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Achieving Inclusive Growth in Sub-Saharan Africa: Exploring the Synergistic Role of Insurance and Institutional Quality

Sylvester Senyo Horvey | Jones Odei-Mensah

Wits Business School, Faculty of Commerce, Law and Management, University of the Witwatersrand, Johannesburg, South Africa

Correspondence: Sylvester Senyo Horvey (sylvester.horvey@gmail.com; sylvester.horvey@wits.ac.za)

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ABSTRACT

The growing importance of inclusive growth has garnered considerable attention in contemporary times. Its importance is further underscored by Sustainable Development Goal 8, which advocates for inclusive and sustainable economic growth, employment, and decent work for all. Achieving inclusive growth requires several key developments, including high institutional quality and a strong insurance industry. This study contributes to knowledge by examining the direct and interactive effects of insurance and institutional quality on inclusive growth. Using the generalised method of moments based on 30 Sub-Saharan African countries between 2005 and 2019, the study presents the following findings: (1) insurance, including life and nonlife penetration, positively impacts inclusive growth; (2) institutional quality, including its components presents a positive influence on inclusive growth; (3) Further, the interaction between insurance and institutional quality stimulates inclusive growth. This implies that quality institutions matter in the drive towards developing the insurance market, thereby fostering inclusive growth. Based on these findings, the study suggests that governments harness insurance's potential to promote inclusive growth and alleviate poverty. Further, the study highlights the urgent need for institutional reforms and policies to unlock the full potential of insurance in driving inclusive growth. This calls for efforts to strengthen the business and institutional environment for sustainable development.

JEL Classification: D63, E02, G22

1 | Introduction

Unlike the conventional growth models, which emphasise aggregate economic output and uneven wealth distribution, inclusive growth focuses on equitable participation, shared prosperity, and safeguarding social cohesion (Horvey et al. 2023). This is crucial to unlocking the full potential of an economy that benefits every segment of society. This creates opportunities for all and benefits all in equal measure while reducing poverty, preserving economic freedom, and ensuring equity across generations (Anyanwu et al. 2016; Ekeocha and Iheonu 2021; Zheng and Su 2022). This is very important because rapid and sustainable poverty reduction depends on inclusive growth that makes it possible for everyone to participate in and benefit from economic growth (Ianchovichina and Lundström 2009). This is integral to the sustainable development goal (SDG) 8, which seeks to promote sustained, inclusive, and sustainable economic growth, employment, and decent work for all. This goal suggests the need for growth to be broad-based, encompassing different sectors of the economy and a large portion of the labour force, including the poor and middle class. This suggests that pursuing inclusive growth is not only an economic imperative but a social and

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ethical one, serving to promote long-term prosperity, stability, and social cohesion. It endorses the notion that a free and equal society can co-exist with long-term economic growth and well-being (Agarwal 2024).

Fostering inclusive growth is vital in emerging and developing regions such as Africa, where disparities in income, access to financial services, and economic opportunities are limited. Ncube (2015) highlights that Africa's growth has not been inclusive, threatening its sustainability. This is particularly true given that the continent's progress is mostly explained by a strong but erratic trend in commodity prices, high public debt, and instability, which worsens economic vulnerability (van Niekerk 2020). According to Ali and Son (2007), large and rising income disparities limit the effect of growth on reducing poverty, which has a detrimental influence on social cohesion and political stability, both of which are necessary for sustainable shared growth. As a result, African countries are exploring pathways to foster inclusive growth. Thus, the worry about the lack of inclusivity, particularly in light of the rapid economic progress on the continent, underscores the need for stringent efforts and developments to foster inclusive growth. Some of these efforts include human capital development, access to financial services, and healthcare (African Development Bank AfDB 2023; World Bank 2024).

In light of the above, this study posits that achieving inclusive growth necessitates a multifaceted approach. Among the various dimensions includes a strong institutional environment and the development of various sectors, such as the insurance industry. A growing body of empirical research demonstrates that the development of insurance markets enhances a country's prospects for sustained growth and that risk management and intermediation, two key functions of insurance, are essential to promoting and maintaining inclusive growth (Lester 2014). According to Zheng and Su (2022), insurance encourages inclusive growth by addressing market failures, particularly from a service equity perspective, through the provision of more accessible and equitable insurance services. For instance, microinsurance and medical insurance can help ensure the stability and continuity of social reproduction by enabling effective risk management, minimising losses incurred by individuals and businesses, protecting affected families from significant financial losses, and supporting companies in resuming operations more quickly. More so, insurance promotes the growth of agriculture and the rural economy (Horvey et al. 2024). It supports the steady growth of the rural economy and the efficient development of agricultural output by providing rural dwellers a minimum level of security, thereby promoting inclusiveness. Also, insurers are large institutional investors in an economy. In this vein, they can collaborate with government agencies to assist in financing environmentally friendly infrastructure, which can support increased productivity. As narrated by Thom et al. (2019), insurance supports business development in at least three ways: Effective risk transfer boosts an organisation's chances of survival and is crucial to its sustainability. Additionally, it facilitates imports and exports and allows for international investment. The strategies and instruments used by insurers to avert risks aid entrepreneurs in devising strategies for risk management and mitigation. This suggests that insurance is crucial to global initiatives aimed at reducing inequality and promoting inclusiveness (Signé 2021). Hence, the insurance industry might contribute to a more resilient, stable, and inclusive society by focusing on the many social and economic benefits of lowering inequality, thereby promoting sustained, inclusive growth. Hence, to ensure sustainable, inclusive growth, it is imperative to recognise the critical role of insurance.

In spite of the importance of the insurance-inclusive growth nexus, we find a notable gap in the literature addressing this relationship. Presently, the empirical literature on insurance and growth largely focuses on three main strands. The first strand of studies examines the relationship between insurance and economic growth, with the majority documenting a positive relationship (Akinlo and Apanisile 2014; Dawd and Benlagha 2023; Pradhan et al. 2023; Ul Din et al. 2017). For instance, Apergis and Poufinas (2020) argue that insurance and economic growth have a significant positive relationship using a panel of OECD countries. The results are consistent for total, life, and nonlife insurance in pre- and post-2008 financial crisis periods. On the contrary, Okonkwo and Eche (2019) found no significant relationship between insurance and economic growth in Nigeria and related this to sustainability and the trust of the insurance public. The second strand also explores the linearity and nonlinearity in the insurance-growth nexus (Asongu and Odhiambo 2020). They establish non-linearities and posit that increases in both life and nonlife insurance have a detrimental net effect on economic growth in Africa. The third strand examines the causality between insurance and growth. For example, Singhal et al. (2022) found that several factors (such as economic, social, and demographic) drive the Asian insurance market. They further discovered a bidirectional relationship between insurance and economic growth. This is supported by (Dash et al. 2018; Pradhan et al. 2023). The fourth strand in the literature focuses on long- and short-run relationships (Balcilar et al. 2020; Olayungbo and Akinlo 2016) and offers divergent results. The findings of Akinlo and Apanisile (2014) show a long-run positive relationship, establishing that insurance has a long-term impact on the growth of economies. This is consistent with Balcilar et al.'s (2020) findings that total insurance penetration has a long-run effect on growth. Further, when broken down into its components (life and nonlife penetration), they obtain evidence of both short-term and long-term impacts on economic growth. These efforts from the literature have helped deepen our understanding of the critical success factors of insurance penetration and how it enhances economic growth. Notwithstanding, these studies offer a limited perspective as they focus solely on the insurance-economic growth relationship without considering its impact on inclusive growth. As explained earlier, inclusive growth is more than conventional growth since it allows co-existing economic freedom, wealth development, and equal opportunity (Agarwal 2024). This also requires the development of the insurance sector. However, there is a lacuna in the literature regarding the relationship between insurance and inclusive growth. The closest to this study is Horvey et al. (2023), who provide initial evidence on the linear and nonlinearity between insurance and inclusive growth. They found a direct U-shaped relationship, implying that higher penetration of insurance improves inclusive growth and vice-versa. The authors further reveal significant threshold levels that countries must surpass to ensure the substantial

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impact of insurance on inclusive growth. This suggests that higher insurance penetration is imperative to fostering inclusive growth. Despite the insightful contributions made by this study, it does not sufficiently address the role of moderating factors, such as institutional quality, in driving insurance beyond the threshold level to stimulate inclusive growth.

Thus, although the study recognises the potential of insurance in promoting equitable growth, the extent of its influence often hinges on the quality of the institutional environment. Pradhan et al. (2023) explain that insurers require an environment where information is symmetrical, possibilities for upward mobility are equal, law and order are paramount to ensure personal protection, and governments, both in the long-term and short-term, pursue social goals through financially restrained policies. For instance, the legal transfer of risk connected with insurance is influenced by the integrity of the legislative procedure, the efficiency of the judicial system in addressing disputes, and the norms and the rule of law and their enforcement (Esho et al. 2004). More so, poor institutional quality leads to poor transparency, which results in higher uncertainty and lower insurability. Bah and Abila (2024) further highlight that the distribution of property rights and the possibility of political participation in an economy are determined by economic polarisation. Consequently, there are limits on the maintenance and caliber of laws and contractual obligations due to the government's willingness and ability to alter the regulatory framework that supports the development of the insurance sector and other related financial industries over time. This is expected to produce the economic and legal stability required for the insurance industry's growth. Hence, the crux of our argument is that insurance stimulates inclusive growth characterised by a sound institutional environment. Nevertheless, the existing literature has largely overlooked the moderating influence of institutional quality on the insurance-inclusive growth nexus. Given this background, the novelty and significance of the study are based on three empirical incursions: (i) examine the independent effects of insurance and institutional quality on inclusive growth; (ii) explore the synergistic effect of insurance and institutional quality on inclusive growth; and (iii) compare if there are significant differences in the life and nonlife insurance markets.

The focus on SSA is germane, given that the question of whether economic growth has been distributed fairly among the populace is a hot topic across the region. To achieve SDGs, the sub-region has prioritised economic growth above other issues throughout the years and seeks to achieve inclusive growth. More so, the insurance industry is chosen because Africa records an average insurance penetration rate of about 2%, which is far below the global insurance penetration rate (7%). South Africa records the highest penetration rate of about 12%. According to Horvey et al. (2024), this low trend persists because the insurance market in Africa is still in its infancy, a significant portion of the population lacks financial literacy, and premiums are prohibitively expensive. Signé and Johnson (2020) add that the reason behind the slow growth rate of insurance penetration in Africa is the difficulties with disposable income that hinder consumers and businesses from expanding the insurance market in Africa. Other challenges include the lack of risk-based historic pricing methods, skills shortage and experience, and poor underwriting practices (PwC 2018). As a result, the Swiss Re Institute (2022) argues that to boost insurance penetration in Africa, there is a need to improve the institutional environment. PwC (2018) adds that the insurance markets are less concentrated in Africa, which presents an opportunity for insurers looking to grow in these areas to acquire and merge with some of the smaller, less established rivals. They further reveal that Africa demands a sound regulatory environment to boost insurance performance. This makes SSA an interesting and critical context to explore the role of institutional quality in the insurance-inclusive growth nexus.

The study contributes to the literature in several ways: First, this study differs from the growing body of knowledge, which mostly focuses on the impact of insurance on economic growth, thereby shifting the focus to inclusive growth. This broadens the scope of insurance potential to encompass not only economic growth but also the distributional effects of growth. Second, given the important role of institutions in insurance market development, gauging the synergies between these two factors helps to understand how their overall impact influences inclusive growth. This provides information to policymakers and gives them the opportunity to formulate policies and strategies to ensure a better institutional environment for insurance market development and inclusive growth. Third, the study disaggregates institutional quality into its components: rule of law, political stability, control of corruption, government effectiveness, voice and accountability, and regulatory quality. By considering the moderating role of these disaggregated variables, this study provides deeper insights into how the different aspect of institutional quality either enhances or weakens the insurance-inclusive growth nexus. This is imperative for policymaking aimed at strengthening the institutional framework in Africa. It offers information to policymakers on which aspect of the institutional framework should be prioritised to drive insurance impact on inclusive growth. Fourth, another major contribution is that the study further performs a segregated analysis to understand the distinguishing impact of total penetration, life penetration, and nonlife penetration on inclusive growth and allows for a comprehensive examination of how institutional quality (including its aggregated variables) interacts with each of these insurance segments in affecting inclusive growth. This is very important given that nonlife insurance covers a wide range of risk categories unrelated to life, whereas life insurance covers risks pertaining to an individual's physical health and remaining years (Bah and Abila 2024). Hence, considering the life and nonlife insurance industry ensures the robustness of the outcomes since they offer a comprehensive understanding of the different insurance market sectors.

The other sections of the paper are structured as follows: Section 2 presents the pictorial impressions of the relationships being tested. Section 3 discusses the theoretical and empirical literature on insurance, institutional quality, and inclusive growth. Section 4 presents the data and empirical models. Section 5 discusses the empirical results, while Section 6 concludes and provides policy recommendations.

2 | Pictorial Impressions

A comparative analysis of the main variables of interest is first explored by way of scatter plots to understand the nature of the

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relationship graphically. Figure 1 illustrates the nexus between inclusive growth and insurance penetration and reveals a positive relationship between inclusive growth and the insurance penetration variables (i.e., total, life, and nonlife). This suggests that countries with high insurance penetration levels are more likely to achieve higher inclusive growth. This is because insurance offers a broad range of benefits to the economy, including financial security, investment opportunities, improved accessibility to financial services, and social safety net protection. It is imperative that policymakers comprehend this link to promote equitable and sustainable economic development. This offers some justification for further investigation into the need to examine these inherent assocations in greater depth.

