

**The Impact of Economic Development on Democratic Transition
in Sub-Saharan Africa (2004–2023): Analyzing Structural and
Policy Dynamics**

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Table of Contents

Abstract	4
Acknowledgment	5
Introduction	7
2. Objectives and Research Questions	9
These objectives lead to the subsequent research questions:	10
3. Significance of the Study and Researcher's Positionality	10
4. Scope and Overview of the Study	12
Chapter Two: Review of Theoretical and Empirical Literature	14
<i>First hypothesis: Economic Growth as a Driver of Democratic Transition (Modernization Theory)</i> ..	14
<i>Second Hypothesis: Constraints on Democratization Driven by Institutions and Resource</i>	19
<i>Third Hypothesis: Multidimensional Development as a Determinant of Democratic Transition</i>	23
2. Synthesis and Literature Gaps	26
Chapter 3. Data and Methodology	27
1. Case Description and Data Structure	27
2. Variables and Measures	28
3. Econometric Framework	30
3.1 The Main P-VECM Model	31
3.2 Robustness Checks	33
4. Ethical Considerations	33
.5 Methodological Limitations	33
Chapter 4: Outcomes and Discussion	34
1. Model Validation and Preliminary Tests	36
2. Main P-VECM Results and Hypothesis Testing	36
2.1 Testing the Long-Run Dynamic and Equilibrium (H1)	36
2.2 Testing Constraints Driven by Institutions and Resources (H2)	37
2.3 Testing Multidimensional Institutional Determinants (H3)	39
3. Robustness Check	40
Chapter 5: Conclusion and Policy Recommendations	41
1. Summary of Empirical Findings and Hypothesis Testing	41
1.1 Testing the Existence of a Long-Run Equilibrium (H1)	41
1.2 Testing Constraints Driven by Institutions and Resources (H2)	42

1.3 Testing Institutional Quality and Multidimensional Drivers (H3)	43
2. Policy Implications and Recommendations	44
2.1 Recommendation for Sustained Institutional Reform	44
2.2 Mitigating Resource Dependence (H2).....	45
2.3 Leveraging Political Freedoms for Quick-Gain Institutional Quality(H3)	45
3. Research Limitations and Avenues for Future Study	45
Conclusion	46
Bibliography.....	47
Appendix	50
Appendix B 1: Correlation Matrix	51
Appendix C 1 : Selection of FE versus RE Models (Hausman Test)	51
Appendix D 1: Dynamic Robustness Check (Difference GMM)	52
Appendix E 1: Long-Run Cointegrating Vector (FMOLS Proxy).....	52
Appendix F 1 : Panel Cointegration Test Results	53
Appendix G 1 : Panel Unit Root Tests (Economic Variables Only)	53
Appendix H. figures 1.....	54

Abstract

The study analyses the causal relationship between economic development and democratic transition by evaluating the dynamic long-term and short-term determinants of democratic outcomes, as quantified by the Polity IV index, in Sub-Saharan Africa (SSA). The region has seen fewer democratic transitions and more political instability, even though it has a lot of natural resources and a high rate of economic growth. Utilizing modernization theory, institutional theory, and political economy frameworks to examine variations in Polity IV outcomes, the study reveals that predictive factors, including overall institutional quality and civil liberties, demonstrate significantly greater statistical significance than GDP growth alone.

The analysis utilizes annual data from 49 SSA countries spanning 2004 to 2023, employing a Panel Vector Error Correction Model (P-VECM) to elucidate both long-term structural relationships and short-term political dynamics. This method makes it possible to find equilibrium constraints, rates of adjustment, and path-dependent processes in the transition to democracy.

The results show three main things. First, in line with path-dependence (H1), there is a stable long-run equilibrium. However, convergence is slow, with only 12.83% of disequilibrium being corrected each year. This shows how hard it is for institutions to change. Second, in support of hypothesis H2, long-term democratic outcomes are significantly and adversely affected by natural resource revenues, offering compelling evidence of a resource-curse mechanism that hinders democratic access through extractive institutional frameworks. Third, in accordance with hypothesis H3, GDP growth is statistically insignificant in the long term, whereas political freedoms, assessed by the Freedom in the World index, emerge as the primary determinant in both short- and long-term contexts.

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Introduction

The relationship between economic development and democratic transition has long been a central topic in political economy, yet it remains deeply contested and empirically unresolved. Classical theories of modernization argue that rising income, improved education, urbanization, and the emergence of a middle class collectively promote democratization. Nevertheless, the trajectory of Sub-Saharan Africa (SSA) over the last two decades presents a far more complex reality in which economic progress has not consistently translated into democratic gains. While some countries, such as Ghana and Botswana, have combined economic expansion with political liberalization, others, including Sudan, Equatorial Guinea, and Rwanda, have achieved substantial economic improvements without transitioning toward more democratic political systems.

This inconsistency challenges the core assumption that economic development is an adequate or dependable catalyst for democratization. The region's different paths raise important questions: Does development have a separate effect on democracy? What institutional, structural, and political conditions enable or hinder economic development in facilitating democratic transition? And why do countries with similar levels of economic performance end up with very different political outcomes?

This study aims to examine the causal relationship between economic development and democratic transition in Sub-Saharan Africa from 2004 to 2023 using a unified econometric framework that transcends conventional causal models, such as basic Granger causality tests, and employs a more sophisticated structure: the Panel Vector Error Correction Model (P-VECM). The study utilizes panel unit root tests and cointegration analysis to investigate whether the primary variables – economic growth (GDP), poverty levels, natural resource reliance, corruption, and institutional quality, etc., exhibit a stable long-run equilibrium with democratic outcomes. Upon confirming

cointegration, the P-VECM framework facilitates the disaggregation of dynamics into short-run adjustments and long-run error-correction mechanisms, thereby enabling a formal and integrated evaluation of both short-run and long-run Granger causality between development indicators and democratic transition.

The research incorporates a secondary static specification, namely a country fixed-effects model estimated with Driscoll–Kraay standard errors, in conjunction with the long-run robustness evaluations. This model provides a substantial additional perspective by evaluating the contemporaneous (non-dynamic) correlation between development indicators and democratic outcomes, while tackling heteroskedasticity, serial correlation, and cross-sectional dependence – traits commonly found in macro-panel data such as SSA. The FE–Driscoll model, despite its inability to encapsulate temporal causation or long-term adjustment mechanisms, serves as a crucial consistency verification to ensure that the direction and magnitude of direct connections align with the dynamic results generated by the P-VECM. This dual-model strategy improves the internal validity of the findings by demonstrating that the observed relationships are not simply artifacts of a single methodological approach.

This study makes three significant contributions. Initially, it presents new evidence with an augmented dataset that encompasses post–Cold War changes, the Arab Spring, increasing reliance on natural resources, especially in oil- and gold-producing economies, and current alterations in governance throughout the area. Secondly, it embraces a multifaceted notion of economic growth that includes education, inequality, corruption, urbanization, dependency on natural resources, and aid flows, rather than depending exclusively on GDP. The study overcomes significant constraints in prior research by utilizing advanced econometric tools, particularly the Panel Vector Error Correction Model (P-VECM), which may ascertain both the presence and direction of causal links.

Collectively, these contributions provide a more profound comprehension of the structural and political dynamics influencing democratic transition in Sub-Saharan Africa and contest deterministic assumptions regarding the correlation between prosperity, development, and democracy, as posited by classical modernization theory.

2. Objectives and Research Questions

The main aim of this study is to evaluate the impact of economic development on democratic transition in Sub-Saharan Africa from 2004 to 2023. The study adopts a multidimensional perspective on development, including income, education, inequality, governance quality, corruption, and natural resource dependence, thereby transcending conventional linear assumptions to reveal the structural dynamics influencing political trajectories in the region. This methodology contests simplistic interpretations of development and instead analyzes the interplay of broader socioeconomic and institutional elements that affect democratic results. The study especially intends to:

1. Assess the causal hypothesis originating from modernization theory, which asserts that economic development - primarily quantified by GDP- can solely facilitate democratic transition in Sub-Saharan Africa.
2. Evaluate the influence of comprehensive aspects of economic development -such as educational attainment, income disparity (Gini coefficient), institutional integrity, and other metrics- on democratic results in the region.

3. Analyze the role of alternative theoretical frameworks, including institutional theory, colonial legacy, and feedback loops, in enhancing causal explanations of democratic transition via predictive variables such as governance quality, institutional strength, corruption levels, and natural resource dependence, potentially providing a more comprehensive causal framework than modernization theory alone.

These objectives lead to the subsequent research questions:

1. What is the degree of the causal influence of economic progress, as measured by GDP per capita within the framework of modernization theory, on democratic transition in Sub-Saharan Africa from 2004 to 2023?
2. In what ways do the larger characteristics of development, such as education, wealth disparity, institutional quality, corruption, and dependency on natural resources, influence democratic outcomes in Sub-Saharan Africa?
3. What institutional, historical, and structural mechanisms - such as governance quality, institutional robustness, corruption channels, resource dependency, and colonial legacy- affect development's role in facilitating or obstructing democratic transition in the region?

