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WORKING PAPER SERIES

239, 2026



Gender Inclusion and Governance: The Role of Productive Capacity

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Forthcoming: Humanities and Social Sciences Communications

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Ethics approval and consent to participate: Not applicable

Consent for publication: Not applicable

Availability of data and material: The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Competing interests: The authors declare that they have no competing interests.

Funding: This research received no specific grant from any funding agency or the commercial or not-for-profit sector.

Authors' contributions: **Ekene ThankGod Emeka**: Conceptualization, Data curation, Writing – original draft, Visualization, Validation, Formal analysis, Methodology.
Simplice A. Asongu: Conceptualization, Writing – original draft, Formal analysis, Visualization, Validation, Supervision.

Acknowledgements: None

Abstract

The purpose of this study is twofold**.** First, it examines the unconditional impact of gender inclusion on governance in Africa. Second, it investigates the moderating role of productive capacity in shaping the effect of gender inclusion on governance. The study focuses on 51 African countries over the period 2010 to 2022. The empirical strategy is based on two approaches. First, an estimated baseline regression model with the pooled ordinary least squares (OLS) technique. Second, dynamic model estimation through the adoption of the interactive System Generalized Method of Moments (SGMM) estimator to address unobserved heterogeneity and simultaneity-driven endogeneity. For robust policy outcomes, governance quality is assessed using an aggregation of six governance indicators, which are further disaggregated into political, economic, and institutional governance. Similarly, gender inclusion is assessed through female labor force participation, female self-employment, female political representation, and female employment. The findings indicate that enhanced productive capacity mitigates the unconditional negative effect of gender inclusion, thereby fostering improved governance outcomes. Moreover, the study identifies the threshold levels at which this reversal occurs. Other findings and policy implications are discussed in alignment with the African Union's 2063 agenda and Sustainable Development Goals (SDGs).

Keywords: Gender inclusion; Productive Capacity; Governance; Panel data; Africa

1.0 Introduction

The positioning of the present exposition on the nexus among gender inclusion (GINC), productive capacity (PRO), and governance (GOV) in Africa is premised on three central fundamentals in the relevant scholarly and policy literature, particularly in relation to: (i) the necessity of advancing women's economic participation as a pillar for achieving the Sustainable Development Goals (SDGs) and the African Union's Agenda 2063; (ii) the critical importance of enhancing productive capacity to unlock Africa's growth potential and competitiveness relative to other global regions; and (iii) the largely underexplored role of gender inclusion and productive capacity in shaping governance within the African context. Governance in the context of this study denotes the institutional framework for formulating, implementing, and enforcing policies, reflecting society's ability to meet needs, manage resources, and address challenges. These three motivational anchors are elaborated sequentially in what follows.

First, in line with the vast body of literature on the role of women in development (Sinha, 1965; Boserup, 1970; Durand, 1975), gender inclusion has evolved from a purely social issue to an economic and political imperative. Within the remit of contemporary development frameworks, gender equality is not only an intrinsic right but also a driver of inclusive growth, innovation, and improved governance outcomes. Several recent studies (see Emeka et al., 2025a; Asongu et al., 2024a; Mhlanga & Ndhlovu, 2023; Asongu & Odhiambo, 2020, *inter alia*) affirm that women's participation in the labor market enhances productivity and social cohesion. Yet Africa continues to grapple with entrenched patriarchal norms, restrictive legal frameworks, and socio-cultural barriers that limit women's full economic engagement (Emeka et al., 2024a; Ifelunini et al., 2022). Despite these constraints, the potential of gender inclusion to strengthen governance remains a compelling policy concern. First, greater representation of women in political and economic spaces fosters inclusivity and accountability, ensuring that diverse voices are reflected in decision-making processes (Asongu et al., 2024a; Asongu & Odhiambo, 2020). Secondly, gender inclusion also contributes to conflict prevention by promoting dialogue, cooperation, and equity in resource distribution, which reduces the likelihood of social unrest (Lwamba et al., 2022). Moreover, the active participation of women enhances policy responsiveness, as governance structures become more attuned to the needs of marginalized groups and the broader society (Das, 2025).

Second, beyond gender inclusion, enhancing productive capacity is central to Africa's long-term growth trajectory. The United Nations Conference on Trade and Development (UNCTAD) defines productive capacity as the ability of an economy to produce goods and services sustainably,

supported by effective resource utilization, entrepreneurship, and interconnected production networks. Despite Africa's resource abundance, the region consistently underperforms on the productive capacity index, recording scores below 32 percent compared to global counterparts (Emeka et al., 2025a; Emeka et al., 2024b). Explanations for this underperformance include weak knowledge diffusion, technological gaps, misallocation of capital, and limited industrial competitiveness (Emeka et al., 2025b; Ogbuabor et al., 2025a; UNCTAD, 2021). Moreover, increasing geopolitical divisions, ongoing regional conflicts, and heightened global uncertainty driven by new trade policies in various countries continue to obscure the productivity outlook of the region (African Development Bank, AfDB, 2025). Yet scaling up productive capacity offers multiple governance dividends. It enhances macroeconomic stability, secures fiscal resources for social programs, and fosters institutional legitimacy through improved service delivery (Ogbuabor et al., 2024a; AfDB, 2024a). These dynamics underscore the centrality of productive capacity not only for growth but also for governance outcomes in Africa. However, this disposition is underexamined in the literature.

Third, the intersection of gender inclusion and productive capacity provides a unique but understudied pathway through which governance institutions can be strengthened. While extant studies on Africa's governance dynamics have predominantly employed governance as a moderating variable in the development process (Saba et al., 2024; Asongu et al., 2024a; Alharbey & Ben-Salha, 2024; Emeka et al., 2024a; Ogbuabor et al., 2025a; Mhlanga & Ndhlovu, 2023), relatively fewer works have directly investigated the drivers of governance themselves. Furthermore, earlier contributions on the determinants of governance (Acemoglu et al., 2001; Gaeser & Shleifer, 2002; Easterly & Levine, 2003; Javed & Javed, 2016) have relied on structural and relatively inelastic factors such as geography, historical legacies, and ethnolinguistic diversity. These variables are less amenable to immediate policy interventions (Alonso et al., 2020; Alonso & Garcimartín, 2013). In contrast, gender inclusion and productive capacity represent dynamic and actionable levers that can be harnessed to reshape governance outcomes in more pragmatic and policy-relevant ways.