Similarly, the scatter plot in Figure 2 shows an upward trend relationship from left to right, implying a positive relationship between insurance and institutional quality. This suggests that countries with high institutional quality levels are more likely to experience development in the insurance market. For instance, a stable and strictly enforced regulatory framework is generally correlated with high institutional quality, and this is essential for the growth of the insurance sector. Also, sound regulation promotes customer trust by ensuring that insurance businesses fulfil their commitments and do business honestly. More so, robust institutions protect clients from deceit and fraud, advancing insurance product sales. Furthermore, the study shows that institutional quality positively drives inclusive growth in SSA, as shown in Figure 3. This underscores the importance of strong institutions in fostering inclusive growth. Given this, policymakers should prioritise maintaining political and economic stability, ensuring solid governance, and strengthening institutional frameworks to increase insurance penetration.

Overall, observation from the scatter plots provides some intriguing insights, suggesting a favourable correlation between inclusive growth, insurance penetration, and institutional quality. However, the study cannot definitively rely on these bivariate data to reach a trustworthy conclusion, even though they offer preliminary evidence on the relationship among the primary variables of interest. Other variables that affect inclusive growth are not included in the bivariate relationship. As a result, there is omitted variable bias in these bivariate results, which requires attention. This problem is discussed in section 4, where more empirical tests are given to provide a more reliable outcome.

3 | Literature Review

3.1 | Theoretical Relationships Between Insurance, Institutional Quality, and Inclusive Growth

The theoretical linkage between insurance and inclusive growth is anchored on the financial development theory and the supply-leading hypothesis. First, Schumpeter established a strong foundation by explaining that any country with more than a certain critical level of financial development will converge to the growth rate of the global technological frontier when resources are effectively distributed from less productive sectors to more productive sectors (Aghion et al. 2005; Schumpeter 1911). This aligns with the supply-leading hypothesis, which states that a stable financial system, including the insurance sector, drives growth (Patrick 1966). Levine (2005) supports the supply-leading hypothesis by highlighting the critical role that financial intermediaries play in mitigating the defects and frictions in the load market. Enhancing ex-ante information about possible investments, managing and diversifying risks, monitoring investments and corporate control, mobilising savings, and fostering trade and developments are channels through which the financial sector contributes to growth. Given this, Lee et al. (2016) emphasise that insurance market development can stimulate growth. Thus, insurance could be a game-changer in promoting shared growth

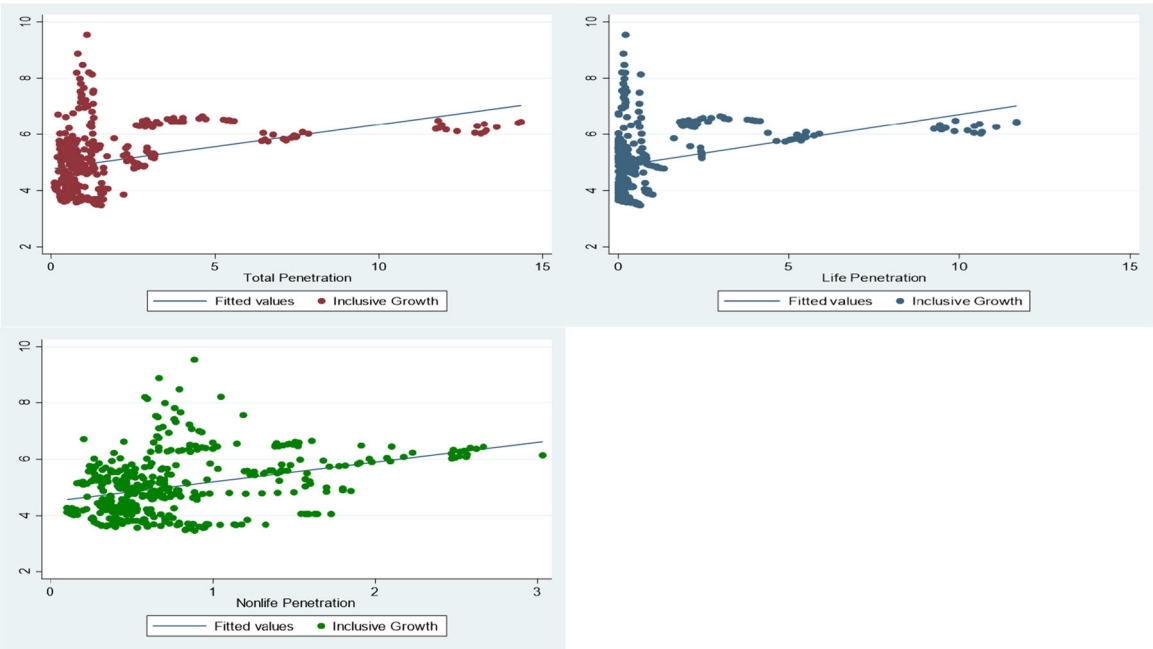

FIGURE 1 | Scatter plots of inclusive growth and Insurance in SSA between 2005 and 2019. [Color figure can be viewed at wileyonlinelibrary.com]

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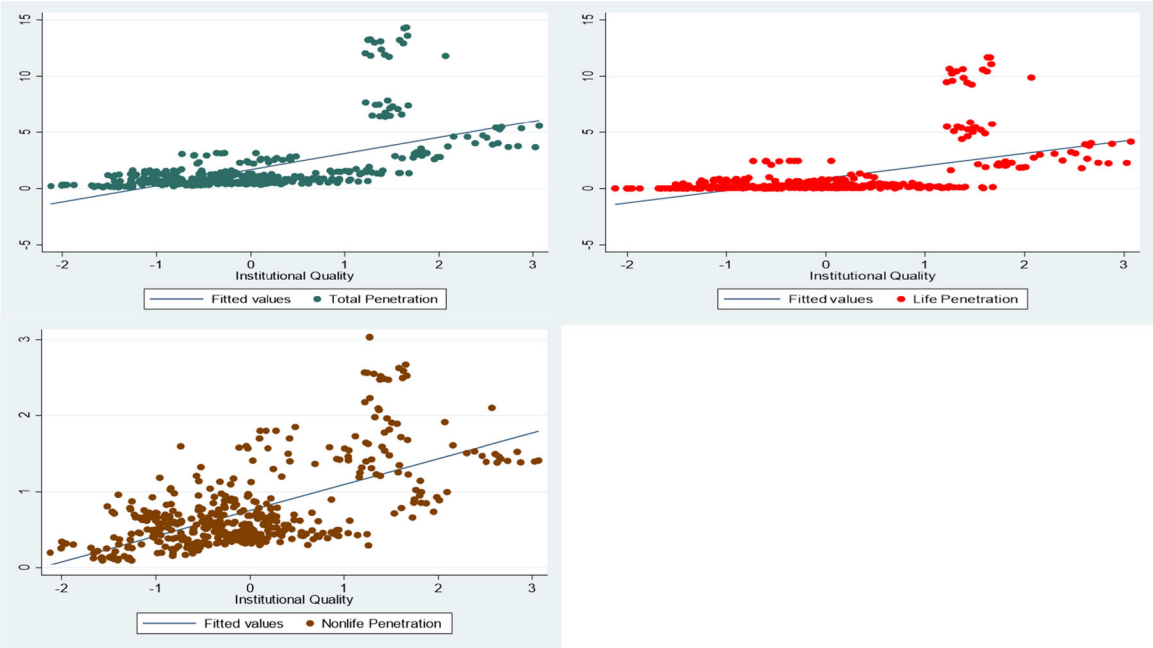

FIGURE 2 | Scatter plots of Insurance and Institutional Quality in SSA, between 2005 and 2019. [Color figure can be viewed at wileyonlinelibrary.com]

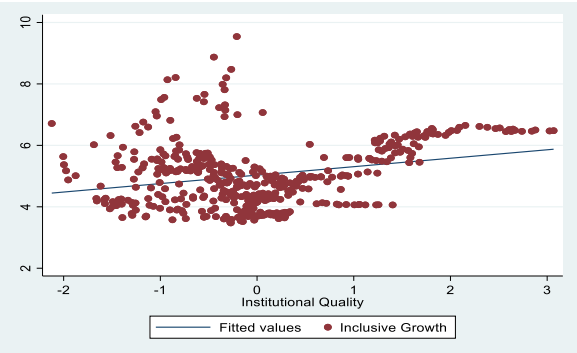

FIGURE 3 | Scatter plots of Inclusive growth and Institutional Quality in SSA, between 2005 and 2019. [Color figure can be viewed at wileyonlinelibrary.com]

in an environment where natural resources abound, institutional frameworks are being built, infrastructure development is rising, and the population is young (African Development Bank AfDB 2018).

While traditional perspectives suggest that insurance market development stimulates growth, there is growing attention to how this impact is vanishing (Panizza 2014), which is greatly attributed to the adverse effects of high levels of inequality, high competition, and market imperfections on growth. Given these conflicting perspectives, an intriguing point that quickly comes up is whether the one-size-fits-all method is appropriate for stimulating the growth process. Lee et al. (2016) argue that to ensure the positive impact of insurance on growth, one must consider the institutional environment, which is explained by the institutional theory. According to institutional theory, organisations operate under a specific set of norms, attitudes, and presumptions that make up rational economic behaviour (Amenta and Ramsey 2010). Lee et al. (2016) posit that a robust institutional system could help the economy as a whole by facilitating financial transactions, enhancing capital markets, and more efficiently channelling funds to the financial sector. In the financial sector, a strong institutional structure is essential for promoting investments and business transactions while reducing transaction costs, both of which boost economic production. Institutions are linked to the growth of the economy as well as growth in the various sectors of the economy. In the context of the insurance-inclusive growth nexus, institutional theory aids in explaining how variations in governance, regulatory efficacy, and corruption control affect the ability of insurance markets to reach underserved populations and promote equitable economic results. Levine et al. (2000) support this narration by demonstrating how institutional elements that strengthen creditor rights and contract enforcement, such as accounting and legal reforms, facilitate financial intermediation and growth. In light of this, the study posits that insurance companies operating in a sound institutional environment would be beneficial to inclusive growth.

3.2 | Review of Insurance Penetration and Inclusive Growth

The literature on insurance and inclusive growth is now emerging, with most studies concentrating on how insurance influences economic growth (Akinlo and Apanisile 2014; Apergis and Poufinas 2020; Asong and Odhiambo 2020; Olayungbo 2015; Pradhan et al. 2023), rather than inclusive growth. Although the two concepts are similar, inclusive growth places more emphasis on the fair distribution of economic gains across all societal sectors, especially the marginalised and vulnerable people, while economic growth is typically gauged by aggregate metrics like GDP (Zheng and Su 2022). As a result, in recent years, scholars have begun to consider how insurance could promote inclusive growth (Horvey et al. 2023). According to research, the insurance

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function - which includes risk management and intermediary - is essential for promoting and sustaining inclusive growth. Successful insurance market development increases a country's chances of experiencing sustainable growth (USAID 2006). Insurance, as a financial tool, is vital to the advancement of inclusive growth because it helps reduce risks, establish financial stability, and improve access to essential services. Thom et al. (2019) and Zerriaa et al. (2017) support this argument and further narrate that insurance reduces the financial burden of unforeseen occurrences, which helps individuals and companies cope with shocks and reduces their vulnerability to poverty. As a result, low-income individuals and businesses have a safety net to participate in the economy without fear of suffering significant losses, which promotes inclusive growth.

Another important aspect of inclusive growth is financial inclusion, to which insurance substantially contributes. According to Horvey et al. (2023), integrating marginalised populations into the formal financial system through access to insurance products improves financial inclusion. For instance, health insurance increases access to medical services, enhancing productivity and improving health (Saksena et al. 2011). This contributes to inclusive growth by reducing health disparities, shielding individuals from crippling medical expenses, and facilitating the active participation of a healthier, more productive workforce in economic activities. Similarly, agricultural insurance enables farmers to invest in high-yield crops and use advanced farming methods, boosting agricultural production and ensuring food security (Carter 2011). As a result, through insurance, the rural community is able to lower their risks of unpredictable weather, crop failures, and market fluctuations. This gives farmers the confidence to invest in improved farming practices and technologies. This raises productivity, stabilises rural incomes, and encourages inclusive growth by enhancing livelihoods, reducing poverty, and fostering sustainable economic development in underserved areas. This aligns with Zheng and Su's (2022) assertion that insurance promotes the growth of agriculture and the rural economy. They argue that giving rural dwellers a minimum level of security facilitates the steady growth of the rural economy and the efficient advancement of agricultural output. This improves people's living standards, especially in rural regions, thereby stimulating inclusive growth (Ma and Du 2017). More so, because insurance pools individual payments for the benefit of all policyholders, it enables the transparent sharing of risk. Lester (2014) shares a similar perspective, contending that insurance shields the impoverished from risks to their well-being, catastrophic losses, and vulnerabilities. Because of this, the impoverished have the opportunity to adopt riskier strategies for boosting their income, spending, and asset accumulation, which suggests the role that insurance plays in fostering inclusive growth.