3. Significance of the Study and Researcher's Positionality

This study is of considerable significance for academic scholarship and policy implementation. Theoretically, it contests the deterministic assertions inherent in classical modernization theory, which posits that economic growth alone is adequate to engender and maintain democratic transition, a perspective popularized by [Lipset \(1959\)](#), whose work constitutes one of the earliest

conceptual underpinnings of the theory. [Huntington \(1991, p. 34\)](#) contended that “all wealthy countries are democracies, and all democratic nations are wealthy,” a premise that seemed valid in certain regions of Latin America and South Asia following World War II. Despite this, these predictions do not completely correspond with the political developments experienced in Sub-Saharan Africa. This disparity highlights the necessity of including supplementary institutional and structural elements when assessing democratic transition in the region.

The research study offers a comprehensive and up-to-date analysis grounded in nearly two decades of regional data, rigorous econometric techniques, and a wide range of development indicators. The findings provide comprehensive insights for scholars examining democratization, inequality, development, and governance in the Global South.

The study delivers evidence that can assist regional organizations, international donors, civil society, and national governments in formulating development programs aimed at enhancing institutional resilience, accountability, and democratic governance. The research identifies the characteristics of development that promote democratic transition and those that may inadvertently support authoritarian stability, providing practical implications for governance reforms, development planning, and mechanisms that enable political revolution.

As a researcher with practical expertise in Sub-Saharan Africa and direct knowledge of its political, social, and economic conditions, my engagement in economic development issues in the region began early and has resulted in numerous articles and studies. The Arab Spring, which was marked by protests calling for democracy and better living conditions for the next generation, has made me even more worried about the region and changed the way I think about the issue in this study.

This perspective offers contextual awareness of the difficulties of SSA, encompassing institutional fragility, conflict dynamics, socioeconomic inequities, and governance challenges, while upholding academic impartiality and methodological precision. This grounded approach enhances the study's interpretive depth while maintaining its objectivity.

4. Scope and Overview of the Study

This research analyzes 49 Sub-Saharan African nations from 2004 to 2023. The analysis predominantly utilizes secondary quantitative data obtained from the World Bank (WDI), Polity IV, V-Dem, Freedom House, and global governance and inequality databases. The dataset reflects extensive regional trends over two decades, although the study is limited by many contextual and empirical obstacles. This includes disparities in data availability among countries and temporal contexts, the formation of new nations like South Sudan, and the political upheavals linked to persistent conflicts and instances of state fragility in certain areas of the region. These interactions create diversity in the measurement and experience of democracy, governance, and institutional performance in practice. While these limitations do not diminish the analytical significance of the work, they highlight the necessity for meticulous interpretation of cross-national comparisons and temporal trends. This research is organized according to the following structure and design:

Chapter One – Purpose of the Study: Introduces the study by presenting the background, problem statement, research gap, and the overarching purpose of the project. It outlines the scope of the study, clarifies key concepts, and establishes the significance of examining the relationship between economic development and democratic transition in Sub-Saharan Africa. This chapter also presents the research objectives and guiding questions.

Chapter Two – Review of Literature: Reviews the theoretical and empirical literature relevant to this study. It situates the project within broader scholarly debates on modernization theory, institutional and structural explanations of democratization, and the political economy of development in Sub-Saharan Africa. The chapter integrates conceptual and empirical findings, identifies gaps in existing research, and develops the hypotheses that inform the analytical framework of the study.

Chapter Three – Methodology: Outlines the methodological approach used in the study. It describes the data sources, sampling frame, and operational definitions of the dependent and independent variables. The chapter explains the econometric strategy, including panel unit root tests, cointegration analysis, the Panel Vector Error Correction Model (P-VECM), and long-run estimators such as FMOLS and DOLS. It also provides the rationale for selecting these methods and discusses considerations of validity and reliability.

Chapter Four – Results and Discussion: Presents the empirical findings derived from the statistical analyses. It reports descriptive statistics, results of unit root and cointegration tests, and the short- and long-run dynamics identified through the P-VECM framework. The chapter also includes Granger causality results and robustness checks. The discussion interprets these findings considering the existing literature and theoretical expectations.

Chapter Five – Conclusions: Concludes the study by summarizing its key findings and addressing the research questions and hypotheses. It discusses the theoretical and policy implications of the results, identifies limitations of the study, and offers recommendations for future research.

Chapter Two: Review of Theoretical and Empirical Literature

The dynamic between economic development and democratic transition has historically been a fundamental discussion in political economy. Classical theories propose that increased affluence and modernization foster democratization; nevertheless, empirical evidence, especially from Sub-Saharan Africa, demonstrates inconsistent results and significant disparities among nations. This chapter examines the principal theoretical frameworks and empirical evidence pertinent to this discourse, concentrating on modernization theory, multidimensional development strategies, and institutional and structural analyses concerning natural resources.

This study organizes the literature around four principal hypotheses, each representing a unique theoretical framework connecting development to democratization. Each hypothesis part incorporates the foundational theoretical rationale and the empirical evidence that either supports or contests the suggested relationship. This hypothesis-driven framework provides a unified analytical background for the econometric methodology employed in the subsequent chapters and clarifies the specific relationship between factors that this study intends to investigate, as outlined in the previously described research objectives and questions.

First hypothesis: Economic Growth as a Driver of Democratic Transition (Modernization Theory): rephrasing makes the hypothesis directly testable using the short-run (Δ GDP) and long-run (GDP level) coefficients of our P-VECM model.

1. Theoretical Framework: Modernization Theory

Modernization theory establishes the fundamental premise that economic development results in democratization. Lipset's foundational assertion that "the wealthier the nation, the more probable

it is to maintain democracy" ([Lipset, 1959](#)) continues to be one of the most impactful notions in political sociology and comparative politics. This viewpoint posits that increasing affluence catalyzes structural and social changes - such as enhanced education, the expansion of the middle class, heightened urbanization, and occupational diversification- that jointly fortify democratic values, tolerance, and political engagement.

[Huntington \(1991\)](#) contends that socioeconomic modernity propels civilizations towards political liberalization by undermining conventional power structures and amplifying citizen demands for accountability. Increased income levels are thought to improve literacy, social mobilization, and civic engagement factors deemed favorable for competitive politics and democratic consolidation.

Huntington noted that in nations with per capita incomes between USD 1,000 and 3,000, twenty-seven of thirty-one either converted to democracy or underwent political liberalization in the mid-20th century. He observed that economic progress alone was inadequate in instances like Czechoslovakia and East Germany, which, despite significant development, did not transition to democracy at that time. This indicates that economic growth and per capita income, however significant, are insufficient on their own to ensure a democratic transition.

Similarly, this core logic is reinforced by the finding that economic growth does not simply correlate with democracy but often precedes it. [Przeworski et al. \(2000\)](#) assert that middle-income levels –approximately between USD 4,000 and 7,000– significantly enhance the probability of authoritarian countries transitioning to democracy. Under this theoretical logic, economic growth is viewed not only as a predictor of political change but as a fundamental condition for sustaining democratic governance in the long run.

2. Empirical Evidence Supporting This Hypothesis

A significant amount of empirical research has traditionally validated modernization theory. [Barro \(1999\)](#) discovers a robust correlation between elevated GDP per capita and enhancements in political rights and civil freedoms among nations. [Inglehart and Welzel \(2005\)](#) contend that economic progress instigates cultural changes that enhance the probability of individual autonomy, gender equality, and democratic governance. Their cycle of “*development* → *cultural change* → *democracy*” suggests that economic development transforms mass values from survival-oriented concerns to self-expression, thereby generating societal demand for democracy.

[Epstein et al. \(2006\)](#) demonstrate that economic progress is positively correlated with the likelihood of shifting from authoritarianism to democracy. This research collectively supports the assertion that development establishes the social foundations - education, wealth, urbanization, and civic culture- that enhance the probability of democratic emergence and sustainability.

Modern dynamic panel studies reinforce this dual relationship. [Jaunky \(2012\)](#), utilizing data from 28 Sub-Saharan African nations, found evidence that “economic growth induces democracy in the short term,” while also demonstrating long-term bidirectionality, supporting the idea of a virtuous cycle. Similarly, [Mari \(2023\)](#) identifies a reasonably substantial positive link between democracy and economic development, validating the correlation premise.

3. Empirical Critiques and Contradictory Evidence

Notwithstanding its intuitive appeal, modernization theory has been subject to extensive criticism. [Przeworski et al. \(2000\)](#), in their quantitative reassessment of the modernization approach, argue that the observed correlation between economic development and democracy may result from two

distinct mechanisms. First, democracies may be more likely to emerge in economically developing states –a mechanism they label endogenous. Second, democracies– regardless of how they originated– may be more likely to survive in more developed states, a mechanism they describe as exogenous.

In their critique, [Przeworski et al \(2000\)](#) challenge modernization theory's foundational assumption that a single general process drives political transitions. Instead, they argue that democratization involves specific causal sequences shaped by the gradual differentiation of social structures and the separation of political institutions from other forms of social organization. Thus, democracy evolves through multiple pathways, which vary substantially across countries rather than through one general developmental trajectory.

[Acemoglu et al. \(2008\)](#) further contests the causal interpretation by showing that the correlation between income and democracy may be driven by historical institutional trajectories, rather than by economic growth itself. When institutions remain authoritarian, increases in income do not automatically translate into political liberalization.