Against this backdrop, the purpose of this study is twofold: (i) to examine the unconditional impact of gender inclusion on governance in Africa, and (ii) to investigate whether productive capacity positively moderates the impact of gender inclusion on governance in Africa. To empirically address these objectives, the study employs panel data covering 51 African economies from 2010 to 2022 and applies both static pooled ordinary least squares (OLS) and the dynamic system generalized method of moments (SGMM) estimators. While the former serves as the baseline regression, the latter provides a more robust estimation as it addresses potential econometric

challenges such as unobserved heterogeneity, simultaneity bias, and endogeneity arising from the inclusion of lagged dependent variables. Furthermore, Emeka and Asongu (2025c) remains the closest study to the present work, having linearly examined the roles of comprehensive gender inclusion and productive capacity on governance quality in Africa. However, the present study departs by focusing specifically on gender inclusion through female labor force participation, female political representation, female self-employment, and female employment. Furthermore, this study takes a different approach from Emeka and Asongu (2025c) by moving beyond the analysis of linear relationships between gender inclusion, productive capacity, and governance quality. While linear connections can provide useful policy lessons, the study suggests that the real insights often lie in non-linear dynamics, particularly when interactive regressions are used to show how moderating factors shape the effect of the main channel on outcomes. To fill this gap, the analysis explores the threshold levels at which these moderators begin to shift the influence of the primary mechanism, ultimately guiding the outcome variable in a particular direction.

The remainder of the paper is structured as follows. Section 2 reviews the theoretical underpinnings and literature on gender inclusion, productive capacity, and governance quality. Section 3 details the data and methodology. Section 4 presents and discusses the empirical findings, while Section 5 concludes with key implications and policy recommendations.

2. Literature review and theoretical underpinnings

2.1 Literature Review

2.1.1 Gender Inclusion and Governance

Research increasingly shows that gender inclusion plays a vital role in shaping governance and institutional outcomes. For example, Nchofoung et al. (2024) find that when women are more involved in political decision-making, financial inclusion in Africa improves, with governance acting as a positive enabler. Similarly, Emeka et al. (2025a) reveal that lifelong gender-inclusive education can strengthen governance when combined with productive capacity, highlighting the value of education as a foundation for inclusive institutions. At a broader institutional level, Carlsson (2020) compares Sweden and Spain, showing how different governance structures influence the way gender equality policies are implemented through the European Social Fund, ultimately affecting their ideological orientation. In the same vein, Vickers (2011) emphasizes that women's politics and feminist strategies are directly shaped by governance structures, since state architectures create both opportunities and constraints for pursuing gender equality. The private sector also reflects this gender–governance connection. Ma et al. (2022) show that the influence of female executives on corporate green innovation depends heavily on governance conditions. In risky or weakly governed environments, female presence tends to reduce innovation, but under stronger environmental governance and supportive institutional settings, women executives become powerful drivers of positive change. Supporting this perspective, Asongu et al. (2024b) find that gender-inclusive education works best when linked with economic governance to advance structural transformation, although its effects on political and institutional governance remain limited. Taken together, these studies suggest that the gender–governance relationship is highly context-dependent, with institutional design and policy environments playing a decisive role in determining outcomes. Beyond governance-specific outcomes, gender inclusion also produces wider benefits for economies and societies. For instance, Altuzarra et al. (2019) identified a U-shaped relationship between women's labor participation and economic development in Europe, while similar evidence from Turkey and Indonesia (Ustabaş & Gülsoy, 2020; Amalia et al., 2023) highlights the economic gains from female labor force participation in services and industry. In Sub-Saharan Africa, Urama et al. (2022) show that women's involvement in the labor market fuels economic growth, while Euwals et al. (2011) stress the importance of affordable childcare in enabling such participation. Collectively, this body of work makes a clear case: gender inclusion not only strengthens growth, financial inclusion, and labor market efficiency but also lays the foundation for more resilient governance systems. Yet, despite this growing evidence, there is still

limited understanding of how gender inclusion directly interacts with governance quality, leaving an important gap in the literature.

2.1.2 Productive Capacity and Governance

Parallel evidence suggests that productive capacity is a key determinant of governance outcomes. Emeka et al. (2024b) identify various macroeconomic indicators as crucial for strengthening Africa's productive capacity, and they further establish a positive relationship between productive capacity and governance. Their findings suggest that improvements in productive capacity, through channels such as investment, trade, and technological advancement, create conditions for stronger governance systems by fostering institutional resilience and policy effectiveness. Conversely, they also highlight that governance structures can act as a potent catalyst for improving productive capacity, since transparent institutions, effective regulations, and accountable leadership provide the enabling environment for productive resources to be efficiently mobilized and utilized. This reciprocal relationship underscores the interdependence between governance and productive capacity in driving sustainable development in Africa. At a broader cross-country level, Azam et al. (2021) show that institutional quality drives sustainable development, especially in middle-income economies, while Flores-Tapia (2022) emphasizes the roles of human capacities, political stability, and economic environment. Gnangnon et al. (2021) equally stress the centrality of productive capacity in achieving sustainable development, while Demiral and Demiral (2023) highlight the impact of human capital, and structural change on energy efficiency. Habiyaremye (2019) adds that research and development, combined with technological progress, significantly enhance productivity. Empirical evidence also links productive capacity to governance quality more directly. Emeka et al. (2025a), analyzing 51 African countries between 2005 and 2022, show that productive capacity has a strong positive effect on governance quality, with gender inclusion acting as a moderator that creates positive synergies. Fors and Olsson (2007) found that country size and resource abundance often hinder institutional investment, whereas Ahmed et al. (2021) and Aminu et al. (2022) find that sound governance systems build resilience. Complementary evidence from Farooque et al. (2021), Nguyen et al. (2019), Thanh et al. (2019), and Ouhirra and Sabri (2019) underscores the role of governance in shaping growth and structural transformation, with corruption and weak accountability serving as obstacles. Overall, two main insights emerge. First, while gender inclusion has been widely studied in relation to growth, labor participation, and financial inclusion, its direct link to governance institutions remains underexplored. Second, traditional approaches emphasize institutional quality as a driver of economic development (Vu,

2022; Alonso et al., 2020; Acemoglu & Johnson, 2005; Hall & Jones, 1999), but they rarely capture the moderating role of gender inclusion. Third, while productive capacity is recognized as a foundation for sustainable development, the literature has not sufficiently examined how it interacts with gender inclusion to shape governance, particularly in Africa.