Further, an empirical evaluation of inclusive insurance contracts by Roa et al. (2019) indicates that insurance reduces vulnerability and increases resilience among the impoverished through microinsurance. They explain that low-income communities may be better protected against health risks, catastrophic events, and other shocks by implementing microinsurance schemes that are specially tailored to their needs. This promotes a more inclusive economy whereby even the most vulnerable may participate and profit from prosperity, improving financial stability and safeguarding livelihoods. This supports Churchill et al. (2014), who investigated the impact of microinsurance on the well-being of low-income households in developing countries. According to their findings, microinsurance increases the financial stability of low-income households, which in turn promotes inclusivity, investment, and consumption. Their study further demonstrates that microinsurance is a cutting-edge social safety net for the impoverished that also serves as an engine for economic growth. Additionally, insurance promotes economic activity and business continuity, both of which are necessary for inclusive growth. This is explained by Horvey and Odei-Mensah (2025a), who highlight that firms with insurance are more robust to shocks and can recover from losses faster, preserving jobs and promoting economic stability. Moreover, insurance makes it easier for small and medium-sized businesses to obtain credit by serving as collateral, which makes it possible for them to obtain funding for growth. This, in turn, encourages inclusive growth by allowing these businesses to thrive, create jobs, and improve the financial well-being of underserved communities. Thus, economic diversification and job creation are fuelled by this increased investment and entrepreneurship, which is essential for inclusive growth.

The above arguments support Thom et al. (2019), who narrate that insurance promotes inclusive growth through three main avenues. First, they state that insurance improves household and individual resilience. Thus, insurance increases a household's resilience to financial shocks and promotes peace of mind even in the absence of risk events. Individuals and households may focus on leading productive daily lives by assigning risk to an insurer. Additionally, insurance gives households access to services like finance, healthcare, and education that they may not otherwise have (Chamberlain et al. 2017). Second, insurance improves business productivity and resilience through effective risk transfer for company sustainability and increases the survival rate of enterprises. Additionally, it facilitates international investment and makes exports and imports easier. Entrepreneurs are compelled or assisted in developing risk management and mitigation plans by the tools and strategies developed by insurers to prevent risks from happening. Because insurance lowers the risk of borrower failure and offers instruments for risk pricing, it also helps to ensure access to corporate finance on more favourable terms. Third, insurance may contribute to the growth of the supply and demand for capital to support investment, or what this study refers to as capital market development in general. This is accomplished in several ways, including the mobilisation of capital through the premium collection, its facilitation of business development and connections to the pensions market, the pooling of capital into larger funds that are easier to manage and invest in, the allocation of such capital to profitable ventures, and, indirectly, the growth of capital market institutions, professionalism, and governance (Horvey et al. 2023).

3.3 | Review of Institutional Quality and Insurance

Both individuals and businesses require an environment where knowledge is symmetrical, possibilities for advancement are equal, law and order are paramount to ensure personal

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protection, and governments, both long- and short-term, pursue social goals through financially restrained policies (Pradhan et al. 2023). This suggests the need for a sound institutional environment, which includes the efficiency of legislative, political, and regulatory frameworks. This is pivotal in shaping and developing the financial markets, including the insurance industry. This is because insurance relies on robust institutions to foster confidence, ensure efficient operations, and protect policyholders. This argument is affirmed by Asongu and Odhiambo (2020), who explored the nexus between financial access, governance, and insurance among 42 SSA countries between 2004 and 2014. Their findings present that good governance is essential for sustainable development because policymakers in the governance sectors are motivated by the advantages of insurance penetration in terms of economic success, which fosters an environment conducive to expanding the insurance industry. This suggests that the institutional environment is essential to driving the insurance market. This is because institutional quality minimises uncertainty by encouraging a stable environment for economic transactions.

Lee et al. (2016) support this claim by stating that individuals and businesses may be dissuaded from purchasing insurance due to worries about unjust treatment and fraud as a result of the degradation of trust in institutions brought about by corruption. When corruption permeates financial and regulatory organisations, confidence in the independence and reliability of insurance businesses and governance structures is undermined. Policyholders might be concerned about issues like premium misuse, lack of transparency in claims processing, or bureaucratic delays driven by bribery demands. These false beliefs undermine confidence in the insurance sector and deter people from buying insurance products. In light of this, Kjosevski (2012) suggests the need for a politically stable environment and minimising corruption. This is supported by their empirical results, which reveal that countries with low levels of corruption and stable political environments generally had higher rates of insurance penetration, as evidenced in their positive result. Hafiz et al. (2022) support this perspective and posit that a sound institutional environment is essential to foster a stable business environment that enables insurance companies to function efficiently and instils trust in their clients' investments.

Further, political stability plays an essential role in the growth and development of the insurance industry. For instance, Lee and Lin (2016) narrate that political stability ensures that regulations will remain in place, which is essential for the long-term planning and investment that the insurance sector needs. In politically stable environments, insurers operate with greater assurance because stable governance reduces the dangers of civil upheaval, regulatory uncertainty, and economic instability. Roe and Siegal (2011) agree with this assertion by further presenting that traditional avenues of investor protection- like legal origin, commercial openness, colonial conditions, and the associated and resulting institutions, cannot work effectively in unpredictable political situations. Therefore, the stability of political systems is essential to the efficient operation of laws and legal systems. Bah and Abila (2024) adds that there could be a direct and indirect relationship between political contexts and insurance activity. This is because political stability encourages insurance providers to operate with confidence because their firms are less likely to encounter abrupt changes in policy or regulatory frameworks. On the other hand, political stability indirectly encourages overall growth and advancement, which increases the demand for insurance. More so, the insurance industry's growth is significantly impacted by the strength of the legal system and the preservation of property rights (Nguyen et al. 2010). Empirical studies indicate a favourable correlation between strong legal institutions and higher levels of penetration of both life and nonlife insurance (Bah and Abila 2024; Fernando et al. 2023). A similar explanation is given by Bah and Abila (2024), who states that a strong legal framework ensures the enforceability of insurance contracts and the availability of legal redress for both policyholders and insurers in the event of a dispute. This can be explained by the fact that legal systems that effectively protect property rights and enforce contracts create an atmosphere conducive to expanding the insurance markets. On the contrary, poor legal systems and protection of rights create uncertainty and risk, which causes individuals to shy away from patronising insurance. Thus, without well-defined property rights, assessing and valuing risks is difficult, and insurers may be reluctant to offer coverage in regions or industries with insufficient legal protections (Fernando et al. 2023). Bah and Abila (2024) further highlight that when consumers and businesses feel confident that claims will be fulfilled and disputes will be resolved peacefully, they are more likely to utilise insurance products. A legal system that renders fair decisions in a timely way for insurance-related disputes adds to this confidence.

Additionally, increasing insurance penetration requires strong regulatory frameworks and strong governance. Thus, insurance penetration tends to be greater in countries with responsible and transparent governance institutions (Beck and Webb 2002). Fernando et al. (2023) support this view by stating that trust in the insurance market is increased when governments establish a stable and predictable regulatory framework through accountability and transparency. Individuals and businesses are more willing to engage with the insurance industry when there are clear regulations, equitable law enforcement, and effective claims procedures in place to guarantee that insurance providers act honourably. This implies that a secure and predictable operating environment for insurance businesses is ensured by effective regulation, which boosts customer trust and promotes the purchase of insurance goods (Akinlo and Idachaba 2024). This re-echoes Bah and Abila's (2024) emphasis that the growth of the insurance industry depends on the quality of regulations, which includes the upholding of property rights and the enforcement of contracts. Thus, the insurance industry is more appealing to suppliers and customers when clear laws and robust regulatory bodies are in place to lower the risks involved in insurance transactions. The above explanations are not without empirical support. For instance, Chang and Lee (2012) employed the panel threshold analysis to examine the impact of the quality of institutions on life insurance by economic growth stage. In their analysis, they found that in low-income countries, institutional factors - such as a broad measure of civil liberties, political stability, government effectiveness, regulatory quality, rule of law, and corruption control - have a significant positive impact on the penetration of life insurance; in high-income countries, however, the effect is

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negligible. Guérineau and Sawadogo (2015) further reveal that life insurance is considered a luxury product, and the demand for life insurance is strongly correlated with institutional quality, which includes government stability and the preservation of property rights. In a nutshell, impressions from the literature emphasise the need for a sound institutional environment to drive insurance market development.

3.4 | Review of Institutional Quality and Inclusive Growth

Ensuring that the benefits of economic progress are fairly distributed to all facets of society is the goal of inclusive growth, which has emerged as a crucial objective for policymakers globally. While various studies have greatly explored the nexus between economic growth and institutional quality (Abubakar 2020; Asante et al. 2023; Nawaz et al. 2014; Nguyen et al. 2018; Wandeda et al. 2021), it is noteworthy to highlight that the relationship between inclusive development and institutional quality has received less attention in the literature. The finance-growth theory contends that growth is more dependent on the financial sector when it is ensconced in a strong institutional framework (Yinusa et al. 2020). Thus, institutions are considered "the rules of the game" that structure economic activity (North 1990). These institutions have an impact on how opportunities and resources are distributed, as well as the general state of the economy (Kunawotor et al. 2020). This aligns with the institutional theory that growth is influenced by the institutional framework in which various economic actors interact with one another (Lee et al. 2016).

Acemoglu and Robinson (2013) assert that countries with robust governance frameworks are more adept at executing policies that foster fair and equitable economic growth. Public health care, social safety nets, and education programs that serve a larger population are examples of these policies. On the other hand, ineffective governance can exacerbate inequality via misallocating resources and resulting in policy failures. Sabir and Qamar (2019) add that institutions that guarantee accountability and openness in government operations are essential for upholding public trust and successfully implementing inclusive growth strategies. This suggests that the quality of regulations has a major impact on inclusiveness and economic participation. Thus, high-quality institutions are crucial for fostering inclusive growth because they offer the infrastructure, stability, and trust needed for equitable access to resources. Gyamfi et al. (2022) support this claim and further posit that inclusive growth requires efficient regulatory frameworks that uphold contracts, safeguard property rights and encourage fair competition. Hence, firms may operate in a predictable environment because these policies encourage entrepreneurship and job development. Furthermore, well-crafted rules can reduce income disparity by preventing monopolies and guaranteeing that economic opportunities are available to a larger portion of the population.

In recent times, few studies have begun to examine the nexus between inclusive growth and institutional quality. For instance, Olanrewaju et al. (2020) found that institutional quality significantly influences inclusive growth; hence, they suggest that countries should harness the power of the institutional framework to drive inclusiveness. This implies that strong institutions promote investments and economic stability while ensuring that growth advantages are distributed more equally. On the other hand, the empirical evidence by Gyamfi et al. (2022) revealed inconclusive results between regulatory quality and inclusive growth, narrating that regulatory quality on its own do does not present any significant impact. Briguglio (2024) attributes this insignificant relationship to the claim that poor nations cannot afford well-functioning institutions of governance and reject governance altogether. Ajaji (2002) narrates that the lack of effective institutions and appropriate policies is the gap in Africa's economic process. The author discovered that civil unrest, ethnic and linguistic division, and corruption are institutional quality indicators that negatively impact development. A more recent study by Ofori et al. (2024a) found a negative relationship between institutional quality and inclusive growth and concluded that weak or inadequate institutional frameworks and poor governance practices impede equitable growth. This aligns with Gupta et al. (2023) argument that poor governance, which takes the form of corruption, obstructs human capital development by raising the price or decreasing the quality of services related to health care, education, and other areas of human capital development, thereby discouraging inclusive growth. To overcome this adverse impact, countries should implement policies to encourage a sound institutional environment. Thus, there must be a strong regulatory framework that adheres to the rule of law, sound regulatory quality, corruption control, accountability, stability in the political arena, and effective governance. Acemoglu and Robinson (2013) highlight this to be essential given that institutions have the propensity to determine a nation's success or failure. In order words, a nation's political structure primarily influences its other economic institutions, which ultimately decide the success or failure of the nation. Therefore, to stimulate inclusive growth, countries are required to develop strong institutional reforms.

