DETERMINANTS OF CLIMATE FINANCE MOBILIZATION AND THE MODERATING ROLE OF ENVIRONMENTAL POLICY STRINGENCY IN SUB-SAHARAN AFRICA

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052805

A RESEARCH DISSERTATION SUBMITTED TO STRATHMORE UNIVERSITY BUSINESS SCHOOL IN PARTIAL FULFILLMENT OF THE DEGREE IN MASTER OF SCIENCE IN DEVELOPMENT FINANCE OF STRATHMORE UNIVERSITY

NOVEMBER 2024

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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DEDICATION

To my son, Ayan Schneider, for his endless patience, understanding, and sacrifices. Thank you for your love and resilience during the times I couldn't be there, as I focused on assignments and exams. Your support means the world to me, and this achievement is as much yours as it is mine.

To Kevin, for being my constant source of encouragement and strength. Your unwavering support and our frequent conversations about my academic progress pushed me to keep moving forward. I am deeply grateful for your presence on this journey.

To my beloved parents, Mr. and Mrs. Robert Misuu Munyoki, for their unwavering love, encouragement, and prayers. Your belief in me has been the foundation of my success.

ACKNOWLEDGEMENT

I thank the Almighty God for providing the strength and wisdom needed to carry out this study. I am also deeply grateful to Strathmore University Business School for the opportunity to pursue the Master of Science in Development Finance.

I wish to express my sincere gratitude to my dissertation supervisor, Dr. Mumbi Maria, for her invaluable guidance, support, and patience throughout the dissertation process. My appreciation also goes to Dr. Farida Abdul and Dr. David Mathuva, whose insightful feedback on the initial proposal and recommendations for restructuring helped shape this work.

I am grateful to my classmates, whose steadfast support was instrumental in successfully completing this dissertation. I am particularly thankful to Baboucarr Nyang, John Maingi, and Edwin Muga for their constructive critiques and cherished support during the development of this dissertation.

ABSTRACT

Climate change poses a significant threat to the global community, with Sub-Saharan Africa (SSA) facing disproportionate vulnerability despite its minimal contribution to greenhouse gas emissions. Climate finance has emerged as a crucial tool to address this challenge, yet the mobilisation of climate finance in SSA encounters numerous obstacles, including funding disbursement issues and a lack of understanding regarding investment determinants. This study aims to bridge these gaps by conducting a comprehensive investigation into the determinants of climate finance mobilisation in SSA. Drawing on factors such as geopolitical dynamics, population growth rates, media visibility, and institutional frameworks, the research seeks to shed light on the complexities of climate finance mobilisation. Additionally, it explores how environmental policy stringency moderate's climate finance mobilisation, offering valuable insights for policymakers and practitioners. Theoretical frameworks of Dependency Theory and Institutional Theory guided the study, providing insights into the socio-economic and institutional factors shaping climate finance mobilisation. Methodologically, the research adopts a comprehensive design incorporating quantitative analysis of secondary data, including multi variate regression analysis and diagnostic tests to explore variable relationships. The study's sample comprises 47 African countries, covering the period from 2015 to 2022, aligning with the ratification of the Paris Agreement. Through its analysis, the research aims to contribute to the literature on climate finance mobilisation while offering practical insights for policymakers and practitioners working to enhance climate-resilient development in SSA. The study reveals that geopolitical factors, media visibility, and ratification of global climate finance initiatives significantly influence the mobilization of climate finance, with media visibility showing the strongest positive impact. Conversely, annual population growth rate shows no significant effect on climate finance mobilization. The interaction of environmental policy stringency with other determinants further enhances the effective mobilization of climate finance. Policymakers should prioritize enhancing media visibility and ratifying international climate agreements to boost climate finance mobilization. Additionally, strengthening environmental policies can amplify the positive impacts of other determinants on climate finance mobilization.

Key words: Climate finance mobilization, geopolitical factors, population growth rate, media visibility, environmental policy stringency.

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ABBREVIATIONS AND ACRONYMS

AfDB: African Development Bank

ARC: African Risk Capacity Group

CFU: Climate Finance Unit

COP26: 2021 UN Climate Change Conference

GDP: Gross Domestic Product

GHGs: Greenhouse Gases

IPCC: Intergovernmental Panel on Climate Change

OLS: Ordinary Least Squares

SSA: Sub-Saharan Africa

UNFCCC: United Nations Framework Convention on Climate Change

DEFINITION OF TERMS

Annual Population Growth Rate: The percentage increase in a region's population over year, which may impact the demand for climate-related projects and resources (Dasandara et al., 2023).

Climate Finance mobilisation: The process of attracting and securing financial resources dedicated to climate-related projects, encompassing both mitigation and adaptation efforts (Baimwera, 2018).

Environmental Policy Stringency: The degree of strictness and comprehensiveness in country's environmental policies, which may influence the effectiveness of climate finance mobilisation efforts(Hafner et al., 2019).

Geopolitical Factors: Political and economic considerations related to international relations and cooperation, influencing the mobilisation of climate finance (Diaz-Rainey et al., 2017).

The extent to which climate-related initiatives andchallenges receive attention and coverage in the media, affecting public awareness and potential financial support (Bae et al., 2022).

Ratification to Global Climate Finance Initiative: Formal approval or acceptance of international agreements and initiatives aimed at addressing climate change through financial mechanisms(Weikmans & Roberts, 2019).

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

The phenomenon of climate change, characterized by discernible alterations in global weather conditions, remains a significant obstacle to the global economy due to its current and prospective repercussions (Hafner et al., 2019). Previous studies have indicated that experts widely agree that anthropogenic greenhouse gases, primarily responsible for climate change, are the principal cause of global warming. Within the realm of climate sceptics, as evidenced by the works of Akomea-Frimpong et al. (2022) and Atz et al. (2023), the fundamental disagreement does not revolve around the existence of climate change itself but rather centers on the attribution of its causes, specifically debating between natural or anthropogenic origins. Notably, sceptics advocate for the former perspective.

The available evidence indicates that the ongoing climate change has a detrimental impact on the global economy. Several studies propose that this impact might potentially result in a loss of up to 20 percent of the world's gross domestic product annually (Kumar et al., 2022). In orderto attain sustainable development, it is imperative to address the issue of climate change. Thisnecessitates the implementation of a viable global approach aimed at diminishing the levels ofgreenhouse gas emissions (Kalia & Aggarwal, 2023). The central inquiry revolves around themitigation of greenhouse gas emissions while simultaneously sustaining global economic growth, given that energy for industrial production, which serves as the primary driver of these emissions, is crucial for economic advancement.

In order to achieve global effectiveness, scholars and policymakers assert that a comprehensive approach to mitigating greenhouse gas emissions should prioritize the facilitation of financial and technical collaboration among nations, thereby promoting the adoption of climate-friendly policies and low-carbon technologies (Bae et al., 2022). Numerous strategies have been suggested in response to the issue of climate change. However, the international community, operating through the United Nations Framework Convention on Climate Change (UNFCCC), has reached a consensus on the implementation of carbon pricing as a significant financial instrument to facilitate the exchange of greenhouse gases (IPCC, 2018). The implementation of adaptable financial mechanisms, exemplified by those outlined in the Kyoto Protocol, has facilitated the ability of nations and initiatives to mitigate greenhouse gas emissions at the most

economically efficient rate (Baimwera, 2018). Climate finance refers to the collection of resources, both within and outside the UNFCCC framework, which are intended to obtain certified greenhouse gas (GHG) emission reductions (World Bank, 2015).

According to Samuwai & Hills, (2018) currently, there are over 50 worldwide public funds, 60 carbon markets, and 6000 private equity funds, together with 99 multilateral and bilateral climate funds, that are operational. The abundance of climate finance sources is both advantageous and disadvantageous for impoverished and tiny, susceptible nations. (Samuwai & Hills, 2018). The blessing is the increased number of potential funding opportunities available, while the curse is the further fragmentation of an already convoluted climate financing landscape. Climate finance emerges within conventional financing and investing, aiming to channel capital into projects that bolster sustainable development by directing investments into climate resilient infrastructure. As defined by the European Commission (EC), this approach integrates environmental, social, and governance (ESG) factors when making financial investment choices, resulting in heightened allocations towards sustainable economic endeavors and undertakings over the long term. This shift is manifested across various sectors, including financial institutions, private enterprises, pension funds, central banks, and global non-profit organizations (European Commission, 2020). Within this landscape, the key financial tools of sustainable finance primarily involve equity and debt instruments (Timilsina, 2021). Debt-based funding takes shape in two distinct formats: loans and bonds. Illustrative instances of sustainable financial instruments encompass a spectrum ofoptions such as green loans, green bonds, equity investments in renewable energy, the tradingof carbon credits, equity participation in public institutions, and a multitude of analogous mechanisms (Samuwai & Hills, 2018)

Climate finance, as defined by the United Nations Framework Convention on Climate Change (UNFCCC) (2021), primarily encompasses funding obtained from various sources such as the public, private, and alternative sectors. Its purpose is to support actions aimed at mitigating and adapting to climate change at the local, national, or transnational level. According to the UNFCCC (2021), climate financing primarily aims to decrease emissions, decrease vulnerability, and improve the resilience of human and ecological systems in response to climate change problems. According to Dasandara et al. (2022.), climate finance encompasses

two primary components: mitigation finance and adaptation finance. Mitigation finance pertains to financial resources allocated towards reducing Greenhouse Gas emissions, while adaptation finance refers to financial resources invested in enhancing the ability of humans and ecological systems to adapt to climate change. In the context of Kenya, a comparable scenario may be witnessed about climate change, with the country being very susceptible to its effects, resulting in various consequences (Baimwera, 2018).

The primary consequences encompass rising temperatures, alterations in precipitation patterns, increasing sea levels, floods, droughts, and an escalation in extreme weather phenomena. The country is currently facing an urgent need to implement mitigation and adaptation strategies in order to address the ever-changing implications of climate change (Kalia & Aggarwal, 2023). Thus far, numerous institutional measures have been implemented in Africa to develop and execute various policies and strategies aimed at raising finances for climate change adaptation and mitigation efforts. (Baimwera, 2018). Undoubtedly, financial resources are the most crucial among the necessary resources for implementing climate change policies and strategies at every level. (Hafner et al., 2019). It is crucial for a developing country like Kenya to enhance its financial resilience by enacting various policies and strategies to address the detrimental effects of climate change.

The study diverges from past similar studies for instance Doku et al. (2021)) by offering a more comprehensive exploration of climate finance mobilisation in Sub-Saharan Africa, encompassing a broader array of factors and employing a rigorous quantitative methodology. While Doku et al. focus on recipient characteristics, this research delves deeper into the determinants of climate finance mobilisation, including geopolitical dynamics, media visibility, and institutional frameworks. Through multivariate regression analysis and diagnostic tests, this study aims to provide robust empirical evidence to inform policymaking and practice, with particular emphasis on understanding the moderating role of environmental policy stringency.

1.1.1 Determinants of climate financing

Climate financing, a critical component of global efforts to combat climate change, encompasses a diverse array of financial instruments, policies, and mechanisms aimed at mobilizing resources for climate adaptation and mitigation initiatives (Bae et al., 2022). The allocation of climate funding to address climate change is influenced by numerous factors,

spanning both the national and international levels. Nevertheless, research indicates that the factors influencing climate funding flows at the global level are more varied and rigorous compared to those at the country level (Kawabata, 2019). At the forefront of climate financing innovation are novel financial instruments such as green bonds, sustainability-linked loans, and green sukuk, as highlighted by Liu (2022). These instruments, emerging predominantly in Asian financial hubs like Hong Kong, Singapore, and Malaysia, represent a shift towards leveraging capital markets to fund climate-friendly projects and initiatives. Their adoption underscores the growing recognition of the need for diversified funding mechanisms to address the multifaceted challenges posed by climate change.

Geopolitical dynamics also play a significant role in shaping climate financing landscapes, as evidenced by studies exploring the implications of climate-induced conflicts and population displacement in regions like West Africa (Lenshie et al., 2022). The intersection of environmental pressures, resource scarcity, and political instability underscores the urgency of fostering cross-border cooperation and resource-sharing mechanisms to address climate-related challenges effectively. Hesketh (2022) discovered that the availability of private funding for mitigation efforts in a country is affected by geopolitical considerations, including historical colonial connections, the size of the country, and its geographical position. These factors also play a significant role in determining the site of Clean Development Mechanism (CDM) projects. Doku (2021) discovers a positive correlation between higher population growth rate, elevated poverty levels, favorable ease of doing business profile, weaker governance policies, weaker control of corruption, stronger rule of law enforcement, increased social inequality, and improved ICT usage with the attraction of more climate finance in countries. In the Pacific Islands, climate change has a significant impact on local politics and governance institutions. It drives collective action and mobilization attempts in response to existential concerns (Barbara, Howard & Baker, 2022). The unique vulnerabilities of small island states underscore the imperative of tailored policy responses and international solidarity to support climate adaptation and resilience-building initiatives in these regions.

The demographic composition of a region, including annual population growth rate, population density, and urbanization rate, profoundly influences the landscape of climate financing. Lenshie et al. (2022) highlight that regions experiencing rapid population growth and urbanization face increased demands for climate-related infrastructure and services. Consequently, substantial investments are required to address environmental challenges arising

from such demographic shifts. Moreover, Pindiriri & Kwaramba (2024) find a positive correlation between population density, urbanization rates, and the allocation of climate-related finance, indicating that densely populated urban centers often receive prioritized funding. Policymakers and stakeholders must understand these demographic dynamics to tailor climate financing strategies effectively, ensuring they meet the evolving needs of growing and urbanizing populations.

The visibility of climate-related issues in the media, as measured by metrics such as media coverage index and social media engagement, significantly shapes public discourse and support for climate financing initiatives. Schäfer & Painter (2021) emphasize the pivotal role of media in framing climate change narratives and influencing public perceptions. Increased media coverage of climate change can raise awareness, stimulate debate, and pressure governments and financial institutions to prioritize climate financing. Hayes & O'Neill (2021) note that changes in media portrayal of climate protests reflect evolving societal attitudes towards climate action, with a growing emphasis on individual agency and collective mobilisation. Leveraging media visibility can amplify advocacy efforts and foster an enabling environment for climate financing mobilisation at local, national, and global levels.

The ratification of global climate initiatives signals a country's commitment to addressing climate change and mobilizing climate finance. Countries that ratify international agreements demonstrate their dedication to global climate goals and participate in coordinated efforts to mitigate climate risks. Qi & Qian (2023) highlight China-led climate-related development assistance and South-South cooperation as significant drivers for vulnerable countries to prioritize climate action. Ratification of global climate initiatives not only enhances a country's credibility in international climate negotiations but also facilitates access to financial and technical support for climate adaptation and mitigation projects. Compliance with global climate commitments strengthens diplomatic relations and fosters collaboration among nations to achieve shared climate objectives, as emphasized by Leonard (2021). Ratification to global climate initiatives thus plays a crucial role in shaping the global climate financing landscape, enabling the flow of resources towards climate-resilient and sustainable development pathways.

For a country like Kenya to receive climate money, it must meet certain fundamental criteria, such as ratifying an international climate agreement and establishing the required legal and policy framework. Baimwera (2018) observes that once this is done, the climate revenue

inflows at the country are dependent on the efforts of the financial institutions, implications for the governance of climate finance, climate finance initiatives as well as conditions in the wider climate financing. Bae et al. (2022) also find that climate finance is positively and significantly associated with Islamic Sharīʿah and media visibility, and negatively and significantly related to financial constraints. Kawabata (2019) Finds that there is influence of international climate finance initiatives on financial institutions with regard to the mobilisation of climate finance, whereas senior management engagement on climate change encourages the highercommitment to climate finance from financial institutions.

The selection of factors such as geopolitical dynamics, annual population growth rate, media visibility, ratification to global climate finance initiatives, and environmental policy stringency as key determinants of climate finance mobilization in Sub-Saharan Africa is informed by their substantial influence on the region's climate finance landscape. Geopolitical factors, including historical colonial ties and regional stability, significantly shape international investment and aid flows (Hesketh, 2022), affecting how funds are allocated for climate projects. Rapid population growth and urbanization increase the demand for climate-resilient infrastructure, making population dynamics a critical determinant (Lenshie et al., 2022). Media visibility raises public awareness and pressures governments and institutions to prioritize climate financing (Schäfer & Painter, 2021). Ratification of global climate initiatives signals a country's commitment to international climate goals, enhancing its credibility and access to funding (Qi & Qian, 2023). Finally, stringent environmental policies create a favorable environment for attracting climate finance by ensuring regulatory certainty and demonstrating a commitment to sustainable development (Bae et al., 2022). Together, these factors encapsulate a comprehensive approach to understanding the multifaceted drivers of climate finance in the region.

