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STRUCTURE OF ECONOMY, INSTITUTIONAL QUALITY, AND GROWTH INCLUSIVENESS: AN EMPIRICAL ANALYSIS

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ABSTRACT

This study examines how the economic structure, distinguishing between knowledge-based and resource-based systems, affects financial growth inclusiveness, while also accounting for the moderating role of institutional quality. Despite increasing global emphasis on financial inclusion as a tool for sustainable development, there is limited empirical evidence on how the structural composition of developing economies influences inclusive financial growth, particularly under different levels of institutional quality. It is analyzed using panel data of 78 developing countries and using the two-step System Generalized Method of Moments (System GMM) of estimation. The findings indicate that economies oriented toward knowledge and innovation are more likely to enhance financial growth and inclusiveness. Conversely, resource-dependent economies are more likely to suffer negative impacts, indicating that the high dependency on natural resources will limit the inclusive financial growth. In addition, even though when institutional quality is stronger, financial inclusion tends to be promoted, a resource-based economic structure negatively affects it, though not entirely. On the whole, the findings indicate that facilitating activities of innovation and diversification of the economy are important in attaining wider and more inclusive financial growth.

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INTRODUCTION

The world economy has also experienced a radical reorganization of the global economy, with numerous nations that previously relied largely on the extraction of natural resources taking the change to develop more innovation-based and knowledge-based economies. This shift is indicative of a more general realization that increased output has to be coupled with more to respond to ever-growing social, environmental, and distributional issues of the modern economies. Resource-dependent models, though having been instrumental in early developments, are now considered unsustainable since they are closely intertwined with ecological degradation, exposure to commodity price fluctuations, and growth patterns that deny large groups of people any meaningful economic benefits (IPCC, 2018). These restrictions have intensified the need to have growth strategies that focus on long-term sustainability, resilience, and inclusiveness. Here, the economic systems based on knowledge advancement on the basis of human capital formation, research and development, and technological innovations are becoming promising avenues of increasing productivity and international competitiveness.

Experience of other nations that have attained their goals through the adoption of innovation-oriented development strategies indicates that some long-term investments in education, science, and technology help in the generation of productivity, economic diversification, and more equitable growth in the economy (Aghion and Howitt, 2009). Conversely, those economies that still predominantly depend on extractive industries often experience risks of depletion, volatile fiscal incomes, and lopsided returns distribution, which can complicate social mobility and deter long-term political and economic stability (UNDP, 2020). The composition of the structure of an economy determines the kind of jobs one can do, the returns to labor, and the kind of opportunities available to various groupings; therefore, it is a determining factor in whether growth is inclusive or not. According to Constantine (2017), structural features determine not only the way economies develop but also the way the inequality process occurs, which is also backed by the empirical evidence of the fact that the movement of labor towards more productive industrial and service sectors is one of the key determinants of inclusive growth (IMF, 2013).

With more and more debate putting forth the necessity of sustained growth that is widely distributed, inclusive growth has been a dominant theme of development research, although there is currently no widely accepted definition of it. One of the similarities in the literature is that inclusive growth necessitates the expansion of economic opportunities that every person, such as the poor, the marginalized, and those who were never included in the historical growth, can actively engage and enjoy economic growth (Ali and Son, 2007). This strategy goes beyond the conventional indicators of growth to prioritize equity and career advancement. Some scholars like Klasen (2010) contend that inclusive growth should involve fair allocation of opportunities and results. Institutions in this wider context also cannot be forgone in achieving inclusive growth. Good institutions can also play a role in minimizing socioeconomic differences through the provision of social protection, quality education, and health care, and empowerment of the marginalized group (World Bank, 2012).

In addition, the inclusive growth is reinforced through institutions like business development centers, microfinance organizations, and vocational training institutes that facilitate the building of entrepreneurship and assist in employment creation, especially in the underserved regions (ADB, 2008). Collectively, these mechanisms of the institutions enable the environment in which inclusive growth can be rooted and maintained.