3.5 | Novelty and Gap

The literature acknowledges that institutional quality and insurance have a significant role in fostering inclusive growth. Nevertheless, there remains a dearth of literature in our understanding of the interplay among these factors. As a result, this study contributes to the literature by examining the role of insurance and institutional quality on inclusive growth. Additionally, it explores the intervening role of institutional quality on the insurance-inclusive growth nexus, which has not been explored to the best of our knowledge. It also offers a more comprehensive understanding by considering the individual insurance (including life and nonlife) variables and different dimensions of institutional quality in promoting inclusive growth. Life insurance provides financial security in the event of death and risk associated with the bodily sphere of an individual, and nonlife insurance covers a variety of risks, such as property, liability, and fire, follow this pattern. Gaining a deeper understanding of the individual effects can help with optimising insurance policies in various institutional contexts to promote inclusive growth. Given the above, the novelty of this study is that, to the best of our knowledge, it is the first to examine

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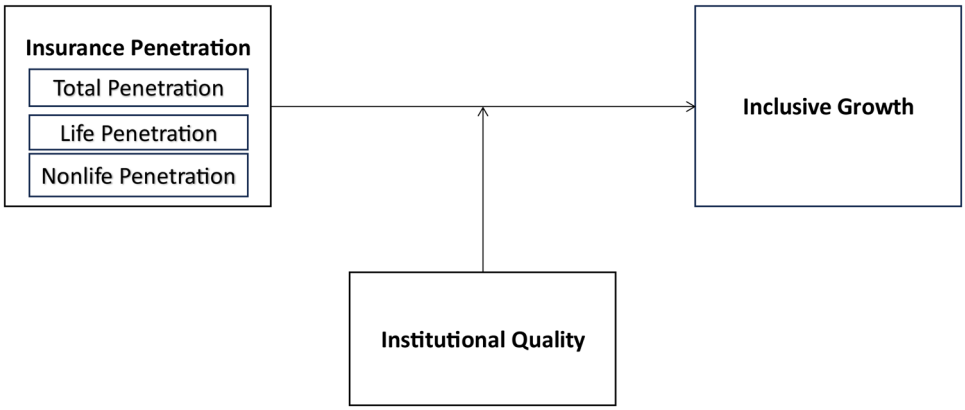

FIGURE 4 | Conceptual framework.

whether institutional quality is key to promoting insurance market development and affecting inclusive growth. This is graphically presented in Figure 4 to aid our conceptual understanding of the explored relationship. It diverges from the conventional literature, which mostly focuses on economic growth without considering its inclusiveness. This study can help create more effective policy designs that maximise the benefits of insurance for fair economic growth by utilising strong institutions.

4 | Data and Methodology

4.1 | Scope, Variables and Sources

This study employs balanced panel data from thirty (30) countries[1] in SSA between 2005 and 2019. The rationale for the selected countries for the sample depends on the constraints in the data available at the time of the study. To measure inclusive growth, which is the dependent variable, the study follows Ali and Son (2007), Anand and Chhikara (2013), and Horvey et al. (2023) to construct the inclusive growth index. This is based on the utilitarian social welfare function in the consumer choice literature. According to this function, shared growth is influenced by two factors. That is, income distribution, which is assessed by the Gini index, and income growth which is measured by GDP per capita. In particular, using the social opportunity function derived from the generalised concentration curve principle, the study integrates several factors into a single indicator[2]. For robustness analysis, the study uses the human development index. The HDI, which incorporates income, education, and health indicators, is useful for inclusive growth since it captures various aspects of human development and well-being essential to inclusiveness.

Regarding the main independent variable, the Global Financial Development Database (GFDD) was used to draw the insurance variables, which is defined as the ratio of insurance premiums to GDP. This assesses the importance of insurance operations to the size of the economy (Horvey and Odei-Mensah 2025a). The study further includes the disaggregated variables of insurance penetration (i.e., life and nonlife) to understand the impact of the two main categories of insurance on the economy. Nonlife insurance covers the risks unrelated to the length of a person's life (such as properties, fire, and motor insurance), whereas life insurance covers risks associated with the bodily sphere of an individual (Horvey and Odei-Mensah 2025b). The World Governance Indicators database was used to identify institutional quality variables, which are moderating variables. All the six variables were used as developed by (Kaufmann et al. 2007). The institutional quality variables are categorised into three areas. The first is political stability and, voice and accountability. This assesses the process used to select, monitor, and change governments. The second category includes government effectiveness and regulatory quality, which captures the ability of the government to create and carry out sound policies. The rule of law and control of corruption are classified in the third category and assess the respect that the state and its population have for the institutions that govern social and economic relations. The six indicators range in value from −2.5 to +2.5. High values suggest a more stable institutional environment and vice versa.

The control variables of the study include labour force participation, gross fixed capital formation, and mobile phone penetration. The essence is to capture the effect of capital, technology, and labour force, as seen in the literature using the neoclassical growth model (Abor et al. 2018; Horvey et al. 2023; Ofori et al. 2024b). The labour force represents those who actively participate in the economy and drive overall growth and productivity, which is known as the working population. Having more workers might lead to higher economic output (Horvey et al. 2023). This accounts for human capital and workforce participation, which drives innovation and growth. This is affirmed by Ofori et al. (2024b), who state that labour participation boosts production and acts as a stimulant for inclusive growth. This is proxied as labour force participation rate, total (% of total population ages 15–64). Mobile phone penetration is measured as mobile phone subscripts (per 100 people). The inclusion of mobile phone penetration in the model is because it promotes pro-poor development by helping households allocate their spending and find a path out of poverty (Abor et al. 2018). Gross fixed capital formation captures how much money is spent on enhancing the physical infrastructure. This is measured as Gross fixed capital formation (% of GDP). It takes hold of the capacity to take in and produce. This includes land improvements and the purchase of machinery and equipment. Strong infrastructure is essential for economic success and may help reduce regional differences, promoting more equitable growth. As a result, the study includes capital investments in the model since they increase access to opportunities for productive work, which is a

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TABLE 1 | Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Inclusive growth	450	322.716	864.165	32.304	13934.83
Life penetration	450	0.920	2.072	0.001	11.677
Nonlife penetration	450	0.759	0.540	0.103	3.031
Total penetration	450	1.674	2.513	0.112	14.708
Corruption	450	−0.556	0.629	−1.534	1.161
Gov. effectiveness	450	−0.64	0.584	−1.879	1.150
Political stability	450	−0.530	0.875	−2.699	1.201
Regulatory quality	450	−0.497	0.530	−1.501	1.197
Rule of law	450	−0.541	0.601	−1.851	1.024
Voice and accountability	450	0.125	0.014	0.104	0.205
Institutional quality	450	0.000	1.000	−2.123	3.067
Labour force	450	70.383	10.991	46.42	90.34
Gross fixed	450	24.65	9.268	2.166	81.021
Mobile	450	61.711	41.227	0.538	165.600

prerequisite for inclusive growth (Adeosun et al. 2020). Data for these variables were drawn from the World Development Indicators Database.

4.2 | Summary Statistics

The results in Table 1 present the variables in their raw forms to display their historical attributes over the sample period. The data indicates that there are fewer inclusive growth trajectories over the sample period, with an average inclusive growth of 322.716. The standard deviation of 864.165 shows wide variations. With an average total penetration of 1.679, the descriptive statistics show that the GDP contributions of all insurance premiums are very low. Likewise, the average values for the insurance penetration subcomponents of the nonlife and life penetration are 0.759 and 0.92, respectively. The underdeveloped insurance sector in SSA may cause low penetration values, which are more likely to impact the lower levels of insurance coverage. More so, the study reveals notable differences in the insurance penetration levels among the countries as indicated by the minimum and maximum values of the insurance penetration indicators (i.e., total, life, and nonlife). With the exception of voice and accountability, all the institutional quality variables record negative average values, implying a weak institutional quality framework in Africa. This can be attributed to factors such as high levels of political instability and corruption in most African countries. The labour force and gross fixed capital formation present mean values of 70.383 and 24.65. The results further reveal an average of 61.711 mobile subscriptions for every 100 people in the population over the sample period.

4.3 | Principal Components Analysis for Institutional Quality Index

The study generates an institutional quality index using the principal component analysis (PCA). PCA is a powerful dimensional reduction technique that aids in maintaining the multi-dimensionality of a set of variables by reducing the number of indices to a small set known as principal components (Greenacre et al. 2022). It is important to note that whether or not our dimension reduction (i.e., PCA) is appropriate for generating an institutional quality index depends on the overall correlations and interrelationships between the variables as well as the adequacy of our sample. The idea that the PCA is appropriate is supported by Table 2, which shows strong correlations among the institutional quality variables. The results of the eigenvalues and eigenvectors are reported in Tables A1 and A2, respectively. Additionally, Table A1 reports the total and partial intercorrelations among the indicators using the Kaiser-Meyer-Olkin (KMO) statistics. As a rule of thumb, if the KMO statistics are more than 0.5, the sample size used to calculate the ICT diffusion index is assumed to be adequate. With a total KMO statistics of 0.8763, it is concluded that the institutional quality sample (i.e., the variables) is adequate and appropriate for the empirical study. Figure 5 reports the scree plot, which shows the number of institutional quality components and the KMO threshold of 1 for choosing the components to create the institutional quality index. Two factors were extracted, given that their eigenvalues were greater than or equal to 1. Factor 1 records eigenvalues of 4.275, accounting for 71% of the variation. Factor 2 records eigenvalues of 1.034, accounting for 17% of the variation. These factors combined account for 88% of the total variation. Individual variables with substantial factor loadings were reduced using the orthogonal varimax rotation (kaiser off) to determine the influence of each element. After that, the institutional quality index is determined by summing the contributions of all the underlying variables to the elements that were retained.

4.4 | Theoretical and Empirical Strategy

The theoretical foundation of this study rests on financial development theory (Aghion et al. 2005; Schumpeter 1911) and supply-

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TABLE 2 | Matrix of correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Inclusive growth	1.000													
(2) Life penetration	0.068	1.000												
(3) Nonlife penetration	0.109	0.772	1.000											
(4) Total penetration	0.080	0.991	0.851	1.000										
(5) Corruption	−0.029	0.387	0.502	0.425	1.000									
(6) Gov. Effectiveness	0.036	0.530	0.626	0.571	0.860	1.000								
(7) Political Stability	0.149	0.315	0.476	0.362	0.715	0.707	1.000							
(8) Regulatory quality	0.062	0.542	0.587	0.573	0.802	0.916	0.677	1.000						
(9) Rule of law	0.041	0.416	0.534	0.457	0.889	0.927	0.783	0.880	1.000					
(10) Voice and accountability	0.157	−0.089	0.044	−0.064	0.116	−0.007	0.121	−0.065	0.061	1.000				
(11) Institutional Quality	0.036	0.530	0.626	0.571	0.860	1.000	0.707	0.916	0.927	−0.007	1.000			
(12) Labour Force	−0.284	−0.353	−0.217	−0.339	−0.076	−0.122	−0.092	−0.209	−0.132	−0.079	−0.122	1.000		
(13) Gross Fixed	0.022	−0.119	0.064	−0.084	0.169	0.091	0.273	−0.037	0.161	0.129	0.091	−0.002	1.000	
(14) Mobile	0.223	0.422	0.406	0.435	0.380	0.449	0.334	0.483	0.439	−0.107	0.449	−0.468	0.162	1.000

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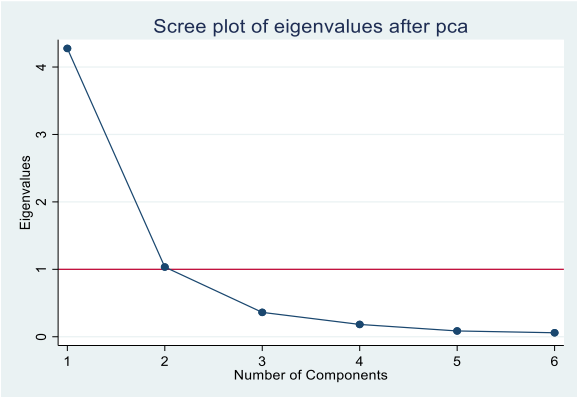

FIGURE 5 | Scree plot of Eigenvalues after PCA. [Color figure can be viewed at wileyonlinelibrary.com]

leading hypothesis (Lee et al. 2016; Levine 2005), which position the insurance industry as an important factor in stimulating inclusive growth. Further, the study recruits the institutional theory to explore the joint impact of insurance and institutional quality on inclusive growth (Amenta and Ramsey 2010; Lee et al. 2016). To this end, the model specification of this study is based on the proposition that institutional quality and insurance penetration affect inclusive growth in SSA. Given this, the study follows the functional form of specification by Horvey et al. (2023) by modelling inclusive growth as

$$IG = f(INS, IQ), \tag{1}$$

where IG represents inclusive growth, INS represents insurance penetration (i.e., total, life and Nonlife), and IQ represents institutional quality (i.e., political stability, voice and accountability, government effectiveness, regulatory quality, the rule of law, and control of corruption).

Then, by following the functional specification, Equation (1) is transformed into a standard empirical statistical model. Given this, the study begins by examining the direct impact of insurance and institutional quality on inclusive growth. This leads to the development of Equation (2).

$$IG_{it} = \theta_1 IG_{t-1} + \theta_2 INS_{it} + \theta_3 IQ_{it} + \vartheta Z'_{it} + \delta_i + \varphi_t + \varepsilon_{it}, \tag{2}$$

Such that IG_{t-1} is 1-year lag of the dependent variable; Z' is a vector of the control variables (i.e., labour force, gross fixed capital formation, mobile phone and FDI); θ *and* ϑ are the parameters to be estimated; δ is the unobserved country specific effects; φ is the time fixed-effects; ε is the error term; i and t are the countries, *1,2, ..., N* and time, *1,2, ... T*, respectively. Equation (2) is further modified to consider the interaction term (thus, insurance and institutional quality) to address the second objective. This is specified as:

$$IG_{it} = \theta_1 IG_{t-1} + \theta_2 INS_{it} + \theta_3 IQ_{it} + \theta_4 (INS{*}IQ)_{it} + \vartheta Z'_{it} + \delta_i + \varphi_t + \varepsilon_{it}. \tag{3}$$

The study follows the estimation procedure by Brambor et al. (2006) to derive the net effects. The variable θ_4 weighs the interaction between insurance and institutional quality to estimate the marginal effect of insurance on institutional quality is estimated as:

$$\frac{\partial IG}{\partial INS} = \theta_2 + \theta(IQ). \tag{4}$$

To estimate equations (2) and (3), the study employed the generalised method of moments (GMM), developed by Arellano and Bond (1991), to examine the direct and synergistic relationship between insurance and institutional quality on inclusive growth. In line with the econometric literature, the selection of the GMM approach is driven by two main factors. First, there are more cross-sections (i.e., N) than the time periods (i.e., T). Second, it addresses potential endogeneity issues in the model, which is due to (i) the inclusion of the lagged dependent variable, which is strongly correlated with the dependent variable. The dependent variable's one-period lag is contingent upon the error term, which is a function of the country-specific effects. (ii) the other endogeneity issue is based on the bidirectional relationship between inclusive growth and insurance penetration (Horvey and Odei-Mensah 2025a; Ma and Du 2017; Zheng and Su 2022). Because a two-step GMM can manage autocorrelation and heteroscedasticity while capturing issues with omitted variables and measurement errors, it is preferred over a one-step GMM (Blundell and Bond 1998).