1.1.2 Geopolitical Factors

The landscape of climate finance is witnessing transformative shifts where at the global level, climate finance governance reflects geopolitical tensions and challenges in achieving equitable distribution and effectiveness (Qi & Qian, 2023). Qi & Qian examine the complexities of climate finance governance, highlighting the role of China-led climate-related development assistance and South-South cooperation in addressing climate injustice with Asian financial centers like Hong Kong, Kuala Lumpur, and Singapore pioneering innovative climate finance

instruments (Liu, 2022). Liu's research underscores the importance of these developments in decarbonizing and building resilience in Asian economies. However, such global trends raise questions about their applicability and impact in regions like East Africa, including Kenya, where unique geopolitical factors and developmental priorities shape the climate finance landscape.

Within the Pacific Islands, climate change has emerged as a key political driver, reshaping internal dynamics and mobilizing communities towards climate action (Barbara, Howard & Baker, 2022). Barbara, Howard & Baker emphasize the transformative potential of climate change as a mass mobilizing factor, illustrating its impact on domestic politics and governance structures. While the Pacific Islands exhibit unique vulnerabilities to climate change, Kenya's coastal regions and small island communities face comparable challenges, necessitating localized responses and political engagement to address climate risks effectively.

In Africa, climate change intersects with geopolitical tensions and security concerns, exacerbating vulnerabilities and sparking conflicts (Lenshie et al., 2022). Lenshie et al. highlight the complex dynamics of climate change-induced conflicts and population displacement in West Africa, drawing attention to the need for geopolitical cooperation and climate resilience initiatives. Kenya, situated in the East African region, faces similar challenges, where climate-induced conflicts over dwindling resources like water and grazing land pose significant threats to stability and development.

In Sub-Saharan Africa, the discourse on climate finance intersects with domestic politics and developmental priorities, shaping national policies and strategies (Baimwera, 2018). These countries, as a recipient of climate finance, grapple with similar challenges in accessing and utilizing climate finance resources effectively, underscoring the importance of global cooperation and equitable distribution of funds. In particular, East African nations being vulnerable to climate change impacts, have their financial backdrops influenced by local geopolitical factors, including resource competition, governance structures, and developmental aspirations.

1.1.3 Annual Population Growth Rate

The annual population growth rate, a fundamental demographic indicator, wields significant influence across various domains, including climate finance mobilisation and resilience-

building efforts, with global implications. According to the United Nations (2021), the world's population continues its upward trajectory, albeit at a slowing pace, with the global population estimated to surpass 8 billion in the coming decades. This sustained growth, coupled with demographic shifts, underscores the criticality of understanding population dynamics in shaping responses to climate change. On a global scale, the annual population growth rate has exhibited a gradual decline in recent years, owing to advancements in healthcare, education, and family planning initiatives (United Nations, 2021). Despite this deceleration, the world's population continues to expand, albeit at a moderated pace, exerting escalating pressure on natural resources, ecosystems, and infrastructure. As the global population approaches 8 billion, the implications of population growth for climate change mitigation and adaptation strategies become increasingly pertinent.

In regions undergoing rapid development, such as Sub-Saharan Africa, the annual population growth rate remains substantially higher than the global average (World Bank, 2021). Statistics indicate that Sub-Saharan Africa experiences significant demographic expansion, driven by a youthful demographic profile and burgeoning urbanization trends. Projections suggest that by 2050, Sub-Saharan Africa could host over a quarter of the world's population, amplifying the urgency of addressing population growth rates in the region for sustainable development and climate resilience (United Nations, 2019). The demographic trends in Sub-Saharan Africa present both challenges and opportunities for climate finance mobilisation and resilience-building endeavors. High population growth rates strain limited resources, exacerbate environmental degradation, and heighten vulnerability to climate-induced hazards such as droughts, floods, and food insecurity (World Bank, 2021). Consequently, addressing population dynamics becomes integral to crafting effective strategies for climate adaptation and mitigation in the region.

Scholarly discourse and policy deliberations increasingly recognize the interplay between population dynamics, climate change resilience, and sustainable development goals. Integrated approaches that consider demographic realities alongside environmental sustainability and socio-economic development imperatives are imperative (United Nations, 2021). Effective climate finance strategies and resilience-building initiatives must align with demographic trends, fostering inclusive growth, equitable resource distribution, and community empowerment across diverse demographic profiles.

In Sub-Saharan Africa, initiatives aimed at addressing population growth rates necessitate multi-dimensional interventions encompassing access to education, healthcare, reproductive rights, and economic opportunities (World Bank, 2021). Statistics underscore the importance of such efforts, not only in slowing population growth but also in enhancing adaptive capacities and bolstering resilience to climate change impacts. By addressing population dynamics comprehensively, Sub-Saharan Africa can pursue sustainable development pathways aligned with global climate objectives. As the international community confronts the complex intersection of population dynamics, climate change, and development imperatives, collaborative action and integrated frameworks are essential for navigating toward a resilient, inclusive, and sustainable future (United Nations, 2021). Embracing the complexities of population growth and climate change resilience can catalyse transformative policies and practices that prioritize human well-being while safeguarding planetary health and ecological integrity.

1.1.4 Media Visibility

Media visibility plays a pivotal role in catalyzing climate finance mobilisation efforts, shaping public perceptions, and influencing policy agendas. The increasing prominence of climate-related discourse in media narratives reflects shifting societal attitudes and evolving communication landscapes. The interplay between media visibility and climate finance mobilisation underscores the transformative potential of public engagement and advocacy in addressing environmental challenges.

The emergence of prominent climate activists, such as Greta Thunberg, has propelled climate protest into the spotlight of media attention, fostering heightened visibility and discourse around climate-related issues (Hayes & O'Neill, 2021). Through the lens of visual representation, the "Greta effect" exemplifies how media narratives can redefine perceptions of climate protest, portraying activists as empowered agents of change rather than social deviants. The visual imagery of climate protest, disseminated through mainstream media channels and image collections, shapes public perceptions, amplifies voices of dissent, and fosters a collective sense of urgency for climate action.

Climate journalism serves as a critical conduit for disseminating information, framing narratives, and catalyzing public discourse on climate change (Schäfer & Painter, 2021). As the media ecosystem undergoes profound transformations, characterized by digitalization and

diversification, climate journalism faces new challenges and opportunities in engaging audiences and shaping public opinion. The evolution of climate journalism reflects broader shifts in media practices, organizational dynamics, and audience preferences, underscoring the need for adaptive strategies and innovative approaches to communication.

In the digital sphere, social media platforms serve as arenas for the articulation of climate-related discourse and the negotiation of environmental identities (Berglez & Olausson, 2023). Social media users navigate complex terrain, negotiating tensions between individual actions and collective responsibilities in addressing climate change. The concept of "high-carbon visibility discourse" sheds light on the ideological underpinnings of online communication, highlighting patterns of disclosure, concealment, and normalization of high-carbon lifestyles in digital spaces.

Digital activism and online Mobilisation have emerged as potent forces driving climate advocacy and environmental stewardship (Baran & Stoltenberg, 2023). The proliferation of digital platforms and networked communication technologies has democratized access to information, empowered grassroots movements, and amplified marginalized voices in the climate discourse. Through a mixed-methods systematic review, scholars trace the contours of digital environmental activism, illuminating emergent research trajectories and methodological trends in the study of online engagement.

Journalists play a pivotal role in mediating climate change discourse and fostering public engagement with environmental issues (Okoliko & de Wit, 2023). In Africa, journalists navigate complex socio-political landscapes, balancing professional norms, institutional constraints, and audience expectations in their coverage of climate-related topics. The relational media framework offers insights into the dynamics of climate journalism, emphasizing the interplay between journalists, sources, and audiences in shaping mediated narratives and fostering inclusive dialogues.

Amidst competing crises and evolving media landscapes, the framing of climate change narratives remains a dynamic and contested terrain (Stoddart et al., 2023). The COVID-19 pandemic has reshaped media coverage of climate issues, disrupting established patterns of discourse and amplifying alternative framings of environmental sustainability. Through critical analysis and empirical inquiry, scholars interrogate the intersections of media visibility, public discourse, and global governance in shaping climate action agendas and fostering

transformative change.

1.1.5 Ratification to Global Climate Finance Initiative

Ratification to the Global Climate Finance Initiative represents a critical step towards addressing the multifaceted challenges of climate change mitigation and adaptation. The convergence of financial instruments, policy frameworks, and institutional mechanisms underscores the urgent need for coordinated action and sustained investment in sustainable development pathways. Financialization, climate finance, and the calculative challenges of managing environmental change highlight the complex interplay between financial markets, environmental imperatives, and regulatory frameworks (Bracking, 2019). Climate finance initiatives evolve within a dynamic landscape of competing accounting systems, risk assessments, and valuation metrics, reflecting broader processes of financialization and marketization. The calculative challenges inherent in climate finance underscore the need for innovative approaches to resource allocation and investment prioritization.

The Green Climate Fund (GCF) emerges as a pivotal actor in climate finance governance, navigating operational challenges and political uncertainties (Bowman & Minas, 2019). As a critical vehicle for mobilizing financial resources and facilitating climate-resilient investments, the GCF must adapt to shifting geopolitical dynamics and funding constraints. Strengthening interlinkages with UNFCCC bodies and enhancing stakeholder engagement can enhance the GCF's resilience and effectiveness in catalyzing climate action. The international climate finance accounting muddle underscores the need for transparent and standardized reporting mechanisms to track financial flows and assess progress towards climate goals (Weikmans & Roberts, 2019). Disparities in accounting practices and reporting methodologies undermine trust and accountability in international climate negotiations, necessitating concerted efforts to harmonize data collection and verification processes. The enhanced transparency framework outlined in the Paris Agreement offers a pathway towards improving the accuracy andreliability of climate finance accounting.

Mobilizing private climate finance for sustainable energy access and climate change mitigation in Sub-Saharan Africa emphasizes the pivotal role of public finance institutions in leveraging private investment for climate-resilient infrastructure and renewable energy projects (Michaelowa et al., 2021). Strategic partnerships, innovative financing mechanisms, and

tailored policy interventions can unlock the transformative potential of private capital in advancing sustainable development objectives and achieving climate targets in the region.

A critical review of post-Kyoto climate change conferences highlights the imperative for enhanced accountability, monitoring, and enforcement mechanisms to track progress towards emission reduction targets and forest conservation goals (Nyirenda, 2023). Despite the establishment of multilateral funds and regulatory frameworks, inconsistencies in climate finance provision and emissions reduction efforts persist, necessitating renewed commitments and collaborative action by the international community.

1.1.6 Environmental Policy Stringency

Environmental policy stringency plays a crucial role in shaping the relationship between other determinants and climate finance mobilization in Sub-Saharan Africa. It acts as a catalyst, influencing the effectiveness of other factors in attracting and utilizing climate finance. Bae et al. (2022) underscore the significance of environmental regulations in creating an enabling environment for climate investments. Stringent environmental policies not only signal a country's commitment to sustainable development but also provide a framework for effective climate action.

In Sub-Saharan Africa, the implementation and enforcement of stringent environmental policies can enhance a country's attractiveness to clim ate finance providers. Investors and donors are more likely to invest in countries with robust environmental regulations as it reduces the risk of environmental damage and ensures the long-term sustainability of projects (Lenshie et al., 2022). Moreover, stringent environmental policies can create a level playing field for businesses, encouraging them to adopt cleaner technologies and practices, further enhancing the impact of climate finance.

The Environmental Performance Index (EPI), a composite measure assessing countries' environmental policies, can serve as a proxy for environmental policy stringency. A higher EPI score indicates more robust environmental policies and regulations. Countries with higher EPI scores are likely to be better positioned to mobilize climate finance as they demonstrate a commitment to environmental protection and sustainable development (Doku, 2021). Moreover, stringent environmental policies can enhance the effectiveness of other determinants such as media visibility and ratification of global climate initiatives. For instance,

media visibility of climate change issues can exert greater pressure on governments to strengthen environmental policies, leading to increased climate finance mobilization (Schäfer & Painter, 2021). Similarly, the ratification of global climate initiativescan act as a catalyst for implementing stringent environmental policies, attracting additional climate finance. In essence, environmental policy stringency can create a positive feedback loop, where stronger policies attract more climate finance, which in turn leads to further policyimprovements and increased investments in climate action.

However, the relationship between environmental policy stringency and climate finance mobilization is not always straightforward. In some cases, stringent policies may deter investments due to perceived regulatory burdens or increased compliance costs (Hesketh, 2022). Therefore, it is essential to strike a balance between environmental protection and investment incentives to maximize the benefits of climate finance. Moreover, the effectiveness of environmental policies also depends on their implementation and enforcement. Weak governance and corruption can undermine the impact of even the most stringent policies, hindering climate finance mobilization (Pindiriri & Kwaramba, 2024).

Thus, environmental policy stringency can play a fundamental moderating role in shaping the landscape of climate finance mobilization in Sub-Saharan Africa. It acts as a catalyst, influencing the effectiveness of other determinants and creating an enabling environment for climate investments. However, its impact is not always straightforward and depends on various factors such as implementation, enforcement, and the balance between environmental protection and investment incentives. Understanding the complex interplay between environmental policy stringency and other determinants is crucial for developing effective strategies to mobilize climate finance and achieve sustainable development in the region.

1.1.7 Climate Financing Mechanisms and Instruments

To streamline the process of providing climate funding, the Convention created a financial mechanism to allocate financial resources to developing nation Parties. The funding structure also supports both the Kyoto Protocol and the Paris Agreement (Dasandara et al., 2023). According to the Convention, the financial mechanism might be assigned to one or more established international corporations. Since the Convention came into effect in 1994, the Global Environment Facility (GEF) has functioned as an operational institution of the funding system. (Dasandara et al., 2023). During the 16th Conference of the Parties (COP) in 2010, the

Green Climate Fund (GCF) was established and in 2011 it was officially designated as an operating entity of the financial mechanism. The financial mechanism is responsible to the Conference of the Parties (COP), which determines its rules, program priorities, and criteria for grant eligibility.

Table 1.1: Climate Financing Mechanisms and Instruments

Instrument/ Mechanism	Provider	Description	Characteristics	Examples of Use
Non-concessional Loans	Commercial banks, private lenders	Loans with market-based terms, generally used for commercial projects.	Shorter repayment periods, higher interest rates, terms similar to market rates	Infrastructure projects, industrial development, commercial enterprises
Concessional Loans	International financial institutions, government agencies	Loans with favorable terms to support development and climate projects.	Longer repayment periods, lower interest rates, favorable terms compared to market rates	Renewable energy projects, climate adaptation and mitigation initiatives
Multilateral Grants	Multilateral organizations (e.g., World Bank, IMF)	Grants provided by international organizations to support non-revenue generating activities in developing countries.	Non-revenue generating activities, focus on capacity building, knowledge management, technical planning	Climate research, capacity building in climate governance, non-profit environmental projects
Bilateral Grants	Individual donor countries	Grants provided directly from one country to another to support specific projects or initiatives.	Direct country-to-country funding for non-revenue generating activities, similar focus as multilateral grants	Bilateral environmental cooperation, technology transfer for climate resilience

Instrument/ Mechanism	Provider	Description	Characteristics	Examples of Use
Debt Swaps	Non-profit organizations, central banks	Financial arrangements where foreign debt is bought at a discount and exchanged for local currency to fund development projects.	Sale of foreign currency-denominated debt at a discounted price, swapped for local currency for development projects	Funding environmental projects, national company shares acquisition for development purposes

Source: Sheriffdeen et al. (2020).

Instruments used in the mobilization of climate funds include; Non-concessional and concessionalloans. These are loans which are characterized by longer repayment terms and lower interest rates, among other terms preferable to market rate loans and equity (Sheriffdeen et. al 2020). Other instrument used are the multilateral and the bilateral grants. These grants play a great role in the creating a non-revenue generating activities in recipient countries, such as knowledge management programs, capacity building programs, ongoing activities that do not generate financial return, and technical and costing plans, among other projects (Doku, 2021).The next instrument used is the debt swaps, Debt swaps involves the sale of foreign currency-denominated debt by creditor nation to an investor (either a non-profit organization or a centralbank) who buys the debt at a price that enables a profit margin. The investor can then swap thisdebt with the debtor nation, in local currency, for shares in a national company or for a wide variety of development projects. Debt for environment swaps cover swaps that typically focuson conservation and other “green” projects (Bhandary, Gallagher, & Zhang 2021).

1.1.8 Climate Finance Mobilisation in SSA

Sub-Saharan Africa (SSA) remains highly vulnerable to climate change, despite contributing the least to global greenhouse gas emissions. According to the Climate Vulnerability Index (CVI), which assesses the susceptibility of regions to climate-related impacts, SSA consistently ranks high in vulnerability due to factors such as exposure to extreme weather events, water stress, and food insecurity. On a scale of 0 to 100, with higher scores indicating greater vulnerability, many SSA countries score above 70, indicating significant susceptibility to climate risks (UNDP, 2021). This vulnerability is exacerbated by limited adaptive capacity and socio-economic challenges faced by many countries in the region. The region's susceptibility

necessitates immediate action to aid in climate change adaptation and mitigation, all of which are crucial for promoting resilient and environmentally friendly economic growth, as well as fulfilling obligations outlined in the Paris Agreement. Consideringthe vastness of SSA's other development requirements, additional funding must be provided in addition to the current obligations on development finance. There exist numerous potential methods to secure funding for addressing adaptation and mitigation requirements, ranging fromgenerating revenue inside a country to utilizing different types of international private financing. (Smith et al., 2020).