[Ross \(2001\)](#) complicates modernization theory even further by demonstrating that resource-rich states –despite high income levels– often fail to democratize due to rentier effects. This evidence highlights that not all forms of development push countries toward democracy. Crucially, the growth hypothesis is often conditional. [Boix, Miller, and Rosato \(2013\)](#) contend that development enhances the probability of democratic transition primarily in non-resource-rich countries characterized by more stable elite incentives. This conditional perspective is essential for the SSA context, where resource dependency is pervasive.

Furthermore, the direction of causality remains debated. While this hypothesis focuses on development driving democracy, [Pelke \(2023\)](#), utilizing V-Dem data and dynamic panel models, re-evaluated this relationship, concluding that democracy enhances average GDP per capita in the long term, suggesting that democracy is not merely an outcome but also a driver of development. This bidirectional view underscores the necessity of employing a dynamic P-VECM approach to capture the time-dependent nature of the relationship.

In a revised version of his classic 1959 thesis, [Lipset \(1994\)](#) re-examines the development democracy relationship in the context of post-Cold War transformations. He argues that achieving democracy requires, above all, institutional and economic effectiveness, particularly in sustaining development and fostering broad changes in social class structure. This updated perspective underscores that economic development alone is not sufficient.

4. Implication for my Study

Hyp-1 posits, "Economic development is positively related to democratic outcomes, but this relationship is time-dependent: economic growth is expected to have a short-run effect on democratization, while sustained affluence enhances the probability of democratic transition in the long run." This hypothesis enables our empirical model to evaluate:

1. Whether GDP growth has short-run [\(Jaunky, 2012\)](#) or long-run causality towards democratic outcomes (Polity IV)
2. The applicability of modernization theory in Sub-Saharan Africa, where numerous nations have experienced economic growth without transitioning to democracy, challenging the universality of Lipset's and Huntington's classic assertions.

Second Hypothesis: Constraints on Democratization Driven by Institutions and Resources: The assumption that institutional legacy, the quality of its institutions, and reliance on natural resources have an impact on democratic transition, whether negative or positive, through what is known as the feedback loop.

1. Theoretical Framework: Institutional Theory

Institutionalist theorists argue that political and economic institutions, rather than affluence, are the principal determinants of democratic outcomes. [Acemoglu and Robinson \(2001, 2012\)](#) assert that historical institutional trajectories establish path dependencies that influence the willingness of elites to share power, limit executive authority, and facilitate competitive democratic governance. States characterized by extractive institutions, sometimes established during colonial control through a "Vicious Circle," typically obstruct democratic transition despite economic advancement, as elites can maintain power without extensive political inclusion.

Conversely, inclusive institutions create a "Virtuous Circle," functioning as a strong causal mechanism for democratic development. The study on state capacity underscores that effective governmental institutions are prerequisites for successful democratic changes ([Migdal, 1988](#); [Fukuyama, 2014](#)). The constraint on democratization is not merely due to resource wealth, but to the institutional response to that wealth. This means the problem lies in the quality of elite political arrangements. These institutional constraints are often historically determined. The variations in political trajectories stem from the "legacies of colonial rule, patterns of state formation, and the early postcolonial elites" who consolidate control over state structures.

Ultimately, this debate aligns with the framework advanced by [Acemoglu and Robinson \(2012\)](#), who conclude that institutional differences (whether extractive or inclusive), rather than income disparities, explain why resource-rich states fail to democratize.

A related body of research stresses that the type of resources feeding the state also matters for institutional trajectories. Resource dependence is widely understood to reduce the likelihood of democratization by weakening taxation, fostering patronage-based politics, and eroding the accountability link between the state and society. [Ross \(2001\)](#) identifies three mechanisms: 1. The benefit of the rentier, whereby governments use resource revenues to buy political loyalty. 2. The effect of repression, in which resource wealth finances coercive apparatuses. 3. The modernization effect, where resource-driven growth fails to transform underlying social structures. [Sachs and Warner \(1995\)](#) similarly demonstrate that resource-rich economies often develop weaker institutions due to rent-seeking and corruption.

2. Empirical Evidence Supporting This Hypothesis

Institutional Legacy and Path Dependency: [Acemoglu, Johnson, and Robinson \(2001\)](#) illustrate that colonial institutional frameworks influenced enduring political results, with extractive institutions closely linked to the longevity of authoritarianism. They contend that economic and political structures can either promote or hinder democratic change. In Europe, inclusive institutions facilitated industrialization and eventually solidified democratic rule, whereas in much of Africa, colonial institutions lacked a focus on welfare or extensive political inclusion conditions that obstructed democratization. [Engerman and Sokoloff \(2002\)](#) assert that colonial inequality frameworks persistently affect political inclusion in African nations, exacerbated by fragile state institutions and restricted central power.

State capacity and governance quality play a critical role in shaping democratic outcomes in Sub-Saharan Africa. [Herbst \(2000\)](#) demonstrates that many African states face structural challenges in establishing territorial authority and consolidating centralized power, which undermines the foundations of accountable governance. Weak state capacity is further associated with higher risks of civil conflict, as [Fearon and Laitin \(2003\)](#) show, thereby destabilizing democratic processes and limiting the effective reach of state institutions. These constraints are frequently manifested at the elite level. [Posner and Young \(2007\)](#) find that patterns of elite turnover significantly influence the likelihood of democratic openings, suggesting that formal democratic institutions are often constrained by informal political arrangements. Similarly, power-sharing arrangements, elite bargaining, and political coalitions shape transition outcomes by mediating access to power and accountability mechanisms. The persistence of weak institutions that fail to translate economic development into political accountability reinforces the argument that governance quality and elite dynamics constitute central constraints on democratic transition.

Resource Dependence: [Ross \(2001\)](#) presents compelling evidence of an inverse relationship between oil reliance and democracy. [Jensen and Wantchekon \(2004\)](#) similarly conclude that resource wealth diminishes support for democratization by enhancing patronage. [Basedau and Lay \(2009\)](#) contend that the political ramifications of resource reliance fluctuate based on the configurations of political settlements. These studies collectively demonstrate that economic progress fails to yield democratic advancements when institutions are weak, extractive, or excessively reliant on resource rents.

3. Empirical Critiques and Contradictory Evidence

Although institutional theory has considerable influence and asserts the causal importance of institutions in determining development outcomes, it has seen severe criticism. [Glaeser et al. \(2004\)](#) contend that prevalent indicators of institutional quality –such as the rule of law, property rights protection, and political stability– frequently represent the results of economic progress rather than its determinants, hence highlighting issues of reverse causation. They argue that institutional theories often neglect the significance of human capital, suggesting that educational investments precede development and then influence political institutions.

In a similar vein, [Przeworski \(2004\)](#) maintains that institutions are not always the initial cause of development; rather, they may emerge as by-products of economic growth or shifts in the distribution of political power. He also argues that claims rooted in historical determinism, namely, that modern development trajectories are fully predetermined by institutional legacies from centuries past, are overstated. Both perspectives emphasize that understanding the relationship between institutions and development requires a dynamic framework that accounts for interactions among political and economic variables, as well as the influence of coalitions and public policies alongside historical factors.

Some studies suggest that natural resources do not invariably hinder democracy. [Haber and Menaldo \(2011\)](#) argue that once historical institutional pathways are properly accounted for, the magnitude of the resource curse diminishes considerably, implying that resource effects are conditioned by institutional quality, rather than institutions being shaped by resource abundance. [Wright, Frantz, and Geddes \(2015\)](#) find that some oil-rich states democratize when institutional arrangements permit broad oversight of revenue flows. [Mehlum, Moene, and Torvik \(2006\)](#) show

that the effects of resource dependence depend critically on institutional quality: “good” institutions mitigate the resource curse, whereas “bad” institutions exacerbate it.

Taken together, these divergent findings suggest that institutional context moderates the relationship between resource wealth and democratic outcomes, reinforcing the theoretical logic underlying this hypothesis.

4. Implication for my Study

Literature suggests that economic development cannot only account for democratic results without considering institutional quality and resource reliance. This hypothesis-2 posits: Institutional quality, state capacity, and natural resource dependence diminish or mediate the impact of economic development on democratic transition in Sub-Saharan Africa. The P-VECM analysis can ascertain whether: Resource-dependent economies exhibit diminished long-term causality. Institutional quality influences the relationship between GDP and democracy. The impacts of development vary between high-capacity and low-capacity states.

This concept is particularly significant for Sub-Saharan Africa, where institutional variety and resource reliance are markedly evident

Third Hypothesis: Multidimensional Development as a Determinant of Democratic Transition:

It is claimed that education, inequality, governance quality, and comprehensive social development exert a more significant influence on democratic transition than economic growth alone.

1. The theoretical framework

While modernization theory emphasizes income growth, more recent scholarship argues that democratization is shaped by multidimensional development rather than GDP alone. This perspective suggests that factors such as human capital, distributional equality, governance quality, and social modernization generate political attitudes, institutional capacities, and societal pressures necessary for democratic transition.

[Glaeser et al. \(2004\)](#) propose that human capital –not income– is the true driver of institutional and democratic development, contending that educated populations are more capable of demanding political accountability and participating meaningfully in democratic processes. Similarly, [Boix and Stokes \(2003\)](#) argue that lower inequality increases the likelihood of peaceful democratization, as elites face reduced redistributive threats under democratic rule.