5 | Results and Discussion

5.1 | Unconditional Effects of Insurance and Institutional Quality on Inclusive Growth

This paper begins by examining the unconditional effects of insurance penetration and institutional quality on inclusive growth. The results are presented in Table 3. Models (1)–(3) provide the empirical results for the insurance penetration variables (i.e., total, life, and nonlife), while Models (4)–(10) present the findings for institutional quality. The study estimates the overall institutional quality index and its six components: government effectiveness, control of corruption, political stability, regulatory quality, rule of law, and voice and accountability. This provides a deeper understanding of which indicator strongly influences inclusive growth. The GMM system was used for estimation, and the assumptions regarding its use were met. For instance, there is no second-order serial correlation. The findings demonstrate that the Hansen test for instrument validity is not rejected, confirming the overall validity of the instruments and the reliability of the regression results (Roodman 2009). Furthermore, the study finds the persistence of inclusive growth over time. This is evidenced by the significant positive values of inclusive growth, which are consistent throughout the models, affirming the model's dynamic nature. This suggests that the current shared prosperity levels in SSA countries are related to the shared prosperity levels in the previous year.

The empirical results demonstrate that total penetration positively influences inclusive growth. The positive result is

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TABLE 3 | Unconditional effects of insurance and institutional quality on inclusive growth.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Inclusive growth (−1)	0.966***	0.967***	0.966***	0.580***	0.205	0.280	0.698***	0.615***	0.539***	0.580***
	(0.010)	(0.010)	(0.010)	(0.127)	(0.558)	(0.288)	(0.139)	(0.173)	(0.132)	(0.177)
Total penetration	0.013*									
	(0.007)									
Life penetration		0.014*								
		(0.008)								
Nonlife penetration			0.020*							
			(0.012)							
Government effectiveness				0.569*						
				(0.295)						
Control of corruption					−1.243					
					(1.059)					
Political stability						0.752**				
						(0.320)				
Regulatory quality							0.404*			
							(0.276)			
Rule of law								0.554		
								(0.498)		
Voice and accountability									1.672	
									(1.344)	
Institutional quality										0.332**
										(0.142)
Labour force	0.011	0.009	0.013	−0.035*	−0.133*	−0.062*	−0.019	−0.031*	0.011	−0.035*
	(0.010)	(0.007)	(0.010)	(0.019)	(0.079)	(0.031)	(0.014)	(0.018)	(0.016)	(0.019)
Gross fixed capital formation	0.013	0.011	0.009	0.012	0.013	0.020	0.011	0.017	0.013	0.013
	(0.011)	(0.010)	(0.007)	(0.008)	(0.018)	(0.015)	(0.014)	(0.015)	(0.015)	(0.017)
Mobile	0.021***	0.018***	0.020**	−0.001	−0.006	−0.001	−0.000	−0.001	0.001	−0.001
	(0.006)	(0.004)	(0.009)	(0.002)	(0.007)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Country/Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	420	420	420	420	420	420	420	420	420	420
Countries	30	30	30	30	30	30	30	30	30	30
No. of instruments	13	13	13	13	13	13	13	13	13	13
AR(1)	0.000	0.000	0.000	0.008	0.002	0.001	0.000	0.000	0.000	0.001
AR(2)	0.312	0.313	0.310	0.286	0.846	0.227	0.338	0.344	0.295	0.286
Hansen	0.228	0.229	0.224	0.258	0.164	0.501	0.201	0.200	0.249	0.258

Note: Standard errors in parentheses.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

further evident when exploring both life penetration and nonlife penetration independently. They show significant levels at 10%. The positive results indicate that increasing insurance coverage can promote inclusive growth. This aligns with Zhen and Su's (2022) and Horvey et al.'s (2023) findings, which reveal a positive relationship between insurance and inclusive growth and argue that more individuals and businesses have access to financial security when insurance services are increased. Hence, the development of the insurance market is essential for sustainable equitable growth. Chester et al. (2020) support this argument and explain that insurance smoothens the economic cycle and decreases the consequences of crises on both the micro and macro levels by reducing uncertainty, unpredictability, and poverty. The argument remains the same for life and nonlife insurance markets. For instance, life insurance encourages long-term savings, education and skill development, human capital development, and

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financial stability - all of which are essential for inclusive growth (Horvey and Odei-Mensah 2025a). Additionally, by utilising their life insurance policies as collateral for loans, policyholders can get credit. The facilitation of funding access has the capacity to stimulate entrepreneurship, firms, and other economic endeavours that foster inclusive growth (Jana 2020). Similarly, nonlife insurance incentivises riskier investments by offering protection against accidents, natural disasters, and property loss. When companies assign some of the risks to insurance companies, they may be able to operate with more assurance (Horvey et al. 2023). This encourages resilience and company continuity thereby, creating an atmosphere that is favourable to economic activity. This evidence affirms the argument by emphasising how insurance, including its different segments, helps close the inequality gap (Heenkenda 2016). Hence, increasing the accessibility of both types of insurance is crucial to fostering a strong inclusive economy. The findings back regional programs like Agenda 2063 of the African Union, which highlights financial inclusion through insurance and bank operations to achieve sustainable development (Nwebo 2018). Given this, the study suggests that policymakers should prioritise educational initiatives to raise awareness of insurance products, particularly among low-income households and small businesses. More so, insurers should develop products specifically tailored to the needs of SSA populations, such as microinsurance for informal sector employees and index-based agriculture insurance for farmers. This aligns with the emphasis placed on financial inclusion strategies and product differentiation.

Also, the study reveals that the overall institutional quality index is positively associated with inclusive growth and was significant at 5%. This implies that effective institutions are essential for promoting inclusive growth. This evidence aligns with the literature that strong institutional quality drives sustainable and equitable growth (Aslam et al. 2021; Gyamfi et al. 2022; Nketia et al. 2022). Thus, an enabling environment for inclusive growth is produced by high-quality institutions. These institutions also ensure equitable resource allocation, promote public confidence, and reduce corruption and inefficiencies. This supports the finance-growth and institutional quality theories, which contend that growth is more revealing when the economy and sectors are established in a strong institutional framework (Yinusa et al. 2020). This is because a strong institutional framework is more adept at executing policies that foster fair and equitable economic growth (Acemoglu and Robinson 2013). Hence, countries with strong institutions are better equipped to implement policies that support social services, healthcare, infrastructure, and education - all of which are critical for inclusive growth. The results imply that a key component of tackling social and economic inequality is having strong institutions. Institutions can guarantee that economic benefits are distributed fairly and reduce inequities by implementing policies intended to redistribute wealth, such as progressive taxation or social security programs.

Turning to the individual institutional quality variables, it is shown that government effectiveness, political stability, and regulatory quality significantly influence inclusive growth. This is plausible given that robust institutions enable improved governance and regulatory policies, which draw investment and stimulate economic activity that benefits a larger portion of the populace. As a result, poverty and inequality are reduced, and economic progress is translated into improvements in the living conditions of all segments of society (Olanrewaju et al. 2020). Acemoglu and Robinson (2013) and Nketia et al. (2022) support this argument and narrate that politically stable and effectively governed nations frequently invest in vital areas like infrastructure, healthcare, and education, which raises living standards. By encouraging good governance, governments may ensure that underprivileged communities have access to social services like healthcare, education, and infrastructure development, contributing to the creation of a more inclusive society. This argument supports the African Union's initiatives, such as the African Peace and Security Architecture (APSA), which aim to address political instability in the region by promoting democratic governance and conflict resolution so as to encourage stability and sustainable growth (Nyadera 2024). More so, a high level of regulatory quality guarantees that laws and rules are favourable to business, which promotes competition, entrepreneurship, and the creation of jobs. This promotes inclusive growth by reducing barriers to economic participation for marginalised populations.

More so, the results indicate that voice and accountability and the rule of law were positively related to inclusive growth, but their effect was insignificant. The positive association suggests that the pathways to inclusive growth are theoretically aligned with institutional elements such as voice and accountability, which stand for democratic participation, transparency in governance, and civil liberties, and the rule of law, which signifies adherence to legal frameworks and contract enforcement (Gyamfi et al. 2022). Their insignificant effect may stem from structural issues in SSA, such as weak governance frameworks, a lack of institutional capacity, and uneven enforcement of laws (Ofori et al. 2024b). Given this, the study presents that institutional reforms that stress not only the development but also the operationalisation of frameworks for justice and accountability must be given top priority by SSA governments. Further, control of corruption exhibits a negative relationship, indicating that a high level of corruption has a detrimental effect on inclusive growth in Africa (Ofori et al. 2024b). As seen in the Corruption Perception Index (CPI), SSA is one of the regions with the highest level of corruption. The brings about economic inefficiencies and induces an adverse influence on growth (Boungou et al. 2024). The negative relationship can also be attributed to the region's weak and inconsistent anticorruption measures. Such efforts do not yield any positive outcome and weaken sustainable growth. Hence, there is a need to enforce anticorruption reforms and prioritise transparency so as to minimise corruption in the region. Gupta et al. (2023) support this narration and posit that poor governance, which takes the form of corruption, obstructs human capital development by raising the price or decreasing the quality of services related to health care, education, and other areas of

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human capital development. Hence, there is a need to reduce corruption and strengthen the other institutional quality indicators to drive inclusive growth. The results suggest that strengthening institutional quality needs to be a primary goal of SSA policy frameworks. To foster equitable growth, governments must prioritise reducing corruption, improving the quality of regulations, and maintaining political stability. Countries that have enacted institutional reforms, such as Rwanda, show that these initiatives can result in observable development effects (Umutoniwase 2024).

Regarding the control variables, the impact of the labour force on inclusive growth was diverse and mostly insignificant. Similarly, the impact of mobile phones was inconclusive. More so, gross fixed capital formation revealed a positive impact, which was consistent across the models. Gross fixed capital formation is the phrase used to describe the net increase of physical assets, such as buildings, machinery, infrastructure, and technology, that are required for sustained economic growth and productive capacity. The results highlight the need to invest in physical assets to promote equitable economic growth (Horvey et al. 2023).

5.2 | The Role of Institutional Quality on the Insurance-Inclusive Growth Nexus

Given the above findings, the study now shifts attention to the intervening role of institutional quality on the insurance-inclusive growth nexus. As earlier explained, the industry requires a strong institutional environment that provides a foundation for growth and development (Pradhan et al. 2023). Further, PwC (2018) explains that to ensure insurance market development, the industry must have a strong structural and institutional environment to thrive. Against this backdrop, the study determines how institutional quality drives the insurance market in fostering inclusive growth. The results are reported in Tables 4–6. Table 4 presents the results using the total penetration as the main independent variable, while Tables 5 and 6 introduce life and nonlife penetration as independent variables, respectively. Similar to the results above, all the assumptions guiding the use of GMM are met. The persistence of inclusive growth is further evidenced in all the Tables. As Brambor et al. (2006) recommended, the constitutive and interaction terms were incorporated into the same model for this study.