However, according to UNDP, (2021) the financing allocated to climate-related issues is comparatively insufficient compared to the area demand. The region has provided inadequate support to the most marginalized and hence the most susceptible demographic groups. The transaction costs associated with small-scale initiatives in the poorest areas are a considerable obstacle to investment. The utilization of public sector grant financing will remain essential in facilitating the achievement of substantial environmental, social, and gender equality advantages resulting from climate activities in the region, especially in relation to adaption measures.

Climate finance flows to the SSA region have been severely restricted. Since the 15th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP15) in 2009, developed countries have pledged to increase financial support for emerging and developing countries in order to provide $100 billion annually by 2020. During the period of 2016-2019, advanced nations provided a total of $80 billion per year in climate finance. However, the SSA (Sub-Saharan Africa) region got less than $20 billion per year, which accounts for around one-quarter of the worldwide flows. In addition, a substantial amount of this funding has replaced other previously allocated development money (Bhattacharya 2022). Furthermore, it is worth noting that overall development spending to low-income countries has decreased since 2009. (Mitchell, Ritchie, and Tahmasebi 2021, Roberts, 2021).

Given the vastness of SSA, it is essential to narrow down the focus to specific countries for a detailed analysis. Countries such as Nigeria, Kenya, and South Africa, which have varying levels of GDP, development indices, and corruption perceptions, was examined to provide a comprehensive understanding of the factors influencing climate finance mobilization. Nigeria, with its large economy and significant oil revenue, contrasts with Kenya's diversified agricultural economy and South Africa's industrialized landscape. These countries also differ in their Human Development Index (HDI) scores and levels of political stability, which play

crucial roles in their ability to attract and utilize climate finance effectively (Smith et al., 2020; UNDP, 2021).

Moreover, understanding the political and economic contexts of these selected countries is crucial. For instance, Nigeria faces challenges related to corruption, which can hinder effective utilization of funds, while Kenya has made strides in renewable energy projects that could serve as models for other SSA countries. South Africa, with its relatively higher GDP, has the potential to leverage private sector investments more effectively but also faces issues related to inequality and social unrest. By examining these countries, the study aims to highlight diverse strategies and obstacles in climate finance mobilization, thereby offering a nuanced perspective on how SSA can enhance its resilience to climate change through improved financial mechanisms and governance structures (Mitchell, Ritchie, and Tahmasebi, 2021; Roberts, 2021).

1.2 Problem Statement

Climate change presents a multifaceted challenge to the world, encompassing social, environmental, and economic dimensions (IPCC, 2020). Anthropogenic greenhouse gas emissions, primarily from fossil fuel combustion for industrial and domestic purposes, are the main drivers of global warming (Roberts, 2021), leading to adverse climate risks that threaten ecological balance, biodiversity, and human society (Bătae et al., 2020). Climate finance has emerged as a crucial mechanism to address the rise in greenhouse gas emissions and mitigate environmental hazards (Baimwera, 2018). However, the policy processes and allocation of climate finance resources have encountered barriers, hindering their effectiveness in mitigating climate change.

In Sub-Saharan Africa (SSA), the impact of climate change is pronounced, despite the region contributing less than 3% to global warming (Bae et al., 2022). SSA remains highly vulnerable to climate change, experiencing increased disasters such as prolonged famine and floods (Dasandara et al., 2023). Although climate funds have existed since the 1990s, significant financing began in the early 2000s, with momentum building after developed countries committed to providing $100 billion annually in climate finance to emerging nations by 2020 (CFU, 2022). However, the disbursement of funds remains low, with SSA receiving only a small fraction of the approved projects, highlighting procedural gaps in climate finance mobilisation.

Research on climate finance mobilisation in Sub-Saharan Africa (SSA) has provided valuable insights into specific dimensions, yet much remains unexplored. Studies like Baimwera (2018) have examined factors influencing carbon finance uptake among renewable energy developers, highlighting targeted mechanisms that drive investment within particular sectors. Similarly, Doku (2021) offered descriptive analyses of green and climate finance across countries and projects, mapping out the landscape of existing financing mechanisms. However, Doku's work, while informative, lacks deeper empirical exploration of the causal factors affecting climate finance mobilisation. This limits its ability to inform strategic interventions for mobilising climate finance across SSA.

Comparative studies such as those by Banga (2019) and Hafner et al. (2019) have provided a broader perspective, examining the challenges and opportunities for mobilising climate finance in developing countries and globally. Banga's research, for instance, highlighted systemic hurdles and potential enablers for climate finance in developing nations. Hafner et al. extended this view to global trends, capturing broader dynamics influencing climate finance mobilisation. Kawabata (2019) contributed a regional perspective by examining climate finance in Europe, where differences in environmental policies offer insights that may be applicable to SSA. These studies underscore important aspects of climate finance but are largely limited to comparative and descriptive analysis.

From a research perspective, there are three notable gaps that need addressing. First, existing studies generally lack a comprehensive examination of the multiple determinants shaping climate finance mobilisation in SSA, often focusing on singular aspects such as project-based financing or carbon finance. This fragmented approach limits a holistic understanding of factors affecting mobilisation. Secondly, most studies employ descriptive analyses, with limited empirical investigation into causal mechanisms; this prevents a more precise understanding of how various determinants actively influence mobilisation efforts. Thirdly, the potential role of environmental policy stringency as a moderating variable remains underexplored. Understanding its influence could be crucial for formulating policies that enhance climate finance mobilisation across diverse contexts in SSA.

This study aims to address these gaps by conducting an empirical analysis of climate finance mobilisation determinants in SSA, examining a range of factors including geopolitical dynamics, population growth rates, media visibility, and commitment to global climate finance initiatives.

1.3 Research Objectives

1.3.1 General Objectives

The general objective of the study was to examine the determinants of climate finance mobilization and the moderating role of environmental policy stringency in Sub-Saharan Africa.

1.3.2 Specific Objectives

i. To investigate the influence of geopolitical factors on climate finance mobilization among Sub-Saharan countries.
ii. To assess the influence of annual population growth rate on climate finance mobilisation among Sub-Saharan countries.
iii. To examine the influence of media visibility on climate finance mobilisation amongSub-Saharan countries.
iv. To analyse the influence of ratification to global climate finance initiatives on climatefinance mobilisation among Sub-Saharan countries.
v. To evaluate the Moderating role of environmental policy stringency on the determinants of climate finance mobilization.

1.3.3 Research Questions

i. How do geopolitical factors shape the mobilisation of climate finance among Sub-Saharan countries?
ii. To what extent does the annual population growth rate impact the mobilisation ofclimate finance among Sub-Saharan countries?
iii. What is the relationship between media visibility and the mobilisation of climatefinance among Sub-Saharan countries?
iv. How does ratification to global climate finance initiatives influence the mobilisation ofclimate finance among Sub-Saharan countries?
v. what is the moderating role of environmental policy stringency on the determinants of climate finance mobilisation in Sub-Saharan countries?

1.4 Scope of the study

This study expands upon the existing literature concerning climate finance mobilisation in Sub-Saharan Africa (SSA) by investigating a sample of 47 African countries over the period from 2015 to 2022. The selection of these countries is based on several criteria, including their geographical location within SSA, their representation of diverse economic, social, and environmental characteristics, and the availability of reliable data for analysis. Additionally, the sample includes countries that have ratified global climate finance initiatives, such as the Paris Agreement, to explore the impact of such ratifications on climate finance mobilisation among Sub-Saharan countries.

The study variables encompass geopolitical factors, annual population growth rate, media visibility, ratification to global climate finance initiatives, and environmental policy stringency. Data for these variables was retrieved from reputable databases such as the World Bank, International Monetary Fund (IMF), United Nations Framework Convention on Climate Change (UNFCCC), and various academic sources. The period of analysis, from 2015 to 2022, is strategically chosen to align with the ratification of the Paris Agreement, ensuring coherence and consistency in the study's analysis of climate finance dynamics.

In terms of methodology, the study employed multivariate regression analysis as part of its sensitivity analysis, departing from the conventional Ordinary Least Squares (OLS) estimators utilized in previous studies. Diagnostic tests, including multicollinearity tests, heteroscedasticity tests, and goodness-of-fit measures, were conducted to ensure the reliability and validity of the regression models. Data analysis techniques involved both descriptive and inferential statistical methods, including correlation analysis, regression analysis, and sensitivity analysis.

1.5 Significance of study

1.5.1 Policy Makers

This study holds significant relevance for policymakers within the climate change and sustainable finance sectors. Policymakers play a pivotal role in crafting policies that foster innovative approaches to mobilising climate finance in the context of climate action. By examining the determinants of mobilising climate finance, this research provides essential

insights that can inform the development of effective policies. The central banks in developing countries will need to take into consideration the findings of the study to promote climate/environmental/Green finance and investment. These policies are instrumental in creating an enabling environment for sustainable finance practices within the climate action domain, particularly in sectors like renewable energy and decarbonization. Furthermore, policymakers play a critical role in embedding these policies into national frameworks,ensuring their integration and alignment with overarching national goals. Their responsibilitiesextend to overseeing the implementation, adherence, and enforcement of these policies and regulations, thereby fostering a conducive landscape for sustainable finance to drive positive climate outcomes effectively.

1.5.2 Researchers and Academic Scholars

The findings of this study hold valuable implications for researchers in the realm of climate financing. These findings will serve as a foundational framework for subsequent research endeavors. The identified issues pertaining to climate finance in the context of climate action provide critical insights that pave the way for potential solutions. By shedding light on the challenges and opportunities associated with sustainable financing, this study creates a launching point for further exploration into the strategies and mechanisms required to address the financing gap within sectors like climate adaptation and Global warming. This study thus offers an avenue for extended research efforts aimed at devising effective approaches to bridge the financing gap and enhance the integration of sustainable finance practices for climate action.

1.5.3 Investors

The private sector, encompassing financial institutions, as well as impact and social investors with a vested interest in channeling investments towards climate finance for climate action, will find the findings of this study to be of paramount significance. These stakeholders are inherently driven by the desire to ensure that their investments are not only allocated as intended but are also utilized in alignment with agreed-upon strategies. In this context, accountability holds a pivotal role, as these actors actively seek insights into the mechanisms that ensure responsible and transparent utilization of funds. By comprehending accountability, these stakeholders gain the capacity to evaluate the outcomes of their investments and the collaborations forged. Therefore, this study's outcomes carry immense value for private sector entities, financial institutions, and impact investors, offering them a comprehensive understanding of the accountability aspects within green finance initiatives geared towards climate action.

1.5.4 Climate change advocates

Climate change poses a significant economic and social challenge to the world. Studies like this one, which focus on combating the problem of climate change through mitigation and adaptation, are not only necessary but also essential for informing public opinion and lobbying on these problems. This study is significant in providing information for the public discourse on the factors that influence the mobilization of climate financing in sub-Saharan Africa.

1.6 Chapter Summary

Chapter 1 introduces the study, outlining its objectives, scope, and methodology. The chapter begins by highlighting the importance of climate finance mobilisation in Sub-Saharan Africa (SSA) and the challenges faced by the region in addressingclimate change. It presents the research questions and objectives, focusing on investigating thedeterminants of climate finance mobilization among SSA countries. The scope of the study is defined, including the selection criteria for the sample of 47 African countries and the period of analysis from 2015 to 2022. The chapter also discusses the study variables, data sources, and methodology, emphasizing the use of multivariate regression analysis and diagnostic teststo enhance the reliability and validity of the findings. Significance of the study is also discussed

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter explores the theoretical frameworks that underpin the study. A comprehensive analysis of prior empirical investigations in this field of research and its associated domains is extensively examined. The other portions of this chapter comprise an empirical analysis, a concise overview of the literature review and the identified research gap, a conceptual framework that elucidates the connection between independent and dependent factors, the operationalization of variables, and ultimately, a summary of the chapter

2.2 Theoretical Framework

To examine the factors that influence the mobilization of climate finance, it is crucial to delve into the ideas that underpin the fundamental principles of climate finance. Theories play a crucial role in the endeavor to anticipate and comprehend phenomena. In this study, the theoretical framework encompasses Dependency Theory and Institutional Theory. Dependency Theory elucidates the asymmetric power dynamics and structural inequalities inherent in the global economic system, shedding light on how Sub-Saharan African countries interact with and navigate the complexities of international financial flows and aid mechanisms. On the other hand, Institutional Theory provides insights into the role of formal and informal institutions in shaping financial behaviors, investment decisions, and policy outcomes related to climate finance mobilisation in the region. Together, these theoretical perspectives offer a comprehensive understanding of the socio-economic, political, and institutional factors influencing climate finance mobilisation efforts in Sub-Saharan Africa.

2.2.1 Dependency theory

Dependency theory, which emerged in the 1950s and 1960s, was championed by scholars such as Raul Prebisch, Celso Furtado, and Andre Gunder Frank (Frank, 1967). Prebisch, an Argentine economist, initially introduced the theory through his analysis of the declining terms of trade for primary commodity exporters in Latin America (Prebisch, 1950). Andre Gunder

Frank further developed the theory, emphasizing the structural inequalities between core and peripheral nations in the global capitalist system (Frank, 1967). Frank's work, particularly his book "Capitalism and Underdevelopment in Latin America," expanded the discourse on dependency by highlighting how underdevelopment in the Global South was not a result of internal deficiencies but rather a consequence of external exploitation and domination.

Rooted in the historical context of colonialism and imperialism, dependency theory posits that developing countries are structurally disadvantaged in the global economic system due to their reliance on developed nations for technology, capital, and markets. According to this theory, the unequal distribution of power and resources perpetuates a cycle of underdevelopment in the Global South, as developing countries become dependent on external actors for economic growth and stability. Dependency theorists argue that this asymmetrical relationship inhibits the autonomy and self-sufficiency of developing nations, leading to economic exploitation and social inequalities.

Central to dependency theory is the concept of core-periphery relations, where developed countries (the core) extract resources and exploit labor from developing countries (the periphery) to sustain their economic growth and dominance. The periphery, in turn, remains reliant on the core for investment, technology, and market access, perpetuating a cycle of dependency and underdevelopment. Dependency theorists highlight the importance of breaking away from this unequal relationship by advocating for policies that promote economic sovereignty, industrialization, and equitable distribution of resources within developing countries. By understanding and challenging the structural constraints imposed by dependency, nations in the Global South can pursue strategies aimed at achieving self-reliance and sustainable development.

Dependency theory has been influential in shaping scholarly discussions and policy debates on development, particularly in understanding the dynamics of economic and political relationships between developed and developing countries (Wallerstein, 1974). Numerous studies have relied on dependency theory to analyze the mechanisms through which core nations maintain their dominance over peripheral countries (Amin, 1974). For instance, Immanuel Wallerstein's world-systems theory, which builds upon dependency theory, has been instrumental in examining the global capitalist system as a hierarchical structure characterized by core-periphery relations (Wallerstein, 1974). Similarly, scholars like Samir Amin, Fernando Henrique Cardoso, and Enzo Faletto have applied dependency theory to diverse context

including Africa, Asia, and Latin America, to elucidate how historical legacies of colonialism and imperialism continue to shape contemporary patterns of economic exploitation and underdevelopment (Amin, 1974; Cardoso & Faletto, 1979). In recent years, dependency theory has experienced a resurgence in relevance as scholars critically assess the impacts of globalization, neoliberal policies, and uneven development on the Global South.

However, dependency theory has received significant criticism over the years. One key critique is that it tends to be overly deterministic, implying that all underdevelopment is a result of external exploitation without adequately accounting for internal factors such as governance issues, corruption, or domestic policy failures. Critics argue that focusing exclusively on external dependencies overlooks the role that local institutions and leaders play in shaping development outcomes (Kay, 2011). Furthermore, the theory's broad generalizations about core-periphery relations may oversimplify the complexity of global interactions, as not all countries in the Global South experience the same level or type of dependency. Some nations, such as China and India, have emerged as economic powers despite their historical peripherality, suggesting that economic growth is possible even within the constraints of global capitalism.

Additionally, dependency theory has been criticized for its limited applicability in a rapidly changing global economy. Globalization and the rise of regional trade blocs have introduced new dynamics that cannot be fully captured through the lens of core-periphery relations. The emergence of South-South cooperation and new financial institutions such as the BRICS Development Bank challenges the binary division between core and periphery, indicating that developing countries can pursue alternative development paths outside traditional dependency structures (Banerjee, 2019).