2.1.3 Theoretical underpinnings

The theoretical framework for this study draws on both the New Institutional Economics (NIE) and the Capability Approach (CA) to explain how gender inclusion and productive capacity influence governance in Africa. The NIE framework, as developed by North (1991), views governance institutions as human constructs that regulate economic and social interactions, with their effectiveness shaped by the prevailing social order, namely primitive, limited, or open access (North et al., 2006). Transitioning from limited to open access requires meeting key "doorstep conditions," which include the rule of law for elites, stable impersonal exchange, and political control of violence (Lehane, 2023). Many African economies remain trapped in limited access orders because of weak rule of law, ethnic fragmentation, low human capital, and political instability (Ekeocha et al., 2023). Within this context, gender inclusion and productive capacity emerge as potential levers for institutional transformation. Gender inclusion broadens participation beyond elites, strengthens accountability, and enhances institutional responsiveness, while productive capacity, expressed through human capital, industrial value-added, and technological innovation, provides the structural foundations for sustainable governance reforms. Together, these dynamics offer a pathway for African economies to transition toward more open and inclusive institutional orders.

Complementing NIE, the Capability Approach (CA), pioneered by Sen (1999a, b) and Nussbaum (2011) and elaborated by Robeyns (2003, 2005, 2017, 2019), provides a normative lens for evaluating how gender inclusion expands individuals' real freedoms and opportunities. CA distinguishes between *functionings*, which are achievements and states of being, and *capabilities,* which are genuine opportunities to live the lives people value. The approach recognizes that social and institutional barriers often constrain women's capabilities even when resources exist. Expanding women's access to labor markets, political representation, education, and healthcare enhances both individual well-being and collective governance outcomes (Nchofoung et al., 2024). For instance, reducing maternal mortality ensures that women can fully engage in productive and political roles, while lifelong access to education fosters creativity, skills, and knowledge that strengthen societal resilience. In this way, gender inclusion is not only a matter

of social justice but also a driver of institutional effectiveness and participatory governance. Bringing NIE and CA together, this study situates gender inclusion and productive capacity as mutually reinforcing forces that strengthen governance. While NIE highlights the institutional conditions necessary for transitioning from limited to open access orders, CA emphasizes the expansion of capabilities that enable individuals, particularly women, to actively shape these institutions. Productive capacity complements both perspectives by providing the resources, skills, and technological infrastructure required for effective policy implementation and service delivery. Thus, gender inclusion and productive capacity jointly foster accountable, transparent, and adaptive governance structures, offering a robust framework for understanding governance reforms in Africa.

Hypothesis 1: Productive capacity positively moderates the impact of gender inclusion on governance in Africa.

3. Data and Methodology

3.1 Data

The purpose of this study is twofold. First, it examines the unconditional impact of gender inclusion on governance quality in Africa. Second, it investigates the moderating role of productive capacity in shaping the effect of gender inclusion on governance. The analysis is based on a balanced panel of 51 African countries covering the period 2010–2022, with the full list of countries provided in Table A1 of the Appendix. In this study, governance serves as the outcome variable. Consistent with Asongu and Nwachukwu (2017), the governance quality index is constructed using Principal Components Analysis (PCA) from six indicators: government effectiveness, rule of law, regulatory quality, voice and accountability, control of corruption, and political stability/absence of violence. Details of the PCA procedure are provided in Section 3.2. For robust policy insights, the governance index is further disaggregated into three dimensions: economic governance (government effectiveness and regulatory quality), political governance (political stability and voice and accountability), and institutional governance (control of corruption and rule of law). The core explanatory variable is gender inclusion, measured using multiple indicators such as female labor force participation and female self-employment. Productive capacity is proxied by the Productive Capacity Index (PCI), which ranges from 0 to 100, excluding the boundaries, and covers 194 economies from 2000 to 2022, as developed by UNCTAD. It is employed as the moderating variable. The Productive Capacity Index (PCI) is a composite index developed by the United Nations Conference on Trade and Development (UNCTAD) to measure countries' abilities to produce goods and services and achieve sustainable development. The index comprises 46 indicators across eight main components (See Oluc et al., 2023).

Following the study of Haruna and Baek (2025), Ogbuabor et al. (2023a), Ogbuabor et al. (2025a), Emeka et al. (2024a), Buterin et al. (2023), Ekeocha et al. (2023), Ogbonna et al. (2022), and Asongu and Odhiambo (2020a), the following control variables are included in this study, human capital development (HCAP), technological innovation (TECH), and industrial value added (INDUS). First, human capital development (HCAP), as emphasized by Ogbuabor et al. (2024a), is expected to enhance governance by equipping citizens with the skills and knowledge to participate in decision-making, demand accountability, and strengthen institutional efficiency. Second, technological innovation (TECH), highlighted in the works of Haruna and Baek (2025), is expected to enhance governance by improving transparency, reducing bureaucratic inefficiencies, limiting corruption, and expanding access to public services through digital solutions. Third, industrial value added (INDUS), as noted by Ogbuabor et al. (2025a), is expected to enhance governance by diversifying the economy, boosting fiscal revenues, and providing

governments with greater capacity to deliver essential services and sustain institutional effectiveness**.** The data for this study were sourced from the UNCTAD database, the World Bank (2025a), and the World Bank (2025b). Table A2 provides the definitions of variables, motivating studies, and the corresponding data sources.

3.2. Principal Component Analysis (PCA)

This study employs Principal Component Analysis (PCA) to construct a composite index of governance. Specifically, PCA is applied to generate indices for overall governance, as well as for its three dimensions: economic governance, political governance, and institutional governance. Consistent with prior governance literature (see Emeka et al., 2025a), the PCA methodology integrates six key governance indicators: government effectiveness, rule of law, regulatory quality, control of corruption, political stability, and voice and accountability. Originally introduced by Pearson (1901) and subsequently advanced by Hotelling (1933), PCA reduces the dimensionality of correlated variables by transforming them into a smaller set of uncorrelated components while retaining maximum variability. In this study, the first principal component, which accounts for the largest share of total variance, is extracted to combine the original governance indicators into a single, robust measure. This approach not only minimizes data complexity but also ensures that the resulting index provides an efficient and reliable representation of governance quality, particularly in relation to the analysis of gender-inclusive education outcomes. The PCA specification pertaining to Table 1 is presented in Equation (1) below.

$$\boldsymbol{GOVQ} = \Omega_1 \boldsymbol{WGI_{ge}} + \Omega_2 \boldsymbol{WGI_{rq}} + \Omega_3 \boldsymbol{WGI_{rl}} + \Omega_4 \boldsymbol{WGI_{vc}} + \Omega_5 \boldsymbol{WGI_{cc}} + \Omega_6 \boldsymbol{WGI_{ps}} \quad \textbf{(1)}$$

Where, Ω_1, Ω_2, Ω_3, Ω_4, Ω_5, and Ω_6 are the eigenvectors (weights) from the PCA, and WGIge, WGIrl, WGIrq, WGIcc, WGIvc, and WGIps are the six dimensions of governance indexes.