The result in Model (14) shows that the relationship between insurance and inclusive growth is contingent on institutional quality, which is evidenced by the significant positive result. The result is consistent across the different insurance variables (i.e., life and nonlife penetration). This is further validated by the positive net effect. The result suggests that increasing institutional quality is essential to driving the insurance market, thereby promoting inclusive growth. This aligns with Bah and Abila (2024), who posit that sound institutions increase trust and confidence among economic agents. The finding supports the arguments of the institutional theory, which emphasise how a strong governance system creates a conducive atmosphere for economic agents and outcomes (North 1990). In the context of the insurance-inclusive growth nexus, institutional theory aids in explaining how variations in governance, regulatory efficacy, and corruption control affect the ability of insurance markets to reach underserved populations and promote equitable economic results (Lee et al. 2016). The insurance industry depends heavily on institutional quality, which includes the efficiency of legislative, political, and regulatory frameworks. More so, in the insurance industry, individuals and companies benefit from high institutional quality by developing trust and confidence because insurers are accountable and transparent in their business operations, reducing fraud and mismanagement (Ben Dhiab and Dkhili 2022). All of these promote the insurance business, which helps them to provide services leading to inclusive growth. Hence, Asongu and Odhiambo (2020) narrate that a strong institutional framework is essential for sustainable development because policymakers in the governance sectors are motivated by the advantages of insurance penetration in terms of economic success, which fosters an environment conducive to expanding the insurance industry, ultimately enhancing inclusive growth. In light of the above, strengthening institutional frameworks should be a top priority for SSA policymakers to optimise the insurance industry's potential. Enforcing legal protections for insurers and policyholders, promoting transparency, and strengthening regulatory competence are all part of this. Harmonised rules and capacity building should be the main focus of current initiatives, such as those pushed by the African Union's Agenda 2063 and the African Insurance Organisation. The insurance industry is encouraged to collaborate with government and regulatory agencies to strengthen their institutional framework to build trust and transparency. This has the propensity to increase their client base and insurance penetration, thereby leading to inclusive growth,

Turning to the six components of the institutional quality variables, the study finds that government effectiveness and control of corruption significantly and positively interact with insurance in affecting inclusive growth. The results remain true for total and life insurance penetration, while nonlife penetration is positive but insignificant. The findings indicate that an effective governance system and corruption control are essential to drive the insurance industry to affect inclusive growth. For instance, effective governments create clear, consistent, and fair regulatory frameworks essential to the insurance industry's smooth operation (Bah and Abila 2024). These regulations protect consumers, ensure fair competition, and maintain the solvency of insurance companies (Pradhan et al. 2023). Such performance will ultimately promote inclusive growth. When moreindividuals buy policies in a well-regulated insurance market, the penetration of insurance rises. Growing penetration lowers risk and provides financial stability, both of which support stable and inclusive economies (Zheng and Su 2022). More so, effective governments frequently carry out financial inclusion policies and initiatives, making insurance products available to a larger demographic, including low-income and rural areas (Fernando et al. 2023). Subsidies, public awareness campaigns, and collaborations with commercial insurers to

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TABLE 4 | Conditional effect of total insurance penetration and institutional quality on inclusive growth (Dev. Var.: Inclusive growth).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Inclusive growth (−1)	0.939***	0.933***	0.939***	0.936***	0.916***	0.908***	0.933***	0.930***	0.943***	0.937***	0.901***	0.899***	0.939***	0.933***
	(0.043)	(0.043)	(0.044)	(0.046)	(0.055)	(0.056)	(0.046)	(0.047)	(0.043)	(0.045)	(0.050)	(0.050)	(0.043)	(0.043)
Total penetration	0.017*	0.019**	0.011	0.015	0.010**	0.016***	0.015**	0.014	0.017	0.019**	0.018	0.022*	0.017*	0.014*
	(0.010)	(0.007)	(0.010)	(0.013)	(0.004)	(0.002)	(0.007)	(0.011)	(0.014)	(0.007)	(0.014)	(0.013)	(0.010)	(0.008)
Government	0.039	0.076**												
	(0.031)	(0.033)												
Total* government		0.028**												
		(0.010)												
Corruption			−0.035	−0.075**										
			(0.028)	(0.034)										
Total* corruption				0.021**										
				(0.009)										
Political					−0.016	−0.036								
					(0.022)	(0.025)								
Total* political						0.010***								
						(0.003)								
Regulatory							0.036	0.061**						
							(0.029)	(0.026)						
Total* regulatory								0.013**						
								(0.006)						
Rule									0.053*	0.103**				
									(0.030)	(0.037)				
Total* rule										0.014***				
										(0.003)				
VoiceAcc											2.904**	2.552*		
											(1.299)	(1.331)		
Total* VoiceAcc												0.237		
												(0.209)		

(Continues)

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TABLE 4 | (Continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Inst. Qual													0.023	0.044**
													(0.019)	(0.017)
Total* Inst. Qual.														0.016**
														(0.005)
Labour	0.009	0.010	0.013	0.008	0.007	0.011	0.014	0.008	0.011	0.013	0.009	0.012	0.010	0.015
	(0.007)	(0.008)	(0.012)	(0.007)	(0.006)	(0.009)	(0.010)	(0.007)	(0.008)	(0.011)	(0.007)	(0.012)	(0.011)	(0.012)
Gross Fixed	0.014*	0.012**	0.009*	0.013*	0.010*	0.014	0.011	0.016*	0.008**	0.010***	0.008**	0.001	0.008**	0.012***
	(0.008)	(0.005)	(0.004)	(0.008)	(0.006)	(0.011)	(0.010)	(0.009)	(0.003)	(0.001)	(0.004)	(0.002)	(0.004)	(0.003)
Mobile	0.001**	0.001**	0.001**	0.002*	0.003**	0.002*	0.001**	0.003**	0.001**	0.003**	0.001**	0.001**	0.002*	0.002**
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)
Net effects	—	0.002*	—	0.003*	—	0.011**	—	0.010	—	0.012**	—	0.052*	—	0.014**
Country/Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	420	420	420	420	420	420	420	420	420	420	420	420	420	420
Countries	30	30	30	30	30	30	30	30	30	30	30	30	30	30
No. of Instruments	10	11	10	11	10	11	10	11	10	11	10	11	10	11
AR(1)	0.000	0.002	0.000	0.000	0.001	0.000	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.002
AR(2)	0.317	0.322	0.311	0.317	0.314	0.315	0.313	0.316	0.313	0.322	0.315	0.314	0.317	0.322
Hansen	0.121	0.118	0.125	0.111	0.131	0.127	0.122	0.115	0.120	0.112	0.169	0.171	0.121	0.118

Note: Standard errors in parentheses.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

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TABLE 5 | Conditional effect of life insurance penetration and institutional quality on inclusive growth (Dep. Var.: Inclusive growth).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Inclusive growth (−1)	1.027***	0.926***	0.940***	0.930***	0.917***	0.907***	0.934***	0.926***	0.945***	0.934***	0.903***	0.902***	0.940***	0.926***
	(0.022)	(0.044)	(0.043)	(0.046)	(0.055)	(0.055)	(0.046)	(0.047)	(0.043)	(0.045)	(0.049)	(0.049)	(0.042)	(0.044)
Life	0.017***	0.021**	0.016*	0.015**	0.014**	0.018**	0.020*	0.022	0.018*	0.025*	0.006	0.020	0.008*	0.030**
	(0.002)	(0.009)	(0.010)	(0.006)	(0.007)	(0.008)	(0.012)	(0.018)	(0.011)	(0.014)	(0.005)	(0.019)	(0.004)	(0.014)
Government	0.026	0.069**												
	(0.023)	(0.028)												
Life* government		0.027**												
		(0.012)												
Corruption			−0.034	−0.056*										
			(0.026)	(0.032)										
Life* corruption				0.044**										
				(0.020)										
Political					0.015	0.027								
					(0.022)	(0.024)								
Life* political						0.021***								
						(0.006)								
Regulatory							0.033	0.056*						
							(0.028)	(0.029)						
Life* regulatory								0.021*						
								(0.012)						
Rule									0.051*	0.087**				
									(0.030)	(0.036)				
Life* rule										0.017**				
										(0.007)				
VoiceAcct											2.928**	2.792**		
											(1.309)	(1.313)		
Life* VoiceAcct												0.225		
												(0.177)		

(Continues)

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TABLE 5 | (Continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Inst. Qual													0.021	0.041**
													(0.017)	(0.019)
Life* Inst. Qual.														0.028**
														(0.012)
Labour force	0.003**	0.004	0.001	0.006***	−0.000	0.000	0.005	−0.006**	0.001	0.000	−0.000	0.004**	0.003**	0.002*
	(0.001)	(0.003)	(0.002)	(0.001)	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Gross fixed	0.022**	0.026	0.033	0.012*	0.019**	0.012***	0.012	0.026	0.012	0.039**	0.009**	0.013*	0.015**	0.020***
	(0.09)	(0.095)	(0.096)	(0.008)	(0.008)	(0.003)	(0.010)	(0.019)	(0.096)	(0.017)	(0.004)	(0.007)	(0.006)	(0.007)
Mobile	0.003	0.001**	0.002**	0.001**	0.001**	0.002*	0.003	0.004**	0.005**	0.002*	0.002**	0.001	0.003**	0.004***
	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Net effects	—	0.00**	—	−0.003	—	0.007	—	0.010	—	0.017**	—	0.048*	—	0.031***
Country/Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	420	420	420	420	420	420	420	420	420	420	420	420	420	420
Countries	30	30	30	30	30	30	30	30	30	30	30	30	30	30
No. of instruments	10	11	10	11	10	11	10	11	10	11	10	11	10	11
AR (1)	0.005	0.000	0.002	0.000	0.001	0.000	0.002	0.000	0.001	0.001	0.002	0.002	0.002	0.002
AR (2)	0.321	0.318	0.312	0.312	0.315	0.314	0.314	0.314	0.314	0.316	0.316	0.315	0.318	0.318
Hansen	0.073	0.121	0.124	0.119	0.130	0.131	0.122	0.116	0.119	0.118	0.169	0.170	0.121	0.121

Note: Standard errors in parentheses.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

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TABLE 6 | Conditional effect of nonlife insurance penetration and institutional quality on inclusive growth (Dep. Var.: Inclusive Growth).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Inclusive growth (−1)	0.943***	0.944***	0.941***	0.946***	0.919***	0.913***	0.936***	0.937***	0.946***	0.945***	0.911***	0.906***	0.970***	0.944***
	(0.042)	(0.042)	(0.044)	(0.044)	(0.055)	(0.056)	(0.045)	(0.045)	(0.043)	(0.044)	(0.048)	(0.049)	(0.039)	(0.042)
Nonlife	0.022	0.037	0.016	0.037	0.019	0.042***	0.017	0.020	0.023	0.047*	0.007	0.068	0.031	0.006
	(0.028)	(0.027)	(0.026)	(0.025)	(0.019)	(0.011)	(0.024)	(0.023)	(0.026)	(0.026)	(0.020)	(0.180)	(0.026)	(0.036)
Government	0.038	0.092**												
	(0.035)	(0.042)												
Nonlife* government		0.037												
		(0.029)												
Corruption			−0.035	−0.094**										
			(0.026)	(0.044)										
Nonlife* corruption				0.065										
				(0.057)										
Political					−0.016	−0.061**								
					(0.022)	(0.025)								
Nonlife* Political						0.064***								
						(0.013)								
Regulatory							0.035	0.071***						
							(0.032)	(0.011)						
Nonlife* regulatory								0.023						
								(0.018)						
Rule									0.054	0.128**				
									(0.047)	(0.048)				
Nonlife* rule										0.052*				
										(0.032)				
VoiceAcct											2.703**	2.128		
											(1.194)	(1.845)		
Nonlife* VoiceAcct												0.638		
												(1.501)		
Inst. Qual													0.029	0.054**
													(0.023)	(0.025)

(Continues)

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TABLE 6 | (Continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Nonlife * Inst. Qual.														0.039**
														(0.014)
Labour force	0.001	0.001	0.001	0.001	−0.000	0.000	0.000	0.000	0.001	0.001	−0.000	−0.000	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Gross fixed	0.025	0.068**	0.036	0.054**	0.015	0.030	0.012	0.010	0.025	0.022	0.080	0.186	0.024	0.127
	(0.020)	(0.032)	(0.034)	(0.022)	(0.014)	(0.411)	(0.016)	(0.011)	(0.024)	(0.289)	(0.229)	(0.332)	(0.261)	(0.280)
Mobile	0.001**	0.002**	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**	0.002**	0.003**	0.001**	0.001**	0.001*	0.002**
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)
Net effects	—	0.013**	—	0.001	—	0.008**	—	0.011	—	0.019**	—	0.147**	—	0.012**
Country/Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	420	420	420	420	420	420	420	420	420	420	420	420	420	420
Countries	30	30	30	30	30	30	30	30	30	30	30	30	30	30
No. of Instruments	10	11	10	11	10	11	10	11	10	11	10	11	10	11
AR (1)	0.027	0.027	0.027	0.026	0.028	0.029	0.028	0.028	0.027	0.027	0.026	0.026	0.025	0.027
AR (2)	0.316	0.325	0.311	0.318	0.313	0.316	0.312	0.318	0.312	0.326	0.315	0.314	0.310	0.325
Hansen	0.115	0.109	0.118	0.100	0.123	0.112	0.117	0.111	0.114	0.102	0.230	0.155	0.085	0.109

Note: Standard errors in parentheses.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

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expand coverage are a few examples of these activities. Furthermore, control of corruption reduces the economic risks created by bribery, extortion, and favouritism. Hence, insurance companies are more confident in providing a greater range of goods and services, including innovative solutions that address different risks (Pradhan et al. 2023). Giving companies vital risk management tools and guaranteeing that economic operations may proceed with less uncertainty promotes inclusive growth. Based on these insights, the study suggests the need for strong measures to promote government effectiveness and low corruption levels in SSA to drive the insurance market. Insurers must also align with institutional reforms, prioritising strong governance and ethical practices to stimulate its development and overall impact on inclusive growth.