Governance-based approaches highlight institutional quality –such as rule of law, bureaucratic effectiveness, and control of corruption– as foundational conditions that support democratic emergence ([Kaufmann, Kraay, & Mastruzzi, 2010](#)). Social modernization theory ([Inglehart & Welzel, 2005](#)) further posits that increasing education, urbanization, and value shifts toward self-expression create cultural environments conducive to democratic politics. Thus, multidimensional development provides a richer explanatory framework for understanding political change in Sub-Saharan Africa.

2. Empirical Evidence Supporting This Hypothesis

Education: [Glaeser et al. \(2004\)](#) find that educational attainment has a stronger causal effect on institutional quality and democratization than income. Acemoglu, Johnson, Robinson, and Yared (2005) show that controlling education significantly weakens the correlation between income and

democracy. Inequality or Gini: [Boix \(2003\)](#) demonstrates that high inequality reduces the likelihood of democratic transitions because elites resist redistribution under democracy. [Houle \(2009\)](#) finds that while inequality does not necessarily prevent transitions, it significantly increases the risk of democratic breakdown.

Governance Quality: [Kaufmann et al. \(2010\)](#) show that higher governance indicators (rule of law, voice and accountability, regulatory quality) correlate strongly with democratic performance. [Fukuyama \(2014\)](#) argues that effective state capacity must precede legitimate democratic consolidation. Urbanization and Social Structure: [Ades and Glaeser \(1995\)](#) argue that urban centers facilitate information flow, collective action, and political mobilization. Collectively, these studies show that democracy is better predicted by a combination of institutional strength, social development, and governance quality, rather than income alone.

3. Empirical Critiques and Contradictory Evidence

Some empirical studies provide a more cautious interpretation: like [Przeworski et al. \(2000\)](#) argue that education and inequality matter primarily for democratic survival, not for democratic emergence. [Ross \(2001\)](#) notes that even highly educated and urbanized societies may remain authoritarian when resource wealth reduces accountability pressures.

[Acemoglu et al. \(2008\)](#) maintain that many development variables correlate with democracy but do not always show robust causal effects once historical institutions are controlled for. These mixed findings highlight the need for dynamic, multidimensional models, such as the P-VECM used in my study to distinguish short- and long-run causal pathways.

4. Implications for My Study

Hypothesis 3 posits: Multidimensional development indicators, specifically variables like Political Freedoms (FIW Index) and Governance Quality (CPI) exhibit a more significant causal impact on democratic transition (Polity IV) than income alone. This hypothesis permits my P-VECM model to evaluate whether: Human capital and institutional variables (FIW, CPI, and GINI) are more reliable predictors of democracy than GDP growth in the long run. Inequality and institutional quality function as mediating variables. The impacts of development differ between the short term and the long term.

Although this hypothesis is grounded in a broad multidimensional development framework that encompasses a wide range of economic, social, and political predictors of democratic outcomes as measured by Polity IV, data availability constraints required testing the multidimensional development argument using a reduced set of indicators. These indicators detailed –explicitly in Chapter 3– represent the core dimensions for which consistent and comparable panel data were available across Sub-Saharan Africa during the study period.

2. Synthesis and Literature Gaps

Across the theoretical and empirical literature, several key insights emerge: 1. Economic growth alone does not cause democratization, especially in contexts marked by rentier dynamics or weak institutions. 2. Institutions mediate the relationship between development and democracy, yet scholars disagree on whether institutions are causes or consequences of development. 3. State fragility and extractive political economies in Sub-Saharan Africa profoundly shape transitions and impede democratic consolidation. 4. Resource wealth introduces distortions that undermine democratic pressures despite economic expansion. 5. Democracy measurement challenges complicate cross-regional comparisons and may overstate democratic progress.

The Gap: very few studies develop integrated models that combine: 1. multi-dimensional economic development (beyond GDP), 2. institutional quality, 3. resource dependence, conflict dynamics, and democratic transitions. across Sub-Saharan Africa from 1984–2023. This project contributes to filling that gap by constructing a comprehensive analytical framework linking economic development to democratic trajectories across the region.

Chapter 3. Data and Methodology

This study uses a Panel Vector Error Correction Model (P-VECM) as the main econometric strategy to analyze how democracy (Polity IV) in Sub-Saharan Africa responds over time to changes in development indicators. The P-VECM separates long-run equilibrium relationships from short-run shocks, allowing the study to test both long-run causality (through the error-correction term) and short-run dynamics. A secondary fixed-effects model with Driscoll–Kraay standard errors and long-run estimators (FMOLS and DOLS) are used only as robustness checks, to confirm that the key relationships are not driven by a single estimation method.

The central research question examined in this study is whether a causal relationship exists between democratic transition –as the outcome variable– and multidimensional development factors. Classical theories have argued that such development indicators serve as predictive determinants of democratic transition, or alternatively, that the potential of democratic transition is conditioned upon sustained improvements in both the level and quality of comprehensive development.

1. Case Description and Data Structure

The dataset has a theoretical maximum structure of 49 countries representing Sub-Saharan Africa (SSA). The regional focus reflects a long-standing debate on whether economic development

facilitates political liberalization in contexts characterized by structural constraints, colonial legacies, resource dependence, and institutional fragility. Countries are classified as Sub-Saharan African according to the World Bank's regional classification, encompassing West, East, Central, and Southern Africa, and excludes Mediterranean countries (e.g., Egypt, Morocco). countries over 20 years between (2004-2023), yielding a total of 980 potential country-year observations.

The data are organized in a long-format panel (stacked time-series), where each row represents a unique country-year observation. Missing values arise primarily from gaps in poverty and inequality reporting, the absence of published data in highly closed states such as Eritrea, and structural constraints associated with newly established countries such as South Sudan, which entered the dataset only after its independence in 2011. Additional limitations stem from countries with limited statistical capacity or those affected by conflict. Despite these challenges, the dataset provides sufficient cross-sectional and temporal variation to estimate dynamic econometric models, including the Panel Vector Error Correction Model (P-VECM).

2. Variables and Measures

To test the results of the three hypotheses, the relevant data and variables were compiled (see Appendix A 1, for a complete list of data sources) based on the core explanatory logics of the three theoretical frameworks. These frameworks link democratic transition as the outcome variable to a set of economic, institutional, and social factors that serve as predictive and explanatory determinants of both the potential and durability of democratic change.

Following data cleaning and preparation using R and STATA, substantial missing data were identified, as documented in (Appendix A 1) Consequently, the final estimation strategy was

restricted to five key variables, which constitute the mathematical specification of the Panel Vector Error Correction Model (P-VECM). The resulting model is formally expressed as follows:

1. Democratic Outcomes (Polity IV)¹ (How power is organized) The Center for Systemic Peace assesses regime authority characteristics on a scale ranging from -10 (total dictatorship) to +10 (total democracy) using an interval measurement. This functions as the principal outcome variable because of its focus on institutional structure, encompassing formal regulations and executive limitations.

Assesses the institutional foundation of political authority. It analyzes the acquisition, restriction, and challenge of executive authority within the state. Essential components include competitiveness in executive recruitment, transparency in executive recruitment, limitations on executive authority, and regulation and competitiveness of political activity. The equation produces the outcome: *"Polity Score = Democracy Score - Autocracy Score"*.

2. "GDP Growth, World Bank: Annual percentage growth rate. Ratio Scale (Min: -48.43%, Max: 19.51%). Assesses economic development, pivotal for evaluating the Modernization Theory hypothesis (H1).
3. Freedom House (FIW Index)² (Predictive factor), an aggregated index quantifying political rights and civil liberties. "Ordinal/Scaled (Min: 1.00, Max: 3.00)" was included as an

¹ Refer to the following for additional information: the Center for Systemic Peace, at: <https://bit.ly/44p6LTg>

² Freedom in the World (FIW), To avoid confusion, numerous studies differentiate between the Polity IV index and the (FIW) metric, considering them as analytically distinct variables. Bollen and Paxton (2000) assert that FIW, due to its dependence on expert assessments, may be more "subjective," rendering it an appropriate independent variable for measuring perceived freedom. Conversely, Polity IV's focus on formal constitutional regulations makes it more "objective" for structural research.

In this analysis, FIW is regarded as a unique factor that signifies the drive for democracy and serves as a short-term determinant. It encapsulates immediate political motivations that incite change, which, over time, aggregate and result in profound shifts inside political frameworks. These processes are perceived as cumulative long-term results that finally culminate in democratic change, as assessed by Polity IV. Refer to the following for additional information, at: <https://bit.ly/4j0ZrTN>

independent variable to evaluate the impact of actual societal freedoms and the strength of civil society (used in H3). assesses the degree of political rights and civil liberties granted to citizens. It is based on expert assessments encompassing 25 indicators, aggregated into two dimensions: Political Rights (e.g., electoral mechanisms, political diversity) and Civil Liberties (e.g., freedom of expression, right to assemble, rule of law, freedom of the press, freedom of religion, and the rights of minorities) FIW is therefore outcome-oriented at the societal level, demonstrating the practical experience of political institutions rather than their formal authority structure.

4. Natural Resource Rents, World Bank: Rents expressed as a percentage of GDP. "Ratio Scale (Minimum: 0.002%, Maximum: 51.84%)" "Assesses economic dependence, crucial for evaluating the Resource Curse hypothesis (H2).
5. CPI (Corruption Perceptions Index), Transparency International (TI): Assessment of public sector corruption. Ordinal Scale (Minimum: 8.00, Maximum: 65.00). Evaluates governance quality, an essential multidimensional factor (component of H3).