Table 1: Principal Component Analysis for Governance (GOVQ)

	Component loadings						Proportions	Eigenvalues
	CC	RL	GE	RQ	VC	PS		
First PC	0.4221	-0.0906	-0.0195	-0.8323	0.3159	0.1445	0.7958	4.7750
Second PC	0.4415	-0.1801	-0.0918	-0.0077	-0.2906	-0.8244	0.0806	0.4837
Third PC	0.4252	-0.3485	-0.2351	0.1305	-0.5831	0.5343	0.0635	0.3809
Fourth PC	0.4232	-0.2967	-0.0658	0.5154	0.6782	0.0549	0.0321	0.1925
Fifth PC	0.3760	0.2635	0.8679	0.1096	-0.1258	0.0905	0.0178	0.1068
Sixth PC	0.3546	0.8249	-0.4224	0.1124	0.0089	0.0524	0.0101	0.0608

Notes: PC: principal component; CC: control for corruption; RL: rule of law; GE: government effectiveness; RQ: Regulatory quality; VC: voice & accountability: PS: political stability/absence of violence. **Source:** Authors' computations.

The composite indicator generated from the PCA, denoted as GOVQ, serves as the measure of governance quality. This indicator has been increasingly adopted in recent studies on African governance (Emeka et al., 2025a; Ogbuabor et al., 2024a; Ogbuabor et al., 2024b; Emeka et al., 2024a; Tchamyou, 2020). As reported in Table 2, which presents the PCA results, approximately 81% of the total variation in governance quality is captured by the retained first principal component constructed from the six underlying governance indicators. The retention of this first component is consistent with the Kaiser criterion (eigenvalue greater than one) (Tchamyou, 2020). Specifically, the first principal component records an eigenvalue of 4.7750, thereby justifying its selection as the governance index. In contrast, the subsequent components yield eigenvalues of 0.4837, 0.3809, 0.1925, 0.1068, and 0.0608, respectively, none of which satisfy the Kaiser criterion for retention.

3.3 Model Specification

3.3.1 Static Model Specification

Recall that the objectives of this study are twofold: (i) to examine the unconditional impact of gender inclusion on governance quality in Africa, and (ii) to investigate the moderating role of productive capacity in shaping the effect of gender inclusion on governance quality. Accordingly, these objectives are specified in the following equations.

$$GOVQ_{i,t} = \alpha_i + \phi_1 GINC_{i,t} + \phi_2 PCI_{i,t} + \phi_3 PCI\ x\ GINC_{i,t} + \phi_4 HCAP_{i,t} + \phi_5 TECH_{i,t} + \phi_6 INDUS_{i,t} + \varepsilon_{i,t} \quad \textbf{(2)}$$

$$\frac{dGOVQ_{i,t}}{dGINC_{i,t}} = \boldsymbol{\phi_1} + (\boldsymbol{\phi_3 PCI_{i,t}}) \quad \textbf{(3)}$$

$$\boldsymbol{ECOGOVQ_{i,t}} = \boldsymbol{\alpha_i} + \boldsymbol{\phi_1 GINC_{i,t}} + \boldsymbol{\phi_2 PCI_{i,t}} + \boldsymbol{\phi_3 PCI\ x\ GINC_{i,t}} + \boldsymbol{\phi_4 HCAP_{i,t}} + \phi_5 \boldsymbol{TECH_{i,t}} + \phi_6 \boldsymbol{INDUS_{i,t}} + \boldsymbol{\varepsilon_{i,t}} \quad \textbf{(4)}$$

$$\frac{dECOGOVQ_{i,t}}{dGINC_{i,t}} = \boldsymbol{\phi_1} + (\boldsymbol{\phi_3 PCI_{i,t}}) \quad \textbf{(5)}$$

$$\boldsymbol{POLGOVQ_{i,t}} = \boldsymbol{\alpha_i} + \boldsymbol{\phi_1 GINC_{i,t}} + \boldsymbol{\phi_2 PCI_{i,t}} + \boldsymbol{\phi_3 PCI\ x\ GINC_{i,t}} + \boldsymbol{\phi_4 HCAP_{i,t}} + \phi_5 \boldsymbol{TECH_{i,t}} + \phi_6 \boldsymbol{INDUS_{i,t}} + \boldsymbol{\varepsilon_{i,t}} \quad \textbf{(6)}$$

$$\frac{dPOLGOVQ_{i,t}}{dGINC_{i,t}} = \boldsymbol{\phi_1} + (\boldsymbol{\phi_3 PCI_{i,t}}) \quad \textbf{(7)}$$

$$\boldsymbol{INSTGOVQ_{i,t}} = \boldsymbol{\alpha_i} + \boldsymbol{\phi_1 GINC_{i,t}} + \boldsymbol{\phi_2 PCI_{i,t}} + \boldsymbol{\phi_3 PCI\ x\ GINC_{i,t}} + \boldsymbol{\phi_4 HCAP_{i,t}} + \phi_5 \boldsymbol{TECH_{i,t}} + \phi_6 \boldsymbol{INDUS_{i,t}} + \boldsymbol{\varepsilon_{i,t}} \quad \textbf{(8)}$$

$$\frac{dINSTGOVQ_{i,t}}{dGINC_{i,t}} = \boldsymbol{\phi_1} + (\boldsymbol{\phi_3 PCI_{i,t}}) \quad \textbf{(9)}$$

In equations (2) to (9) above, **GOVQ** represents governance; **ECOGOV** denotes economic governance; **POLGOV** refers to political governance; and **INSTGOV** signifies institutional governance. Similarly, **GINC** captures gender inclusion, proxied by female labor force participation, women's political representation, and female self-employment. Other variables remain as explained in section 3.1. $\varepsilon_{i,t}$ is the error term i, t denotes the individual and time dimension. Equations (2), (4), (6), and (8) capture the overall effect of gender inclusion moderated by productive capacity. This effect is determined by summing the coefficients ($\boldsymbol{\phi_1}$+$\boldsymbol{\phi_3}$) and subsequently testing the statistical significance of their joint impact. Equations (2) to (9) are estimated using the Pooled OLS estimation technique. However, the Pooled OLS approach is subject to several fundamental limitations, such as unobserved heterogeneity, simultaneity bias, and endogeneity concerns. These limitations have been extensively documented in the literature (see, for example, Pondie & Bitoto, 2025; Bitoto & Ongo, 2024). To address these challenges, particularly the endogeneity problem associated with Pooled OLS, we adopt a dynamic modeling approach as a robustness check to the baseline Pooled OLS results. This alternative estimation strategy is presented in Section 3.2.2 below.