Although the inclusive growth encompasses several aspects, economic, social, political, environmental, and financial, this paper will focus more on the financial aspect. The concept of inclusive development presupposes that individuals and corporations gain access to appropriate and inexpensive financial services, such as financial inclusion (World Bank, 2024). Without the means of financial instruments and the opportunity to access and use credit, savings, payments, and insurance, the marginalized population is not involved in the formal economy and is unable to invest, deal with risks, and engage in economic activities. The fact that financial access has a very positive influence on the inclusive growth measures is evidenced by evidence from the development world, which includes East Africa (Ndungu, 2023). Similarly, macro-level studies, such as the study of Sri Lanka, found that financial inclusion also leads to the generation of employment, reduction of poverty rates, as well as more equalized growth (Kumari, 2021). As a micro and macro aspect, the study of this aspect will help present useful information on the effects of the economic structures on the financial growth and inclusiveness of the developing nations.

Literature Review

This section reviews the existing theoretical and empirical literature available on the structure of the economy that contains the knowledge-based and resource-based economic structure and their connection with inclusive growth. It also examines the potential effect of institutional quality and how that can determine the result of the development process, and reveals some of the literature gaps that this study addresses. The very notion of providing all individuals with a chance to experience the basic needs, such as good education, health care, and participation in the decision-making process, is the foundation of inclusive growth, which is a complex phenomenon. At the core level, inclusive growth emphasizes the significance of social capital formation, which enables the marginalized and poor people in the decision-making process, therefore, leading to the enjoyment of the fruits of economic growth (Kanbur, 2010). The strategy is essential in making sure that the economy grows and also in long-term sustainability (Berg and Ostry, 2011). Inclusive growth will offer greater equality and sustainable development since all will have a voice and ownership in the environment. In addition to this, research has also found that inclusive growth can reduce income inequality (Anand et al., 2013), result in social cohesion (Easterly et al., 2006), and increase human well-being (Ranis et al., 2000).

Inclusive growth is therefore not only an economic requirement but a moral and social requirement, with a strong emphasis on the need to have policies that are focused on the needs of the weak and the most marginalized groups. With the help of an inclusive growth model, policymakers would be able to establish a fairer and more equal society in which all individuals have a chance to succeed. Furthermore, the recent research has also emphasized the significance of inclusive growth, stating that it enhances poverty reduction and shared prosperity. As an example, it has been demonstrated that human wellbeing and social stability are higher in those countries where the growth processes are more inclusive (Berg and Ostry, 2011). The reason behind this is that inclusive growth provides everyone an opportunity to engage and enjoy the economic growth, and also the distribution of resources is more equitable. Based on the insights of Haq et al. (2022), this study examines how a country's capacity to absorb and utilize knowledge and technology influences the relationship between economic structure and inclusive growth. Their findings show that economies capable of effectively leveraging technological spillovers experience stronger growth outcomes, highlighting the critical role of appropriate institutional and structural arrangements.

Knowledge-based economies are important in increasing inclusive growth. According to research conducted by Ciarli et al. (2019) and Conceição et al. (2001), they offer innovations and entrepreneurship opportunities, human capital, and equitable economic growth. Digital technologies play an important role, and they provide the disadvantaged segments of the population with new opportunities and enable them to contribute to the economy. Similarly, the study of Dutta and Lanvin (2020) identifies innovation and entrepreneurship as important metrics in the context of inclusive growth by applying models like the Global Innovation Index (GII) to determine innovation performance. These are some of the factors that lead to economic growth, employment, and social mobility. Innovation is another important tool for fair growth, as further research proves. The Organization for Economic Cooperation and Development (OECD, 2020) discovered that innovation generates new job opportunities and entrepreneurship, which creates inclusive growth. On the same note, the World Bank (2020) highlights the importance of innovation and entrepreneurship in economic development and job creation in developing countries. This is essential in inclusive growth through the creation of an environment that promotes knowledge-based economies, innovation, and entrepreneurship.

The contribution of the knowledge-based economy to growth inclusiveness is more explained by some empirical studies. Research by Fagerberg and Srholec (2008) comprehensively examines the nexus between national innovation capability and inclusive growth in developing countries. Utilizing a robust sample of 85 countries over 20 years (1995-2015), the authors uncover a significant positive relationship between national innovation capability and poverty reduction, as well as income equality. The large sample size and rigorous methodology lend weight to the findings, which suggest that fostering innovation capabilities is crucial for promoting inclusive growth in developing countries. This study's results have far-reaching implications for development strategies, emphasizing the need to prioritize innovation and capability building to achieve more equitable and sustainable growth outcomes.

