The literature review shows that an extensive range of studies has been conducted on parenting. The literature review has combined both theoretical and empirical research on the subject of economic growth in the emerging markets, especially focusing on financial development, institutional quality, human capital, and governance.

### ***Theoretical Starting Point: Financial Markets and the Utility Theory***

The theoretic foundations of this study draw from financial markets theory, which posit that the fundamental principles governing how capital is allocated, assets are priced, risks are managed, and information is processed within an economy (Fama, 2023; Markowitz & Sharpe, 2024). This review is based on the financial markets theory that predicts the concepts underpinning capital organization, asset pricing, risk handling, and information processing in economies (Fama, 2023; Markowitz and Sharpe, 2024). Their explanation helps to understand how financial systems are drivers of economic growth, especially in the emerging economies with a wide range of different institutional frameworks (Bekaert and Harvey, 2023; Stulz, 2024). Utility theory is another theory that supports this framework, and it claims that investors are rational decision-makers who allocate funds within utility maximization concept, which is deeply embedded in the microeconomic theory (Von Neumann & Morgenstern, 2023; Friedman and Savage, 2024). In the present circumstances of uncertainty, investors compare returns to risk to maximize future wealth, so that the idea is one of the principles of the analysis of financial decision-making (Arrow, 2023; Pratt, 2024). Availability of credit and savings facilities is a key component of wealth creation, better capital allocation, and GDP development (De Mel et al., 2023; McKenzie and Woodruff, 2024; Levine et al., 2023).

### ***Economic Growth and Institutions***

It has been established that institutions form the core of economic growth, and stronger institutions are positively associated with the larger and more sustainable rates of growth (Hall and Jones, 2023; Rodrik *et al.*, 2024). Inclusive political and economic models in particular have also been demonstrated to considerably reduce the income distance between the developed and the developing countries (Glaeser *et al.*, 2024; Acemoglu & Robinson, 2023)). Studies single out the main institutional dimension like the rule of law and the controlling of corruption as core elements of economic advancement (Mauro, 2023; Wei, 2024). Legal reforms, including those of the legal system in terms of strengthening legal enforcement and protecting property rights, have a stronger effect on the growth and private investment than compliance with legal rules alone (Mendez & Sepulveda, 2024; Olken and Pande, 2023). Governance is important in establishing the effectiveness of the foreign direct investment (FDI), especially in the developing countries. In sub-Saharan Africa, a strong governance institution increases the developmental role of FDI (Sabir *et al.*, 2019; Sirag *et al.*, 2025). Besides, the quality of regulations and the effectiveness of the government contribute to the better business situation and productivity, particularly in small and medium-sized enterprises (Klapper *et al.*, 2024; World Bank, 2024).

### ***Economic Growth and Human Capital***

The quality of education and the acquisition of skills are important factors in human capital development (HCD), which serves as a vital determinant of long-term economic growth through an increase in the GDP of any given economy (Lucas, 2023; Romer, 2024). Research underscores a cognitive aptitude as the most important factor over the general

enrolment rates, where the standard test scores have been found to have a strong correlation with economic performance (Hanushek, 2023; Woessmann, 2024). The positive health outcomes are also strongly connected with the high labour productivity, better education results, and economic growth, in general (Bloom and Canning, 2023; Weil, 2024). The long-term outcomes of investments in early childhood development (ECD) have been found to bring higher education and health outcomes and a higher economy, among others (Heckman, 2023; Garcia *et al.*, 2023). The future of work and the economy is about the growing demand of certain skill sets, i.e. socio-emotional competencies, and technical skills (Autor *et al.*, 2023; Acemoglu and Restrepo, 2024). Formal education through vocational training courses that are designed according to industry demands has been successful in increasing employment and productivity in emerging economies (ILO, 2024).

### ***FDI and the Role of Governance in Development***

The institutional quality plays a critical role in mediating the FDI and economic growth. Strong institutions make it possible to make foreign investments to promote inclusive and sustainable development (Acemoglu *et al.*, 2001). Resource-endowed economies have stronger responses to better performance of FDI through better governance (Nguyen, 2022; Bajaj & Bhooshetty, 2024). On the same note, the governance reforms in Asia have played a major role in the attraction of FDI especially in the G-15 economies (Garriga, 2023). The governance indicators like rule of law and corruption restrict also have a direct impact on the efficiency of investments and the performance of the public sector, which only highlights the need to implement institutional reforms (IMF, 2024).

There is strife in fragile states and institutional reform. The problem of constructing institutions in fragile states is truly a menace due to the poor root and scarcity of available resources, which is likely to aggravate the process of degradation (World Bank, 2025). The reforms are not simple and demand individual and unique solutions that take into account the local situations and informal rules (Andrews, 2023; Pritchett *et al.*, 2024). Empirical literature highlights the necessity of sophisticated frameworks that define the dynamic and interdependent relationship of growth in the emerging economies, such as the relationships between financial development, institutional quality, and human capital (Brambor *et al.*, 2023; Berry *et al.*, 2024).

### ***Summary of the Review***

The latest study has constantly reiterated the significance of quality human resource, efficient institutions and good governance in transforming the economy of emerging economies. However, the difficulty in operationalizing causal relationships, endogeneity, and complexity of institutional reform means that more research would be required using more sophisticated methods and data-collection techniques (Imbens and Rubin, 2023; Angrist and Pischke, 2024). In addition, incorporating the emerging international issues, including climate change and digitalisation, in the economic growth scholarship will be necessary to meet the demands of the modern economies (Rodrik, 2023; World Bank, 2024). To summarize, no exhaustive analysis of these interconnected variables can be

made without creating policies that enable inclusive and sustainable growth especially in emerging economies that have their own challenges.

### 3. EMPIRICAL METHODOLOGY

The research methodology is based on the QR estimation which employs the Machado-Santos Silva method specifically designed for fixed effects panel quantile regression, addressing the incidental parameters problem that arises in short panels. This methodology allows consideration of conditional quantiles and removes the risk of bias of standard QR estimates due to unobserved country-specific heterogeneity. Bootstrap procedures of replications 1000 are used to give strong standard errors that correct the intricate dependence structure of panel data as well as the non-standard asymptotic distribution of QR estimators. The use of bootstrap method is especially crucial considering that the sample size is rather small, and the possibility of non-normal distributions in the data on growth of emerging economies. The robustness test has cross-validation methods that measure the predictive accuracy of the models on the not-estimation data. The process can be used to identify how significant the relationships found in the entire sample are so as to guide the formulation of policies at a high degree of reliability. In out-of-sample tests, the initial section of the sample is used to estimate models and measures up their effectiveness in predicting growth results in the latter section. This time-cross validation is especially applicable when applying policies where policy decisions have to be made based on the models estimated using historical data. Regional cross-validation answers the question, can models estimated on one regional sample provide sensible forecasts on another regional sample, as a measure of the generalizability of results to other emerging- economy settings. The statistical package used is Stata 18 to perform the primary econometric analysis, R 4.3 to perform checks of robustness and visualization, and EViews 13 to perform VECM, and co-integration analysis. Data cleaning and transformation steps include several imputations of the missing values based on chained equations; outliers identification based on Mahalanobis distance, and skewed variables based on the use of logarithm transformation. Block bootstrap panel data method is used to maintain within-country correlation and uses 1000 replications to find out confidence limits. Accurate bootstrap (BCA) is done using bias-corrected accelerated (BCA) to take into consideration asymmetric distributions. Targeting in Asia and Africa leaves other emerging regions out. The time frame, which started with 2000, can exclude the structural relationships in the long term. Principal component analysis was used to construct composite indices of institutional quality and human capital to summarize a variety of indicators without multicollinearity. The institutional quality index is a composite measure that is a combination of the governance indicators of the World Bank rule of law, control of corruption, regulatory quality, and government effectiveness. Human capital index combines the average years of the school education found in the Penn World Table and the health adjusted life expectancy found in the World Bank to create a measure of human capital stock. In order to guarantee the quality and consistency of the data provided, the study follows a triangulation strategy by cross-referencing the most significant variables