3.2.2 Dynamic Model Specification

Following the dynamic methodological approach adopted in similar studies on the determinants of governance (see Emeka et al., 2025a), the objectives of this study are dynamically specified below as follows:

$$\boldsymbol{GOVQ_{i,t} = \alpha_i + \phi_1 GOVQ_{i,t-1} + \phi_2 GINC_{i,t} + \phi_3 PCI_{i,t} + \phi_4 PCI\ x\ GINC_{i,t} + \phi_5 HCAP_{i,t} + \phi_6 TECH_{i,t} + \phi_7 INDUS_{i,t} + \pi_{i,t}} \quad \textbf{(10)}$$

$$\frac{\boldsymbol{dGOVQ_{i,t}}}{\boldsymbol{dGINC_{i,t}}} = \boldsymbol{\phi_2 + (\phi_4 PCI_{i,t})} \quad \textbf{(11)}$$

$$\boldsymbol{ECOGOVQ_{i,t} = \alpha_i + \phi_1 ECOGOVQ_{i,t-1} + \phi_2 GINC_{i,t} + \phi_3 PCI_{i,t} + \phi_4 PCI\ x\ GINC_{i,t} + \phi_5 HCAP_{i,t} + \phi_6 TECH_{i,t} + \phi_7 INDUS_{i,t} + \pi_{i,t}} \quad \textbf{(12)}$$

$$\frac{\boldsymbol{dECOGOVQ_{i,t}}}{\boldsymbol{dGINC_{i,t}}} = \boldsymbol{\phi_2 + (\phi_4 PCI_{i,t})} \quad \textbf{(13)}$$

$$\boldsymbol{POLGOVQ_{i,t} = \alpha_i + \phi_1 POLGOVQ_{i,t-1} + \phi_2 GINC_{i,t} + \phi_3 PCI_{i,t} + \phi_4 PCI\ x\ GINC_{i,t} + \phi_5 HCAP_{i,t} + \phi_6 TECH_{i,t} + \phi_7 INDUS_{i,t} + \pi_{i,t}} \quad \textbf{(14)}$$

$$\frac{\boldsymbol{dPOLGOVQ_{i,t}}}{\boldsymbol{dGINC_{i,t}}} = \boldsymbol{\phi_2 + (\phi_4 PCI_{i,t})} \quad \textbf{(15)}$$

$$\boldsymbol{INSTGOVQ_{i,t} = \alpha_i + \phi_1 INSTGOVQ_{i,t-1} + \phi_2 GINC_{i,t} + \phi_3 PCI_{i,t} + \phi_4 PCI\ x\ GINC_{i,t} + \phi_5 HCAP_{i,t} + \phi_6 TECH_{i,t} + \phi_7 INDUS_{i,t} + \pi_{i,t}} \quad \textbf{(16)}$$

$$\frac{\boldsymbol{dINSTGOVQ_{i,t}}}{\boldsymbol{dGINC_{i,t}}} = \boldsymbol{\phi_2 + (\phi_4 PCI_{i,t})} \quad \textbf{(17)}$$

In equations 10, 12, 14, and 16, $\pi_{i,t} = \mu_i + \varepsilon_{i,t}$; where μ_i is the specific country effect, and the error term, $\varepsilon_{i,t} \sim iidN(0, \sigma_\varepsilon^2)$, shows absence of serial correlation, $E[\varepsilon'_{i,t}, \varepsilon_{i,s}] = 0$. The cross-sectional units are specified as $i = 1, 2, \ldots, 51$, the time period is given as, $t = 1, 2, \ldots, 13$. The moment conditions, that is, regressor exogeneity $E(Z'_{i,t}, \pi_{i,t}) = 0$ and the panel-level collinearity $cov(Z'_{i,t}, \mu_i) \neq 0$, ensure that all the regressors are valid instruments. Likewise, equations (10), (12), (14), and (16) capture the overall effect of gender inclusion moderated by productive capacity. This effect is determined by summing the coefficients ($\boldsymbol{\phi_2 + \phi_4}$) and subsequently testing the statistical significance of their joint impact. The dynamic specifications represented in equations (11), (13), (15), and (17) are estimated using the System Generalized Method of Moments (S-GMM). Blundell and Bond (1998) advanced the earlier difference GMM estimator by introducing the System GMM approach, which has proven to be more effective in mitigating endogeneity. The strength of the S-GMM method lies in its ability to account for the endogeneity of both the main explanatory variables and the control variables by exploiting internal instruments derived from the lagged

values of the variables in both the level and differenced equations. Within this framework, particular attention is devoted to addressing identification, simultaneity, and exclusion restrictions. Identification requires a clear distinction between the dependent variables, endogenous regressors, and strictly exogenous variables. To guard against over-identification and instrument proliferation, the number of instruments is carefully restricted so as not to exceed the cross-sectional dimension in the model specifications. Furthermore, the validity of the exclusion restrictions is tested through the Difference-in-Hansen Test (DHT), which evaluates the exogeneity of instruments (Asongu, Le Roux & Biekpe, 2018).

4.0 Empirical Result

4.1. Descriptive Statistics and Correlation Matrix of the Variables

Before proceeding to the regression analysis, the study provides an overview of the summary statistics of the variables, as presented in Table A3-A4. The descriptive figures highlight key patterns relating to governance and its various dimensions, gender inclusion, productive capacity, and other indicators across the study sample. The aggregated governance indicator reports a relatively low mean value of 0.129 and a maximum value of 5.856. Similarly, the disaggregated governance dimensions also record low mean and maximum values, underscoring the weak governance and institutional environment that characterizes much of the African continent. These results point to persistent challenges in political stability, regulatory quality, and institutional effectiveness, which have been well-documented in earlier studies on Africa's governance deficits (see Ekeocha et al., 2023; Ogbonna et al., 2022). The indicators of gender inclusion also present concerning trends. The mean value for female political participation is 20.908, while female employment averages 48.67 across the sample. These statistics suggest that structural barriers and socio-economic constraints continue to limit women's participation in political and economic activities, thereby reinforcing gender inequalities across African labor markets. These findings underscore the need for deliberate policy measures aimed at removing barriers to women's inclusion and fostering more equitable and inclusive growth. Regarding productive capacity, the descriptive statistics reveal a mean value of 32.61% and a maximum value of 54% for the region. These results reflect Africa's limited productivity expansion, which is largely constrained by insufficient sectoral diversification and weak technological advancement (Ogbuabor et al., 2025a; Emeka & Asongu, 2025). This highlights the pressing need for structural transformation and greater investment in technology-driven sectors to strengthen long-term economic resilience. Finally, the dataset exhibits considerable variability across all variables, indicating substantial heterogeneity among the observations. The correlation matrix in Table A4 indicates strong correlations among the governance indicators, though the are disclosed in distinct specifications in order to put emphasis on the conceptual differences of outcome variables. This approach is consistent with recent literature (see Ogbonna et al., 2022).