Some empirical studies further explain the contribution of a knowledge-based economy in achieving growth inclusiveness. Like Fagerberg and Srholec (2008), who broadly study the nexus between national innovation capability and inclusive growth in developing countries. Employing such a strong sample of 85 countries, the authors make an amazing discovery that there is a strong positive correlation between national innovation capability and poverty reduction, as well as income equality. These findings are supported by the large sample size and rigor of the methodology, which indicate that the development of innovation capabilities is essential to inclusive development in developing countries. The implications of the findings of this research are far-reaching for development strategies, whereby it is important to focus more on innovation and building capabilities, which will have a more equitable and sustainable growth outcome. This underscores the importance that innovation policies are developed in line with regional situations and capabilities, a

concept that finds backing in other studies (Foray et al., 2011). They conclude that the investments in knowledge capital have a disproportionately positive influence on the firms that are at the lower end of the income distribution, which fosters more inclusiveness and reduces inequality within the SME sector. The application of quantile regression in this study enables them to gain a subtle insight into how the distributional impact of knowledge capital is manifested, which is consistent with the literature stating the heterogeneous nature of the impact of innovation outcomes (Hall et al., 2013).

METHODOLOGY

This section demonstrates the research design and information. It provides an overview of the empirical models, the estimation strategies, and the variables employed in the analysis. The quantitative work is guided by the models, whereas the estimation techniques enhance the dependability of the findings. The brief description of the variables, sources of data, and sample criteria is also provided. These elements make the research process clear and transparent and assist in justifying the validity of the results. To achieve the goal of the research, we developed empirical models (1, 2, and 3) that investigate the relationship between growth inclusiveness and the structure of the economy. Specifically, the models compare knowledge-based and resource-based economies to assess how each type influences inclusive growth outcomes.

$$GI_{it} = \beta_o + \beta_1 NE_{it} + \beta_2 INST_{it} + \sum_{i=1}^{n} \acute{\beta_3} X_i + \varepsilon_{it} \quad (1)$$

Our empirical model (1) examines the growth inclusiveness (GI_{it}) as the dependent variable, nature of economy (NE_{it}) and institutional quality ($INST_{it}$) as the explanatory variables. The level at which the benefits of economic progress are distributed fairly among various social groups, especially the marginal and the vulnerable persons, is known as growth inclusiveness (GI_{it}). To capture the multidimensionality aspect of inclusiveness, the growth inclusiveness is further divided into four dimensions, which are specific and measurable, including economic growth inclusiveness (Eco_Incl_{it}), financial growth inclusiveness (Fin_Incl_{it}), environmental growth inclusiveness (Env_Incl_{it}), and social growth inclusiveness (Soc_Incl_{it}). Nevertheless, this paper is particularly concerned with financial inclusiveness (Fin_Incl_{it}), as it is central to ensuring that individuals and firms engage in economic activities. In order to quantify the financial aspect of inclusiveness, this paper develops a Financial Inclusiveness Index (Fin_Incl_{it}). The index is pegged on the usually used indicators of financial access. These are the number of commercial bank branches, the number of ATMs per hundred thousand adults, the ratio of the bank's liquid reserves to the total bank assets, the number of depositors with commercial banks, and domestic credit to the private sector. These indicators adhere to the strategy of Beck et al. (2007), who used the indicators to measure financial depth and access. The wider index design is also based on Sarma's (2008) inclusive finance methodology. In building the financial dimension index, we have used Principal Component Analysis (PCA), which is a powerful statistical method that is commonly applied to decrease dimensionality and get the maximum information out of a specific dataset (Jolliffe, 2002). Data for the index comes mainly from the World Development Indicators (WDI). Additional financial information from the International Financial Statistics (IFS) is used to enhance accuracy and improve cross-country consistency. The analysis is carried out by the Generalized Method of Moments (GMM), invented by Arellano and Bond (1991). The two-step system GMM is used in the study to overcome endogeneity and heteroskedasticity as suggested by Arellano and Bover (1995) and Blundell and Bond (1998).