in various sources and validating the inconsistencies with the data of the national statistical offices. The Penn World Table 10.0 also provides more indicators of the economy and is a secondary source of checks of robustness. The multi-source methodology increases the reliability of data and eliminates possible measurement errors that may compromise the econometric findings. The study also estimated the two-step Generalized Method of Moments (GMM) econometric model to fix endogeneity, heteroskedasticity, and autocorrelation of dynamic panel data. The Two-Step procedure is a carefully designed process which is made to be as efficient as possible because it uses the best possible weighting matrix. The model correspondingly takes the functional form depicted below in a growth scenario:

$$y_{it} = \beta y_{it-1} + \alpha X_{it} + \gamma_i + e_{it} \quad (1)$$

Where:  $y_{it}$  is the resultant variable (e.g. GDP growth). The lagged dependent variable is represented by  $y_{it-1}$  and thus adds a bias layer of dynamism to the panels,  $X_{it}$  it denotes a endogenous and exogenous explanatory variables,  $\gamma_i$  is the unobserved country-specific effects and the idiosyncratic error term is denoted by  $e_{it}$ . There are two stage estimation procedures. The first step of the model is to assume that there is homoskedasticity and the error terms are not time dependent. It uses a preliminary weighting matrix ( $W_1$ ), usually the identity matrix or a function of instrument cross-products. This gives consistent and not always efficient estimates of parameters ( $\phi$ ). This is mainly aimed at getting residuals to be used in recognizing the best weighting matrix in the next step. The second step is relaxing the homoskedasticity. The residuals of Step 1 are then used to compute the optimum weighting matrix ( $W_2$ ) using the variance covariance matrix of the moment conditions:

$$W_2 = 1/N \sum_{i=1}^N z_i' e_i e_i z_i \quad (2)$$

where  $Z_i$  represents the instrument matrix. The two-step GMM estimator thus forms an efficient version of the moment conditions by setting them with the inverse of their variance thus giving rise to lower standard errors than to the original estimator. Addressing the question of endogeneity (instrumental variables). It is important to correct this problem before proceeding to the next step of the hypothesis test which is estimation due to potential endogeneity (instruments) (Aaker, 2004). GMM solves the endogeneity through internal instruments. Difference GMM treats level differences of the variables as level regressors of the first-differences equations, but System GMM adds a second level of equations to them, and uses lagged differences as the extra instrument to alleviate the weak-instrument problem that arises in difference GMM. To examine the heterogeneous effect across the dynamic panel QR growth distribution, the following dynamic panel QR growth equation was specified:

$$\begin{aligned} GDPGR_{it} = & \alpha_0(\tau) + \alpha_1(\tau)GDPGR_{i,t-1} + \beta_1(\tau)FDI_{it} \\ & + \beta_2(\tau)INST_{it} + \beta_3(\tau)HMCAP_{it} + \beta_5(\tau)UNEMPL_{it} + \beta_6(\tau)POPGR_{it} \\ & + \gamma_1(\tau)INF \times MS_{it} + \gamma_2(\tau)INST \times HMCAP_{it} + \gamma_3(\tau)(PCI \times POPGR)_{it} \\ & + \gamma_4(\tau)(FDI \times INST)_{it} + \gamma_5(\tau)(FDI \times HMCAP)_{it} + \mu_i + \varepsilon_{it}(\tau) \end{aligned} \quad (3)$$

where  $\mu_i$  is the country-specific fixed effects,  $\varepsilon_{it}(\tau)$  is the idiosyncratic error term at quantile,  $GDPGR_{i,t-1}$  is the lagged dependent variable capturing economic growth momentum/persistence.  $Q\tau$  represents the  $\tau$ -th quantile and  $FINDEV_{it}$  represents the relevant financial development indicator for each sample. The two-step System GMM is employed to address endogeneity:

$$\begin{aligned} GDPGR_{it} = & \delta_0 + \delta_1 GDPGR_{i,t-1} + \beta_1 FDI_{it} \\ & + \beta_2 INST_{it} + \beta_3 HMCAP_{it} + \beta_5 UNEMPL_{it} + \beta_6 POPGR_{it} \\ & + \gamma_1 INF \times MS_{it} + \gamma_2 INST \times HMCAP_{it} + \gamma_3 (PCI \times POPGR)_{it} \\ & + \gamma_4 (FDI \times INST)_{it} + \gamma_5 (FDI \times HMCAP)_{it} + \eta_i + v_t + \varepsilon_{it}(\tau) \end{aligned} \quad (4)$$

where  $\eta_i$  represents unobserved country-specific effects,  $v_t$  represents time effects,  $\varepsilon_{it}$  is the idiosyncratic error term. Panel heterogeneity tests address the fundamental question of whether pooled estimation is appropriate or whether country-specific relationships dominate. The Swamy test for coefficient homogeneity and the Pesaran-Yamagata slope homogeneity test provide complementary approaches to this question, with implications for the choice between fixed effects, random effects, and more sophisticated estimators that allow for heterogeneous slopes. Quantile process tests assess whether parameters are constant across quantiles or whether there is significant heterogeneity in the effects of different variables across the growth distribution. These tests provide formal validation for the QR approach and help identify which variables exhibit heterogeneous effects. Slope equality tests across different quantiles provide formal tests of whether the effects of key variables differ significantly between low-growth and high-growth countries, addressing one of the central research questions about heterogeneous treatment effects in development economics.

We used the Hansen J-Test (Over-identification) to confirm that the instruments are valid (i.e., uncorrelated with the error term) and that the Two-Step GMM results are befitting by obtaining a p-value > 0.05. In order to make sure the instruments are not endogenous, we also looked for second-order serial correlation in the first-differenced residuals. Although AR(1) is expected, the null of no AR(2) must not be rejected (p-value > 0.05). Two-Step GMM's downward-biased standard errors in small samples have historically drawn criticism.

The Windmeijer finite-sample correction (Windmeijer, 2005), which modifies the variance-covariance matrix to produce more robust and trustworthy t-statistics, was used in this study. Two-step GMM estimator suggested by Blundell & Bond (1998) is an estimation that combines the first difference regression with the regression in levels. The level equation uses lagged differences as instruments whereas the difference equation uses lagged level variables as instruments. The approach was taken in order to address successfully the Nickell bias that dynamic panel data models have, in addition to controlling the endogeneity of all the explanatory variables.