4.2 Presentation of findings

The empirical results of this study are presented in Tables 2, 3, and Tables A5 to A10. Tables 2 and Table A5, Table A6 and Table A7 report the baseline estimates obtained from pooled OLS regressions, whereas Tables 3 and Table A8, Table A9 and Table A10 present the robust estimations based on the System GMM technique. Each table is structured into four panels corresponding to

the gender inclusion indicators, namely female labor force participation, female employment, female political representation, and female self-employment. Importantly, the policy recommendations of this study are based on the robust System GMM estimations. In line with existing GMM-based literature (e.g., Asongu et al., 2024a; Asongu et al., 2024c), the validity of the System GMM results is confirmed through four key diagnostic checks. First, the Arellano–Bond autocorrelation tests are applied to examine the properties of the residuals. As expected, the results indicate significant first-order serial correlation but no evidence of second-order autocorrelation, thereby supporting the consistency of the estimations. Second, the Sargan and Hansen tests are employed to assess the validity of the internal instruments. Where discrepancies arise between the two tests, greater reliance is placed on the Hansen test, particularly in the presence of concerns about instrument proliferation. Third, the Difference-in-Hansen test is used to evaluate the strict exogeneity of the instruments. Finally, the Fisher statistics are reported to assess the overall validity of the models. The System GMM results presented in Tables 3 and A8 to A10 further indicate that governance and its various dimensions are persistent, for the most part, consistent with the findings of Emeka et al. (2025a).

Before presenting the empirical strategy, it is important to restate the main hypothesis introduced in Section 2 for clarity. The study posits that productive capacity moderates the effect of gender inclusion in a way that improves governance outcomes across the sampled countries. To validate this proposition, two conditions are expected in the empirical results: (i) gender inclusion should exhibit a negative direct effect on governance, and (ii) the interaction between gender inclusion and productive capacity should yield a positive effect on governance and its dimensions. In essence, the hypothesis suggests that while gender inclusion may have a negative unconditional impact on governance, its negative influence can be mitigated when complemented by enhanced productive capacity. The implication is that governance outcomes improve only when gender participation is accompanied by enhanced productive capacity, highlighting the threshold role of productive capacity in shaping governance outcomes. An inverse relationship between gender inclusion and governance outcomes may emerge from several interrelated dynamics. For instance, while increasing female political representation enhances diversity in decision-making, it may also generate resistance in male-dominated political structures, leading to power struggles that undermine institutional stability. Similarly, rising female employment and self-employment can create competition in labor markets traditionally dominated by men, potentially triggering social tensions and reinforcing discriminatory practices that weaken governance quality. In economies where institutions are fragile, the rapid entry of women into formal political and economic spaces may outpace institutional reforms, exposing gaps in regulatory and accountability frameworks. Moreover, some approaches to gender inclusion, such

as symbolic representation without substantive empowerment, can consolidate elite interests while masking deeper governance weaknesses. Structural barriers further compound these challenges, as unequal access to resources, limited childcare support, and entrenched cultural norms may constrain the effectiveness of gender inclusion, creating frustration and disillusionment that erode trust in governance systems. In some cases, governance scores may also decline due to measurement effects, as increasing visibility of women in political and economic spaces disrupts entrenched power dynamics, temporarily worsening indicators such as political stability or voice and accountability.

In light of the above, and to address concerns related to interactive regressions highlighted by Brambor et al. (2006), this study evaluates the testable hypothesis by incorporating both unconditional and conditional estimates of gender inclusion when examining its overall effect on governance. To ensure proper interpretation, thresholds of productive capacity and the net effects of gender inclusion are computed, rather than relying on coefficient estimates as in linear additive models. These computational approaches are consistent with contemporary studies on interactive regressions (Emeka et al., 2025a; Nchofoung et al., 2021, 2022). To put the foregoing discussion into perspective, consider, for instance, panels 1, 2, 3, and 4 of Table 3, which is the robust estimated result in Table 2 (i.e., the baseline result). In panel 1 of Table 3 which is the corresponding panel for female labor force participation, its net effect is given as -0.0018 = (32.61 * 0.0004 + (-0.0148)), where 32.61 is the mean value of productive capacity, and 0.0004 is the coefficient of interaction between productive capacity and female labor force participation, plus the unconditional coefficient of female labor force participation, which is given as -0.0148. It therefore implies that, where applicable (i.e., when all the necessary coefficients for calculating the net effect are statistically significant), the net effect of gender inclusion is given by "the mean of the policy variable multiplied by the coefficient of the interactive term plus the unconditional effect". This procedure is applicable across the reported estimated output of this study. Hence, the first empirical finding from this study, consistent with the estimation of the robust analysis, is that gender inclusion has a negative net effect on governance, suggesting that increased female participation in political and economic spheres, in the absence of supportive institutional and structural reforms, may inadvertently weaken governance outcomes by exacerbating tensions, reinforcing existing inequalities, or exposing institutional deficiencies. These findings reflect the realities of Africa, where gender inclusion initiatives often confront deeply entrenched patriarchal norms, weak institutional frameworks, and limited enforcement of gender equity policies. In many cases, the visibility of women in politics and the labor market does not translate into substantive empowerment, but instead creates fragile representation that fails to dismantle structural barriers. Moreover, unequal access to resources, pervasive cultural stereotypes, and inadequate social

protection systems, such as childcare support, hinder the transformative potential of gender inclusion. As a result, the net effect of gender inclusion on governance may remain negative unless complemented by deliberate institutional strengthening, capacity building, and policies that foster genuine equity and inclusive participation.