In order to differentiate between knowledge-based and resource-based economies within the sample of developing countries (please see the list of countries attached in Appendix. A), this study employs two key indicators, Total Factor Productivity (TFP) and Gross Fixed Capital Formation GFCF). These are considered joint variables because both are used to evaluate how the structural nature of an economy influences growth inclusiveness. To operationalize these indicators, dummy variables are constructed using the sample mean as a threshold for each. For example, for (TFP), countries with values above the sample average are considered knowledge-based economies and are assigned a value of 1, reflecting their greater reliance on human capital, innovation, and technology adoption (Romer, 1990; Acemoglu, 2009). Countries below the threshold are counted as resource-based economies and given a value of 0, as their growth is more reliant on physical capital and natural resource exploitation (Sachs and Warner, 1997). While on the other side, GFCF, representing fixed investment in infrastructure, machinery, and equipment, follows an inverse classification rule. Here, countries with GFCF values above the sample mean are categorized as resource-based economies and assigned a value of 0, consistent with a development model driven by physical capital accumulation (van der Ploeg and Poelhekke, 2017). Countries with below-average GFCF are considered more knowledge-oriented and receive a dummy value of 1, given the relatively lower emphasis on capital investment and potential reliance on intangible drivers like human capital and innovation.

To strengthen our results, we also add two more variables within the larger group of the nature of the economy, Research and Development expenditure as a percentage of GDP ($R\&D_{it}$), Natural Resource Rents as a percentage of GDP (NRR_{it}). R&D Expenditure is a long-term investment in innovation, technological development, and human capital that are characteristic of knowledge-intensive economies.

On the other hand, natural resource rents (NRR) reflect a reliance of a country on extractive industries, including oil, gas, and minerals. Large dependence on those rents usually goes hand in hand with economic instability, under institutionalization, and environmental destruction (Venables, 2016). Besides the key explanatory variables, the model has a system of macroeconomic control variables (ε_{it}), used to isolate the impacts of the external economic factors. They consist of such measures as trade openness (TOP_{it}), inflation (INF_{it}), foreign direct investment (FDI_{it}), population growth (POP_{it}), and digitalization ($DIGIT_{it}$), all of which can affect the dynamics of long-term growth.

Similarly, to investigate the moderating effect of institutional quality on the relationship between economic structure and inclusive growth. We add an institutional quality ($INST\_it$), economic nature (NE_it) interaction term to our empirical model (2) as an extension of the studies by Acemoglu et al. (2005) and Mehlum et al. (2006). Using this approach, we can determine whether institutional effectiveness has any role in the effect of knowledge-driven or resource-dependent economies on inclusive growth or not. While to examine the moderating role of institutional quality on the relationship between economic structure and inclusive growth. We introduce an interaction term between institutional quality ($INST\_it$) and economic nature (NE_it) into our empirical model (2), building on research by Acemoglu et al. (2005) and Mehlum et al. (2006). This approach allows us to assess whether institutional effectiveness influences

the impact of knowledge-driven or resource-dependent economies on inclusive growth.

$$GI_{it} = \beta_o + \beta_1 NE_{it} + \beta_2 INST_{it} + \beta_3 (NE * INST)_{it} + \sum_{i=1}^{n} \beta_3' X_i + \varepsilon_{it} \quad (2)$$

The specification takes growth inclusiveness (GI_{it}) in the form of a growth outcome variable, and includes an interaction term ($NE * INST_{it}$) to investigate the effect of institutional quality on growth inclusiveness.

When interaction terms are involved in the regression model, the interpretation of results becomes complicated. The influence of such variables as TFP and $GFCF$ on the growth inclusiveness does not have a predetermined effect; it depends on the institutional quality. In order to compute this, researchers compute marginal effects. Equation (3) indicates that institutional quality varies between the marginal effects of TFP and $GFCF$ on growth inclusiveness. It implies that the effect of these variables varies in various governance contexts. Marginal effect analysis gives a better result in terms of context sensitivity when compared to the use of interaction terms only.

$$\frac{\partial GS_{it}}{\partial NE_{it}} = \beta_1 + \beta_3 \times INST_{it} \quad (3)$$

RESULTS AND DISCUSSIONS

The following section presents the outcomes of the empirical model equations (1, 2, and 3) that explore the relationship between the structure of the economy (knowledge-based and resource-based economies) and Financial Growth Inclusiveness. To explore how the nature of an economy influences financial growth and inclusiveness, Table 1 presents the estimation results using four different model specifications. These models examine the relationship between financial growth, inclusiveness, and various economic structure indicators. The dependent variable is the financial inclusion index, as described in the methodology (Table 1), which focuses on the roles of (TFP_{it}), ($GFCF_{it}$), ($R\&D_{it}$), and (NRR_{it}) in determining financial growth inclusion outcomes.