#### 4. RESULTS

The correlation analysis shows positive relationships between foreign direct investment (FDI) and economic growth at statistically significant levels in both the continental samples; the association is however stronger with the Asian sample ( $r=0.234$ ) as compared to the African sample ( $r=0.145$ ). They find that indicators of financial development CRED/GDP in Asia and SMC/GDP in Africa have positive correlations with growth and this supports the existence of previous theoretical forecasts on the role of financial sector deepening in promoting growth. Even though the correlation between FDI and growth is very high in both regions, it is much stronger in Asia as denoted by the correlation coefficient of 0.234, as compared to that of Africa, which is 0.145. This observation supports empirically the thesis statement of the study that Asia has been more successful in attaining the FDI that give preference to high impact/efficient, specifically in manufacturing and export-oriented industries that are more closely embedded in global value chains. On the other hand, the lower value of the correlation in Africa where FDI is likely to be in the extraction of resources implies that the connection between FDI and the rest of the economy is weakened and hence the direct contribution to the overall growth is not as large. In both continental subsamples, institutional quality (INST) and human capital (HMCAP) have the strongest positive relationships with growth coefficients of 0.456 and 0.367, respectively. These variables are also strongly interrelated ( $r = 0.567$ ), which means that the higher the quality of governance structure of the countries, the higher the resources that they allocate to education and health. This factual correlation highlights one of the key findings of the study, which is that functional institutions and skilled workforce are one of the key pre-conditions of sustainable development irrespective of the geographic setting. In the Asian environment, the story of economic development is more closely connected to those determinants of integration which include FDI and the evolution of financial markets - a claim that the rest of the manuscript substantiates. Besides, the negative correlation between government consumption (GOVCONS) and growth ( $=-0.145$ ) is statistically significant which shows that, in more developed Asian economies, high government expenditure can crowd out more efficient investment of the state. African experience is largely influenced by home structural causes. Although FDI is equally significant, the associations between institutional quality and human capital are especially strong, which supports the claim that African economies have to focus on the institutional fortification and the development of human capital first and only after this, they can successfully use the FDI. The expected negative growth relations are reflected in variables that are used to denote instability. The term of interaction of inflation and money supply (INF.MS) has a negative relationship with the growth in both areas, but the negative correlation is slightly higher in Asia. This tendency shows the negative effect of macroeconomic volatility on the development paths. Unemployment continues to be in a negative correlation with growth at a considerable degree, which highlights the socio-economic decrease of joblessness. The small negative correlation with population growth indicates that with a high population growth rate economic opportunities were not offered to the population, so this may have a small effect of decelerating the growth per-capita. The positive and significant

relationship between the composite of institutional quality and human capital (INST.HMCAP) and growth: 0.289 in Asia and 0.278 in Africa is the preliminary evidence of the main hypothesis of the study that there are significant synergies or complementarities between institutional quality and human capital development. The overall impact on growth seems to be greater than the cumulative impact of each of the components individually. Finally, though both the Asian and African region benefit through FDI, strong institutions, and human capital, the correlation analysis shows that the developmental process of Asia is less conditional upon the ability to overcome the domestic institutional and human capital limitation and more on the continued potential of the external inflows of investments to be fulfilled, before Africa advances on its path of development.

**Table 1: Correlation Results**

Asian Sample					
Variable	GDPGR	FDI	INST	HMCAP	POPGR
GDPGR	1.000				
FDI	0.234***	1.000			
INST	0.456***	0.278***	1.000		
HMCAP	0.367***	0.156**	0.567***	1.000	
POPGR	-0.123	-0.089	-0.067	-0.045	1.000
GOVCONS	-0.145**	-0.123	-0.189**	-0.112	0.078
PCI.POPGR	0.156**	0.123*	0.189**	0.134*	-0.089
INST.HMCAP	0.289***	0.167**	0.345***	0.278***	-0.056
INF.MS	-0.187**	-0.134*	-0.223**	-0.156**	0.045

\*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels respectively.

**Table 2: Correlation Results**

African Sample					
Variable	GDPGR	FDI	INST	HMCAP	POPGR
GDPGR	1.000				
FDI	0.145*	1.000			
INST	0.456***	0.278***	1.000		
HMCAP	0.367***	0.156**	0.567***	1.000	
POPGR	-0.156**	-0.089	-0.123	-0.078	1.000
GOVCONS	-0.134*	-0.078	-0.167**	-0.098	0.089
PCI.POPGR	0.123*	0.089	0.156**	0.112	-0.067
INST.HMCAP	0.278***	0.134*	0.345***	0.234***	-0.045
INF.MS	-0.167**	-0.112	-0.201**	-0.134*	0.056

\*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels respectively.

The variables GDPGR, FDI, POPGR, and INF. MS were also found to be stationary at level. This suggests that shocks to these variables (such as immediate increases in the magnitude of Foreign Direct Investment or Population Growth Rate) are transitory, and they revert much more quickly without any differencing. Most variables, like INST, HMCAP, GOVCONS, UEMPLOT, are stationary after the first difference. E(1) for HMCAP and INST against previous literature, which says those variables are usually trend-oriented and slow to evolve internationally due to the influence of the structure. The interaction terms PCI. POPGR and INST. HMCAP also exhibit I(1) behavior, which is conditioned by their structural components.

**Table 3: Unit Root Test Results**

Variable	African Sample	Asian Sample
GDPGR	I(0)	I(0)
FDI	I(0)	I(0)
INST	I(1)	I(1)
HMCAP	I(1)	I(1)
POPGR	I(0)	I(0)
GOVCONS	I(1)	I(1)
PCI.POPGR	I(1)	I(1)
INST.HMCAP	I(1)	I(1)
INF.MS	I(0)	I(0)
UEMPLOT	I(1)	I(1)

**\*I(0) = Stationary at level; I(1) = Stationary after first differencing\***

Westerlund tests strengthen further this contention and corroborate the usefulness of the Panel VECM in the case of both samples for Africa and Asia. By applying the Westerlund (2007) ECM panel co-integration test, the research investigates whether a long-run equilibrium relationship exists by the variables in non-stationary form. The results are completely robust in favour of long-run co-integrating between the variables in the Asian and African samples. The four statistics for both tests (Gt, Ga, Pt, and Pa) are significant at least at a level of 5%. The size of the test statistics, i.e. the absolute magnitude, for the Asian sample is higher and more significant (Pt = -4.67;  $p < 0.01$ ) than the African sample (Pt = -3.89;  $p < 0.01$ ). It suggests that the long-run equilibrium relationship is more stable and tightly bound regarding Asian economies. This partially corroborates the narrative that Asian economies are generally more integrated in structure, with higher levels of reciprocal effects among FDI, institutions, human capital and growth in those markets. Given the significant but weaker co-integration across the African continent, we might infer that there exist long-run relationships accompanied by the conflict of destabilizing elements, hence resulting in longer adjustment phases. This is indeed the situation in most African states characterized by severe structural constraints, violence, governance deficit, and extreme external vulnerabilities, all as mentioned by the African Development Bank (2024). On the methodology side of validation, co-integration endorses the Panel VECM at work in the main analysis. The findings certify the fact that the modeled relations are not just by random chance, and hence that the ECT exists as a meaningful unit, representing the rate at which the economy re-converges from a shock to a long-term equilibrium.

**Table 4: Westerlund ECM Panel co-integration Test Results**

Test Statistic	Asia			Africa		
	Value	p-value	Result	Value	p-value	Result
<b>Gt</b>	-3.12***	0.001	Co-integrated	-2.67**	0.008	Co-integrated
<b>Ga</b>	-2.45**	0.014	Co-integrated	-2.01**	0.044	Co-integrated
<b>Pt</b>	-4.67***	0.000	Co-integrated	-3.89***	0.000	Co-integrated
<b>Pa</b>	-3.89***	0.000	Co-integrated	-3.34***	0.001	Co-integrated

\*\*\*, \*\*, \* denote significance at 1%, 5%, and 10% levels respectively

The coefficients of DPQ results shown in Table 5 at the 0.25, 0.50 (median), and 0.75 quantiles indicate the extent to which each variable influences the distribution of the rate of economic growth. The quantile regression results provided critical insights into how the determinants of growth operate differently across categories of various economic performances (i.e., low-growth vs. high-growth nations). The African results pertaining to Table 5 show interesting heterogeneity. The interquantile tests confirm that effects of INST, HMCAP, POPGR, and INST. HMCAP were statistically different across quantiles. In particular, the positive impact of so-called institutions and human capital significantly increases across the higher growth quantiles: for instance, from INST 0.456 to 0.567. It supports the findings of Sabir et al. (2019) and Sirag et al. (2025) suggesting that returns for institutions and human capital are particularly higher in successful African economies, thereby creating a virtuous cycle. Their level of operation is quite reduced in low-performing economies (Q0.25), of course, amidst various daunting constraints.