3. Econometric Framework

This study seeks to explain the dynamic evolution of Democratic Outcomes (Polity IV) in Sub-Saharan Africa (SSA) by identifying the causal factors that determine a country's long-run democratic path. The primary empirical tool is the Panel Vector Error Correction Model (P-VECM). The disaggregates the analysis into three components: a static FE model to identify the long-run equilibrium relationship; the ECM term to measure the speed of adjustment back to that equilibrium; and the short-run differenced terms to capture the immediate impact of economic and institutional shocks. The Fixed Effects model with Driscoll-Kraay standard errors, (FE+DK) and FMOLS/DOLS are utilized as necessary secondary, robust checks to validate the core findings.

To ensure the data is suitable for dynamic modeling. The researcher did Preliminary Tests and Diagnostics Descriptive statistics (see table.1) confirmed the substantial heterogeneity of the panel, validating the need for panel methods. The check for multicollinearity using the correlation matrix (Appendix B 1) found no concerning relationships, with the highest observed correlation between CPI and FIW_n (Normalized FIW) at approximately -0.65 . Finally, the Hausman test (Appendix C 1) was used to select the FE model as the static baseline.

Table 1: Descriptive Statistics

Variable	Mean	Min	Max
Polity IV	2.624	-7.000	10.000
GDP growth	1.151	-48.429	19.508
Natural resource rents	10.873	0.002	51.844
CPI (Corruption)	30.89	8.00	65.00
FIW (Freedom Index)	2.252	1.000	3.000

- Summary statistics are computed for the full panel sample.

Time Series Properties: The prerequisite for the P-VECM is that variables must be cointegrated. Panel Unit Root Tests (LLC, IPS, Appendix G 1) were initially ambiguous; however, the subsequent Panel Cointegration Tests (Pedroni, Kao; Appendix F 1) strongly and consistently affirmed the presence of a long-run relationship (H1), providing the necessary methodological justification for the dynamic model.

3.1 The Main P-VECM Model

The purpose of P-VECM serves as an initial model for estimating short-run, long-run, and adjustment dynamics testing. H1 through H3. The P-VECM framework allows the

simultaneous estimation of long-run equilibrium and short-run deviations, as derived from the general error correction paradigm.

$$\Delta \text{Polity IV}_{i,t} = \lambda \text{ECM}_{i,t-1} + \sum_{k=1}^p \Gamma_k \Delta X_{i,t-k} + \alpha_i + \epsilon_{i,t}$$

Plain Language Explanation:

- The coefficient λ on $\text{ECM}_{i,t-1}$ measures the speed and mechanism of convergence back to the long-run democratic path. A significant negative λ is essential for H1.
- The terms $\sum \Gamma_k \Delta X_{i,t-k}$ capture the immediate impact (**shocks**) of changes in GDP growth, FIW, etc., on the change in the polity IV.
- The FE model serves as the cointegration equation, where its coefficients define the parameters of the long-run equilibrium relationship tested in (H2) and (H3)

Short-run causality is assessed using Wald tests on the lagged differenced terms, while long-run causality is evaluated through the statistical significance of the error-correction term (ECM or ECT) Together, these components allow the analysis to distinguish between immediate dynamic responses and enduring structural relationships linking development to democratic transition. The overall goal of the study is to assess if development has facilitated the transformation of democracy.

Following the P-VECM specification, the error correction term (ECM) quantifies the rate at which democratic outcomes, as assessed by Polity IV, revert to their long-term equilibrium trajectory after a transient disturbance. A statistically significant negative ECM coefficient shows the existence of long-term adjustment dynamics in democratic transition.

The short-run coefficients, in contrast, denote the immediate annual impacts of variations in GDP growth, political freedoms (FIW), corruption perceptions (CPI), and natural resource rents on democratic outcomes, encapsulating short-term political reactions that may aggregate into enduring institutional transformation.

3.2 Robustness Checks

To strengthen the reliability of the findings, multiple resilience checks are incorporated. Fully Modified OLS (FMOLS) and Dynamic OLS (DOLS) methods (Appendix E 1) estimators are used to validate the long-run coefficients derived from the P-VECM. In addition, the final P-VECM was estimated using Driscoll-Kraay (DK) standard errors (non-dynamic) to address potential cross-sectional dependence (common shocks among SSA countries), hence enhancing the reliability of the t-statistics and hypothesis testing.

4. Ethical Considerations

The study uses publicly available secondary macro-level datasets and involves no human subjects. Ethical practices include accurate reporting, transparency in sourcing, and adherence to academic integrity.

5. Methodological Limitations

Methodological limitations include variation in data availability across countries and years. For instance, South Sudan was established only in 2011, and countries such as Eritrea publish virtually no official statistics and remain highly closed, resulting in gaps that affect the overall availability of observations. The final dataset comprises 980 observations and, as shown in Table (2), contains substantial missing values.

Another limitation concerns potential measurement bias in democracy indicators, particularly regarding how democracy is defined and numerically operationalized. While Freedom House provides one of the most consistent annual datasets, reliance on external expert assessments introduces risks of normative bias. Structural and institutional heterogeneity across Sub-Saharan African states further complicates cross-country comparability, reflecting broader challenges in macro-level comparative political economy research.

Nevertheless, the combined use of panel unit root tests, cointegration analysis, and the application of both the primary P-VECM framework and the secondary FE–Driscoll estimator enhances the methodological rigor and robustness of the study's finding.

Chapter 4: Outcomes and Discussion

This chapter presents the empirical findings of the study and evaluates the relationship between economic development and democratic outcomes in Sub-Saharan Africa. Building on the econometric framework outlined in Chapter 3, the chapter reports the results of the preliminary diagnostic tests, core panel estimations, and robustness checks employed to assess both short-run dynamics and long-run equilibrium relationships.

The chapter is structured as follows. Section 1st reports econometric pre-tests and model validation procedures, including panel unit root and cointegration analyses, as well as specification tests. Section 2nd presents the core empirical results, distinguishing between long-run relationships and short-run adjustment dynamics within the P-VECM framework. Finally, Section 3rd provides robustness checks to assess the stability and reliability of the main findings across alternative model specifications.

Main Table 2. Static Fixed Effects vs. Dynamic P-VECM Results

Dependent Variable: Polity IV	(1) Static Fixed Effects (Levels)	(2) Dynamic P-VECM (Differences)
	Polity i,t	Δ Polity i,t
Standard Errors	Standard	Driscoll–Kraay (DK)
ECMt–1 (Error Correction Term)	N/A	–0.1283*** (0.0115)
GDP growth (Level / Δ GDP)	0.0186 (0.0232)	0.0024 (0.0060)
Natural resource rents (Level / Δ Rent)	–0.0426* (0.0190)	–0.0029 (0.0043)
CPI (Level / Δ CPI)	0.0358 (0.0282)	–0.0342 (0.0207)
FIW–n (Level / Δ FIW)	–1.8187*** (0.3653)	–1.6461*** (0.4631)
Diagnostics & Tests		
Observations (N \times T)	705	657
R ² (Within)	0.0490	0.1332
Long-Run Causality Test (p-value on ECM)	N/A	< 2.2e-16***

Notes:

- Robust standard errors in parentheses.
- *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.
- Column (1) reports static fixed effects estimate in levels.
- Column (2) reports dynamic P-VECM estimates in first differences with Driscoll–Kraay standard errors.

1. Model Validation and Preliminary Tests

This section confirms the structural integrity of the panel data and validates the selection of the Panel Vector Error Correction Model (P-VECM) as the appropriate dynamic model, based on the pre-tests detailed in Chapter 3. The preliminary diagnostics confirmed two prerequisites for estimation. First, the Hausman test strongly favored the Fixed Effects (FE) model (Appendix C 1) justifying its use as the cointegrating long-run benchmark. Second, the Correlation Matrix (Appendix B 1) confirmed that multicollinearity is not a concern, allowing for reliable coefficient estimation.

Cointegration Justification (Prerequisite for H1): The P-VECM requires that the variables are cointegrated (sharing a long-run relationship). Despite initial ambiguity from unit root tests, the multi-test panel cointegration analysis (Pedroni, Kao: Appendix F 1) unanimously and robustly affirmed the existence of a long-run equilibrium. This provides the necessary methodological justification for a dynamic approach, reinforcing findings from similar prior studies on the region.

2. Main P-VECM Results and Hypothesis Testing

The core results, presented in Table 2, are interpreted to test the three main hypotheses by separating the long-run relationships from the short-run dynamics and adjustment mechanisms.

2.1 Testing the Long-Run Dynamic and Equilibrium (H1)

H1: Classical modernization theory posits that sustained GDP-based economic growth leads to democratic outcomes in the long run. Under this framework, democratic outcomes are expected to converge toward a long-run equilibrium, with political systems exhibiting path dependence in their adjustment process.

Table/Column: in *table 2, column (2)* (P-VECM) Result: The Error Correction Term (ECMt-1) is negative and significant, at: -0.1283^{\wedge} .

These results strongly supported H1, the negative and significant (ECM) coefficient confirms the existence of a stable long-run equilibrium to which the system converges. The magnitude indicates that approximately 12.83% of the deviation from the long-run democratic path is corrected within the subsequent year.