Another critique is that the prescription for economic self-reliance through import substitution industrialization (ISI) has not always yielded positive outcomes. In many cases, such policies led to inefficient industries and stagnation, further entrenching underdevelopment (Bruton, 1998). As a result, some scholars argue that integration into the global economy, rather than isolation, can offer better opportunities for growth if pursued strategically.

Despite these criticisms, dependency theory is highly relevant to the current study as it provides a lens through which to analyze the unequal power dynamics and economic relationships between developed and developing countries, particularly in the context of climate finance

mobilisation in Sub- Saharan Africa. The theory underscores the structural inequalities that persist within the globaleconomic system, where core nations exert control over peripheral countries, often perpetuating dependency and underdevelopment (Frank, 1967). In the context of climate finance, dependency theory helps illuminate how Sub-Saharan African countries, as peripheralnations within the global economic hierarchy, may face challenges in mobilizing climate finance due to their historical and structural disadvantages. These countries often lack the financial resources, technological capabilities, and institutional frameworks necessary to address climate change effectively. Dependency theory suggests that the dependence of these countries on external sources of finance and technology may perpetuate their vulnerability to climate change and hinder their ability to pursue sustainable development pathways autonomously (Escobar, 1995).

By integrating dependency theory into the study's theoretical framework, the research explored how the legacy of colonialism, unequal trade relations, and global economic policies shape the Mobilisation of climate finance in Sub-Saharan Africa. It can also shed light on the role of international actors, financial institutions, and geopolitical factors in perpetuating or mitigating dependency dynamics within the climate finance landscape (Wallerstein, 1974). Overall, dependency theory offers valuable insights into the structural constraints and power imbalances that influence climate finance mobilisation efforts, contributing to a more nuanced understanding of the complexities inherent in addressing climate change in the Global South.

2.2.2 Institutional Theory

Institutional theory, initially formulated by scholars such as Meyer and Rowan (1977) and DiMaggio and Powell (1983), posits those institutions, both formal and informal, shape human behavior and decision-making within organizations and societies. The theory emphasizes the role of institutions in providing stability, predictability, and meaning to social life. Institutions comprise rules, norms, and routines that guide individuals and organizations' actions and interactions, influencing organizational structures, processes, and outcomes (Scott, 2014).

Within the framework of institutional theory, organizations are perceived as rational actors strategically responding to institutional pressures to enhance their legitimacy and ensure survival in their respective environments (Scott, 1995). Coercive pressures, arising from legal mandates and regulatory frameworks, compel organizations to conform to externalexpectations and norms established by governmental authorities and regulatory bodies (DiMaggio and

Powell, 1983). These pressures manifest in the form of laws, regulations, and policies that prescribe certain behaviors and practices deemed acceptable or required within specific industries or sectors. Organizations must adhere to these mandates to avoid sanctions,penalties, or legal repercussions, thereby ensuring their continued operation within the boundsof the law.

Normative pressures, rooted in societal values, professional standards, and cultural norms, exert a significant influence on organizational behavior and decision-making processes (Scott, 2001). They shape organizations' internal structures and practices by defining what is considered appropriate and legitimate behavior within a given context. Norms and expectations regarding ethical conduct, corporate social responsibility, and stakeholder engagement guide organizations in their interactions with employees, customers, communities, and other key stakeholders (Suchman, 1995). Compliance with these norms enhances organizational reputation, fosters trust and credibility, and strengthens relationships with stakeholders. Moreover, adherence to societal norms and expectations enhances organizations' social capital and facilitates their integration into broader networks of social relations, thereby contributing to their long-term viability and sustainability.

Numerous studies have relied on institutional theory to analyze various phenomena across diverse domains, including organizational behavior, public policy, and environmental governance. For example, scholars have used institutional theory to examine the adoption and diffusion of environmental management practices in organizations (Hoffman, 1999), the emergence and evolution of regulatory regimes in environmental policy (Cashore et al., 2004), and the role of institutional factors in shaping corporate social responsibility initiatives (Brammer & Pavelin, 2006). Similarly, Oliver (1991) examined how organizations adopt symbolic actions and cultural symbols to align with prevailing institutional norms and expectations. These studies underscored the importance of institutional isomorphism—the

process through which organizations become structurally and behaviorally similar—to maintain legitimacy and secure resources in institutional environments.

Furthermore, Scott (2008) expanded on institutional theory by distinguishing between three pillars of institutional analysis: regulative, normative, and cognitive. He emphasized the significance of these pillars in shaping organizational behavior and decision-making processes across diverse institutional contexts. DiMaggio and Powell (1983) provided foundational insights into institutional theory by highlighting the role of institutional isomorphism in organizational fields. Their work underscored how organizations strive to mimic prevailing institutional models and practices to enhance their legitimacy and ensure institutional support. These seminal contributions laid the groundwork for subsequent research exploring the intricate interplay between organizations and their institutional environments.

In the context of climate finance mobilisation, institutional theory is relevant given the role of formal and informal institutions in shaping actors' behaviors and decisions. Studies applying institutional theory have investigated how institutional arrangements, governance structures, and policy environments influence climate finance initiatives, investment decisions, andproject outcomes (Helmke & Levitsky, 2004; Pattberg & Stripple, 2008). By examining the institutional background surrounding climate finance mobilisation in Sub-Saharan Africa, the current study seeks to identify the institutional factors that facilitate or impede effective climate finance mobilisation in the region. The institutional factors identified in the theory align closely with the variables under investigation in the study. For example, the dimension of Policies and Institutions encompasses the formal rules, regulations, and governance structures that govern financial activities related to climate change mitigation and adaptation. Institutional theory suggests that the presence of clear, transparent policies and robust institutional frameworks can facilitate the Mobilisation of climate finance by providing a conducive environment for investment and resource allocation (DiMaggio & Powell, 1983). Understanding these dynamics can inform policy interventions aimed at strengthening institutional capacity, enhancing regulatory frameworks, and fostering conducive environments for climate finance investment and implementation.

However, it has several limitations. One major critique is its overemphasis on stability and conformity, which underestimates the capacity of organizations to innovate and adapt in dynamic environments; in climate finance, organizations often employ diverse strategies that deviate from established norms. Additionally, institutional theory tends to neglect power

dynamics and conflicts among stakeholders, assuming that institutions operate neutrally while power imbalances can significantly influence institutional arrangements. Moreover, the theory often portrays organizations as passive entities responding to external pressures, overlooking their agency in actively shaping institutional outcomes through advocacy and strategic choices. It also tends to focus on formal institutions, which can lead to an incomplete understanding of how informal institutions, such as social norms and cultural practices, impact behavior and resource allocation. Finally, despite its widespread application, institutional theory lacks robust empirical evidence in specific domains like climate finance, highlighting the need for more studies that validate its assumptions. Addressing these limitations can refine institutional theory and enhance its applicability in understanding the complexities of climate finance mobilization in Sub-Saharan Africa.

2.3 Empirical Review

This section serves as a thorough investigation into empirical research conducted on the factors influencing climate finance mobilisation across Sub-Saharan countries. It offers a comprehensive review of studies focusing on various determinants such as geopolitical factors, annual population growth rate, media visibility, climate finance mobilisation, and environmental policy stringency within the region.

Geopolitical factors play a crucial role in shaping climate finance mobilisation strategies in Sub-Saharan Africa. Studies, such as Liu's (2022) doctoral dissertation, delve into the emergence of climate finance instruments within Asian financial centers and their implications for global trends in low-carbon and climate-resilient financing. By employing qualitative methods and frameworks like financial ecologies, these studies shed light on the intricate dynamics and actors involved in climate finance market development.

The annual population growth rate is another significant determinant influencing climate finance mobilisation efforts. Research by Chirambo (2017) explores the potential of microfinance institutions in enhancing climate change resilience across Africa. By proposing inclusive growth strategies and emphasizing financial inclusion, these studies underscore the importance of adapting climate change policies to accommodate demographic shifts and population growth rates in the region.

Media visibility also plays a pivotal role in influencing climate finance mobilisation initiatives.

Studies like those by Hayes and O'Neill (2021) analyze the visual representation of climate protests in media outlets, challenging traditional paradigms and highlighting shifts in visual discourse. These investigations provide insights into how media portrayal can influence public perception and mobilisation efforts related to climate change finance.

Furthermore, studies directly focused on climate finance mobilisation provide valuable insights into the mechanisms and challenges associated with attracting financial resources for climate-related initiatives. Research by Michaelowa et al. (2021) assesses the mobilisation of private climate finance for sustainable energy access and climate change mitigation in Sub-Saharan Africa. By examining case studies and engagement with UNFCCC-backed climate finance instruments, these studies offer practical strategies for enhancing climate finance mobilisation within the region.

Lastly, environmental policy stringency emerges as a critical determinant influencing climate finance mobilisation efforts. Studies by Jones and Levy (2018) and Ahmed and Schumacher (2019) explore the impact of stringent environmental regulations on driving sustainable development and attracting investments in renewable energy infrastructure. Through empirical analysis, these studies highlight the importance of robust environmental policies in fostering conducive environments for climate finance mobilisation across Sub-Saharan countries.

2.3.1 Geopolitical Factors and Climate Finance Mobilisation

Liu's (2022) doctoral dissertation investigates the emergence of climate finance instruments within Asian financial centers, namely Hong Kong, Kuala Lumpur, and Singapore. The study aimed to scrutinize the adoption and outcomes of green debt instruments in response to global trends toward low-carbon and climate-resilient financing since the Paris Agreement. By employing a neo-Marxian perspective and the 'financial ecologies' framework, Liu critically evaluates the processes and actors shaping market development across the three financial centers. Through qualitative methods including document analysis and elite interviews, the study highlights the innovation of green loans and sukuk bonds tailored to local markets, yet it reveals challenges in governance and transparency that hinder consistent achievement of low-carbon and resilient outcomes.

Dalby (2015) explored the intricate intersection of climate change and geopolitics, particularly focusing on its implications for global security. By highlighting the transformative impact of climate change on the material circumstances underpinning modern economies, Dalby argues

for a fundamental reformulation of fossil-fueled capitalism to mitigate its adverse effects. The study underscores the interconnectedness of international political economy and security studies in addressing the challenges posed by climate change-induced disruptions.

Lenshie et al. (2022) delve into the geopolitics of climate change-induced conflicts and population displacement in West Africa. Through a qualitative approach, the study examines the complex interplay between anthropogenic activities, climate change, and conflicts in the region. By focusing on Nigeria and Mali, the study underscores the geopolitical ramifications of climate change-induced unrest, emphasizing the need for international cooperation to mitigate its adverse consequences.

Barbara et al. (2022) explored the domestic politics of climate change in the Pacific Islands, highlighting its role as a catalyst for political change and contestation within the region. By tracing the impact of climate change on internal political dynamics, the study sheds light on its potential to mobilize political participation and organization. The study underscores climate change's unique power to shape political dynamics in the Pacific Islands, thereby highlighting its significance as a mass mobilizing factor.

Qi and Qian's (2023) study scrutinized the governance challenges of climate finance, with a focus on China's role in the international climate finance architecture. By analyzing the inconsistencies and geopolitical motivations underlying climate finance governance, the study advocates for South-South cooperation and China-led climate-related development assistance to bridge climate finance gaps and promote climate action priorities globally.

Noel's (2023) dissertation examined international transfers for climate justice, analyzing the determinants, objectives, and impacts of climate finance. By reviewing the landscape of climate finance governance, the study contributes to understanding the complexities surrounding climate finance and its implications for addressing climate justice demands globally.

Leonard et al. (2021) analyze the geopolitical repercussions of the European Green Deal, emphasizing its effects on the EU's energy balance, global markets, and trade patterns. The study underscores the need for the EU to manage the geopolitical aspects of its domestic decisions, particularly in its relationships with key global players, highlighting the profound implications of the European Green Deal on global geopolitics.

2.3.2 Annual Population Growth Rate and Climate Finance Mobilisation

Higher population growth often translates into greater consumption of resources, leading to

increased greenhouse gas emissions. The rapid urbanization associated with population growth results in a surge in energy needs and infrastructure development, which can exacerbate environmental degradation. For instance, Chirambo (2017) highlights that expanding urban areas typically require more energy and transportation services, leading to higher emissions if fossil fuels continue to be the primary energy source. Consequently, this escalating demand underscores the urgent need for climate finance to support investments in cleaner technologies and sustainable practices. Mobilizing climate finance becomes crucial for developing projects aimed at transitioning to renewable energy sources, improving energy efficiency, and implementing sustainable land use practices.

On the other hand, a growing population can foster innovation and economic diversification, providing opportunities for climate-friendly practices. As the demographic landscape evolves, it often leads to increased entrepreneurial activity, particularly in green technologies and sustainable resource management. For example, Pindiriri and Kwaramba (2024) discuss how green budget tagging (GBT) serves as a framework for mobilizing climate-related finance, highlighting its effectiveness in aligning public expenditure with sustainability objectives. In rapidly growing economies, there is often a greater push for innovative solutions, which can attract domestic and international investments in climate resilience. This dynamic not only supports the mobilization of climate finance but also contributes to the long-term sustainability of economic activities.

Demographic factors, particularly the proportion of young people in the population, play a critical role in influencing climate finance mobilization. A youthful population represents a demographic dividend that can be harnessed to drive climate action. Engaging young people in climate finance initiatives enhances awareness and advocacy for sustainable practices, creating a demand for investment in climate resilience. Studies have shown that youth involvement in climate initiatives can lead to innovative approaches to address climate challenges (Ulpiani et al., 2023). For instance, youth-led organizations can effectively communicate the importance of sustainable practices and mobilize resources to support community-driven climate projects, thereby influencing funding decisions.

Moreover, understanding the relationship between population growth and climate finance mobilization is essential for policymakers. Effective policies that consider demographic trends can facilitate the development of targeted interventions to attract climate finance. For example, integrating population growth projections into climate finance strategies can help identify

priority areas for investment, ensuring that funds are allocated to initiatives that address the most pressing needs. By recognizing the interdependencies between population dynamics and climate finance, policymakers can design comprehensive frameworks that promote sustainable development while meeting the demands of a growing population.

Despite the potential for increased climate finance mobilization linked to population growth, challenges remain. Many Sub-Saharan countries face significant barriers to accessing climate finance, including institutional inefficiencies, lack of awareness, and limited capacity to develop bankable projects. Edeminam and Akpasoh (2023) emphasize the importance of domestic resource mobilization to meet climate goals without over-reliance on international loans. However, without robust institutional frameworks and capacity-building initiatives, countries may struggle to effectively harness the potential of their growing populations to attract and utilize climate finance.

Ajiya's (2023) paper interrogated the challenges and accessibility of climate finance for countries affected by climate change, using a neo-Marxist perspective to examine the behaviors of countries responsible for climate change catastrophes. The study emphasizes the importance of honoring financial pledges, removing access barriers, and mobilizing climate finance to address climate change's adverse impacts and promote global prosperity.

2.3.3 Media Visibility and Climate Finance Mobilisation

Hayes and O'Neill (2021) investigate the visual representation of climate protests in UK media and Getty Images collections between 2019 and 2020. They analyze news content and production to understand how climate protest imagery has been portrayed, challenging the traditional 'protest paradigm.' The study reveals a shift in visual discourse, with climate protestors, particularly school strikers, depicted individually and optimistically, departing from the historical portrayal of protestors as socially deviant.

Schäfer and Painter (2021) conduct an advanced review on climate journalism's production worldwide, addressing changes in the media ecosystem. They find a shifting organizational landscape, with specialist reporters facing more challenging conditions. Roles have diversified from 'gatekeeping' to 'curating,' and journalist-source relationships have evolved, expanding from scientists to various stakeholders. The study highlights the need for more comparative and relational approaches, emphasizing the importance of examining climate journalism beyond individual cases and countries.

Berglez and Olausson (2023) critically examine climate irresponsibility on social media, emphasizing the role of "high-carbon visibility discourse." They explore how users, through posts, disclose or overlook their high-carbon lifestyles, contributing to the climate change narrative on social media. Using media theory, semiotics, network theory, and critical theory, the study provides a framework for analyzing visual disclosure of carbon footprints, revealing the ideological meanings embedded in social media communication about climate change.

Baran and Stoltenberg (2023) contribute to the emerging field of digital environmental and climate activism research with a mixed-methods systematic literature review. Analyzing 138 peer-reviewed articles, the study quantitatively assesses theories, methodologies, and empirical focus, while qualitatively identifying research trajectories. The findings show a rapid growth in interest, a shift towards climate change as a primary focus, and a diversity of theories and methodologies. The review highlights the need for more comparative and relational approaches that go beyond individual cases, countries, and platforms in understanding digital environmental and climate activism.