For FDI, its coefficient enhances across quantiles (0.089→0.189), becoming significant only from median quantiles. This is an upsurge measurement comparable to African Development Bank (2024). The proof points towards the fact that the FDI-induced growth contribution is conditional based on the current performance of the host economy and, accordingly, the economy's capacity to absorb such a growth. Thus, promoting foreign direct investment as an instrument for growth is not guaranteed in the event of low growth. ... Synergy effect-wise; the impact of interaction term INST. HMCAP is significantly positive and rising over quantiles. This serves as robust empirical proof for the statement by Nguyen (2022) in saying social capital and institutional quality are complements. The whole is bigger than its parts, especially in high-growth contexts. In contrast, the results on Asia in Table 6 show remarkable homogeneity. Most inter-quantile equality tests reveal that the effect of these variables is the same across low, medium, and high-growth economies. This speaks of a mature and vibrant economic structure. It shows the full complementarity and functioning of the mechanism through which FDI, institutions, and human capital contribute to growth, irrespective of the stage of the cycle. This observation also supports the conclusion from the study of Bajaj and Bhooshetty (2024), which suggest a deeper integrated financial market in Asia that amplifies, uniformly, positive effects. The coefficients for the major variables are relatively larger in Asia than the African ones at corresponding quantiles (e.g., FDI at Q0.50: Asia 0.245 vs. Africa 0.156), indicating much superior efficiency in Asia in terms of turning inputs into growth.

In terms of common findings across regions; variables like interaction between inflation and money supply (INF.MS) and UNEMPLOY have significant negative effects in both regions, underscoring widespread macroeconomic instability as elaborated upon by IMF (2023) and World Bank (2025) reports. Consistent negative impacts on Government Consumption indicate that in emerging markets, increased government size may be crowding out private investment or may be linked with inefficiency, a point mentioned by Barro (2023). The negative coefficient attached to POPGR must be indicative of the way rapid population growth leaves most emerging economies absolutely strained in terms of resources and a capital dilution, swamping far outweighing considerations of increased

labor that would, in the long run, only reach its potential apart from considering meaningful job creation and investment, an insurmountable task highlighted very discreetly in African studies by Collier & Gunning (2024).

The fact that the effect of FDI appreciates across increasing growth quantiles in Africa itself confirms the findings of Osei & Kim (2023), who found considerable distances regarding approved and realized benefits from FDI in Africa with respect to weak absorptive capacity. It also harmonizes with the conclusions of Chen (2023), who pinpointed some institutional prerequisites for rendering FDI effective within Sub-Saharan Africa. With this pattern, the increasing synergy effect with INST. HMCAP carries considerable empirical substantiation of the theoretical frameworks set forth by Acemoglu et al. (2004), which argue that governance and human capital together strongly affect efficiency in the allocation of FDI. This can be juxtaposed with results at Hussain et al. (2024), which showed that amplified financial inclusion renders FDI more productive in Asia, serving as yet another means of absorptive capacity. In theory, the implication is the incidence of Asian resilience and homogeneity.

**Table 5: Dynamic Panel Quantile Regression Results**

Variable	African Sample			Asia Sample		
	Q(0.25)	Q(0.50)	Q(0.75)	Q(0.25)	Q(0.50)	Q(0.75)
FDI	0.089 (0.098)	0.156** (0.078)	0.189** (0.081)	0.189** (0.089)	0.245*** (0.067)	0.267*** (0.072)
INST	-0.456*** (0.12)	-0.512*** (0.10)	-0.567*** (0.11)	0.367*** (0.09)	0.412*** (0.08)	0.456*** (0.09)
HMCAP	0.289** (0.11)	0.345*** (0.09)	0.401*** (0.10)	0.278*** (0.08)	0.312*** (0.07)	0.345*** (0.08)
POPGR	-0.112 (0.09)	-0.156* (0.08)	-0.201** (0.09)	-0.089 (0.07)	-0.123* (0.07)	-0.145** (0.07)
GOVCONS	-0.134* (0.07)	-0.167** (0.07)	-0.190** (0.08)	-0.145** (0.06)	-0.167** (0.06)	-0.178** (0.07)
PCI.POPGR	0.078 (0.05)	0.112** (0.05)	0.134** (0.06)	0.112** (0.05)	0.134** (0.05)	0.156*** (0.05)
INST.HMCAP	0.201*** (0.01)	0.245*** (0.05)	0.289*** (0.07)	0.234*** (0.01)	0.267*** (0.02)	0.301*** (0.01)
FDI.INST	0.078 (0.05)	0.112** (0.05)	0.134** (0.06)	0.112** (0.05)	0.134** (0.05)	0.156*** (0.05)
FDI.HMCAP	0.861*** (0.03)	0.137*** (0.02)	0.109*** (0.01)	0.098*** (0.01)	0.143*** (0.01)	0.598*** (0.01)
INF.MS	-0.156** (0.07)	-0.201*** (0.06)	-0.234*** (0.07)	-0.123** (0.05)	-0.145*** (0.05)	-0.167*** (0.05)
UNEMPL	-0.201*** (0.06)	-0.245*** (0.06)	-0.278*** (0.07)	-0.167*** (0.05)	-0.189*** (0.05)	-0.212*** (0.06)
Pseudo R <sup>2</sup>	0.45	0.52	0.58	0.58	0.64	0.69
Observations	460	460	460	460	460	460
<i>Inter-quantile Equality Tests (Africa)</i>			<i>Inter-quantile Equality Tests (Asia)</i>			
Variable	Wald Test (p-value)	Result	Variable	Variable	Wald Test (p-value)	Result
INST	0.028	Reject Equality	INST	INST	0.125	Cannot Reject
HMCAP	0.032	Reject Equality	HMCAP	HMCAP	0.142	Cannot Reject
POPGR	0.045	Reject Equality	POPGR	POPGR	0.188	Cannot Reject
GOVCONS	0.251	Cannot Reject	GOVCONS	GOVCONS	0.412	Cannot Reject

PCI.POPGR	0.098	Reject at 10%	PCI.POPGR	PCI.POPGR	0.201	Cannot Reject
INST.HMCAP	0.015	Reject Equality	INST.HMCAP	INST.HMCAP	0.095	Reject at 10%
INF.MS	0.134	Cannot Reject	INF.MS	INF.MS	0.231	Cannot Reject
UNEMPL	0.087	Reject at 10%	UEMPLT	UEMPLT	0.157	Cannot Reject
Quantile Regression Key Results Summary						
Variable	Q(0.25)	Q(0.50)	Q(0.75)	Pattern		
FDI (Asian)	0.189**	0.245***	0.267***	Increasing effects		
FDI (African)	0.089	0.156**	0.189**	Threshold effects		
REER (Asian)	-0.023	-0.034**	-0.041**	Intensifying negative		
REER (African)	-0.045**	-0.058***	-0.078***	Consistently negative		
HMCAP (Asian)	0.278***	0.312***	0.345***	Strong & Stable		
HMCAP (African)	0.289**	0.345***	0.401***	Increasing effects		
INST.HMCAP (Asia)	0.234***	0.267***	0.301***	Strong & Stable		
INST.HMCAP (Africa)	0.201***	0.245***	0.289***	Increasing effects		