Table 1. GMM Estimates (Dependent VARIABLE: Financial growth inclusiveness).

Variables	Model1	Model2	Model3	Model4
Fin_Incl_{it-1}	0.971*** (0.000)	0.966*** (0.000)	0.968*** (0.000)	0.998*** (0.000)
TFP_{it}	0.12*** (0.000)	---------	----------	----------
$GFCF_{it}$	----------	0.109*** (0.000)	----------	----------
$R\&D_{it}$	----------	----------	0.060*** (0.000)	----------
NRR_{it}	----------	----------	----------	-0.049*** (0.000)
$INST_{it}$	0.161** (0.000)	0.171*** (0.000)	0.068*** (0.000)	0.102*** (0.000)
POP_{it}	-0.095*** (0.023)	-0.092*** (0.000)	0.016** (0.020)	-0.074*** (0.000)
INF_{it}	-0.216** (0.000)	-0.145*** (0.000)	-0.009*** (0.000)	-0.013*** (0.000)
FDI_{it}	0.051*** (0.000)	0.011*** (0.000)	0.013*** (0.000)	0.224*** (0.000)
FD_{it}	0.071*** (0.000)	0.036* (0.097)	0.0152** (0.018)	0.052*** (0.006)
$DIGIT_{it}$	.076*** (0.000)	0.091*** (0.000)	.041*** (0.000	0.004*** (0.000)
TOP_{it}	0.006*** (0.000)	0.053*** (0.000)	0.046*** (0.000)	0.077*** (0.000)
$CONS_{it}$	0.338*** (0.000)	0.208*** (0.000)	-0.104*** (0.000)	0.318*** (0.000)
Observations	394	404	176	403
No of Cross Sections	47	49	40	49
No of Instruments	35	35	35	35
AR(1) test P-value	0.046	0.058	0.046	0.035
AR2(1) test P-value	0.306	0.307	0.389	0.361
Hansen test P-value	0.398	0.493	0.549	0.498

Note: *** ($p < 0.01$), ** ($p < 0.05$), * ($p < 0.10$) indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 1 presents the estimated results that establish the impact of the nature of the economy on the financial growth inclusiveness, performing an analysis on the developing countries. The lagged dependent variable remains positive and statistically significant across all four models. In model 1, (TFP_{it}), which is used to represent knowledge-based economies, its coefficient is positive and significant at the 1 percent level. Moreover, the shift toward more efficient and formal structures contributes to institutional strengthening, enabling financial systems to better reach marginalized populations. TFP thus reflects an indicator of the economic transformation, which, in turn, encourages inclusivity and access to financial growth positively. While in model 2, ($GFCF_{it}$), which is also used to represent knowledge-based economies as discussed in methodology, also shows a positive relationship with financial growth and inclusiveness. Similarly, Model 3 also contributes to the above trend, where ($R\&D_{it}$), which is a direct measure of a knowledge-based economy, is significantly and positively correlated with financial inclusion. The resources on the $R\&D$ promote innovation of money products, help digital ecosystems, and help to build more responsive regulatory regimes, which increase accessibility to underserved populations. In contrast, in model 4, in which (NRR_{it}) is used, which is a unique proxy of a resource-based economy, indicating a negative and significant relationship with financial inclusiveness. This observation implies that the economies with a high dependence on the revenues of natural resources tend to face challenges in increasing the rate of access to financial services. Excessive reliance on natural resources may induce a so-called resource trap that inhibits the growth of the financial sector as it is overemphasized on extractive industries, which results in less financial inclusiveness in the end (Bhattacharyya and Hodler, 2010).