Okoliko and de Wit (2023) investigated the political dimension of mediated climate change communication in South Africa, Nigeria, and Kenya, using an African relational framework. Through semi-structured interviews with 11 climate journalists, the study reveals factors influencing climate journalism, such as role orientation, norm application, and work environment. It argues for a perspective grounded in the ability of people to "commune with" rather than "communicate to" others, emphasizing the importance of relational approaches in climate journalism.

Stoddart et al. (2023) examined media coverage and framing of climate change during the COVID-19 pandemic, focusing on Canadian legacy newspapers. The study explores whether the pandemic served as a critical event impacting climate change coverage, leading to shifts in framing. While the pandemic reduced media coverage of climate change, it also opened new spaces for framing that connects environmental and economic dimensions of sustainability. The findings underscore the complex relationship between competing crises and their influence on media coverage and framing of climate change.

Stoddart, Tindall, Brockhaus, and Kammerer (2023) reflect on COP26, its outcomes, and the UNFCCC processes. They highlight the value of COP meetings as arenas for global climate governance, where state leaders, activists, and private actors regularly meet. COP meetings facilitate cooperation, parallel multi-level games, and serve as regularly scheduled critical

events shaping public discourse on climate change. The analysis emphasizes the need for COP meetings to provide transparency and visibility for civil society voices.

Daume, Galaz, and Bjersér (2023) explored the role of social bots in framing climate change discourse on Twitter during the 2019/2020 Australia bushfires. Using over 1 million tweets, the study identifies how social bots amplify different perspectives and influence climate change frames, including the spread of misinformation. The findings reveal that social bots contribute to the climate change conversation by amplifying frames supporting and opposing climate action, as well as those appealing to emotions. The study highlights the complex interplay between social bots, Twitter conversations, and online news media in shaping discussions about climate change and wildfires.

2.3.4 Ratification to Global Climate Finance Initiative and Climate Finance Mobilisation

Bracking (2019) provided an analysis of the emergent dispositive of climate finance, focusing on financialization and the calculative challenges of managing environmental change. The article offers a periodization of different phases of climate finance and analyzes how climate finance projects incorporate competing systems of accounting. It argues that experiments in calculating time and value in climate finance continue, suggesting a need for more comprehensive accounting solutions.

Bowman and Minas (2019) examined the Green Climate Fund (GCF) as a significant addition to UNFCCC frameworks for mobilizing increased finance for climate change mitigation and adaptation. The study explored challenges faced by the GCF in operationalization and governance, particularly in light of US President Trump’s decision to withdraw from the Paris Agreement. It suggests strategies to strengthen the GCF's resilience, including deepening interlinkages with UNFCCC bodies and engaging non-Party stakeholders.

Weikmans and Roberts (2019) address controversies surrounding international climate finance figures since the 2009 Copenhagen summit. They analyze the lack of internationally agreed modalities for climate finance accounting, which has led to contrasting statements on climate finance. The article explores how the Paris Agreement's enhanced transparency framework could improve climate finance accounting and reporting, contributing to greater trust between Parties in international climate negotiations. Michaelowa, Hoch, Weber, Kassaye, and Hailu (2021) assess the Mobilisation of private climate finance for sustainable energy access and climate change mitigation in Sub-Saharan Africa. The study examines how UNFCCC-backed climate finance instruments engage privateinvestment in energy-focused climate mitigation.

Based on case studies from Ethiopia, Madagascar, and South Africa, the paper highlights the importance of tailored approaches to local circumstances in mobilizing private climate finance.

Nyirenda (2023) reviews the Conference of the Parties (COPs) and their impact on greenhouse gas emissions and deforestation, particularly after the Kyoto Protocol. The study analyzes the status of emissions and deforestation during and prior to COP meetings, noting a significant increase during COP periods. It highlights the establishment of climate funds and the inconsistent provision of climate finance as key outcomes of COP meetings. The article emphasizes the need for policies promoting sustainable forestry and reducing reliance on trees/forests to achieve GHG reduction targets.

2.3.5 Environmental Policy Stringency

Environmental policy stringency, a pivotal moderator for determinants of climate finance mobilisation, encapsulates the rigor and effectiveness of governmental regulations and policies aimed at mitigating climate change and environmental degradation. Although direct exploration of thisvariable within the context of climate finance mobilisation among Sub-Saharan countries is limited, its overarching importance is underscored in broader discussions on environmental governance and sustainable development.

Jones and Levy (2018) delve into the transformative impact of stringent environmental policies, particularly in driving sustainable development and attracting investments in renewable energy infrastructure. Their study reveals a positive correlation between robust regulatory frameworks and heightened private sector engagement in renewable energy projects. This correlation suggests that stringent policies create conducive environments, fostering increased mobilisation of climate finance.

Ahmed and Schumacher (2019) delve into the intricate relationship between environmental policy stringency and foreign direct investment (FDI) flows, particularly in the renewable energy sector. Their research indicates that nations boasting stringent environmental regulations tend to attract higher levels of FDI in renewable energy projects. Such countries are perceived as low-risk environments with stable regulatory frameworks, thus enticing investment in climate-friendly initiatives.

In Sub-Saharan Africa, Kaminski et al. (2020) and Ochieng et al. (2021) shed light on the effectiveness of environmental policies in bolstering sustainable development and enhancing climate resilience. Their studies emphasize the urgent need for stronger policy frameworks to

tackle environmental challenges and mobilise financial resources for climate adaptation and mitigation efforts in the region. These findings accentuate the indispensable role of policy stringency in shaping climate finance mobilisation strategies within Sub-Saharan Africa.

Furthermore, Gondo (2022) delve into the societal ramifications of environmental policy stringency, particularly its influence on public perceptions and attitudes towards climate change mitigation measures. Their research suggests that nations with stringent environmental regulations tend to garner higher levels of public support for climate finance initiatives. This heightened support can facilitate the mobilisation of resources for sustainable development projects, underscoring the profound impact of policy stringency on societal engagement with climate-related initiatives.

In a comprehensive analysis by Ingram (2023), the intricate relationship between environmental policy stringency and climate finance mobilisation in Sub-Saharan Africa is thoroughly examined. Their findings highlight that countries with more stringent environmental regulations tend to attract higher levels of climate finance investment. This underscores the pivotal role of policy stringency in driving financial flows for climate-related initiatives in the region, contributing to a deeper understanding of the complex dynamics between policy frameworks, investment dynamics, and environmental sustainability in Sub-Saharan Africa.

2.4 Summary of empirical review findings

Table 2.1 presents the summary of literature reviewed above. The summary of the literature gives the findings of the reviewed study, literature gaps present in the reviewed studies and how the current study worked to fill the literature gaps.

Table 2.1: Summary of literature gaps

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
Liu, F. (2022)	The Development of Climate Finance in Asia: Drivers, Processes, Outcomes	Utilized a case study approach involving financial experts and qualitative content analysis.	The study revealed that in addition to adopting internationally recognized green bonds, new forms of climate finance instruments, including green loans, sustainability-linked loans, and green sukuk (Islamic bond), were developed in Hong Kong, Singapore, and Malaysia, respectively.	The Study was carried to assess the development of climate finance in India which presents a contextual gap	The current study was carried out to investigate the development of climate financing and techniques used in mobilizing climate finance funds
Dalby, S. (2015)	Climate geopolitics: Securing the global economy. International Politics	Employed conceptual analysis with a focus on global population and theoretical frameworks.	The study's findings indicate that ensuring security necessitates a fundamental restructuring of the fundamental principles of capitalism reliant on fossil fuels. This restructuring aims to address the most detrimental consequences of the metabolic rift that underpins modern society. However, it is evident that both state planners and security experts have thus far been unable to effectively tackle this challenge, despite their efforts to utilize market innovations for transforming energy systems.	The study does not give a clear linkage between Climate geopolitics and mobilization of climate finance.	The current study worked to fill this gap by providing a relationship between climate geo politics and mobilisation of climate funds by impacts of geopolitical factors on climate finance mobilisation among Sub-Saharan countries

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
Lenshie, et.al., (2022)	Geopolitics of climate change-induced conflict and population displacement in West Africa. Local Environment	Conducted a case study with a focus on the West African population and qualitative analysis.	The paper contends that the implementation of climate resolution among countries and regions of the world has remained unclear, despite the negative impacts of human activities on livelihood and subsistence resources due to a lack of appropriate competing areas.	The study does not give a clear relationship between Climate geopolitics and Mobilisation of climate finance.	The current study worked to fill this gap by providing a relationship between climate geo politics and Mobilisation of climate funds by impacts of ggeopolitical factors on climate finance mobilisation among Sub-Saharan countries
Barbara, Howard & Baker (2022)	The domestic politics of climate change in the Pacific Islands. Asia Pacific Viewpoint	Conducted a case study with a focus on the Pacific Island population and qualitative content analysis.	This study delineates the parameters of a novel research plan concerning the effects of climate change in Pacific nations as a driving force in politics. The study also suggests that climate change poses a significant threat to the Pacific Islands, and it has the ability to mobilize people on a wide scale amid the region's predominantly localized and fragmented political landscape.	The study was carried out on pacific island which may present very different results as that in Sub-Saharan Africa	The study localized the findings as it was carried out in Sub Saharan Africa
Qi, & Qian (2023)	Climate finance at a crossroads: it is high time to use the global solution for global problems.	Utilized a literature review with an international community focus and conceptual frameworks.	The study's findings indicate that China-led climate-related development aid and South-South cooperation on climate change have significant potential to help vulnerable countries achieve their climate action priorities and combat climate injustice.	The study was carried out on China which may present very different results as that in Sub-Saharan Africa	The study localized the findings as it was carried out in Sub Saharan Africa.

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
Noel, (2023)	International transfers for climate justice: determinants, objectives and impacts of climate finance	Conducted a meta-analysis with a global population focus and statistical analysis.	Recipient countries have not yet experienced a reduction in their carbon emissions as a result of climate funding. In contrast to a portion of the aid-growth literature, the conclusion is not that international transfers are ineffective.	The study paid more focus on the application and the impact of climate finance to the recipient countries. The study failed to investigate the determinants of Mobilisation of climate fund. The generalizes it scope to the recipient countries failing to pay enough focus on Sub-Saharan Africa countries	The scope of the study was restricted to Sub-Saharan Africa countries.
Doku, et. al., (2021)	Determinants of climate finance: Analysis of recipient characteristics in Sub-Sahara Africa	This study employed a dynamic panel model	The findings show that Sub-Sahara African countries with higher population growth rate, higher poverty levels, better ease of doing business profile, weaker governance policies, weaker control of corruption, stronger rule of law enforcement, deepened social inequality, and better ICT usage, have attracted more climate finance	The study does not give a clear relationship between Ratification to Global climate finance Initiative and Mobilisation of climate finance.	The current study worked to fill this gap by providing a relationship between Ratification to Global Climate finance Initiatives and Mobilisation of climate finance among Sub-Saharan countries

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
Leonard (2021)	The geopolitics of the European green deal	Employed conceptual analysis with a European population focus and theoretical frameworks.	The findings of the study showed seven actions towards building Relationships with important neighborhood countries which were; Help neighboring oil and gas-exporting countries manage the repercussions of the European Green Deal. Improve the security of critical raw materials supply and limit dependence, first and foremost on China Promote global coalitions for climate change mitigation, for example through a global coalition for the permafrost, which would fund measures to contain the permafrost thaw. Promote a global platform on the new economics of climate action to share lessons learned and best practices	The main focus on the study was not on Mobilisation of climate finance but rather the study assessed on building strong relationship with important neighborhood countries such as Russia and Algeria, and with global players including the United States, China and Saudi Arabia	The study aimed to assess the determinants climate finance mobilisation among Sub-Saharan countries.
Chirambo (2017)	Enhancing climate change resilience through microfinance: Redefining the climate finance paradigm to promote inclusive growth in Africa	Employed an empirical study with an African population focus and statistical analysis.	The findings of the study showed that microfinance can support the Mobilisation of resources for climate change programs; hence, financial inclusion should be incorporated in climate change policies	The study paid much focus on the Enhancing climate change resilience through microfinance failing to incorporate climate finance	The study assessed the determinants of climate finance mobilisation among Sub-Saharan countries.

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
Pindiriri & Kwaramba (2024)	Climate finance in developing countries: green budget tagging and resource Mobilisation	Utilized an empirical study with a focus on developing country populations and statistical analysis.	The results show that all 32 developing countries that have undertaken green budget tagging are also associated with larger inflows of climate-related finance. The results also show that a minimum level of climate-related finance is required to achieve CO_2 emissions reduction. However, the current mean yearly inflow of climate-related development finance falls short of the level that drives emissions reduction	The study scope of the study does not underscore geopolitical factors annual population growth rate and media visibility as determinants of mobilizing for climate funds	The study worked to assess the impact of geopolitical factors, annual population growth rate and media visibility in mobilizing for climate funds
Edemina m & Akpasoh (2023)	Climate finance landscape in Nigeria: Options for resource Mobilisation.	Employed an empirical study with a Nigerian population focus and statistical analysis.	The study's findings offer a comprehensive perspective on the climate finance choices available to Nigeria for domestically mobilizing resources to address climate issues, without relying heavily on international loans and grants.	The study presents a gap in determinants of mobilisation of climate finance as it does no assess geopolitical factors annual population growth rate and media visibility	The study worked to assess the impact of geopolitical factors, annual population growth rate and media visibility in mobilizing for climate funds
Chirambo (2023)	Mitigating Disaster Risks and Vulnerabilities Through Climate Finance and Sustainable Water Management:	Utilized an empirical study with a focus on Sub-Saharan African populations and statistical analysis.	The study found that fiscal reforms in SSA countries have not been successful in significantly enhancing the mobilization of domestic taxes for funding socio-economic development programs. Additionally, there is a lack of strong integration of SDG 6 (sustainable management of water) goals in NDCs, which can	The study fails to focus on Mobilisation of climate finance but rather focuses on Mitigating Disaster Risks and Vulnerabilities Through Climate Finance and Sustainable Water	The study bridged this gap by assessing the determinants of climate finance mobilisation among Sub-Saharan countries.

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
	Policy Considerations for Sub-Saharan Africa and Malawi		hinder efforts to simultaneously mitigate disaster risks and reduce vulnerabilities.	Management	
Ajiya (2023)	Understanding Climate Finance: The Myth, Processes and Accessibility. Pro cesses and Accessibility	Employed conceptual analysis with a focus on affected countries' populations and qualitative content analysis.	The study revealed that if there is a failure to increase investments in nature as part of climate finance, there will be severe implications of climate change for everyone, including the extinction of animal and plant species.	The study target area does not include the Sub-Saharan Africa countries	The scope of the study was restricted to Sub-Saharan Africa countries.
Hayes, & O'Neill (2021)	The Greta effect: Visualizing climate protest in UK media and the Getty images collections	Conducted content analysis with a UK population focus and qualitative content analysis.	The analysis demonstrates that over the period of 2001-2009, climate protests were commonly depicted in a manner that concealed the human aspect of the protests and aligned with the established pattern of protest. Conversely, during the period of 2019-20, protesters, especially school strikes, were shown with a sense of individuality, strength, and optimism.	The study does not focus on the determinants of climate finance mobilisation among Sub-Saharan countries.	The study bridged this gap by assessing the determinants of climate finance mobilisation among Sub-Saharan countries.
Schäfer & Painter (2021)	Climate journalism in a changing media ecosystem: Assessing the	Utilized a literature review with a global population focus and content analysis.	The study's findings indicate that Elite sources have historically played a significant role and continue to do so, while the composition of these sources has expanded beyond	The study does not provide a clear relationship of the impact of media visibility on	The study bridged the gap by assessing the impact of media visibility on climate finance mobilisation among Sub-Saharan countries.