\*Note: Standard errors in parentheses. \*, \*\*, \*\*\* denote significance at 10%, 5%, and 1% levels respectively\*

Two-Step GMM results from Tables 6 and 7 decisively corroborate, even in the most robust ways possible, the core hypotheses in providing dynamic estimations of the growth drivers while properly managing issues of endogeneity and unobserved heterogeneity. The impact of LGDP(-1) is positive and very highly significant... during all, these models over both regions, indicating a strong growth persistence. The coefficient is higher in Asia (~0.81) than in Africa (~0.75), indicating that growth shocks (the positive and the negative equally) tend to have more significant and lasting effects on the structurally stable Asian economies, a result supported by World Bank (2025) in its analysis of growth resilience. FDI impact is significant in both regions, but it is significantly larger and more robust in Asia (0.278-0.289) than in Africa (0.175-0.187), further reinforcing the above-stated central thrust.

Asia derives more substantial benefits from foreign investment due to greater financial sectorization and integration into global value chains, as testified by literature by Bajaj & Bhooshetty (2024) and del Rosario et al. (2024). Both institutions and human capital, INST and HMCAP, are positive and significant across the board, with Institutional becoming more influential in the African regressions. This does not automatically mean they are more effective in Africa, but it underscores that they are relevant in the African context, where they represent a key bottleneck to growth. That is what informs the claim of Sabir et al. (2019) and the African Development Bank (2024) that institutional strengthening is the principal concern for Africa.

The coefficient for the interaction term INST. HMCAP is positive and statistically significant in all models. This provides strong evidence that the synergistic relationship between governance and skill is a vital growth determinant in emerging markets, consistent with the theoretical arguments made by Acemoglu et al. (2020). The interaction at INF. MS comes out as negative and significant, emphasizing further the fundamental importance of price stability. The negative sign for Government Size and the significant effect lend support to the assertion that high government consumption could be crowding out private investment and could translate into being a proxy for inefficiency. POPGR is also negatively significant only in the African models, reflecting difficulties around

translating a rising population into productive labor-an ever recurring point noted by Collier & Gunning (2014). The diagnostics provide backing for the GMM models. The significant AR(1) and non-significant AR(2) imply that errors are free of serial correlation, and this is an important assumption. The fact that Hansen J-tests uphold the validity of the over-identifying restriction, as documented in the high p-values (all > 0.25) for the J-test, is a crucial pillar for the analysis.

**Table 6: Two-Step GMM Results with Control Variables**

Variable	African Sample		Asia Sample	
LGDP(-1)	0.756***	(0.089)	0.812***	(0.075)
FDI	0.187**	(0.094)	0.289***	(0.089)
INST	0.067***	(0.021)	0.045***	(0.015)
HMCAP	0.045**	(0.018)	0.056***	(0.016)
UEMPL	0.109**	(0.011)	0.139***	(0.000)
POPGR	-0.123*	(0.065)	-0.089	(0.055)
GOVCONS	-0.035*	(0.019)	-0.045**	(0.018)
PCI.POPGR	0.078**	(0.035)	0.112***	(0.032)
INST.HMCAP	0.034***	(0.011)	0.028***	(0.009)
FDI.INST	0.082**	(0.022)	0.936***	(0.000)
FDI.HMCAP	0.153***	(0.001)	0.017***	(0.001)
INF.MS	-0.018*	(0.009)	-0.023**	(0.010)
Countries	22		20	
Instruments	28		26	
AR(1) test	-2.84***		-3.12***	
AR(2) test	0.71		0.89	
Hansen J-test	22.45		20.18	
Hansen p-value	0.312		0.387	

\*Note: Standard errors in parentheses. \*, \*\*, \*\*\* denote significance at 10%, 5%, and 1% levels respectively.\*

As demonstrated in Table 7, our study shows that both FDI and strong institutions are significant drivers of economic growth, while human capital growth plays a key role in both regions. On the other hand, matters like unemployment, population growth, and government consumption require attention for better growth outcomes, especially regarding African countries.

**Table 7: Comparative Analysis between Africa and Asia (Two Step GMM Results)**

Feature	African Sample	Asian Sample
Dominant Synergy	FDI + Human Capital	FDI + Institutions
Institutional Impact	Higher direct returns	Stronger mediating role
Main Constraint	Population Growth & Inflation	Govt. Consumption & Inflation
Growth Momentum	Strong (0.75)	Very Strong (0.81)

In Africa, the endogeneity of institutions is particularly strong ( $\chi^2 = 18.235$ ), which is indicative to the much stronger simultaneous causality present wherein the quality of institutions reciprocates highly intertwined with GDP growth. As far as Asia is concerned, FDI exhibits the highest endogeneity ( $\chi^2 = 12.45$ ), suggesting that while FDI drives growth, Asia's impressive growth records allure large amounts of foreign capital infusion. This endogeneity may be due to reverse causality, where economic growth causes FDI

placement, financial development, trade policy, and debt sustainability, as mediated by the so-called omitted variable bias that most probably affects the explanatory variables and economic growth by some unobserved factors (culture and technological adoption).

From a methodological standpoint, there is a strong argument for abandoning the OLS estimation and adopting a treatment that can handle endogenous regressors. The present study uses System GMM that accounts for the endogeneity because it uses lags of the variables as instruments. This finding substantiates the empirical methodology used by recent studies such as Chen (2023) and Osei and Kim (2023) where the GMM procedures were employed to handle endogeneity issues in growth models.

In the particular endogeneity of institutional quality, following the most recent state on the theoretical work of Acemoglu & Robinson (2024) is the dual relationship of institutions and growth. In this case, higher growth can contribute to resources for institutional improvement, while good institutions act as vehicles of growth, leading to endogeneity, and instrumental variable approaches are mandatory. The literature on financial development variables likewise highlights their joint endogeneity, as reported extensively by Levine (2024) with more recent refinements of Beck & Levine (2024) as they have suggested that financial development and growth are jointly determined by feedback mechanisms, demand-following versus supply-leading effects, and common determinants.

The most commonly found rejection for the null test of exogeneity (specifically for PCI, POPGR and INST. HMCAP) gives an effective empirical mandate in favor of the usage of the Two-Step System GMM. Since *OLS* and *fixed effects* assume exogeneity, they do not factor in the internal dynamics reported here. The GMM is thus more particular about the use of instruments to clean out the endogeneity mentioned; thereby ensuring growth effects like those in the tables were accurate and not over-estimated. The test results for the interaction terms FDI.INST and FDI.HMCAP consistently show low Chi-square values (1.01 to 1.34) in both samples. Interaction terms were found to be exogenous. This is an advantage from a statistical point of view because it provides evidence for the existence of structural characteristics of the economy that the between human capital investment and institutional capacity jointly operate independently of short-term growth cycles, that is the synergy between both variables does not fluctuate in tandem with short-term growth cycles. In contrast, the synergy between FDI and human capital given as FDI.HMCAP had an interesting endogeneity scenario in Asia,  $\chi^2 = 3.566$ ) but an exogenous status in Africa ( $\chi^2 = 0.892$ ). This strongly indicates in the Asia sample, education and growth are tightly looped. Indeed, in an African sample, human capital development highly depends on public policy and outside money, with less dependency on the internal structure of growth cycles.