The second set of findings reported in Tables 2, 3, and Tables A5 to A10 relates to the threshold level of productive capacity required to offset the negative unconditional impact of gender inclusion on governance. To determine this threshold, the study adopts the decision rules outlined by Saba et al. (2024), and Asongu and Odhiambo (2021). First, similar to the calculation of net effects, thresholds can only be estimated when the relevant coefficients are statistically significant. Second, for any estimated threshold to hold policy relevance, it must fall within the statistical range of the corresponding variable, as presented in the summary statistics. Within this framework, Panel 1 of Table 3 illustrates that the threshold of productive capacity associated with Female Labor Participation lies within the acceptable statistical bounds. The corresponding threshold values in Panel 1 of Table 3 is derived as follows: $|\frac{-0.0148}{0.0004}| = 37.000$, such that the unconditional coefficient is divided by the conditional coefficient. This same procedure is applied across Table 2 and Tables A5 to A10. Additionally, following the methodology of Asongu and Odhiambo (2021), thresholds were not computed for gender economic inclusion in panels where the unconditional and interactive effects move in the same direction (see, for example, Panel 3 of Table A5 and Panel 2 of Table A9). In such cases, the results are interpreted as positive synergies, since both the unconditional and conditional coefficients are positive. Threshold levels can only be derived when the unconditional and interactive effects display opposing signs. The existence of a threshold value of productive capacity implies that governance benefits from gender inclusion only materialize once productive capacity reaches a critical level below, which gender inclusion may undermine rather than enhance governance.

Table 2: Pooled OLS estimation result for Governance, Gender Inclusion, and Productive Capacity, in Africa (2010 – 2022). Dependent Variable: Governance

	(1)	(2)	(3)	(4)
Variables	Female Labor Participation	Female Employment	Female Political Representation	Female Self-Employment
Gender Inclusion	-0.0611***	-0.0508***	0.00393	0.0352**
	(0.0160)	(0.0158)	(0.0196)	(0.0141)
Productive Capacity	0.0139	0.0495*	0.117***	0.188***
	(0.0298)	(0.0277)	(0.0218)	(0.0324)
Productive Capacity X Gender Inclusion	0.0027***	0.0025***	0.0002	-0.0006**
	(0.0004)	(0.0004)	(0.0005)	(0.0003)

Technological Innovation	2.253***	2.438***	2.351***	2.150**
	(0.799)	(0.812)	(0.827)	(0.839)
Industrial Value Added	-0.0452***	-0.0401***	-0.0410***	-0.0408***
	(0.00526)	(0.00534)	(0.00567)	(0.00541)
Human Capital	0.194	-0.191	-0.523	0.230
	(1.424)	(1.394)	(1.593)	(1.429)
Constant	-1.534	-2.644***	-2.797***	-7.025***
	(0.965)	(0.916)	(0.610)	(1.441)
Net Effect of Gender Inclusion	0.0269	0.0307	na	0.0156
Threshold of Productive Capacity	22.6296	20.3200	nsa	58.6667
Observations	663	663	663	663
R-squared	0.566	0.558	0.481	0.485
year effect	YES	YES	YES	YES
F-test	49.43	54.55	38.17	41.38
Prob > F	0	0	0	0

Source: Authors' Construct. Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Note: ***, **, and * denote significance levels of 1%, 5%, and 10% respectively. na: "Not Applicable" as at least one estimated coefficient required for calculating the net effect and/or threshold is not statistically significant. nsa "Not specifically available". The mean value of productive capacity is 32.61.

Table 3: System GMM estimation result for Governance, Gender Inclusion, and Productive Capacity in Africa (2010 – 2022). Dependent Variable: Governance

	(1)	(2)	(3)	(4)
Variables	Female Labour Participation	Female Employment	Female Political Representation	Female Self-Employment
(-1) Governance	1.0021***	1.0076***	1.0248***	1.0150***
	(0.0172)	(0.0179)	(0.0194)	(0.0127)
Gender Inclusion	-0.0148*	-0.0103	-0.0028	-0.0135**
	(0.0081)	(0.0071)	(0.0083)	(0.0063)
Productive Capacity	-0.0130	-0.0080	-0.2198	-0.0253*
	(0.0131)	(0.0114)	(0.1789)	(0.0137)
Productive Capacity X Gender Inclusion	0.0004**	0.0003*	-0.0024	0.0004***
	(0.0002)	(0.0002)	(0.0018)	(0.0001)
Technological Innovation	-0.0152	-0.0162	-0.5675**	-0.1044
	(0.1928)	(0.1635)	(0.2740)	(0.1779)
Industrial Value Added	-0.0046***	-0.0041**	-0.0110	-0.0027*
	(0.0014)	(0.0017)	(0.0090)	(0.0015)
Human Capital	-0.6514	-0.3817	0.0003	0.4617
	(0.4036)	(0.4322)	(0.0002)	(0.4342)
Constant	0.9597**	0.5674*	0.5360**	0.7233

	(0.4228)	(0.3146)	(0.2052)	(0.6994)
Net Effect of Gender Inclusion	-0.0018	na	na	-0.0005
Productive Capacity Threshold	37.0000	nsa	nsa	33.7500
Diagnostic Check				
Fisher	4451.51***	6064.82***	4393.72***	10316.03***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	612	612	612	612
Number of countries	51	51	51	51
No. of Instruments	45	45	45	45
year effect	yes	yes	yes	yes
Hansen_test	25.80	26.86	32.56	30.91
Hansen Prob	0.474	0.417	0.175	0.232
Sargan_test	56.56	56.34	58.44	52.33
Sargan Prob	0.000478	0.000510	0.000271	0.00164
AR(1)_test	-5.266	-5.273	-5.250	-5.291
AR(1)_P-value	1.39e-07	1.34e-07	1.52e-07	1.21e-07
AR(2)_test	-1.499	-1.506	-1.394	-1.409
AR(2)_P-value	0.134	0.132	0.163	0.159
DHT for instruments				
(a)Instruments in levels				
H excluding group	16.98	17.71	20.14	20.66
	(0.200)	(0.169)	(0.092)	(0.080)
Dif(null, H=exogenous)	8.82	9.15	12.43	10.24
	(0.786)	(0.762)	(0.493)	(0.674)
(b) IV (years, eq(diff))				
H excluding group	17.12	20.21	20.20	15.85
	(0.312)	(0.164)	(0.164)	(0.392)
Dif(null, H=exogenous)	8.68	6.65	12.36	15.06
	(0.651)	(0.826)	(0.337)	(0.180)

Source: Authors' Construct. Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Note: ***, **, and * denote significance levels of 1%, 5%, and 10% respectively. The mean value of productive capacity is 32.61.