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
	production of climate change-related news around the world.		scientists to include a wider variety of stakeholders. Similarly, there appears to be a significant and increasing impact of stakeholder public relations on climate journalism.	Mobilisation of climate finance	
Okoliko, & Wit (2023)	Climate Change, the Journalists and "the Engaged": Reflections from South Africa, Nigeria, and Kenya	Employed a qualitative study involving journalists and stakeholders and qualitative content analysis.	The study found that various elements, including the journalists' role orientation, norm application, and work environment, have an impact on how climate journalism is carried out in different African settings.	The study assessed the engagement of journalists in climate change matters failing to identify the impact made by media visibility in Mobilisation of climate finance	The study bridged the gap by assessing the impact of media visibility on climate finance mobilisation among Sub-Saharan countries.
Daume, Galaz & Bjersér (2023)	Automated Framing of Climate Change? The Role of Social Bots in the Twitter Climate Change Discourse During the 2019/2020 Australia Bushfires	Utilized a mixed methods study involving Twitter users and content analysis along with statistical analysis.	The study findings indicate that climate change constitutes a significant portion of online discussions around fires. The bushfires are predominantly portrayed as a matter related to climate change, encompassing its quantifiable effects and political viewpoints.	The study had contextual gap as it was conducted to investigate Australia bushfires. The study further did not investigate on the determinants of Mobilisation of climate finance	The scope of the study was restricted to Sub-Saharan Africa countries. The study further assessed the determinants of climate finance mobilisation among Sub-Saharan countries.
Bracking (2019)	Financialization, climate finance, and the calculative	Employed conceptual analysis with a global population focus and theoretical frameworks.	The Article contends that there are numerous accounting units included in modern climate finance products, each loosely derived from a distinct	The study only focused on Financialization, climate finance, and the calculative challenges of	The current study bridged the gap by assessing the determinants of climate finance mobilisation among

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
	challenges of managing environmental change		phase in this periodization.	managing environmental change failing to investigate the determinants of Mobilisation of climate finance	Sub-Saharan countries.
Bowman & Minas (2019)	Resilience through interlinkage: the green climate fund and climate finance governance.	Utilized a literature review with an international community focus and conceptual frameworks.	The analysis suggests that strengthening the connections between the Green Climate Fund (GCF) will improve the organization's ability to effectively control climate funding and make a significant contribution to ambitious climate action, especially during times of uncertainty.	The study's focus was on GCF interlinkages and coherence of climate finance governance and did not assess Mobilisation of climate finance	The current study bridged the gap by linking the concepts of GCF interlinkages, coherence of climate finance governance and Mobilisation of climate finance.
Michaelowa, et. al., (2021)	Mobilising private climate finance for sustainable energy access and climate change mitigation in Sub-Saharan Africa	Employed an empirical study with a Sub-Saharan African population focus and statistical analysis.	The study found that there is no universal success model and that approaches should be customized to fit local conditions.	The study's scope was on private climate financing for sustainable energy access and climate change mitigation.	The study generalized the finding to both private and public climate financing
Lenshie, et al. (2022)	Geopolitics of climate change-induced conflict and population displacement in	Case study focused on the West African population and qualitative analysis	Climate resolution implementation is unclear despite negative impacts on livelihood and resources	Lack of clear relationship between climate geopolitics and mobilization of climate finance	Provide relationship between climate geopolitics and mobilization of climate funds, focusing on impacts of geopolitical factors on climate

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
	West Africa. Local Environment				finance mobilization in Sub-Saharan countries
Kalia & Aggarwal (2023)	Impact of ESG Scores on Financial Performance in Healthcare: Moderating Role of Country-Level Development	Correlation and multivariate regression analysis of 468 healthcare firms across developed and developing economies	ESG scores positively impact FP in developed economies, negatively or insignificantly in developing economies	Need for more detailed examination of country-specific factors influencing ESG-FP relationship	Investigate specific country-level factors affecting ESG-FP relationship in healthcare sector
Hafner et al. (2019)	Barriers to Investment in Climate Solutions: A Scoping Review	Scoping review of academic and grey literature	Identified 52 barriers to investment in climate solutions, categorized into economic, financial, political, social, technological, market, and governance failures	Need for deeper exploration of the dynamic nature of these barriers over time	Conduct longitudinal studies to understand how barriers to climate investment evolve over time
Bae et al. (2022)	Factors Influencing Climate Financing in Bangladesh: Political Connections as Moderators	Ordinary least squares regression on 1,000 firm-year observations from 200 non-financial companies	Financial constraints, political connections, and media visibility influence climate financing; political connections moderate financial constraints	Limited understanding of political connections' role in other developing countries	Study the role of political connections in climate financing across various developing countries
Kawabata (2019)	Determinants of Financial Institutions' Involvement in Climate Finance	Mixed-methods approach with interviews and quantitative survey analysis	International climate finance initiatives and senior management engagement significantly influence FIs' climate finance activities	Need for more region-specific studies to generalize findings	Explore determinants of climate finance mobilization in different regional contexts

Author	Title	Methodology	Findings	Research gaps	How to Fill the Gap
	Mobilization				
Baimwera (2018)	Determinants of Carbon Finance Accrual in Renewable Energy Projects in Kenya	Triangulation of methodologies including questionnaires, interviews, and policy document analysis	Size of project, carbon market affiliation, and technology influence carbon finance; lack of capital and high transaction costs are constraints	Limited attention to renewable energy projects in other African countries	Expand research to include renewable energy projects across various African countries
Halimanjaya (2015)	Relationship Between Developing Countries' Characteristics and Climate Mitigation Finance Inflow	Two-part model and robustness checks on Rio Marker data from 180 developing countries	Higher CO2 intensity, larger carbon sinks, lower GDP per capita, and good governance attract more climate mitigation finance	Need for updated analysis with recent data and broader geographic scope	Use recent data to analyze climate mitigation finance inflows in a wider range of developing countries

2.5 Conceptual Framework

Conceptual framework is a graphical expression of the relationship between the independent variables and the response variable (Chave et al., 2015). Kothari (2014) explained the independent variable to be that variable that causes change to the dependent variable. In the conceptual framework depicted in Figure 2.1 below the independent variables are geopolitical, annual population and media visibility whereas the dependent variable for the study is climate finance mobilisation. The relationship between the independent variable and dependent variable is moderated by Environmental Policy Stringency.

Firstly, geopolitical factors play a crucial role in determining a country's capacity to access and utilize climate finance. Historical legacies of colonialism, country size, geographical location, and past or present conflicts, as reflected in war treaties, all contribute to shaping the socio-economic and political landscape within which climate finance initiatives operate. Secondly, the annual population growth rate of a country influences its vulnerability to climate change impacts and its demand for resources to implement adaptation and mitigation measures. Factors such as population size, density, and the rate of urbanization all affect the scale and nature of climate finance requirements.

Media visibility emerges as another critical determinant, as the extent to which climate-related issues are covered by the media can influence public awareness, political prioritization, and advocacy efforts related to climate finance. Metrics such as the media coverage index, social media engagement, and the frequency of climate change news articles all contribute to shaping public discourse and policy responses.

Additionally, a country's ratification status and adherence to global climate finance initiatives play a significant role in signaling its commitment to addressing climate change. The timeliness of ratification, compliance with commitments, and participation in international climate agreements are all indicators of a country's readiness to engage in global efforts to mobilize climate finance. Finally, the stringency of a country's environmental policies creates an enabling environment for climate finance mobilization by providing clear regulatory frameworks and incentives for investment in sustainable development projects.

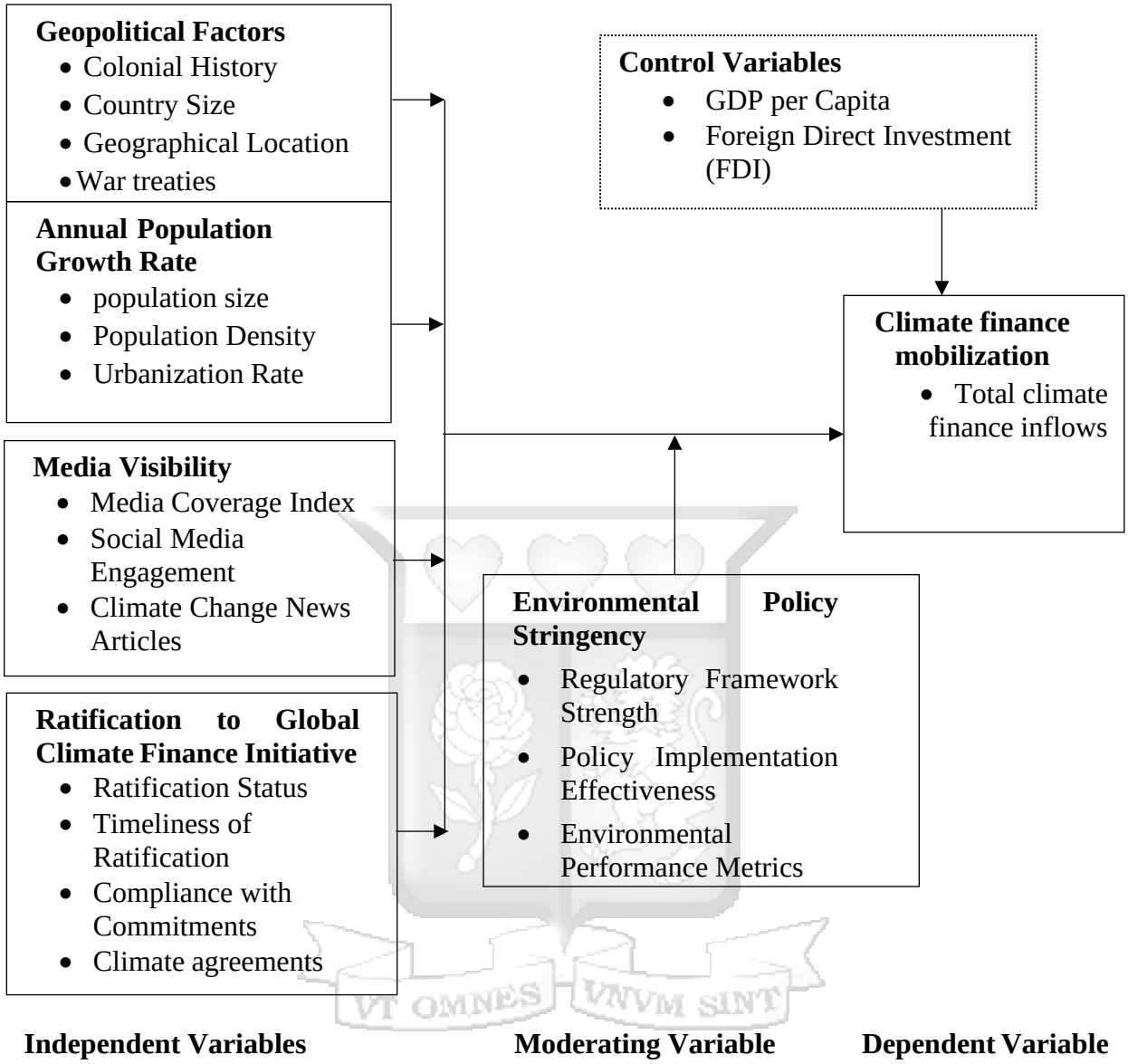

Figure 2.1: Conceptual Framework

Within the context of Dependency Theory, the variables related to geopolitical factors and population growth rate can be analyzed as manifestations of historical and structural dependencies that influence a country's capacity to access climate finance. For example, colonial history and war treaties reflect historical legacies that shape a country's relationship with international financial institutions and donor countries, affecting its ability to attract climate finance. Similarly, population size and urbanization rate are indicators of demographic trends that impact a country's vulnerability to climate change and its demand for financial resources to implement adaptation and mitigation measures.

Institutional Theory provides insights into how formal and informal institutions influence financial behaviors and decision-making processes related to climate finance mobilisation. Variables such as media coverage index and ratification status can be analyzed in terms of institutional pressures and norms that shape public discourse, policy priorities, and international commitments. For instance, media visibility reflects the influence of societal norms and expectations on climate change advocacy and political mobilization, while ratification status indicates a country's adherence to international agreements and the regulatory frameworks that govern climate finance mobilisation. Overall, linking the conceptual framework to the theoretical underpinnings of Dependency Theory and Institutional Theory enhances the understanding of the complex socio-economic, political, and institutional factors that shape climate finance mobilisation in Sub-Saharan Africa.

2.6 Operationalization of variables

Operationalization refers to the process of defining and quantifying the variables utilized in a research study, including their meaning and measurement. (Kothari *et al.*, 2014). The process is conducted to ensure that readers are cognizant of the specific connotations attributed to the variables, as these connotations may vary across different academic fields. This section outlines the methodology for measuring the dependent variable, independent variable, and control variables.

Table 2.2: Operationalization of Variables

Variable	Measure	Definition	Database Source
Geopolitical Factors **(Independent)**	Index of Colonial Influence	Composite score based on duration of colonial rule, type of colonizer, and the nature of the post-colonial relationship	Example: Colonial Influence Dataset (specify developer/institution)
	Country Size	Land area in square kilometers	World Bank Development Indicators: https://data.worldbank.org/
	Geographic Location	Categorical (Coastal, landlocked, island)	World Bank Development Indicators: https://data.worldbank.org/

Variable	Measure	Definition	Database Source
	Interstate Conflicts	Number of active interstate conflicts within past 5 years	Example: Armed Conflict Location & Event Data Project (ACLED): https://acleddata.com/
Annual Population Growth Rate **(Independent)**	Percentage change in total population	Year-over-year change in population	World Bank Development Indicators: https://data.worldbank.org/
Media Visibility **(Independent)**	Climate Change Media Index	Number of national news articles, social media mentions related to climate change, adjusted for population	Example: Media Cloud (or similar platform), National News Outlets : https://mediacloud.org/
Ratification to Global Climate Finance Initiative **(Independent)**	Treaty Ratification	Binary (Yes/No) for key agreements (e.g., Paris Agreement, Kyoto Protocol)	UNFCCC, Specific Treaty Websites: https://unfccc.int/
	Timeliness	Years since the agreement entered into force until a country's ratification	UNFCCC, Specific Treaty Websites: https://unfccc.int/
Environmental Policy Stringency **(Moderating)**	Environmental Performance Index	Composite score assessing countries' environmental policies	Example: Yale Environmental Performance Index (EPI): https://epi.yale.edu/
Mobilization of Climate Finance **(Dependent)**	Total Climate Finance Received	Annual amount in USD of climate-related grants, loans, and investments received by a country	Example: OECD Climate Finance Database: https://epi.yale.edu/

Source; Researcher (2024)

2.7 Chapter Summary

The chapter reviews the existing literature on climate finance mobilisation per objective of the study. The chapter reviews study conducted on the Geopolitical Factors, Annual Population Growth Rate and Media Visibility and the climate finance mobilisation. The chapter further shows the relationship between the independent variables and the dependent variable in the conceptual framework. The conceptual framework further indicates the moderating effect of environmental stringency policy on the determinants of mobilisation of climate finance. The chapter also present s operationalization of variables to increase reliability of the data collected.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a blueprint or outline for conducting the study. Section 3.2 outlines philosophical assumptions. Section 3.3 identifies the research design and describes the researcher's overall plan for obtaining answers to the research questions guiding the study. Section 3.4 identifies the population and sample of interest to the researcher, and which was used in the study. Section 3.5 describes the data used in the study and how that data was collected. Section 3.6 explains how the data was analyzed and summarizes the conceptual and empirical models to be applied. Section 3.7 consists of the operationalization of variables.

3.2 Philosophical assumptions

Research philosophy encompasses the foundational beliefs and assumptions that underpin the research process, influencing how knowledge is generated and interpreted. According to Saunders, Lewis, and Thornhill (2009), research philosophy creates a background for research and shapes the nature of knowledge produced. Henn, Weinstein, and Foard (2005) further elaborate on this concept by describing research philosophy as a paradigm that defines the approach and patterns through which research is conducted.

In conducting research, it is crucial to consider various paradigms that reflect the truth, nature of reality, beliefs, and values of the researcher. These factors significantly contribute to both the conduct and outcomes of the research. By selecting an appropriate research philosophy, researchers can identify, comprehend, and mitigate potential biases in their studies (Henn et al., 2005).

For this study, the positivism research philosophy was adopted. Positivism emphasizes the use of objective, empirical measurements and statistical analysis to uncover patterns and causal relationships (Bryman, 2016). The explanatory design of this study, which focuses on quantifying the determinants of climate finance mobilization among Sub-Saharan African countries, aligns

well with the positivist emphasis on observable phenomena and generalizable results. By relying exclusively on quantitative data, the research adhered to the principles of positivism, which prioritize rigorous, objective analysis to produce clear and reliable findings. This philosophy is particularly suited for studies that do not incorporate qualitative methods (Creswell, 2014; Tashakkori & Teddlie, 2010).

Given the purely quantitative nature of the data for this study, the positivist paradigm provided a fitting framework for analyzing the determinants of climate finance mobilization among Sub-Saharan African countries. It emphasized objective measurement and statistical analysis, aligning seamlessly with the study's goal of identifying and quantifying causal relationships (Bryman, 2016). This approach facilitated a clear and objective examination of how various factors influence climate finance mobilization, yielding robust insights grounded in quantitative evidence.

3.3 Research Design

An explanatory research design was adopted for this study to investigate the relationship between climate finance mobilization and its determinants in Sub-Saharan Africa. Explanatory research aims to identify and elucidate causal relationships between variables, illuminating the mechanisms that influence the phenomena under investigation (Kothari, 2004). By employing this research design, the study sought to go beyond merely describing the phenomenon of climate finance mobilization and instead focused on understanding the factors that drive or inhibit its mobilization in the region.

The explanatory research design allowed for the exploration of complex relationships among multiple variables, providing insights into the underlying causes and effects of climate finance mobilization. The study analyzed the influence of various determinants, including geopolitical factors, population growth rates, media visibility, and environmental policy stringency, on climate finance mobilization in Sub-Saharan Africa. By identifying these causal relationships, the research aimed to contribute to a deeper understanding of the dynamics shaping climate finance mobilization efforts in the region.