Substantive Finding: This low speed of adjustment establishes that democratic change is a slow, path-dependent, and highly persistent process in SSA. The system's inertia confirms the theoretical view that political reform is a difficult, long-term endeavor that faces substantial institutional resistance.

Brief synthesis: the findings provide strong empirical support for classical modernization theory in the Sub-Saharan African context. The negative and statistically significant error-correction term confirms the existence of a stable long-run equilibrium linking economic development and democratic outcomes. However, the relatively low speed of adjustment indicates that democratic change unfolds gradually and exhibits pronounced path dependence. This suggests that while economic growth contributes to long-run democratic consolidation, political systems in SSA respond slowly to structural improvements, reflecting institutional inertia and resistance to rapid reform.

2.2 Testing Constraints Driven by Institutions and Resources (H2)

H2: Institutional legacy, institutional quality, and dependence on natural resources shape democratic outcomes in the long run through self-reinforcing feedback mechanisms, exerting

either positive or negative effects on democratic transition depending on the institutional configuration.

Table/Column: *Table 2 column (1)* (FE Model): Result (Resource Constraint): The coefficient for Natural Resource Rents is negative and significant (-0.0426^*) and Result (Institutional Quality): The coefficient for Political Freedoms (FIW Index) is negative and significant (-1.8187^{***}).

These results supported H2, the negative resource rent coefficient confirms the Resource Curse mechanism, showing that high reliance on resource extraction reinforces extractive institutional arrangements in the long run. The high significance of the FIW Index also validates that the quality of institutional rules and freedoms is the crucial factor constraining (or promoting) the long-run Democratic Outcome.

Substantive Finding: The constraint on democratization is therefore identified as an institutional problem rooted in the legacies of state formation and elite political arrangements, which are aggravated by rent-seeking behavior associated with natural resources.

Brief synthesis: The findings suggest that long-term democratic outcomes are consistently limited by the integrity of institutions and dependence on natural resources. The negative and statistically significant coefficient on natural resource rents affirms the enduring resource-constraint effect, whereby dependence on extractive revenues hampers democratic development. Simultaneously, the significant coefficient associated with political freedoms underscores institutional regulations and liberties as a crucial long-term determinant of democratic performance. Together, these findings identify institutional frameworks –sustained by rent-seeking behaviors– as the principal mechanism influencing democratic outcomes over time, regardless of short-term fluctuations.

2.3 Testing Multidimensional Institutional Determinants (H3)

H3: posits that multidimensional institutional, political, and social development exerts a stronger influence on democratic outcomes than economic growth alone.

Table/Column: Table 2 column (1) and (2): *Long-Run Result (Table 2, Col 1)*: The coefficient for GDP growth is insignificant (0.0186) while the multidimensional institutional determinants (FIW and natural rent) are significant. *For Short-Run Result (Table 2, Col 2)*: The change in Freedom House's (Δ FIW $-n$) is the *only* individually significant short-run coefficient (-1.6461^{***}).

These results strongly supported H3, the statistical insignificance of GDP growth in the long run directly challenges the simplest premise of classical Modernization Theory. The dominance of FIW (A measure of governance quality/freedoms) in both the long run and the immediate short run confirms that **non-economic factors** are the primary drivers of political trajectory. This explains the phenomenon of divergence where countries with similar economic growth rates still exhibit vastly different democratic outcomes.

Substantive Finding: The results confirm the multidimensional hypothesis: institutional quality, rather than economic buoyancy, determines the political path. The highly significant impact of (Δ FIW $-n$) further isolates improvements in civil liberties and political rights as the most powerful and immediate lever for democratic change.

Brief synthesis: The findings show that GDP growth has not statistically significant long-run effect on democratic outcomes, while institutional determinants are consistently significant. In the long-run specification, governance-related variables dominate the relationship, and in the short run, changes in political freedoms emerge as the only statistically significant predictor of democratic change. These estimates indicate that democratic dynamics are driven primarily by institutional

factors rather than by economic growth, with improvements in political rights and civil liberties exerting the strongest and most immediate influence.

3. Robustness Check

To evaluate the robustness of the fundamental empirical results, further calculations were performed utilizing alternate long run and dynamic parameters. The long-run connections discovered in the fixed-effects benchmark model were re-estimated using the Fully Modified Ordinary Least Squares technique, which addresses endogeneity and serial correlation in cointegrated panel contexts. The FMOLS estimations are shown in (Appendix E 1).

A comparison of the FE findings in Table 2 with the FMOLS results in (Appendix E 1) demonstrates a substantial agreement in both the direction and statistical significance of the principal long-run coefficients. Natural resource rents consistently demonstrate a negative and statistically significant correlation with democratic outcomes, although political freedom (FIW-n) retains robust significance with considerable scale. The consistency of these coefficients across estimating methods indicates that the long-term impacts shown in the baseline model are not influenced by estimator-specific assumptions or possible biases.

The model's dynamic structure was also confirmed by a Difference GMM estimator, as shown in Appendix D 1, alongside its long-run robustness. The GMM findings validate the continuity of democratic results via a statistically significant lagged Polity variable, while conventional diagnostic assessments demonstrate the validity of instruments and the lack of second-order serial correlation. Collectively, these robustness checks enhance trust in the empirical approach and affirm the validity of the primary conclusions about the pivotal influence of institutional elements and resource dependency on democratic results.

Chapter 5: Conclusion and Policy Recommendations

This study addressed a persistent research problem concerning the dynamics of democratic transition in Sub-Saharan Africa, a region characterized by institutional volatility and a high dependence on natural resource rents, which often generate conflicting pathways for political development. The primary objective of this research was to analyze the time-dependent determinants of democratization using the Panel Vector Error Correction Model (P-VECM). This framework enabled a systematic examination of both short-run shock responses and long-run equilibrium dynamics governing democratic outcomes, as measured by Polity IV.

By adopting a dynamic econometric approach, the study tested Three core hypotheses grounded in major theoretical traditions, concerning the existence of long-run equilibrium, the constraint of resource dependence, and the dominance of multidimensional institutional quality. This concluding chapter summarizes the empirical findings, evaluates their theoretical implications, and translates them into policy-relevant recommendations.

1. Summary of Empirical Findings and Hypothesis Testing

The empirical findings derived from the P-VECM analysis provide strong support for the dominance of institutional factors in democratic change. The results are summarized below in direct relation to the three core study hypotheses.

1.1 Testing the Existence of a Long-Run Equilibrium (H1)

The analysis began with Hypothesis 1, which posits the existence of a long-run equilibrium relationship between democracy and economic variables, reflecting the modernization theory that assumes economic growth alone is sufficient to generate the causal conditions for democratic transition. The empirical evidence provides strong support for this hypothesis. Multiple panel

cointegration tests, Pedroni Panel ADF, Kao, and Johansen–Fisher– unanimously and statistically significantly reject the null hypothesis of no cointegration (p-value < 0.003 for all tests; Appendix F 1).

More importantly, the error correction term (ECM_lag) in (Table 2) is negative and statistically significant (−0.1283***), which shows that there is an equilibrium adjustment mechanism. This result supports the main idea behind the P-VECM framework and shows that, even though there are frequent short-term political problems, countries in Sub-Saharan Africa tend to go back to a shared long-term democratic path. [Jaunky \(2012\)](#) found that there is often a bidirectional long-term equilibrium between growth and democracy in Africa, even though there are short-term shocks. This "virtuous cycle" fits with those results. The estimated adjustment speed of 12.83% per year indicates, on the other hand, shows that this process of convergence is slow and very resistant to change. [Przeworski et al. \(2000\)](#) say that institutional change happens slowly and over time, and that economic growth supports democracy, but the actual transition is slow and rare. This shows how gradual institutional change is. It also shows what [Bratton and van de Walle \(1997\)](#) called "path dependence." This means that the effects of colonial and post-colonial institutions create a structural "drag" that stops immediate democratic leaps after economic growth.

1.2 Testing Constraints Driven by Institutions and Resources (H2)

H2, which posits that high economic growth in the absence of inclusive political and economic institutions ([Acemoglu & Robinson, 2012](#)) exerts a negative effect on democracy in the long run. The estimated long-run coefficient for natural resource rents in the benchmark fixed-effects model is negative and statistically significant ($\beta = -0.0426^*$; **Main Table 2**). This finding is further corroborated by the Fully Modified Ordinary Least Squares (FMOLS) estimates reported in

(Appendix E 1), which confirm both the direction and statistical significance of the relationship. [Ross \(2001\)](#) says that having a lot of resources hurts democracy in two ways: the taxation impact (governments with no money have fewer requests for representation) and the expenditure effect (rents are used to co-opt opposition and keep authoritarian coalitions together).

These findings are very similar to what the classical resource curse literature says. This literature argues that reliance on resource rent strengthens rentier structures, weakens fiscal accountability, and undermines institutional limits on political power. In some cases, it even says that reliance on resource rents makes the central state less authoritative. [Bratton and van de Walle's \(1997\)](#) look at neopatrimonialism, Within the framework of SSA, the results show that reliance on outside resources is a structural barrier to the long-term strengthening of democracy, especially in nations where the government's income isn't mostly coming from taxes on citizens.