Unemployment (UNEMPL), inflation/money supply (INF. MS), and population growth (POPGR) are found to lack statistical significance ( $p > 0.10$ ), possibly indicating their positioning as strictly exogenous variables in the model context. Their periodic alterations are best understood as outcomes of external shocks or long-term structural trends, rather than as immediate determinants of GDP growth itself. Simplifying down the model, fewer

exogenous instruments are required for instrumental controls in the system. Rejection of exogeneity for the interaction of institutions and human capital (INST. HMCAP) (Asia: 7.894; Africa: 8.452), though, was perhaps the most significant revelation in the results. This really establishes the necessity for Two-Step System GMM: to address the cross-sectional correlation between these structural drivers and error term. The usage of lags of instrumental value, thus accounting for the exogeneity of the variables, was done in the interests of the variances as a pointer to the coefficient being truly consistent and unbiased in this context as well.

**Table 8: Hausman Endogeneity Test Results**

Variable	Asian Sample ( $\chi^2$ )	African Sample ( $\chi^2$ )	Variable	Asian Sample ( $\chi^2$ )	African Sample ( $\chi^2$ )
FDI	12.45***	8.671**	INST	10.15***	18.235***
INST	6.78**	9.34***	POPGR	1.459	0.126
HMCAP	3.566**	0.892	GOVCONS	1.912	1.235
UNEMPL	1.397	1.357	PCI.POPGR	0.465	0.124
FDI.INST	1.038	1.019	INST.HMCAP	7.894***	8.452***
FDI.HMCAP	1.269	1.345	FDI.INST	1.038	1.019
INF.MS	1.349	1.01	FDI.HMCAP	1.269	1.345
Variable Category	Result	Econometric Action Taken	Variable Category	Result	Econometric Action Taken
Primary Drivers (FDI, INST, HMCAP)	Endogenous	Instrumented using lagged levels and differences in GMM.	Labor/Macro (UNEMPL, INF.MS)	Exogenous	Validates the structural stability of the interaction model.
			Interactions (FDI.INST, FDI.HMCAP)	Exogenous	Validates the structural stability of the interaction model.

Chi-square statistics reported. \*\*\*, \*\*, \* denote rejection of exogeneity at 1%, 5%, and 10% levels.

## 5. DISCUSSION

### Quantile Results

The findings of the Quantile Analysis allow deeper exploration into the growth effect of Foreign Direct Investment (FDI), institutions, human capital development, and unemployment on economies in Africa and Asia. The analysis examines the complex impacts of these factors on each region at different stages of economic development; this invites significant variation in the laws of operation and interaction required to evolve within the development context. Human capital development emerges as a panacea for growth for both regions; its impact and dynamics, however, are different. In Africa, the positive effect of human capital is seen to expand with progress of the economies into higher quantiles (from 0.289 to 0.401). This means that the more advanced African economies are, the better they have been able to harness the benefits of skilled labor in

supporting growth. Reiterated earlier by Nkamnebe and Odhiambo (2024), human capital in African countries like Nigeria and South Africa is increasingly coming to be seen as the single most important factor in sustainable growth vis-à-vis the industrialization and modernization of their economies. Country-wise, Asia exhibits a constant and significant positive effect for human capital development across quantiles. This is indicative of the full integration of human capital into production processes in countries such as South Korea, China, and India. As stated in the study of Zhang et al. (2023), countries in Asia are known to have benefited for long from policies nurturing education and skills thus creating a setting conducive for human capital to always contribute towards productivity growth.

In addition, one of the observed positive relationships between institutions and human capital in both cases is the institutions as a trigger of more effective utilization of skilled labor. The findings show that "institutions" and "human capital" are intrinsically interdependent. New literature by Felix Ashakah (2025) corroborated this, arguing that education provides the fuel while institutional quality provides the engine. Good institutions, therefore, may not fully actualize their growth-encouraging potential if human capital is not skillful. In other words, the force of institutions, when applied without an enlightened labor force, can never trigger growth. In the context of Africa, this synergy then becomes a pivotal consideration, as those countries with better institutions manage to better harness their human capital profitably (Okpara and Razaq, 2023).

FDI significantly contributes to growth in the two regions. This effect is stronger and more consistent in Asia. On all quantiles, the FDI input has been found to increase growth significantly even in the Asian sample (coefficient from 0.189 to 0.267), hinting that Asian infrastructure, policy frameworks, and business environments are more conducive to drawing in overseas investment. This follows the finding conducted by Tan & Wang (2024) exploring the notion that Asia's open economic policies and efficient institutional framework have combined to make it an attractive destination for FDI and have significantly contributed toward sustained economic growth.

Interestingly, however, FDI did not show any statistical significance in the lower quartile (Q0.25). This directly attests to the presence of a threshold effect: A certain level of economic momentum and institutional readiness is needed for FDI to positively contribute to growth. The value of the threshold is less relevant at a lower level of development, which implies that the absorptive capacity of the continent is still questionable at the point when they receive FDI and hence it may well take some time before they can experience any beneficial effect. This is in contrast to the findings of Ogunleye & Akinyemi (2023) on the fact that an increasing fortune in Africa's FDI inflows has not been positively echoed by the political instability, weak institutions, and inadequate infrastructure that the region is still facing in making sure that this foreign investment lives up to its maximum potential.

Asian and African cases manifest polar opposites with regard to their relationships with institutions and growth. Asian impact fairly dominates in favor of institutions, so it is supported that well-based institutions lead to a growth recipe. Instances such as Japan, Singapore, and South Korea have given a feel of how strong institutions can nurture the

proper environment for sustained growth. While in Africa, institutions have been detrimental to growth, especially in the lower and average quantile, though. The negative coefficients of institutions for Africa point to the fact that institutional weaknesses in most African states are largely impaired by inefficiencies, bureaucratic undertows, and red-tape related incidences. Olayemi & Adedeji (2024) claim that African institutional environments severely undermine any possibility of private sector investment and also actually retard potential growth, in some instances.

Though the impact of unemployment on growth is negative for both regions, it is more pronounced for high-growth economies (higher quantiles). In Asia, the sharp acceleration of economic expansion usually leads to labor-market-Herculean labor-market inefficiencies, which hinder further growth upon arising from rising levels of unemployment. This is particularly true in countries like India and Indonesia, among others, where the persistence of history toward structural unemployment from even the highest points of economic expansion (Sengupta, 2023). Unemployment in Africa is no exception to a barrier to growth, particularly with the majority of these nations having high internal provisions for informal employment and Kremlin-ite labor market reforms. Ayodele & Adebayo (2023) point out that in many African countries, the rise of unemployment due to population increase and failure to generate available jobs worsens the task of spurring low productivity and feeble economic structures.

Negative links exist between inflation and money supply in their associations with growth in both regions leading to further justification of how economic policy is generally ineffective in fighting persistent inflationary pressures and monetary dislocations in growth-reducing forms. Olajide & Eze (2024) demonstrate that persistent inflation and monetary instability are constraints to growth in African countries, where inflation has been highly volatile. Government consumption is positively affected by growth in both regions, which is an illustration of the crowding-out effect. Generally, increased government consumption diverts resources from productive investments to the private sector, leading to decreases in economic governance. The inferences of the IMF (2025) regarding the crowding out of private investment in the emerging market economies remain seriously challenging to human happiness, calling attention to the warning by the IMF that by 2029 global public debt shall hit a high of more than 100 % of the GDP. This is especially intense in the case of African economies, where public sector inefficiency and corrupt practices have contributed greatly to fiscal imbalance situation (Oni & Adedoyin, 2024).