The results also reveal that political stability engenders positive synergies with insurance in affecting inclusive growth. The result is significant for all the insurance penetration variables. The empirical evidence supports the notion that insurance product investments are less risky in politically stable environments. This supports Pradhan et al.'s (2023) assertion that political stability propels economic development as it encourages investment and effectiveness in financial institutions such as insurance, which provides avenues for economic growth and development. This is consistent with Bah and Abila (2024), who argue that a stable political environment stimulates insurance consumption, whereas political instability impedes financial development and dampens the dynamics of the insurance market. Webb and Beck (2002) add that political instability may limit the economic opportunities available to potential producers and customers of insurance goods, which might hinder the insurance industry's growth. This implies that when there is stability in governance, leadership, and political atmosphere, individuals and businesses feel more assured that their insurance investments will be protected and that contracts will be honoured. This assurance encourages more individuals to obtain insurance, increasing the prevalence of insurance in affecting growth. More so, voice and accountability reveal a positive moderating influence on total, life and nonlife penetration and inclusive growth. Similarly, the interaction of regulatory quality and rule of law with total and life penetration was significantly positive. This aligns with the arguments in the literature (Akinlo and Idachaba 2024; Guérineau and Sawadogo 2015; Malik et al. 2022) supports this. These scholars highlight that regulatory quality guarantees that insurance companies follow guidelines that foster financial inclusion and confidence (Malik et al. 2022). Contract enforcement is ensured by the rule of law, which makes risk minimisation and claims management easier. To guarantee that insurance policies are in line with the requirements of underserved communities, voice and accountability promote public involvement in government (Akinlo and Idachaba 2024). Bunni and Bunni (2022) add that insurance is a contractual agreement between two parties; hence, the legal system influences the insurance contracts. In this regard, clear regulations enable insurers to operate more easily and encourage them to expand their customer base and product offerings, both of which boost insurance penetration. More so, the presence of property rights encourages insurers to invest efficiently and control product prices (Webb and Beck 2002). This is in line with Nguyen et al. (2010), who contend that improved insurance development is facilitated by a more robust legal framework that protects property rights. More so, the efficiency of government regulations determines its capacity to enact and enforce sound policies and laws that foster the expansion of the insurance sector (Dragos et al. 2017). The efficiency of market competition regulation, the ease of starting a new business, investment prospects, and financial independence all have a favourable influence on the demand for insurance, thereby affecting inclusive growth.

Again, a strong legal framework ensures the enforceability and impartial honouring of agreements between policyholders and insurers (Bunni and Bunni 2022; Pradhan et al. 2023). Protection of consumer rights increases faith and confidence in insurance products. Customers feel more secure knowing that they have choices when it comes to legal action in the event of conflicts or contract breaches (Malik et al. 2022). More individuals and businesses are encouraged to join in insurance because of this confidence, and higher penetration rates are reached. Following Brambor et al.'s (2006) computational procedure, as specified in Equation (4), the net effects of the interactive terms were estimated. The results reveal positive values. These narrations indicate that the presence of a strong institutional environment in the form of government effectiveness, control of corruption, political stability, regulatory quality, rule of law, and voice and accountability are essential in driving insurance performance, ultimately affecting inclusive growth. That is, though insurance promotes inclusive growth, its impact is more revealing in the presence of a strong institutional environment. Hence, governments should ensure a more robust institutional framework that provides a conducive environment for insurance operations. Additionally, the study shows that the interaction of life insurance with the institutional quality variables in Table 5 is more significant than the nonlife result in Table 6. The implication is that institutional quality is more profound in driving the life insurance market than the nonlife market, which aligns with the argument in the literature (Anyanwu et al. 2016; Bah and Abila 2024; Gine et al. 2019). One possible reason is because of the long-term nature of life insurance, its function in financial intermediation, the complexity and sensitivity of the products, and the requirement for strong legal and regulatory frameworks. Good institutional quality promotes a robust and long-lasting life insurance market by guaranteeing stability, confidence, and protection for policyholders. Despite this result, the positive interactive effects and significant value of the institutional quality index in Table 6 support the notion that the presence of institutional quality does not undermine the performance of nonlife insurance in driving inclusive growth. Hence, both life and nonlife insurance markets should capitalise on the strength of a country's institutional environment to promote their business for better inclusiveness.

5.3 | Robustness Analysis

This section examines the robustness of the results in Tables 3–6 by employing a different measure for inclusive growth, which is the human development index. The human development index captures several characteristics, including

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emphasising the development of human capabilities, accounting for equity and sustainability, capturing multiple dimensions of human development, providing international comparability, guiding policy, being easily understandable, and offering a holistic view of inclusive development beyond economic output (Horvey et al. 2023). The results are presented in Tables 7–10. The findings agree with the initial results that insurance and institutional quality are essential to driving inclusive growth. More so, the study reveals that the effect of insurance on inclusive growth is more profound in the presence of a strong institutional framework. More so, all six institutional quality indicators present a positive interactive influence on insurance in driving inclusive growth. This is consistent with the life and nonlife insurance sectors. This validates the robustness and reliability of the initial findings.

6 | Conclusion and Policy Recommendations

6.1 | Conclusion

To address the challenge of inclusive growth in SSA, this study aligns with the 2030 SDG 8 by examining whether institutional quality is pertinent to the insurance-inclusive growth nexus. The discourse is probed using the generalised method of moment technique based on a sample of 30 countries in SSA between 2005 and 2019. This is important because, without insurance, those with high, moderate, and low incomes might all fall below the poverty line in the event of a calamity. More so, Africa's current socioeconomic and political climate has brought attention to how crucial institutions are to the continent's financial and economic success. Given this, this study explores how institutional quality enhances insurance penetration in affecting inclusive growth. Accordingly, the study sought to achieve the following objectives: (i) examine the independent effects of insurance and institutional quality on inclusive growth; (ii) explore the synergistic relationship between insurance and institutional quality and their combined influence on inclusive growth; and (iii) compare if there are significant differences in the life and nonlife insurance markets.

The following findings were established. First, the study found that insurance exerts a positive impact on inclusive growth. This includes the life and nonlife insurance markets, which are seen to be vital for promoting and positively impacting inclusive growth. This suggests that insurance serves as a strong indicator of inclusive growth. Also, the institutional quality index presents a positive influence on inclusive growth. Similarly, all the institutional quality dimensions, except control of corruption, stimulate inclusive growth. Further, the results show that the interaction between insurance and institutional quality drives inclusive growth. This remains the same when the six institutional variables were introduced as moderating factors. Additionally, the study reveals that the intervening role of institutional quality on the insurance-inclusive growth nexus is more pronounced in the life insurance industry than the nonlife industry due to their significant results. Notwithstanding, the estimated net effect presents that institutional quality is essential to driving both the life and nonlife insurance market in promoting inclusive growth. Hence, insurance coupled with a strong institutional environment could be a game changer in achieving inclusive growth. That is, while insurance positively influences inclusive growth, its effect becomes remarkable in the presence of a strong institutional environment.

6.2 | Theoretical Implications

The findings from the study reinforce the theory of financial development by emphasising the critical role that insurance penetration, including life and nonlife markets, plays in fostering inclusive growth. Financial development theory states that a robust financial system reduces risks, encourages saving, and efficiently distributes resources - all of which support economic growth and development. Insurance is an essential component of the financial system that provides financial stability and risk-sharing, enabling profitable investments for both individuals and businesses. For example, life insurance promotes long-term investments and the transfer of wealth between generations, while nonlife insurance reduces vulnerability by providing protection against unforeseen shocks. These mechanisms are essential for the marginalised, small businesses and rural communities, which often face greater risks. Insurance promotes resilience, reduces inequality, and increases economic participation, all of which help to link financial development with the goals of inclusive growth. Similarly, the supply-leading hypothesis emphasises that financial sector development can promote economic growth by increasing and enhancing access to financial services. This theory holds that insurance provides an essential platform for risk mitigation and financial inclusion, fostering economic activity that benefits individuals and the broader economy. Additionally, the study extends the institutional theory by highlighting that a sound institutional environment encourages the effectiveness of the financial sector, including the insurance industry, thereby amplifying inclusive growth. As an illustration, a strong institutional environment for life insurance ensures financial stability and contract enforcement, which boosts customer confidence and promotes long-term savings. In the case of nonlife insurance, sound institutions increase insurance uptake and utilisation by reducing transaction costs, encouraging ethical behaviour, and ensuring timely claims processing, which is likely to propel insurance's impact on inclusive growth. The theoretical understandings gained from institutional theory emphasise how important it is to prioritise institutional reforms in addition to initiatives to increase insurance penetration.

6.3 | Policy Implications

Based on the above, the policy recommendations are not far-fetched and do not differ for the life and nonlife industries. Given the importance of insurance in driving inclusive growth, it is recommended that governments harness the potential of insurance in promoting inclusive growth and combat poverty. Governments could provide subsidies to low-income households to patronise insurance. This can promote inclusive growth by strengthening social protection and lowering susceptibility to economic shocks. Also, the insurance sector

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TABLE 7 | Unconditional effects of insurance and institutional quality on inclusive growth (Dep. Var.: HDI).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
HDI (−1)	1.022***	1.022***	1.025***	0.920***	0.959***	0.961***	0.856***	0.876***	0.989***	0.917***
	(0.024)	(0.024)	(0.027)	(0.020)	(0.046)	(0.079)	(0.089)	(0.117)	(0.046)	(0.035)
Total penetration	0.015**									
	(0.007)									
Life penetration		0.013*								
		(0.008)								
Nonlife penetration			0.005							
			(0.004)							
Government effectiveness				0.009***						
				(0.002)						
Control of corruption					0.001					
					(0.002)					
Political stability						0.001				
						(0.005)				
Regulatory quality							0.031			
							(0.028)			
Rule of law								0.016		
								(0.013)		
Voice and accountability									−0.235	
									(0.186)	
Institutional quality										0.005**
										(0.002)
Labour force	0.013*	0.014	0.008	−0.015**	0.018*	0.021*	−0.019	−0.023	−0.013	−0.015
	(0.007)	(0.012)	(0.006)	(0.007)	(0.011)	(0.013)	(0.018)	(0.019)	(0.010)	(0.012)
Gross fixed capital formation	0.003**	0.004	0.004	0.054***	1.912***	1.769***	1.261	0.553	1.083**	0.975**
	(0.01)	(0.008)	(0.010)	(0.002)	(0.314)	(0.429)	(1.571)	(0.739)	(0.435)	(0.447)

(Continues)

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TABLE 7 | (Continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Mobile	−0.003	−0.001	−0.001*	0.000*	−0.001***	−0.001***	0.001	−0.000	−0.001**	−0.000*
	(0.002)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Country and time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	420	420	420	420	420	420	420	420	420	420
Countries	30	30	30	30	30	30	30	30	30	30
No. instruments	14	14	14	14	14	14	14	14	14	14
AR (1)	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001
AR (2)	0.623	0.626	0.604	0.457	0.867	0.827	0.430	0.734	0.638	0.483
Hansen	0.017	0.123	0.102	0.167	0.065	0.124	0.365	0.189	0.075	0.210

Note: Standard errors in parentheses.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

should employ innovative techniques to reach out to the poor and marginalised members of society rather than focusing solely on the rich. This could be done by developing new insurance products that meet the specific needs of the people, alongside improving microinsurance and agricultural insurance offerings. More so, insurance companies should prioritise educational initiatives to raise awareness of insurance products, particularly among low-income households and small businesses, to increase the purchase of insurance products. Additionally, considering the high level of poverty and the informal sector in SSA, governments, insurers, and foreign development organisations are encouraged to collaborate to facilitate risk pooling, premium reduction, and increase the availability of insurance services to achieve equitable growth. For instance, subsidised insurance for disadvantaged populations can alleviate financial limitations and advance social justice. These initiatives will develop the insurance market, ultimately fostering inclusive growth.

More so, strengthening the institutional landscape has shown to be a strong factor in driving insurance penetration and fostering inclusive growth. Hence, governments should design policies that are meant to ensure strong institutions are more apt to function well and strengthen the quality of operations in the financial sector. This will discourage insurers from leveraging their power for personal gains rather than promoting social welfare, which will encourage inclusiveness. This also requires support from regional bodies such as the African Union, ECOWAS, and SADC to improve institutional quality and promote collective progress and equitable growth. Reforms that facilitate the private sector's participation should be prioritised. These prerequisites ought to include a government free from corruption, a strong legal and judicial system, and the stringent enforcement of property rights and contracts. Thus, it is crucial to implement policies that increase institutions' ability to uphold the rule of law and accountability. Hence, reforms aimed at reducing corruption, encouraging judicial independence, and encouraging public engagement should be pursued. This will improve the efficacy of governance institutions and financial development. Governments should also strive for broader political reforms to increase investors' confidence in the insurance sector, especially in life insurance. Improve the accountability, openness, and effectiveness of the regulatory organisations overseeing the insurance industry. Robust governance ensures equitable and ethical operations by insurance businesses, there by promoting public trust and involvement in insurance initiatives. It also creates and implement strong legal structures that safeguard policyholders and guarantee the fulfilment of insurance agreements. Strong legal frameworks can minimise disagreements and increase the dependability of insurance as a safety net for finances. These structures will promote insurance market development, thereby fostering inclusive growth.

6.4 | Limitations and Research Recommendations

Given that the study did not focus on all countries in Africa, scholars could expand the scope of the study by considering a larger sample to observe how the findings of the study hold.