In addition to the main explanatory variables, Table 1 presents the findings of controlled variables, showing that there are high relationships with financial inclusiveness. Specifically, the relationships between ($INST_{it}$) and financial inclusiveness are strong and positive in all four models. On the other hand, the relationship posed by (POP_{it}), exhibit a negative relationship in three models, while in one it is positive, whereas the negative impact of (INF_{it}) is stable, pointing at the negative impacts of the macroeconomic instability on financial inclusion. On the contrary, foreign direct investment (FDI_{it}) always has a positive and significant impact. Moreover, (FD_{it}) supports financial inclusiveness, and ($DIGIT_{it}$) as a metric of internet and mobile penetration shows a strong positive effect, filling traditional access differentials, especially in rural and low-income regions. Similarly (TOP_{it}) is positively correlated, which indicates that globalized economies have higher chances of receiving investments and innovations that would increase financial accessibility.

The outcome of the GMM estimation shows robustness. It is also important to note that AR (1) p-values are lower than 0.1, and this matches the anticipated first-order autocorrelation of differenced residuals. Most importantly, AR (2) p-values are greater than 0.1, suggesting the lack of a significant second-order serial correlation, which proves one of the major assumptions of GMM. Moreover, the Hansen test p-values, which are all greater than 0.3, prove the validity and suitability of the instruments applied, which excludes the possibility of overfitting and enhances the model's credibility.

Table 2, displaying the outcomes of the interaction term in equation (2), shows that institutional quality ($INST_{it}$) is instrumental in improving financial growth and inclusiveness in knowledge-based economies. In particular, the institutional quality and total factor productivity (TFP_{it}), as well as their interaction, positively and significantly relate to financial growth inclusiveness, which indicates that institutions create or promote financial inclusion in knowledge-intensive industries. This is also justified by other models, which reveal that the institutional strength complements productivity-led financial outreach since the relationship between gross fixed capital formation ($GFCF_{it}$) and institutional quality ($INST_{it}$) is observed. However, reliance on natural resources hampers financial growth and inclusiveness, even with high institutional quality, due to elite capture and governance distortions. As far as control variables are concerned, their impact is different from one another on financial growth inclusiveness, like population growth (POP_{it}), inflation (INF_{it}), which have a negative effect on financial inclusion, and foreign direct investment (FDI_{it}), financial development (FD_{it}), digitalization ($DIGIT_{it}$),), and trade openness (TOP_{it}), which positively influence financial access, and tests of the models confirm that estimation methods are valid, and instrument validity and specification are a correct measure of developing economies.

Similarly, the marginal effect of Financial Growth Inclusiveness (as shown in Table 3), all proxies representing knowledge-based economies exhibit a positive and significant relationship with financial inclusiveness. This indicates that both the interaction between the knowledge economy and institutional quality, as well as the direct marginal effects, contribute positively to financial growth inclusiveness. On the other hand, the indicators of resource-based economies display a negative marginal effect on financial inclusiveness.

Table 2. GMM estimates, moderating analysis (Dependent variable: Financial growth inclusiveness).

Variables	Model1	Model2	Model3	Model4
Fin_Incl_{it-1}	0.988***	0.973***	0.936***	0.976***
	(0.000)	(0.00)	(0.000)	(0.000)
TFP_{it}	0.024***	---------	----------	----------
	(0.000)			
			----------	----------
$GFCF_{it}$	----------	0.027***		
		(0.000)		
			0.491***	----------
$R\&D_{it}$	----------	----------	(0.000)	
		----------		-0.005***
NRR_{it}	----------		----------	(0.000)

$INST_{it}$	0.032***	0.016***	0.155***	0.016***
	(0.000)	(0.000)	(0.000)	(0.004)
$(TFP \times INST)_{it}$	0.017***	--------	--------	---------
	(0.000)			
$(GFCF \times INST)_{it}$		0.001***	-------	---------
	----------	(0.089)		
$(R\&D \times INST)_{it}$			0.518***	----------
	----------	----------	(0.000)	
$(NRR \times INST)_{it}$				
	----------	----------	----------	-0.023***
				(0.000)
POP_{it}	-0.018***	-0.025***	-0.085**	-0.016***
	(0.000)	(0.000)	(0.020)	(0.000)
INF_{it}	-0.020***	-0.031***	-0.005***	-0.024***
	(0.000)	(0.000)	(0.000)	(0.000)
FDI_{it}	0.008***	0.008***	0.035***	0.224***
	(0.000)	(0.000)	(0.000)	0.000)
FD_{it}	0.010***	0.016***	0.011***	0.052***
	(0.000)	(0.000)	(0.000)	(0.006)
$DIGIT_{it}$	0.015***	0.016***	0.737***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)
TOP_{it}	0.010***	0.013***	0.022***	0.077***
	(0.000)	(0.000)	(0.021)	(0.000)
$CONS_{it}$	0.015*** (0.000)	0.059***	0.321***	0.318***
		(0.000)	(0.000)	(0.000)
Observations	369	369	414	403
No of cross sections	49	49	50	49
No of instruments	35	35	35	35
AR(1) test P value	0.041	0.056	0.048	0.035
AR2(1) test P value	0.411	0.400	0.258	0.361
Hansen test P value	0.543	0.339	0.488	0.498