Furthermore, the explanatory research design facilitated the use of quantitative methods to gather

and analyze data. Statistical analysis and regression modeling were employed to quantify the relationships between variables and test hypotheses regarding the determinants of climate finance mobilization.

To address potential endogeneity in the study, a classical linear regression model (CLRM) approach was utilized, drawing on econometric techniques to mitigate biases arising from correlated errors and explanatory variables. As Kothari (2004) posited, CLRM provides a robust solution for identifying relationships by ensuring that the assumptions of the model—such as linearity, independence, homoscedasticity, and normality of residuals—are met. The assumption of no perfect multicollinearity, which requires that explanatory variables are not perfectly linearly related, further enhances the validity of the estimates used in the estimation process.

The CLRM estimation procedure encompassed several steps, including the identification of appropriate explanatory variables, parameter estimation using the ordinary least squares (OLS) method, significance testing of coefficients, and conducting diagnostic tests to assess the reliability of the results. Through this methodological framework, the study aimed to produce consistent and reliable estimates of the relationships between climate finance mobilization and its determinants, thereby enhancing the credibility and validity of the research findings.

3.4 Population and Sampling

Population and sampling in this study encompassed Sub-Saharan African countries, totaling 47 nations in the region. The population includes countries that fall within the geographical boundaries of Sub-Saharan Africa, providing a comprehensive scope for understanding climate finance mobilization dynamics. The study covered the period from 2015 to 2022, capturing recent developments and trends in climate finance mobilization across Sub-Saharan Africa.

Given the nature of the study, which relies on secondary data analysis, the entire population of Sub-Saharan African countries was considered. As the study utilizes secondary data exclusively, there is no sampling involved. Instead, the research encompassed all available data pertaining to climate finance mobilization in Sub-Saharan Africa during the specified period. This approach ensures that the analysis encompasses the entirety of the population under study, allowing for

comprehensive insights into the determinants and patterns of climate finance mobilisation across the region.

The selection criteria for the 47 countries under review in this study was based on several factors to ensure representativeness and relevance to the research objectives. Firstly, countries were chosen from the Sub-Saharan African region to focus on areas where climate finance mobilization is particularly pertinent and where significant variations in geopolitical factors, population growth rates, media visibility, and environmental policy stringency are observed. Secondly, the selection considered the availability and reliability of data pertaining to climate finance mobilization and its determinants for each country, ensuring that comprehensive and accurate information can be obtained for analysis. Additionally, the diversity of countries in terms of geographical location, economic development status, political stability, and climate change vulnerability was taken into account to capture a wide range of contexts and experiences within the region. Through this systematic approach to country selection, the study aims to provide a comprehensive and nuanced understanding of the factors influencing climate finance mobilization across Sub-Saharan Africa.

In addition to the above criteria, the study employed a two-sample approach to compare differences in climate finance mobilization determinants between countries that have ratified the Paris Accord and those that have not. This approach involves creating a dummy variable (1/0) to indicate whether a country has ratified the Paris Accord. As of May 29, 2024 all 54 African countries had signed and submitted their Nationally Determined Contributions (NDCs) under the Paris Agreement. The majority of African countries have also ratified the Paris Agreement (https://unfccc.int/process/the-paris-agreement/status-of-ratification) where among them 13 had yet to rectify. Therefore, the first category involved countries yet to sign up to the Paris Accord which included the 13 Sub-Saharan African countries that have not ratified the Paris Accord. The secondary category were the countries that have ratified the Paris Accord. This group included the 41 Sub-Saharan African countries that have ratified the Paris Accord. By using this two-sample perspective, the study aims to investigate if there are any significant differences in the determinants of climate finance mobilization between these two sets of countries.

3.5 Data Collection Methods

Since this study relies on secondary data sources, the data collection method primarily involves sourcing information from existing datasets, reports, and publications related to climate finance mobilisation in Sub-Saharan Africa. The data was collected from reputable sources such as international organizations, government agencies, research institutions, and academic publications. Specifically, datasets from organizations like the World Bank (2024), African Development Bank (2024), and United Nations (2024) were accessed to gather comprehensive and reliable information on climate finance initiatives, disbursements, and related factors in the region. Additionally, relevant academic journals provided valuable insights into the subject matter, contributing to a thorough and understanding of climate finance dynamics in Sub-Saharan Africa.

Furthermore, the data collection process involved systematic searches through online databases, institutional repositories, and official websites of relevant organizations to identify and retrieve pertinent datasets and reports. Keywords related to climate finance mobilisation, Sub-Saharan Africa, and specific variables of interest were used to conduct targeted searches and ensure the retrieval of relevant information. By employing rigorous data collection methods and leveraging a diverse range of sources, this study aims to obtain comprehensive and high-quality data for the analysis of climate finance mobilisation in Sub-Saharan Africa.

3.6 Research Quality

To ensure that the research maintained high quality, the researcher remained independent and did not manipulate any variables within the study. This adherence to objectivity is crucial for secondary data analysis, where the integrity of the original data sources is paramount.

3.6.1 Validity

Validity refers to the extent to which the tools or models used in research accurately measure what they are intended to measure. As defined by Bridget and Lewin (2005), validity is essential for ensuring that the findings truly reflect the phenomena being studied. In this research, the validity of the model was established through a two-step process. First, the model was meticulously examined and compared with the set objectives to confirm that it adequately addressed the research

questions. Second, consultation with an expert, specifically the research supervisor, was conducted to evaluate the relevance and appropriateness of the data collection tools in fulfilling the study's objectives. This validation process is particularly important in secondary data studies, as it ensures that the data utilized aligns well with the intended analysis and conclusions.

3.6.3 Reliability

Reliability refers to the extent to which an instrument or model provides consistent and stable outputs. Kothari (2008) defines reliability as the capacity of a measurement tool to yield similar results under consistent conditions. Mugenda and Mugenda (2003) emphasize that reliability measures the extent to which an instrument produces the same outputs after repeated administration. In the context of this research, the reliability of the model was assessed by reviewing the secondary data sources used in the study. This assessment involved checking for consistency in data collection methods and ensuring that the data maintained its integrity across different time periods and contexts. By prioritizing reliable data sources, the study aimed to enhance the overall quality and trustworthiness of the findings.

3.7 Data Analysis

The analysis employs a quantitative approach to examine the factors influencing climate finance mobilization in Sub-Saharan Africa. Statistical methods are used to assess the relationships between independent variables, the moderating variable, and the dependent variable. This approach includes regression analysis to evaluate the impact of each variable and the moderating effect of environmental policy stringency on the mobilization of climate finance.

Table 3.1: Variables in the Study

Variable Type	*Variable*	*Description*
Independent Variables (IV)	Geopolitical Factors	Factors related to political stability, international relations, and governance structures.
	Annual Population Growth Rate	The rate at which the population of a country increases annually.
	Media Visibility	The extent to which climate finance issues are covered in the media.
	Ratification to Global Climate Finance Initiatives	The extent to which countries have formally agreed to global climate finance agreements and protocols.
Moderating Variable (MV)	Environmental Policy Stringency	The strictness and enforcement of environmental regulations and policies within a country.
Dependent Variable (DV)	Mobilization of Climate Finance	The amount of financial resources allocated to climate-related projects and initiatives in Sub-Saharan Africa.

Model Specifications

Base Model (Independent Variables Only):

$Y=\beta_0+\beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4 +\varepsilon$

Moderating Model (Adding the Moderating Variable):

Base Model: $Y=\beta_0+\beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4 +\varepsilon$

Control Model: $Y=\beta_0+\beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4+\beta_5X_5\beta_5 +\varepsilon$

Interaction Model (Adding Interaction Terms):

$Y=\beta_0+\beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4+ \beta_5X_5 + \beta_6(X_1*X_5) + \beta_7(X_2* X_5) + \beta_8(X_3* X_5) + \beta_9(X_4* X_5)$

$+ \varepsilon$

Where:

- Yrepresents the dependent variable (climate finance Mobilization).
- X_1, X_2, X_3, X_4 are the independent variables (geopolitical factors, annual population growth rate, media visibility, ratification to global climate finance initiative, respectively).
- X_5 represents the moderating variable (environmental policy stringency).
- γZ represents the control variables (GDP per capita, FDI, government effectiveness, corruption perception index).
- β_0, β_1, β_2, β_3, β_4, and β_5 are the coefficients for each independent variable, the moderating variable, and time.
- β_6, β_7, β_8, and β_9 are the coefficients for each interaction term
- $\epsilon_i$is the error term.

3.8 Diagnostic tests

Diagnostic tests sought to identify the possibility of bias that may have occurred in the research. Several diagnostic tests were employed to ensure the validity and reliability of the regression models used in the study.

3.8.1 Test for Normality

The normality test was conducted to assess whether the residuals of the regression model followed a normal distribution, which was crucial for the validity of statistical inferences. The test for normality was carried out because this study required the use of a regression analysis model, which assumed data to be normally distributed (Osborne & Waters, 2002). The test for normality was necessary as the study led to regression analysis models. In particular, the Shapiro-Wilk test was employed to test for normality. This test established the extent of normality of the data by detecting the existence of skewness or kurtosis. Data were considered to be normally distributed if the test results were statistically insignificant, with a significance value of no more than 0.05 (Zhang, Cheng, & Liu, 2011).

3.8.3 Test for Multicollinearity

The multicollinearity test examined the presence of multicollinearity among the independent variables, which could have distorted coefficient estimation and affected result interpretation. Multicollinearity was a situation that occurred when independent variables were correlated with one another, and when this association was high, it affected the prediction abilities of the predictor variable (Mugenda & Mugenda, 2008). Multicollinearity was assumed to be absent when testing hypotheses using regression analysis; however, this had to be confirmed by conducting the multicollinearity test. The test was computed using the Variance Inflation Factors (VIF) and its reciprocal, the tolerance, to establish if one predictor had a strong linear relationship with the other predictor. A common VIF rule of thumb was that VIFs above 10 indicated a sign of severe multicollinearity that affected the study (O'Brien, 2007).

3.8.2 Test for Heteroscedasticity

The heteroscedasticity test evaluated whether the variance of the residuals was constant across different levels of the independent variables. The study tested for heteroscedasticity to assess whether the variability of variables was equal or unequal across the range of values of a second variable that predicted it (Brooks, 2019). The Lagrange Multiplier (LM) test was conducted to determine whether there was heteroscedasticity. The LM test involved comparing the χ^2-test statistic with the χ^2-test value from the chi-square tables (Wooldridge, 2020). The χ^2-test statistic was computed by multiplying the number of observations by the R^2 of the model. If the χ^2-test statistic was greater than the χ^2-test value from the chi-square tables, then the null hypothesis was rejected. If the null hypothesis was rejected, then there was heteroscedasticity (Brooks, 2019).

3.8.3 Test for Autocorrelation

The autocorrelation test investigated whether there was serial correlation among the residuals, potentially invalidating statistical inferences. The study tested for autocorrelation using the Durbin-Watson Statistic to assess the degree of similarity between time series and a lagged version of itself over successive time intervals. The ordinal logistic regression models assumed that the error terms were uncorrelated with each other across observations. When the error terms were

correlated with each other, it was stated that they were autocorrelated (Brooks, 2019). The Durbin-Watson (DW) Statistic had two critical values: an upper critical value (dU) and a lower critical value (dL), and there was an intermediate region where the null hypothesis of no autocorrelation could neither be rejected nor accepted. If the Durbin-Watson Statistic fell between 0 and the lower critical value, then there was evidence of positive autocorrelation. In addition, the test was inconclusive if the DW test value fell either between the upper critical value and lower critical value or between 4 - dU and 4 - dL. However, there was evidence of negative autocorrelation if the DW statistic fell below 4 - dL (Brooks, 2019). The test was conducted using SPSS.

3.9 Ethical considerations

Ethics referred to the standards of behavior that guided the conduct of a person in relation to the rights of those who became the subjects of their work or were affected by it (Nyongesa, 2018). In upholding ethical considerations, the study adopted three principles of ethical research: respect, justice, and beneficence. This was achieved by acquiring ethical clearance from the Strathmore University Institutional Ethics Review Committee (SU-IERC).

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATIONS

4.1 Introduction

This chapter presents the analysis of the data collected, detailing the findings and interpretations of the results. The aim is to elucidate the relationships between the determinants of climate finance mobilization among Sub-Saharan countries. The analysis begins with descriptive statistics to outline the key characteristics of the dataset, offering an initial understanding of the data's distribution and variability. A series of diagnostic tests were then conducted to validate the statistical models, ensuring that assumptions such as normality, multicollinearity, homoscedasticity, and autocorrelation are met. The analysis then explores the specific influence of independent variables—geopolitical factors, annual population growth rate, media visibility, and ratification to global climate finance initiatives—on climate finance mobilization. The chapter concludes by examining the moderating effect of environmental policy stringency, assessing how it influences the relationship between these determinants and the actual mobilization of climate finance in the region.

4.2 Descriptive Statistics

Table 4.1 presents the descriptive statistics for the variables under study: Geopolitical Factors Index, Population Density, Climate Change Media Index, Environmental Performance Index, and Total Climate Finance Received. Units of observations were 376 which were aggregated into 47 units of analysis.

Table 4.1: Descriptive Statistics

	Observations	Minimum	Maximum	Mean	Std. Deviation
Geopolitical Factors Index	376	1.00	3.00	1.89	0.43
Population Density (persons per sq. km)	376	3.00	626.00	109.64	141.23
Climate Change MediaIndex	376	40.00	1,027.00	286.79	197.06
Environmental Performance Index	3761.00	3.00	1.49	0.69	
Total Climate Finance Received (USD)	376	20,000,000.00	750,000,000.00	199,255,319.15 170,682,704.36	

The Geopolitical Factors Index, ranging from 1 to 3, has a mean of 1.89 with a standard deviation of 0.43, indicating a moderate level of geopolitical factors affecting the Sub-Saharan countries, with some variation among them. The Population Density shows a wide range from 3 to 626 persons per square kilometer, with an average density of approximately 110 persons per square kilometer, and a high standard deviation of 141.23, reflecting significant differences in population distribution across the region.

The Climate Change Media Index varies significantly from 40 to 1,027, with a mean of about 287 and a standard deviation of 197.06. This suggests substantial variation in media coverage related to climate change issues among the countries. The Environmental Performance Index has a mean of 1.49 and a standard deviation of 0.69, indicating relatively low environmental performance on average with some variability. The Total Climate Finance Received ranges from 20 million to 750 million USD, with a mean of approximately 199.26 million USD and a standard deviation of 170.68 million USD. This wide range highlights the disparity in climate finance mobilization among Sub-Saharan countries.

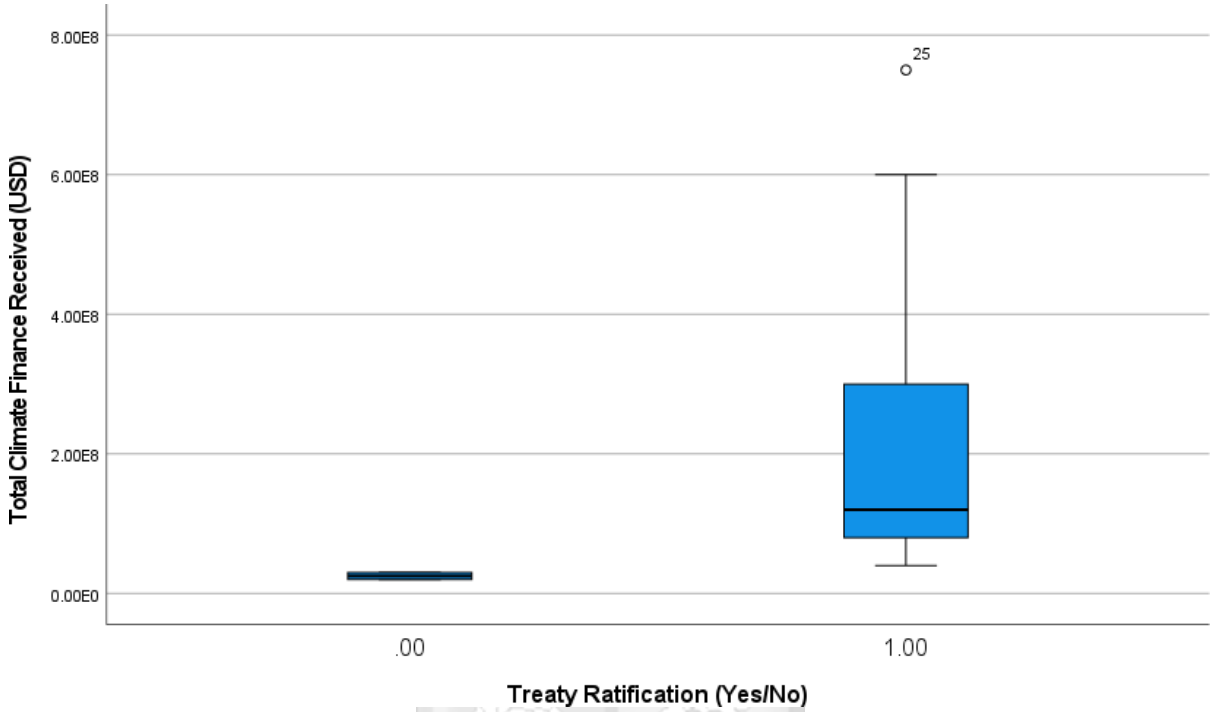

Figure 4.1: Graphical Presentation for Ratification Index

Figure 4.1 visually represents the distribution of total climate finance received (in USD) by countries based on their treaty ratification status (yes or no). Countries that have ratified the treaty tend to receive substantially higher levels of climate finance. The median amount for this group is significantly above zero, indicating that a majority of these countries have secured funding. In contrast, countries that have not ratified the treaty exhibit minimal to no climate finance reception. The box for this group is tightly clustered near zero, suggesting a lack of financial support. While there is some variability within each group, the overall trend is evident: treaty ratification appears to be strongly associated with increased access to climate finance.