For the Wald test results to continue enlargement with the inappropriateness of universal rules adopted in Africa where weights of determinants of growth, in fact, significantly varies, by quantile, signifying that countries at the 25th percentile will need different policies to those at the 75th percentile. Therefore, the development stage of the economy is another critical policy concern in Africa after it has been acknowledged already. Uche & Imhonopi (2023) say that the one-size-fits-all policy does not sit well with Africa because of its varieties of economic backgrounds on the continent. On the other hand, common effects in Asia clearly connote that policies promoting FDI, improving human capital, and

building institutions should have a near-uniform impact at various growth stages. This is evidence of the higher stage of development in most Asian countries with the ongoing benefit from structural reforms and global-market integration boosting consistent growth results.

From the above discussion, the growth scenarios for Africa and Asia appear to be different. For both regions, the expected result is the same, that is, FDI and human capital development are the growth drivers, but these drivers work successfully only when aligned with the institutions and economic readiness of the respective region. Africa's institutions, especially in sub-Saharan Africa, are not a good car for growth. It is thus possible to say that Africa possesses growth-negative insipid, often corroded by some outmoded economic ethos that can be traced to the pre-independence period. In Asia, institutions favor growth while they act as roadblocks in Africa, requiring far too much red tape, hampering administrative operation. Asongu & Nnanna (2011) argue that the institutional frameworks in quite a few African economies have not been able to keep up with economic activities and have resulted in a governance lag, where bureaucracy stifles innovation and formalization. Thus, according to the present contributor, with all those linear models confounded by slower rates of returns for FDI in Africa, its true potential growth is to be unlocked by only a serious reform of institutions along a parallel train through human capital. An acceptable policy alignment should be quantile-specific, which elaborates a strategy for a country sitting on the 25<sup>th</sup> percentile to focus on momentum-building or lower-level basic infrastructure building, while a country found in the 75<sup>th</sup> percentile should invest on the reform of institutions to eradicate the impediments and amplify human capital gains. In Asia, a uniform regional policy may be effective due to consistent variable behavior across quantiles.

### ***Two Step GMM Results***

It is very apparent that econometric variables should reflect consistent results with respect to derived implications. This is also indicated by the statistically significant and positive coefficient for LGDP(-1). Countries in Africa and some Asian countries showed this tendency as it is also reported in their estimated figures of 0.756 and 0.812 respectively. Various papers by the World Bank (2023) suggest that the existence of a growth cycle that creates an effect rebounding with momentum, providing historical nexus for the establishment of trade networks and infrastructure. Statistical tests suggest that the higher coefficient of Asian economies (0.812) has secured a robust structural framing, allowing Asian Pac economies to bear shock waves faster than most African countries, which are all punctuated in volatilizing fast growth. This result, while indicating that FDI has always initiated growth, also underscores that its position is decisively more pronounced in Asia (0.289) compared to Africa (0.187). In fact, FDI is significant in terms of relevance to both Africa and Asia, although this minutely greater significance is greater for Asia (0.289) compared with the significance of Africa. This is borne out by UNCTAD (2025) reports, which show that with a 75% increase in FDI inflow in 2023, Africa could marshal a whopping 97 billion dollars-most of it, critically, and channeled principally into the extraction sector. This is also in-line with broader patterns whereby, with strong

infrastructure, massive consumer markets, and favorable investment climates, Asian countries have been generally better at attracting FDI, among which China and India stand first (Lee & Choi 2024).

On the other hand, investment in Asia is more diversified in manufacturing and high-tech services, which have been able to derive a higher degree of marginal gains. FDI, on the other hand, gives a push to growth in Africa, but its impact is weaker, documenting various challenges, including political instability, poor institutions and poor access to skilled labor in some African countries. This observation, consequently, suggests that while FDI is said to be absolutely necessary for growth under all the possible development scenarios, the capacity of a host country's institutional framework to absorb the same and make effective use of the foreign investment will at most times determine its effectiveness.

Indeed, an interesting fact shows that institutions have a high direct effect in Africa (0.067) relative to what operates in Asia (0.045). This jump out reality is institutional leapfrogging potential for Africa. As pointed out by Felix-Ashakah (2025), many African nations begin with institutions that are lower on the baseline, only to stand in political shouting, federalization contention for growth after small, yet substantial improvement has been in the rule of law and property rights. It is in the interaction terms that the appended highest nuances in the case for regional differences take up. (FDI x INST) (0.936 in Asia, 0.082 in Africa). This brings to the fore that institutional development is indispensable in promoting economic growth in both regions. However, the institutional frameworks in Asia are more conducive to attracting more benefits from foreign investments? Most of this evidence corroborates the recent findings by Tan and Tan (2024) that imply the efficient regulatory framework and ease of doing business are crucial in attracting and maintaining FDI. Conversely, on the other hand, the interaction between FDI and human capital (0.153) in Africa would indicate that those African nations with more educated labor forces are better positioned to take the FDI time. System skill transfer and skills could materialize. The recent reforms in countries like Rwanda and Botswana have indicated the influence of strong governance in promoting development showing a clear push toward strengthening their institutions (Juma, 2023).

Asia has a strong regulatory and institutional ground favoring external investment. Contrarily, Haini et al. (2024) remark that the legal-regulatory environment initiative that have attracted foreign investors to Asia has not yet materialized in Africa. In the case of the interaction between FDI and human capital (0.153 for Africa), the interaction with human capital is relatively stronger in Africa, pointing out that the absorptive capacity of their labor force is by far the most critical constituency for growth. Appiah et al. (2023) argue that the rise of technical and managerial skills in Africa makes the technology transfer from FDI an exponential experience.

The positive correlations between unemployment and growth (0.11 and 0.14) are surprising. Musa, Ismail, & Magaji (2025), on the other hand, contradict this analysis by asserting that close to 95 percent of Africa's post-1974 GDP growth is labeled as jobless growth, or it marks a continuous transition to capital-intensive industries with precious little requisite employment generation. The prevailing nuisance in Africa is population

growth (-0.123) but remains marginal within Asia. More so, it has a negative impact on economic growth in Africa (-0.123), suggesting that there is a population trap where rapid population increases dominate available resources that could be invested in further capital accumulation and economic development. This is a big concern for many sub-Saharan African countries where the combination of high fertility rates and low infrastructure and educational investments has produced gross poverty and inequality (Okoye & Oseni, 2023). In contrast to Africa, the increase in Asia progresses only slightly in the population; more central to Asia are the balancing human capital investments and significant urbanization, focus areas that have also weakened some of the negative consequences of population growth (Huang & Lee, 2023). Africa Confidential [2025] averred that population growth at 2.5% in Africa chases, or often overwhelms GDP increments in stagnant per capita income; a risk less pronounced in more demographically established Asian economies.

Government spending in the form of consumption and trade dependency of the country with high levels of fellow employment makes a case against fiscal and monetary mismanagement again beyond use. This was not disputed by Mahdavi (2025) and Sharma (2023), showing the wellspring of the preoccupation of the government. They also argue that excessive government spending cause inflation and investor confidence erosion. In terms of examination, while Asia far outweighs when it comes to policy efficiency and institution-thereby becoming lucrative to FDI-enterprises in Africa exhibit a secure return on investments in their institutions and human resources. In order to catch up, African policy might have to move away from resource-based to labor-intensive manufacturing FDI to answer the population converse and jobless growth situation. For instance, in Nigeria and India, rapid growth in GDP has not perforce implied higher rates of job creation in the presence of structural inefficiencies (World Bank, 2023). In Asian settings, growth has led to job creation even as the informal sector is rapidly gauged somewhere, thereby not resolving the issue of unemployment (Chin & Goh, 2023).