1.3 Testing Institutional Quality and Multidimensional Drivers (H3)

H3, which argues that democratic transition is shaped by non-economic or institutional factors and posits that political freedoms play a pivotal role in determining democratic outcomes, receives strong empirical support across both time horizons. In the long run, political freedom (FIW_n) emerges as the most powerful predictor of democracy, with a large and statistically significant coefficient in the fixed-effects model ($\beta = -1.8187^{***}$; **Main Table 2**). This finding underscores the foundational role of political rights and civil liberties in sustaining structural democratic change ([Huntington, 1991](#)).

Economic Insignificance: Crucially, the coefficient for GDP growth is statistically insignificant in the long-run model, while the institutional variables (FIW-n and natural rent) are highly significant. This differential statistical significance confirms H3: nations with similar economic

development have diverse democratic outcomes due to institutional characteristics (political freedoms and resource dependency) being the primary predictors, rather than economic momentum alone. Offers factual support for the concept established by [Acemoglu and Robinson \(2012\)](#), which asserts that institutional arrangements, rather than wealth differences, dictate democratic success.

In the short run, changes in political freedom (ΔFIW_n) constitute the only individually statistically significant dynamic predictor ($\beta = -1.6461^{***}$; Main Table 2). This outcome illustrates that whereas economic factors often exert a gradual influence on democracy, sudden political changes impacting civil liberties can precipitate swift democratic decline or enhancement. These findings collectively disprove the rudimentary interpretations of modernization theory in Sub-Saharan Africa, instead endorsing the multifaceted perspectives of [Carothers \(2002\)](#) and [Levitsky and Way \(2010\)](#), who contend that the quality of governance is the principal long-term catalyst for democratic transformation in SSA.

2. Policy Implications and Recommendations

The empirical validation of the P-VECM framework, particularly the separation of short-run drivers from long-run constraints, enables the formulation of targeted policy recommendations.

2.1 Recommendation for Sustained Institutional Reform

The slow adjustment speed, (12.83% per year) implied H1, indicates that democratic reform is inherently a long-term process. This indicates that democratic reform is inherently a long-term process. Policymakers must adopt sustained, multi-year strategies aimed at deepening institutional constraints on political power. Short-term efforts are unlikely to yield durable democratic gains without continuous institutional reinforcement to stabilize the political settlement.

2.2 Mitigating Resource Dependence (H2)

Given the strong empirical support for H2, reducing dependence on natural resource rents should be a central long-run policy objective. This study recommends comprehensive resource governance reforms, including mandatory revenue transparency mechanisms aligned with EITI principles and the establishment of sovereign wealth funds designed to stabilize revenue flows and insulate democratic institutions from rent-induced distortions. Such institutional “firewalls” can weaken the rentier effect identified in the long-run estimates.

2.3 Leveraging Political Freedoms for Quick-Gain Institutional Quality(H3)

The dominance of ΔFIW_n in the short-run dynamics suggests that policymakers possess avenues for more immediate democratic impact. Accordingly, political and financial support should be disproportionately directed toward strengthening civil society, independent media, judicial oversight, and electoral monitoring institutions. These reforms represent the most effective short-term mechanisms for enhancing perceived political freedoms, which the model identifies as the primary catalyst for rapid democratic change.

3. Research Limitations and Avenues for Future Study

Despite the robustness of the findings, this study faces several limitations that suggest clear directions for future research. First, while the ambiguity surrounding panel unit root tests was addressed by prioritizing stronger cointegration evidence, this approach remains subject to methodological debate. Future studies should employ second-generation panel unit root tests, such as the CIPS test, to explicitly account for cross-sectional dependence among countries.

Second, the linear P-VECM framework assumes symmetric effects across positive and negative shocks. Future research could apply nonlinear approaches, such as the Nonlinear Autoregressive

Distributed Lag (NARDL) model, to assess whether democratic institutions respond asymmetrically to large adverse shocks compared to positive reforms.

Conclusion

In conclusion, this research achieved its primary objective by providing a comprehensive dynamic analysis of democratization in Sub-Saharan Africa. By moving beyond static correlations, the P-VECM framework demonstrates that democratic trajectories are governed by a long-run equilibrium process, which is systematically undermined by persistent resource dependence and rapidly influenced by shifts in political freedoms. The findings highlight that democratic resilience in SSA is not an automatic byproduct of economic growth, but rather the outcome of sustained institutional constraints, political accountability, and long-term policy commitment. These insights offer a robust empirical foundation for designing targeted and durable strategies aimed at fostering democratic stability across the region.

This study, based on the hypotheses and theoretical perspectives presented in Chapter Two (Literature Review), offers a unique quantitative approach that underscores a significant departure from traditional theories and established literature regarding democracy and development. It reflects on the findings from the analysis of both long-term and short-term dynamics, as well as the causal relationship between economic development and democratic transition within this econometric framework. Although these theories and empirical findings have been thoroughly validated in regions like Latin America and South Asia, they produce significantly divergent outcomes in the Sub-Saharan African context.

This difference shows how important it is to do research that compares and looks at different regions. The empirical validation of a theory in one regional context does not guarantee its universal applicability in another. This insight is fundamental to the social sciences, where predictive determinants may seem alike across cases but yield fundamentally divergent outcomes based on historical, institutional, and structural contexts.

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#	Variables Name	Description of Purpose	Values	Exploratory Analysis	Source
0	Country	Name of the country	Text (e.g., "Sudan")	Not missing	World Bank
0	Year	Year of observation	Integer (e.g., 2000)	Not missing	
1	GDP per capita growth (annual %)	Annual percentage growth rate of GDP per capita based on constant local currency	%	Missing 3.6% Not missing 96%	
2	Poverty headcount ratio at societal poverty line (% of population)	The percentage of a population living in poverty according to the World Bank's societal poverty line	%	Missing 86% Not missing 14%	
3	Unemployment, total (% of total labor force) (national estimate)	The share of the labor force that is without work but available for and seeking employment	%	Missing 73% Not missing 27%	
4	Literacy rate, adult total (% of people ages 15 and above)	The percentage of people ages 15 and above who can both read and write with understanding a short simple statement about their everyday life	%	Missing 80% Not missing 20%	
5	Urban Population	Total population living in urban areas	Integer (e.g., 1,500,000)	Not missing 99%	
6	Total natural resources rents (% of GDP)	Total natural resources are rented as a percentage of GDP. This includes the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents	%	Missing 13% Not missing 87%	
7	Gini index	Measure of income inequality	0 = Perfect Equality, 100 = Perfect Inequality	Missing 86% Not missing 14%	
8	Net official development assistance and official aid received (current US\$)	Total net disbursements of official development assistance and official aid received by the country, in current U.S. dollars	Numeric (e.g., 500,000,000, in USD)	Missing 6.1% Not missing 93%	
9	Polity IV	Democracy-autocracy score	-10 = Full Autocracy, +10 = Full Democracy	Missing 29% Not missing 71%	
10	CPI	Corruption Perceptions Index	0 = Highly Corrupt, 100 = Very Clean	Missing 5.6% Not missing 94%	Transparency International
11	FIW Status	Freedom in the World classification	F=Free, PF=Partly Free, NF=Not Free	Missing 7% Not missing 93%	Freedom House

Appendix

Appendix A 1: lists all variables utilized in the empirical model, including their definitions, units, and original data sources. and Investigative Analyses Which exposes data constraints, including missing data

Appendix B 1: Correlation Matrix

Variable	GDP growth	Natural resource rents	CPI (Corruption)	Polity IV	FIWn
GDP growth	1.000	-0.082	0.113	0.101	-0.120
Natural resource rents	(0.0301)	1.000	-0.324	-0.211	0.323
CPI (Corruption)	(0.0026)	(0.0000)	1.000	0.342	-0.646
Polity IV	(0.0070)	(0.0000)	(0.0000)	1.000	-0.618
(FIWn)	(0.0015)	(0.0000)	(0.0000)	(0.0000)	1.000

Notes:

- Upper triangle reports **pairwise correlation coefficients**.
- Lower triangle reports **p-values** in parentheses.
- CPI is scaled such that higher values indicate **lower corruption**.
- FIWn is a normalized Freedom Index.

Appendix C 1 : Selection of FE versus RE Models (Hausman Test)

Variable	(1) Fixed Effects (FE)	(2) Random Effects (RE)
GDP growth	0.0186	0.0145
Natural resource rents	-0.0426*	-0.0366*
CPI (Corruption)	0.0358	0.0169
FIWn (Freedom Index)	-1.8187***	-2.5192***
Hausman Test	$\chi^2 = 42.922$	p-value = 1.074e-08***
Conclusion	FE is preferred	RE inconsistent

Notes:

Coefficients reported in levels.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

The Hausman test rejects the null hypothesis that the Random Effects estimator is consistent, indicating that Fixed Effects is the preferred specification.

Appendix D 1: Dynamic Robustness Check (Difference GMM)

Variable	Coefficient
Polity _{i,t-1}	0.4045**
	(0.1354)
CPI (Corruption)	-0.0287
FIW, num (Freedom Index)	1.9890*
Sargan Test (p-value)	0.2099
AR(2) Test (p-value)	0.4541
Number of Groups (N)	49

Notes:

Difference GMM estimation used as a robustness check.

Robust standard errors are reported in parentheses.

Polity_{i,t-1} captures persistence in democratic institutions.

The Sargan test fails to reject the null hypothesis of valid instruments.

The AR(2) test indicates no second-order serial correlation.