4.3 Further Discussion of Results and Implications

The following findings are further evident from this study. First, from the baseline result and Table A8-A10 of the robust analysis, technological innovation emerges as a positive driver of better governance. In line with Haruna and Baek (2025) and Ogbuabor et al. (2025b), the findings show that innovation can make governments more transparent, efficient, and responsive. Advances in technology improve information flows, expand access to digital platforms, and strengthen accountability through tools such as e-governance and digital financial inclusion (Haruna & Baek, 2025). Technological progress creates space for more effective institutions, empowers citizens with

stronger channels for participation, curbs corruption, and ultimately provides a strategic pathway for building governance systems that are resilient, transparent, and people-centered.

Second, the study finds that human capital development and industrial value-added have negative impacts on governance. This reflects the institutional realities of many African countries. Although education levels have risen, weak institutional linkages often prevent human capital from contributing to governance improvements. Education to labor market mismatches and the politicization of educational outcomes further dilute its governance benefits (Bol et al., 2019). Similarly, industrial growth, particularly in resource-heavy and manufacturing sectors, has not been sufficiently tied to governance reforms. Instead, resource wealth and industrial expansion have in many African economies deepened elite capture, rent-seeking, and institutional fragility, thereby weakening rather than strengthening governance (Harvey, 2014). Overall, the findings stress the need to treat the drivers of productive capacity differently when designing governance-enhancing policies. Investments in technological innovation, such as digital infrastructure, ICT-enabled public services, and supportive regulatory environments, are more likely to yield real governance gains. By contrast, focusing only on expanding human capital or industrial growth without addressing institutional weaknesses risks entrenching existing governance challenges rather than solving them.

5 Concluding Remarks and Policy Recommendations

The purpose of this study is twofold. First, it examines the unconditional impact of gender inclusion on governance quality in Africa. Second, it investigates the moderating role of productive capacity in shaping the effect of gender inclusion on governance. The study focuses on 51 African countries over the period 2010 to 2022. The empirical strategy is based on two approaches. First, baseline regression models are estimated using pooled ordinary least squares (OLS). Second, the adoption of the generalized method of moments (GMM) estimator to address both unobserved heterogeneity and simultaneity-driven endogeneity. For robust policy outcomes, governance quality is assessed using an aggregation of six governance indicators, which are further disaggregated into political, economic, and institutional governance. Similarly, gender inclusion is assessed through female labor force participation, female employment, female political representation, and female self-employment. The findings can be summarized as follows. First, gender inclusion exerts a negative unconditional effect on governance. Second, productive capacity positively moderates this adverse impact of gender inclusion on governance. Third, technological innovation emerges as a strong channel for enhancing governance in Africa, whereas the roles of human capital and industrial value added remain negative.

The results have several policy implications. First, policymakers should promote gender-inclusive education and training programs to ensure equal access to skills development for both men and women, thereby enhancing workforce productivity. This aligns with SDG 4 (Quality Education) and SDG 5 (Gender Equality), as well as Aspiration 6 of Agenda 2063, which emphasizes inclusive growth and opportunities for women and youth. Second, gender-responsive labor market policies should be implemented to eliminate gender-based discrimination and foster equal opportunities for employment and career advancement. This recommendation contributes to SDG 8 (Decent Work and Economic Growth) and SDG 10 (Reduced Inequalities), while supporting Agenda 2063's Aspiration 1, which seeks a prosperous Africa based on inclusive growth and sustainable development. Third, supporting women's entrepreneurship and improving their access to financial resources can unlock their entrepreneurial potential, leading to greater innovation, job creation, and economic growth. This is consistent with SDG 9 (Industry, Innovation, and Infrastructure) and Agenda 2063's Aspiration 6, which calls for an Africa whose development is people-driven, particularly by women. Fourth, strengthening investment in technological innovation is essential for promoting good governance in the region. Particular emphasis should be placed on enhancing women's access to digital skills, innovation hubs, and technology-driven opportunities, as this empowers women while improving transparency, accountability, and efficiency in governance. This directly supports SDG 9 (Industry, Innovation and Infrastructure) and SDG 16 (Peace, Justice, and Strong Institutions), alongside Agenda 2063's Aspiration 3, which envisions an Africa of good governance, democracy, respect for human rights, justice, and the rule of law.

Fifth, policies should prioritize improving human capital development through quality education, vocational training, and health investments, since a skilled and healthy population is vital for effective governance and sustainable development. Similarly, enhancing industrial value added through diversification, value chain development, and support for manufacturing can create jobs, stimulate economic transformation, and reinforce governance. These priorities advance SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), and SDG 9 (Industry, Innovation and Infrastructure), while being directly linked to Agenda 2063's Aspiration 1 on sustainable and inclusive growth. In addition, investing in gender-responsive infrastructure and strengthening gender-sensitive governance and institutions are crucial for addressing gender disparities and fostering inclusive, resilient, and prosperous economies. These actions advance SDG 5 (Gender Equality) and SDG 10 (Reduced Inequalities), while reinforcing Agenda 2063's Aspiration 6. Finally, the findings highlight the importance of situating these interactions within the broader Sustainable Development Goals (SDGs) agenda and the African Union's Agenda 2063.

The study has provided actionable policy implications because the existence of a threshold value of productive capacity implies that governance benefits from gender inclusion only materialize once productive capacity reaches a critical level below which, gender inclusion may undermine rather than enhance governance. Hence policy makers should ensure that the policy or moderating production capacity thresholds are reached in order for gender inclusion to represent a sufficient and necessary condition for the promotion of good governance. Below the relevant productive capacity thresholds, gender inclusion is a necessary, but not a sufficient condition for the promotion of governance.

The GMM approach, employed in this study, has the limitation of eliminating cross-specific effects to avoid the concern of endogeneity that is related to a correlation between the lagged dependent variable and the corresponding country-specific effects. Thus, reassessing the results in the context of country-specific priorities is also essential for deriving tailored policy recommendations at the national level. Furthermore, while the present study has focused on the gender inclusion channel variable, ensuring that Africa is on track to achieve both its global commitments under the 2030 UN Goals and its continental vision under Agenda 2063 will require future research in other inclusive frameworks to improve scholarly and policy insights into the investigated linkages. The findings in this study cannot be extended to other regional and continental bodies in the world unless such extension is consistent with empirical validity. Thus, future studies should assess if the established findings are relevant to other regions and continents.

Funding: This research received no specific grant from any funding agency or the commercial or not-for-profit sector.

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