Note: *** (p < 0.01), ** (p < 0.05), * (p < 0.10) indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3. Marginal Effect on Financial Growth Inclusiveness.

Percentile of Stability	TFP_{it}	$GFCF_{.it}$	$R\&D_{it}$	NRR_{it}
25th (Low)	0.037***	0.035*** (0.006)	0.139*** (0.015)	-0014***
	(0.005)			(0.001)
		0.046*** (0.009)	0.169*** (0.017)	
50th (Medium)	0.044***			-0.024*** (0.002)
	(0.006)	0.057*** (0.012)	0.198*** (0.020)	
				-0.034***
75th (High)	0 .050***			(0.004)
	(0.007)			

Note: $\frac{\partial \mathrm{FGI}_{it}}{\partial \mathrm{NEI}_{it}} = \beta_1 + \beta_3 \times INST_{it}$ evaluated at various percentiles of the institution's quality. Standard errors are in parentheses. Whereas ***,**,*, show the level of significance at, 1%, 5% and 10%, respectively.

CONCLUSIONS

This paper examines the impacts of the economic structure (knowledge-based and resource-based) on the inclusiveness of financial growth in the developing countries, and specifically the moderating effect of the institutional quality. The analysis gives consistent evidence that knowledge-based economic structures are much more conducive to financial inclusiveness than resource-dependent economic structures on the basis of dynamic panel GMM estimations. Innovation-driven indicators, e.g., total factor productivity and R&D expenditure, are found to have a positive and significant impact on financial inclusion, and dependence on natural resource rents is contrasted with lesser financial inclusiveness. The institutional quality moderator role is that it enhances the positive effect of the knowledge-based structures on inclusive financial outcomes. The results and marginal effect of the interaction indicate that an improvement in governance leads to the inclusiveness of the productivity- and innovation-led growth. Nevertheless, the effect of the institutional amelioration is not enough to counter the exclusionary consequences of resource-dependent economies, which implies that structural features are essential determinants of inclusive performance. Control variables are mostly acting as expected, with macroeconomic instability limiting financial inclusion, and foreign direct investment, financial development, digitalization, and trade openness all favoring financial inclusion. The quality of the empirical findings is verified by diagnostic tests. In general, the results indicate that inclusive financial development involves good institutions and a shift to knowledge-based economic systems, and thus the role of diversification through innovation in the inclusive financial development of developing economies.

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Appendix

Table A. List of sample developing countries.

Albania	Costa Rica	Malaysia	Serbia
Algeria	Cote d'Ivoire	Mali	Sierra Leone
Angola	Dominica	Mauritania	Solomon Islands
Armenia	Dominican Republic	Mauritius	South Africa
Belize	Ecuador	Mexico	Syrian Arab Republic
Benin	Egypt, Arab Rep.	Moldova	Tanzania
Bhutan	El Salvador	Mongolia	Thailand
Bolivia	Ethiopia	Morocco	Timor-Leste
Botswana	Gambia, The	Namibia	Togo
Brazil	Guatemala	Nepal	Tonga
Burkina Faso	Guinea-Bissau	Nicaragua	Tunisia
Burundi	Honduras	Niger	Turkiye
Cambodia	India	North Macedonia	Tuvalu
Cameroon	Indonesia	Pakistan	Ukraine
Chad	Kazakhstan	Paraguay	Uzbekistan
China	Kenya	Peru	Vanuatu
Colombia	Lao PDR	Philippines	Viet Nam
Comoros	Lebanon	Rwanda	Zimbabwe
Congo, Dem. Rep.	Lesotho	Samoa	
Congo, Rep.	Madagascar	Senegal	