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TABLE 8 | Conditional effect of total insurance penetration and institutional quality on inclusive growth (Dep. Var.: HDI).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
HDI (−1)	0.854***	0.847***	0.976***	0.947***	0.916***	0.689***	0.870***	0.802***	0.841***	0.784***	0.963***	1.040***	0.912***	0.847***
	(0.045)	(0.046)	(0.024)	(0.037)	(0.088)	(0.116)	(0.071)	(0.077)	(0.098)	(0.088)	(0.051)	(0.051)	(0.037)	(0.046)
Total penetration	0.014*	0.015*	0.006*	0.013*	0.017*	0.019*	0.012**	0.018	0.014	0.016*	0.012**	0.013*	0.009	0.011
	(0.008)	(0.007)	(0.003)	(0.007)	(0.010)	(0.011)	(0.006)	(0.016)	(0.011)	(0.009)	(0.005)	(0.017)	(0.010)	(0.008)
Government	0.013***	0.011**												
	(0.003)	(0.004)												
Total* government		0.010*												
		(0.006)												
Corruption			0.002*	0.002										
			(0.001)	(0.002)										
Total* corruption				0.001										
				(0.001)										
Political					0.003	0.014**								
					(0.005)	(0.006)								
Total* political						0.011*								
						(0.006)								
Regulatory							0.022*	0.015**						
							(0.012)	(0.006)						
Total* regulatory								0.012						
								(0.010)						
Rule									0.016*	0.008*				
									(0.009)	(0.005)				
Total* rule										0.004**				
										(0.002)				
VoiceAcc											−0.203	−0.105		
											(0.180)	(0.103)		
Total* VoiceAcc												−0.029		
												(0.064)		

(Continues)

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TABLE 8 | (Continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Inst. Qual													0.015**	0.012***
													(0.006)	(0.002)
Total* Inst. Qual.														0.031*
														(0.020)
Labour force	0.009*	0.008	−0.003	0.015*	0.009*	0.010	−0.007	0.008*	−0.010	0.005	−0.013	0.007***	−0.002**	-0.015
	(0.005)	(0.007)	(0.004)	(0.009)	(0.006)	(0.009)	(0.006)	(0.004)	(0.008)	(0.004)	(0.011)	(0.001)	(0.000)	(0.012)
Gross fixed	0.080***	0.082***	0.020*	0.031**	1.728***	0.136***	−1.001	0.092***	0.197	0.097**	0.857**	0.001	0.820*	0.075***
	(0.021)	(0.022)	(0.010)	(0.015)	(0.382)	(0.038)	(1.194)	(0.021)	(0.720)	(0.036)	(0.342)	(0.019)	(0.451)	(0.020)
Mobile	0.010**	0.007***	0.005	0.001	0.003	0.001	0.004**	0.003***	0.005	0.001**	0.006**	0.003	0.002*	0.005***
	(0.003)	(0.000)	(0.004)	(0.000)	(0.003)	(0.001)	(0.001)	(0.000)	(0.004)	(0.000)	(0.003)	(0.003)	(0.001)	(0.001)
Net effects	—	0.010**	—	0.012	—	0.013	—	0.012*	—	0.014**	—	0.009	—	0.011**
Country/Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	420	420	420	420	420	420	420	420	420	420	420	420	420	420
Countries	30	30	30	30	30	30	30	30	30	30	30	30	30	30
No. of instruments	11	12	11	12	11	12	11	12	11	12	11	12	11	12
AR (1)	0.000	0.000	0.001	0.001	0.001	0.003	0.001	0.001	0.001	0.000	0.000	0.001	0.001	0.000
AR (2)	0.404	0.432	0.719	0.787	0.796	0.845	0.593	0.997	0.624	0.906	0.695	0.921	0.488	0.432
Hansen	0.059	0.068	0.066	0.101	0.103	0.112	0.330	0.226	0.205	0.094	0.095	0.058	0.236	0.048

Note: Standard errors in parentheses.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

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TABLE 9 | Conditional effect of life insurance penetration and institutional quality on inclusive growth (Dep. Var.: HDI).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
HDI (−1)	0.905***	0.884***	0.997***	0.993***	0.908***	0.897***	0.926***	0.910***	0.973***	0.931***	1.039***	1.041***	0.905***	0.884***
	(0.023)	(0.026)	(0.019)	(0.017)	(0.026)	(0.028)	(0.021)	(0.023)	(0.017)	(0.019)	(0.028)	(0.027)	(0.023)	(0.026)
Life	0.011*	0.014	0.007	0.011	0.012***	0.015***	0.010**	0.012	0.010**	0.011***	0.009	0.013	0.009	0.012**
	(0.006)	(0.011)	(0.005)	(0.009)	(0.004)	(0.003)	(0.004)	(0.008)	(0.05)	(0.004)	(0.007)	(0.014)	(0.008)	(0.006)
Government	0.010***	0.009***												
	(0.002)	(0.002)												
Life* government		0.013***												
		(0.001)												
Corruption			0.002	0.002*										
			(0.002)	(0.001)										
Life* corruption				-0.004										
				(0.003)										
Political					0.005***	0.005**								
					(0.001)	(0.002)								
Life* political						0.010								
						(0.070)								
Regulatory							0.008***	0.008***						
							(0.002)	(0.002)						
Life* regulatory								0.007						
								(0.005)						
Rule									0.003***	0.004***				
									(0.001)	(0.001)				
Life* rule										0.002***				
										(0.000)				
VoiceAcct.											−0.179**	-0.157**		
											(0.067)	(0.066)		
Life* VoiceAcct												-0.027		
												(0.037)		
Inst. Qual													0.018***	0.020***
													(0.004)	(0.006)

(Continues)

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TABLE 9 | (Continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Life* Inst. Qual.														0.021***
														(0.004)
Labour force	0.007	0.010**	−0.008	0.007	−0.000	0.006**	−0.000	−0.003	−0.000	0.007*	0.005**	−0.004	0.006*	0.009
	(0.005)	(0.005)	(0.007)	(0.005)	(0.000)	(0.003)	(0.000)	(0.002)	(0.000)	(0.004)	(0.002)	(0.003)	(0.004)	(0.008)
Gross fixed	0.060***	0.068***	0.011	0.013*	0.049***	0.053***	0.043***	0.049***	0.024***	0.041***	0.017*	0.014	0.053***	0.061***
	(0.011)	(0.012)	(0.007)	(0.007)	(0.011)	(0.011)	(0.009)	(0.009)	(0.008)	(0.008)	(0.010)	(0.012)	(0.010)	(0.011)
Mobile	0.002**	0.003**	0.002	0.004	0.005**	0.001**	0.001	0.002*	−0.003	0.004*	−0.002**	−0.001**	0.007**	0.005**
	(0.000)	(0.000)	(0.002)	(0.003)	(0.002)	(0.000)	(0.001)	(0.001)	(0.002)	(0.003)	(0.000)	(0.000)	(0.003)	(0.002)
Net effects	—	0.005**	—	-0.013	—	0.010**	—	0.009*	—	0.010	—	0.011	—	0.012**
Country/Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	420	420	420	420	420	420	420	420	420	420	420	420	420	420
Countries	30	30	30	30	30	30	30	30	30	30	30	30	30	30
No. of instruments	11	12	11	12	11	12	11	12	11	12	11	12	11	12
AR (1)	0.001	0.000	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000
AR (2)	0.506	0.466	0.673	0.687	0.783	0.825	0.873	0.936	0.691	0.822	0.974	0.956	0.506	0.466
Hansen	0.120	0.690	0.102	0.321	0.302	0.467	0.512	0.170	0.561	0.458	0.539	0.447	0.312	0.691

Note: Standard errors in parentheses.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

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TABLE 10 | Conditional effect of nonlife insurance penetration and institutional quality on inclusive growth (Dep. Var.: HDI).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
HDI (−1)	0.890***	0.898***	0.993***	0.998***	0.870***	0.871***	0.903***	0.907***	0.956***	0.963***	1.041***	1.042***	0.890***	0.898***
	(0.027)	(0.026)	(0.020)	(0.020)	(0.033)	(0.033)	(0.026)	(0.025)	(0.019)	(0.020)	(0.030)	(0.031)	(0.027)	(0.026)
Nonlife	0.023**	0.024*	0.011	0.013	0.017***	0.016***	0.015***	0.016***	0.013**	0.012	0.012	0.017	0.016**	0.013**
	(0.011)	(0.015)	(0.010)	(0.009)	(0.004)	(0.004)	(0.003)	(0.004)	(0.006)	(0.010)	(0.012)	(0.015)	(0.008)	(0.006)
Government	0.010***	0.010***												
	(0.002)	(0.002)												
Nonlife* government		0.015*												
		(0.008)												
Corruption			0.002*	0.004***										
			(0.001)	(0.001)										
Nonlife* Corruption				−0.003***										
				(0.001)										
Political					0.005**	0.006**								
					(0.002)	(0.002)								
Nonlife* political						-0.004								
						(0.003)								
Regulatory							0.008***	0.008***						
							(0.002)	(0.002)						
Nonlife* regulatory								0.003						
								(0.002)						
Rule									0.004***	0.004***				
									(0.001)	(0.001)				
Nonlife* rule										0.010				
										(0.009)				
VoiceAcct											−0.170***	−0.036		
											(0.035)	(0.110)		
Nonlife* VoiceAcct												−0.099		
												(0.125)		
Inst. Qual													0.015***	0.016***
													(0.003)	(0.003)

(Continues)

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TABLE 10 | (Continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Nonlife* Inst. Qual.														0.021*
														(0.013)
Labour force	0.010*	0.009*	0.005	0.003	−0.006	−0.002	0.003*	−0.005	0.004**	−0.001**	−0.002	0.001	−0.004*	0.005*
	(0.006)	(0.05)	(0.004)	(0.002)	(0.005)	(0.001)	(0.002)	(0.004)	(0.000)	(0.000)	(0.001)	(0.001)	(0.002)	(0.003)
Gross fixed	0.024***	0.033***	0.013*	0.014**	0.042***	0.033**	0.030***	0.029***	0.031***	0.029***	0.014	−0.005	0.038***	0.046***
	(0.006)	(0.010)	(0.007)	(0.006)	(0.014)	(0.013)	(0.009)	(0.009)	(0.008)	(0.008)	(0.010)	(0.010)	(0.011)	(0.011)
Mobile	0.006**	0.005**	−0.006	−0.004	0.002**	0.003**	0.001**	0.004**	0.005	0.006	−0.004**	−0.001*	0.002**	0.004**
	(0.003)	(0.002)	(0.005)	(0.003)	(0.000)	(0.000)	(0.000)	(0.002)	(0.005)	(0.005)	(0.001)	(0.000)	(0.000)	(0.001)
Net effects	—	0.014	—	0.015	—	0.019	—	0.15	—	0.007	—	0.005	—	0.013**
Country/Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	420	420	420	420	420	420	420	420	420	420	420	420	420	420
Countries	30	30	30	30	30	30	30	30	30	30	30	30	30	30
No. of instruments	10	11	10	11	10	11	10	11	10	11	10	11	10	11
AR (1)	0.000	0.000	0.001	0.001	0.000	0.000	0.001	0.000	0.001	0.001	0.001	0.001	0.000	0.000
AR (2)	0.432	0.394	0.658	0.648	0.569	0.567	0.779	0.749	0.634	0.600	0.951	0.956	0.432	0.394
Hansen	0.019	0.013	0.001	0.001	0.014	0.012	0.015	0.013	0.001	0.001	0.007	0.005	0.019	0.013
Sargen	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Number of instruments	10.000	11.000	10.000	11.000	10.000	11.000	10.000	11.000	10.000	11.000	10.000	11.000	10.000	11.000

Note: Standard errors in parentheses.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

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Also, regional-specific analyses such as those of West Africa, Southern Africa, East Africa, North Africa, and Central Africa could be explored to give policymakers information at regional levels on actions that could be implemented to attain growth and prosperity for all. Although this study considered three insurance indicators (total, life, and nonlife penetrations), future studies could consider other insurance indicators, such as inclusive insurance, and how it influence inclusive growth. Other moderating factors, such as digital transformation and financial development, could be examined to determine how these affect the insurance-inclusive growth nexus.

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The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Endnotes

[1]The 30 countries includes "Angola, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Congo, Rep., Côte d'Ivoire, Ethiopia, Gabon, Ghana, Kenya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Togo, Uganda, Zambia".

[2]Refer to Horvey et al. (2023) for detailed information on how the inclusive growth variable was created.

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Appendix

TABLE A1 | PCA and Eigenvalues of institutional quality.

Component	Eigenvalue	Difference	Proportion	Cumulative	KMO
Comp1	4.27597	3.24191	0.7127	0.7127	0.9235
Comp2	1.03405	0.672242	0.1723	0.885	0.8453
Comp3	0.361811	0.17902	0.0603	0.9453	0.9253
Comp4	0.182791	0.0966226	0.0305	0.9758	0.8844
Comp5	0.0861684	0.0269578	0.0144	0.9901	0.8486
Comp6	0.0592106	.	0.0099	1	0.3071
Overall					0.8763

TABLE A2 | Eigenvectors of principal components of institutional quality index.

Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6
Control of corruption	0.4478	0.0699	0.1725	−0.7935	0.3592	0.0781
Government effectiveness	0.4627	−0.0857	0.2663	0.1852	−0.4309	0.6983
Political stability	0.4036	0.1189	−0.888	0.1017	0.0986	0.1197
Regulatory quality	0.4481	−0.1531	0.2844	0.5494	0.5927	−0.2042
Rule of Law	0.4698	0.0004	0.0546	−0.0466	−0.5692	−0.6709
Voice and accountability	0.0295	0.9748	0.164	0.1471	0.0177	0.0094

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