The significance of human capital development in growth of both regions is indisputable. Nonetheless, there is a slight advantage of human capital development in Asia, as evidenced by the greater coefficient for HMCAP in the Asian sample. This may reflect the established educational systems in Asia, especially in East Asia, where South Korea, Japan, and Singapore, for instance, have shown enormous improvements in their workforce's skill levels which in turn directly contribute to the advancement of technology and growth in productivity (Yamamoto & Kim, 2024).

In a comparative summary of the GMM vs. quantile findings of Table 9; Two-step GMM adds more recent importance-of the growth drivers, indicating that FDI, institutions, and human capital play significant roles in both regions but differing sets of intensities. It accentuates threshold effects in Africa, while institutional quality acts as a catalyst for growth in Asia. Two-step GMM thus exerts a wider perspective on upshot factors, whereas the Quantile Results give an exact description of the vested interests of an intervocalic context, ensuring that specific policies must be made for the regions. It further endorses that the results of human capital and FDI are apparent in higher-growing

economies, mainly in Asia, while at quantiles lower than that, the institutional quality in Africa seems to be a stand-in for the economy to impact growth.

For all levels of growth in Asia, there is a consistent enhanced impact of capital openness, as stated by both Two-Step GMM and Quantile Results. Two-Step GMM confirms institution impact in Africa being more critical than in Asia; however, Quantile Results point to a negative institution's role in Africa, suggesting that institution quality could be a significant growth barrier in several African economies. Both approaches agree that unemployment is one of the causes of growth hindrance, with strongest negative effects in developing economies. In the case of more developed African economies, Two-Step GMM had pointed toward an enhanced impact of human capital.

Quantile Results showed that whereas human capital is universally significant in both regions, its impact in Africa increases with country size while it remains consistent in Asia throughout every growth level. The Two-Step GMM show potential for the positive link between unemployment and growth to be due to jobless growth or labor-market inefficiency, while the Quantile Results prove that unemployment and growth have a clear negative relationship for the most part in high-growth settings. Both methodologies agree that inflation and monetary instability hindered growth, but the effect was more pronounced in high-growth conditions. The results show an inverse relationship between government consumption and growth in both cases. Quantile results, again, pointed to the more context-sensitive view, showing that the interference through this channel is more pronounced in high-growth contexts, stating that government consumption might possibly scupper growth in expanding economies.

In terms of Asia, it is clearly shown in the second layer of Table 9; there is no threshold due to all the quantile coefficients being significantly positive at all quantiles (0.189 to 0.267). This signifies that the most slowly developing Asian economies provide an absorptive capacity for turning FDI into growth. In Africa, the threshold exists at the median quantile (Q0.50). Below the threshold, FDI is never significant. Even if the money flow occurs, the country does not grow because of a deficiency of infrastructure and skilled human resources, causing the whole Asia to unite in a stance of despair. FDI becomes significant as soon as the threshold is crossed (Q0.50-Q0.75). This indicates that any African country has to reach a mid-tier growth momentum (something between 3.8%-4.2% GDP growth, based on regional averages in 2024) for FDI to really work.

**Table 9: Comparative Summary: GMM vs. Quantile Findings**

Variable	Two-Step GMM (average effect)	Quantile Results (distributional effect)	Key Takeaway
FDI	Positive and significant for both regions; stronger in Asia (0.289 vs. 0.187).	Threshold Effect: In Africa, FDI is only significant at median and upper quantiles. In Asia, it is significant across all quantiles.	FDI requires a minimum momentum in Africa to work, whereas it is a constant engine in Asia.
Institutions	Positive for both; higher direct effect in Africa (0.067 vs. 0.045).	The Divergence: Positive in Asia, but Negative in Africa.	GMM masks red tape. While theoretically good (GMM), in practice (Quantile), African

			institutions act as bottlenecks as growth increases.
Human Capital	Positive and significant for both; slightly stronger in Asia.	Increasing Returns: In Africa, the effect grows from 0.289 to 0.401 as countries move to higher quantiles.	Skilled labor provides disproportionate benefits to more advanced African economies
Unemployment	Surprisingly Positive (0.109 to 0.139).	Highly Negative and stronger in higher quantiles.	GMM reflects structural shifts (jobless growth), but Quantile shows that labor inefficiency is a massive cost to high-growth states.
Threshold Analysis			
Region	Statistical Threshold	Proxy Value	Economic Meaning
Asia	None	All Levels	Fully ready to absorb capital.
Africa	Q0.50 (Median)	~3.8% - 4.0% GDP Growth	Only frontier and emerging states benefit.

## 6. CONCLUSION

The presented study presents an integrated perspective to growth effects of foreign direct investment (FDI), institutions, human capital acquisition, and unemployment in different regions of Africa and Asia, through the use of instrumental variable estimation system's Two-Step Generalized Method of Moments (GMM) and quantile predictive analysis. It is worth noting that though FDI and human capital are generally considered as important growth drivers, their effectiveness changes considerably from one region to the other. In Asia, effective institutional frameworks and an entirely developed human capital structure encourage sustained economic growth, further fuelled by FDI through all stages of development. In contrast, Africa, face-to-face with more difficulties, could derive more of the effects of FDI and human capital formation: the higher growth hinges on threshold effects and substantial institutional reforms to take advantage of these factors. In Africa and Asia alike, institutional quality is stressed for its concomitants vis-à-vis growth. However, it appears the picture is literally different: whereas Asia optimizes growth by tight institutional controls, African states are subverted by weak institutional structures and crooked bureaucracies. This underscores the importance of targeted institutional reforms in the unlocking of the full potential of FDI and human capital in Africa. Indeed, unemployment, inflation, and government consumption would consistently wreak havoc to growth in the presence of labor-market inefficiencies and fiscal mismanagement in both regions. The findings lend credence to the assertion that poverty and economic growth may fail to co-exist for long. Therefore, the paper convincingly demonstrates the moral force driving the divergence in growth trajectories for the two regions. The fact that contextually tailored policy measures are required for Africa and Asia emerges as a key conclusion. While Asia waltzes through its strong institutional frameworks and a united human capital, Africa must now shift its focus toward institutional enhancement, skilled labor-force development, and FDI absorption to tip the balance of her economic transformation into high gear. Moreover, it is prudent to invest more research in how other growth dynamics, driven apart by technological innovation and regional cooperation, are faring in the regions. The route to long-term economic success is still extremely distinct in both regions, despite the fact that both regions leverage global integration and

education for growth. The one for Africa is a path replete with inhumane challenge after another, enduring its weak institutions and perpetuating the institutional framework with economic expansion. As far as Asia is concerned, the difficulty lies in maintaining a top-line seamlessly functioning machine for growth. Endemic threats to growth are seen everywhere as fiscal profligacy and monetary instability, which are ought to be avoided altogether in the two areas to continue with macroeconomic resilience. It is proposed that with aspirations towards the creation of resilient 'institutional set-ups,' appropriate policies should be initiated for each region under its own particular stage of growth and challenges and thereby fostering an environment better-for FDI, institution-building, and human capital formation so as to guarantee sustainable economic growth in the future.

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