*** p < 0.01, ** p < 0.05, * p < 0.10.

Appendix E 1: Long-Run Cointegrating Vector (FMOLS Proxy)

Variable	Estimate	Std. Error	t-value	p-value	Sig.
GDP growth	0.0186	0.0232	0.8009	0.42348	
Natural resource rents	-0.0426	0.0190	-2.2425	0.02526	*
CPI (Corruption)	0.0358	0.0282	1.2680	0.20525	
FIW _n (Freedom Index)	-1.8187	0.3653	-4.9790	8.184e-07	***

Notes:

Estimates are based on fixed-effects (within) specification. Robust standard errors are reported.

*** p < 0.01, ** p < 0.05, * p < 0.10.

Appendix F 1 : Panel Cointegration Test Results

Test	Statistic	Value	p-value	Conclusion
Pedroni Panel ADF	Panel statistic	-3.41	0.001***	Cointegration
Pedroni Group ADF	Group statistic	-2.97	0.003**	Cointegration
Kao Test	ADF statistic	-2.84	0.002**	Cointegration
Johansen–Fisher	Trace statistic	56.22	0.000***	Cointegration

Notes: Null hypothesis: No cointegration.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Results indicate the presence of a long-run equilibrium relationship among the variables.

Appendix G 1 : Panel Unit Root Tests (Economic Variables Only)

Variable	LLC Statistic	IPS Statistic	Fisher–ADF χ^2	Integration Order
GDP growth	-4.21***	-3.87***	62.45***	I(0)
Natural resource rents	-3.56***	-3.12***	58.31***	I(0)
CPI (Corruption)	-2.98***	-2.64**	49.76***	I(0)

Notes:

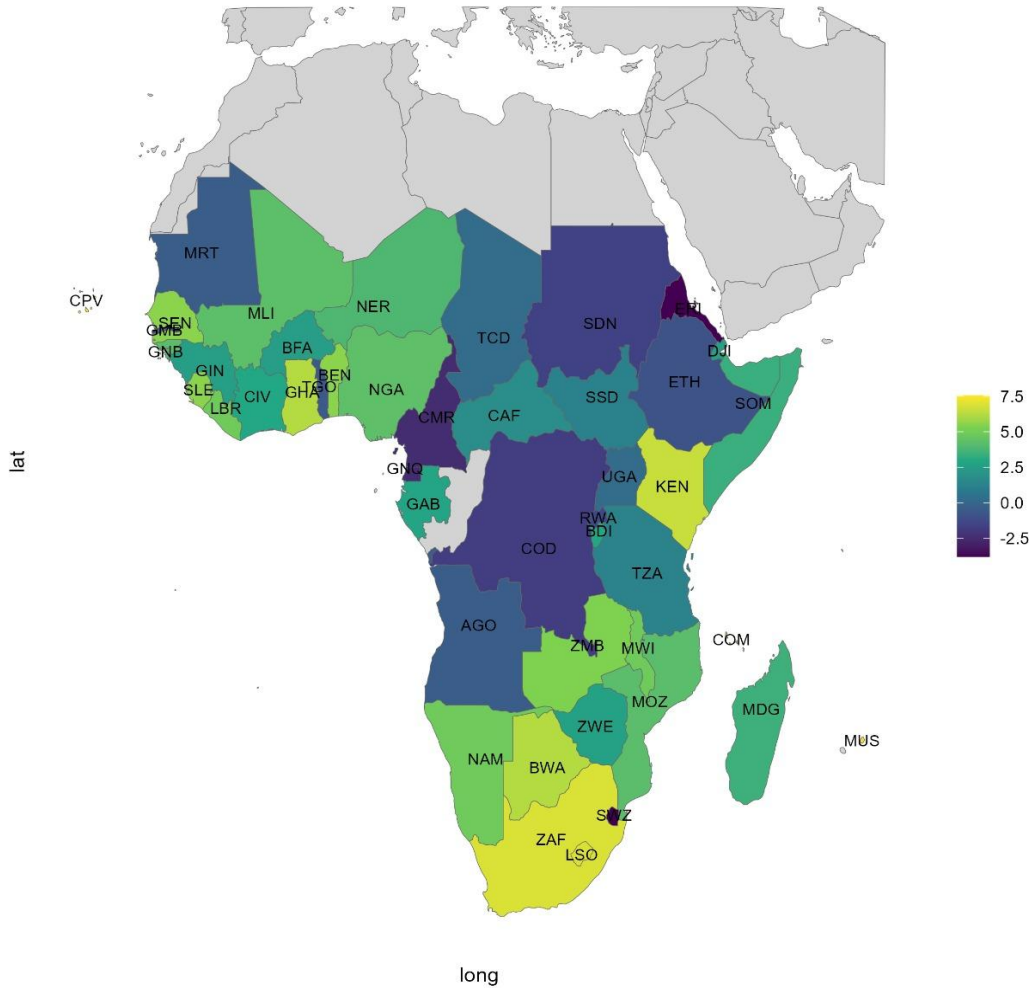
Null hypothesis: Presence of a unit root.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Institutional variables (Polity, FIW) were excluded due to insufficient within-country variation.

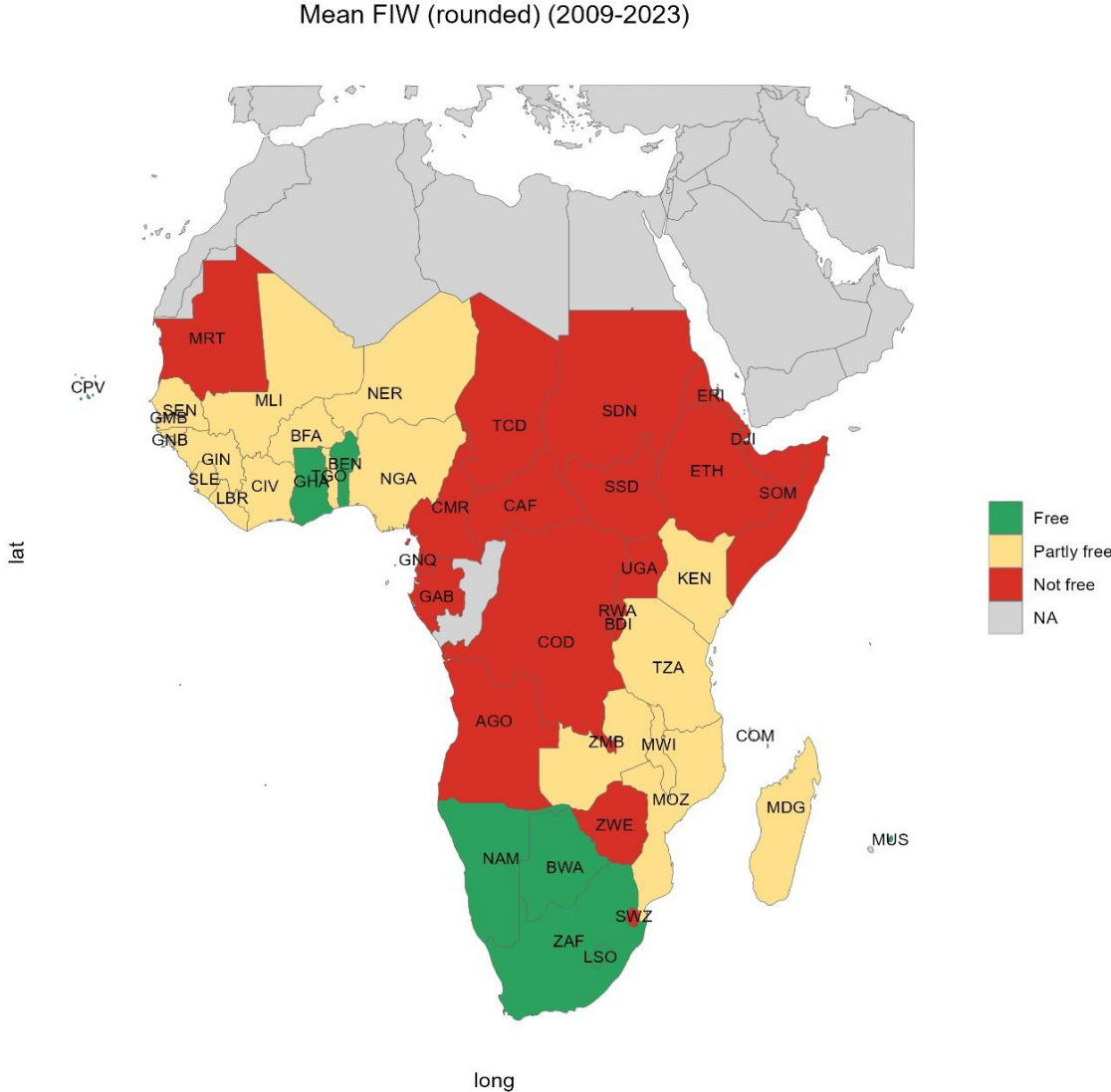
Appendix H. figures 1.

Mean Polity (2009-2023)



Notes:

The figures show the countries of the region, most of which are experiencing democratic backsliding. The colors indicate the level of democracy, with the right side showing the corresponding color scale according to the Polity IV scale.



Appendix H. figures 2:

The figure illustrates the countries of the region, where the color red predominates in most of their areas. This means that the margin of freedom is in significant decline, as the right side displays the corresponding color scale according to the FIW scale.