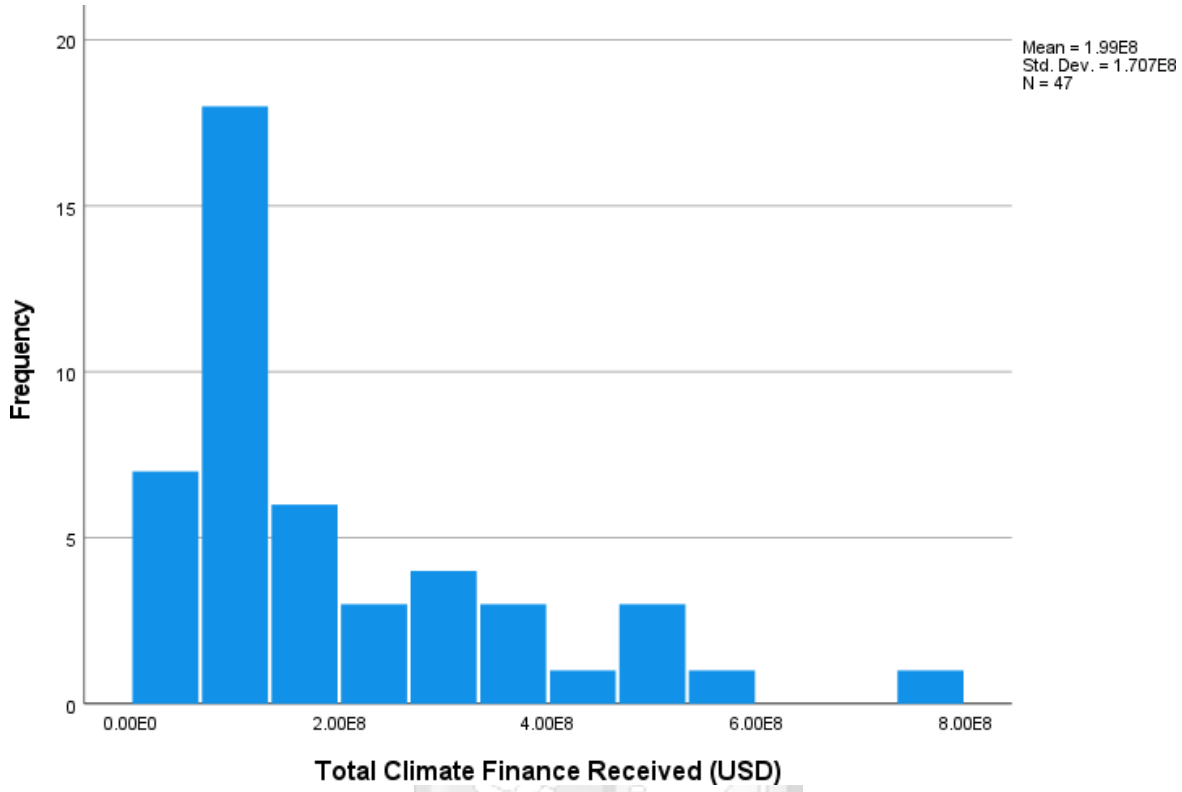

Figure 4.2: Total Climate Finance Received

Figure 4.2 presents a histogram illustrating the distribution of total climate finance received (in USD) by a sample of 47 countries. The x-axis represents the total climate finance received, divided into intervals of 200 million USD, while the y-axis indicates the frequency or number of countries falling within each interval.

The distribution is positively skewed, with a long right tail suggesting that a few countries received significantly higher amounts of climate finance compared to the majority. The mean climate finance received is approximately 1.99 billion USD, and the standard deviation is 1.707 billion USD, indicating considerable variability in the data. The most frequent interval is between 0 and 200 million USD, suggesting that a substantial number of countries received relatively small amounts of climate finance.

4.3 Diagnostic Statistics

This section presents the diagnostic statistics used to evaluate the regression models developed in this study, which are critical for ensuring the validity and reliability of the analysis. Diagnostic tests help confirm that the assumptions underlying the regression models are met, thereby enhancing the credibility of the results. The first diagnostic, the **Normality Test** (Section 4.3.1), assesses whether the residuals of the regression model follow a normal distribution, a key assumption for many statistical methods. Ensuring normality is essential as it affects the accuracy of hypothesis tests and confidence intervals, which are crucial for interpreting the relationships between variables in this study. Next, the **Test for Multicollinearity** (Section 4.3.2) examines whether there is high correlation among the independent variables. Multicollinearity can distort the regression results by inflating the variance of the coefficients, making it difficult to determine the true effect of each variable. Addressing this issue is important for ensuring that the model accurately reflects the individual contributions of each determinant to climate finance mobilization.

Following these, the **Test for Heteroscedasticity** (Section 4.3.3) checks if the variance of the residuals is consistent across different levels of the independent variables. Heteroscedasticity can lead to inefficient estimates and biased conclusions, so this test is vital for ensuring that the regression results are robust and reliable. Lastly, the **Autocorrelation Test** (Section 4.3.4) evaluates whether the residuals from the regression model are independent of each other. Autocorrelation may suggest that important patterns in the data have been overlooked, which could undermine the model's accuracy. Identifying and correcting for autocorrelation is necessary to ensure that the regression model accurately captures the relationships between the variables, thereby providing valid insights into the factors influencing climate finance mobilization in Sub-Saharan Africa.

4.3.1 Normality Test

Table 4.2: One-Sample Kolmogorov-Smirnov Test

			Total Climate Finance Received (USD)
N			47
Normal Parametersa,b	Mean		199,255,319.149
	Std. Deviation		170,682,704.364
Most Extreme Differences	Absolute		0.211
	Positive		0.211
	Negative		(0.147)
Test Statistic			0.211
Asymp. Sig. (2-tailed)c			0.251
Monte Carlo Sig. (2-tailed)d	Sig.		0.245
	99% Confidence Interval	Lower Bound	0.000
		Upper Bound	0.000

a Test distribution is Normal.
b Calculated from data.
c Lilliefors Significance Correction.
d Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.

4.3.2 Test for Multicollinearity

Table 4.3: Collinearity Statistics

	Tolerance	VIF
Geopolitical Factors Index	0.57	1.755
Population Density (persons per sq. km)	0.948	1.055
Climate Change Media Index	0.741	1.35
Treaty Ratification (Yes/No)	0.692	1.446

Table 4.4: Tolerance Level

	Tolerance	VIF
Geopolitical Factors Index	0.57	1.755
Population Density (persons per sq. km)	0.948	1.055
Climate Change Media Index	0.741	1.35
Treaty Ratification (Yes/No)	0.692	1.446

4.3.3 Test for Homoscedasticity

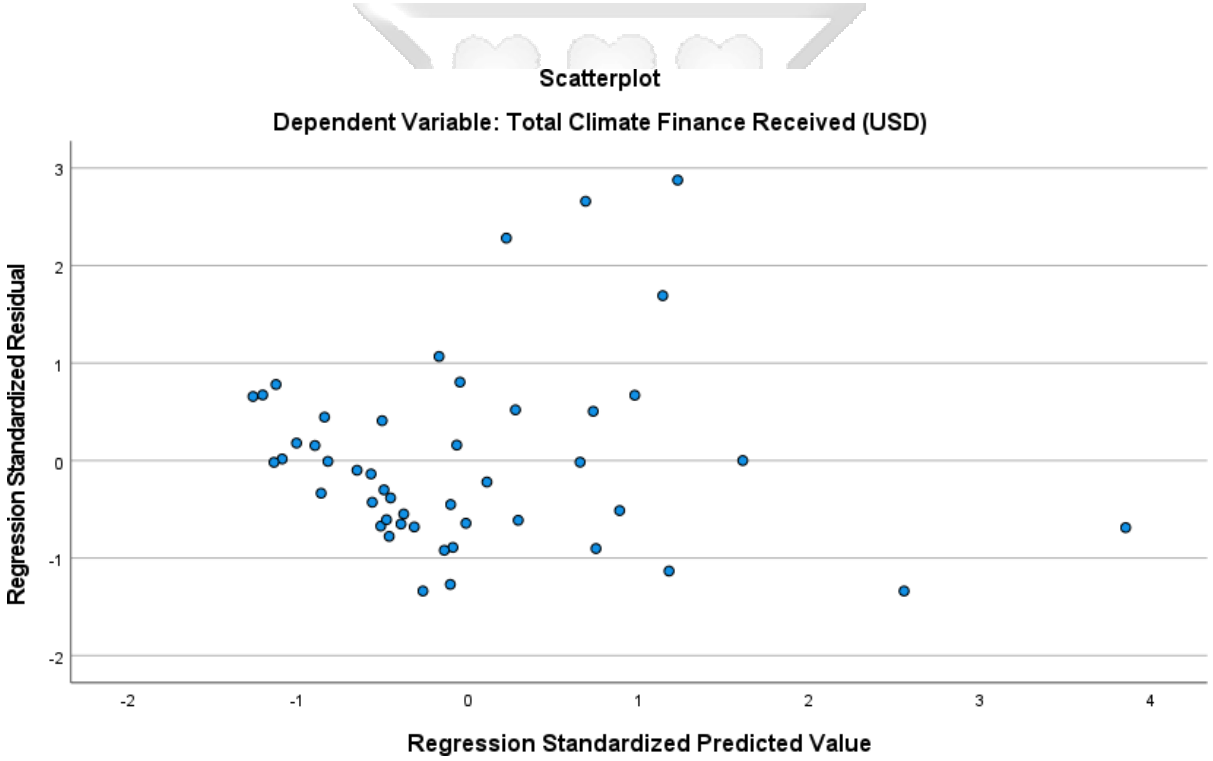

Figure 4.3: Scatter Plot to Homoscedasticity

4.3.4 Autocorrelation Test

Table 4.5: Durbin-Watson

Model	Durbin-Watson
1	1.595

a Predictors: (Constant), Treaty Ratification (Yes/No), Population Density (persons per sq.km), Climate Change Media Index, Geopolitical Factors Index

b Dependent Variable: Total Climate Finance Received (USD)

4.4 Influence of Geopolitical Factors on Climate Finance Mobilization

This section examines the influence of geopolitical factors on the mobilization of climate finance. Geopolitical factors can include political stability, international relations, and regional conflicts, which may affect the flow and allocation of climate finance to different countries. Understanding the impact of these factors is crucial for designing strategies to enhance climate finance mobilization in regions affected by geopolitical issues.

Table 4.6: R2 for Geopolitical Factors and Climate Finance Mobilization

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.455a	0.207	0.189	0.764	1.531

a Predictors: (Constant), Geopolitical Factors Index
b Dependent Variable: Total Climate Finance Received (USD)

The R-squared value of 0.207 in Table 4.6 indicates that approximately 20.7% of the variability in total climate finance received can be explained by the Geopolitical Factors Index. The Adjusted R-squared value of 0.189, which accounts for the number of predictors in the model, suggests a similar explanatory power. The standard error of the estimate is 0.764, and the Durbin-Watson statistic is 1.531, which is within the acceptable range (1.5-2.5) indicating no significant autocorrelation in the residuals.

Table 4.7: ANOVA for Geopolitical Factors and Climate Finance Mobilization

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	6.855	1	6.855	11.74	.001b
Residual	26.276	45	0.584		
Total	33.131	46			

a Dependent Variable: Total Climate Finance Received (USD) b Predictors: (Constant), Geopolitical Factors Index

The ANOVA table (Table 4.7) shows that the regression model is statistically significant, with an F-value of 11.74 and a p-value of 0.001. This indicates that the Geopolitical Factors Index significantly predicts the amount of climate finance received, rejecting the null hypothesis that the predictor's coefficient is equal to zero. The sum of squares for the regression (6.855) and the residual (26.276) reflect the explained and unexplained variance, respectively.

Table 4.8: Model Coefficients for Geopolitical Factors and Climate Finance Mobilization

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	19.766	0.312		63.409	0.000
Geopolitical Factors Index	-1.637	0.478	-0.455	-3.426	0.001

a Dependent Variable: Total Climate Finance Received (USD)

Table 4.8 presents the model coefficients, revealing that the Geopolitical Factors Index has a significant negative effect on the total climate finance received ($B = -1.637$, $p = 0.001$). The constant term ($B = 19.766$, $p < 0.001$) represents the expected climate finance received when the Geopolitical Factors Index is zero. The standardized coefficient (Beta) of -0.455 indicates that for each unit increase in the Geopolitical Factors Index, the total climate finance received decreases by approximately 0.455 standard deviations, highlighting a significant inverse relationship.

The model equation can be constituted as follows:

Total Climate Finance Received (USD)=19.766−1.637×Geopolitical Factors Index. The statistical significance of the Geopolitical Factors Index ($p = 0.001$) indicates that policymakers should prioritize improving geopolitical stability to enhance climate finance mobilization. The significant F-value (11.74) in the ANOVA test underscores the overall model'srobustness, suggesting that geopolitical factors are a substantial predictor of climate finance reception. This insight is crucial for Sub-Saharan African countries, many of which struggle withgeopolitical instability, as it highlights an area for potential improvement to attract more international financial support.

The influence of geopolitical factors on climate finance mobilization is profound, as these elements can significantly impact the flow and allocation of funds. Political stability, international relations, and regional conflicts are critical determinants that can either facilitate or hinder financial support for climate initiatives. Countries with favorable geopolitical conditions tend to attract more climate finance because investors and donor agencies perceive lower risks in politically stable environments. This underscores the need for policymakers to address geopolitical challenges, as enhancing stability can create a more favorable landscape for climate finance mobilization. For instance, improved political stability may lead to increased investor confidence, ultimately resulting in greater financial inflows for climate-related projects (Ritchie & Roser, 2020).

Moreover, geopolitical factors are intertwined with the global political economy, where relationships between countries can determine access to financial resources. Countries that maintain strong international partnerships and engage in cooperative frameworks for climate action are more likely to secure funding. As highlighted by O'Brien (2022), building alliances and fostering diplomatic relations can enhance a country’s bargaining power in securing climate finance. This suggests that effective foreign policy strategies that prioritize climate objectives could significantly influence the ability of nations, particularly those in regions vulnerable to climate change, to mobilize necessary funds.

Additionally, the presence of regional conflicts and instability often detracts from climate finance opportunities, as these conditions create a perception of risk for potential investors. Conflict can lead to resource diversion, where funds that could be allocated for climate initiatives are instead directed toward immediate security needs. As noted by Kharas and McArthur (2020), the international community must recognize the interdependence of security and climate finance,

advocating for policies that simultaneously address geopolitical stability and climate resilience.

4.5 Influence of Annual Population Growth Rate on Climate Finance Mobilization

This section investigates the effect of the annual population growth rate on climate finance mobilization. Population growth can impact the demand for climate finance, as rapidly growing populations may require more resources for climate adaptation and mitigation efforts. Analyzing this relationship helps in understanding whether countries with higher population growth rates attract more or less climate finance.

Table 4.9: R^2 for Annual Population Growth Rate and Climate Finance Mobilization

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.113a	0.013	-0.009	0.853	1.326

a Predictors: (Constant), Annual Population Growth Rate
b Dependent Variable: Total Climate Finance Received (USD)

Table 4.9 shows that the R-squared value is 0.013, indicating that only 1.3% of the variability in total climate finance received can be explained by the Annual Population Growth Rate. The Adjusted R-squared value is slightly negative (-0.009), suggesting that the model may not fit the data well and that adding more predictors might not improve the model significantly. The standard error of the estimate is 0.853, and the Durbin-Watson statistic is 1.326, which indicates slight positive autocorrelation in the residuals, although it is not severe.

Table 4.10: ANOVA for Annual Population Growth Rate and Climate Finance Mobilization

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	0.426	1	0.426	0.587	.448b
Residual	32.704	45	0.727		
Total	33.131	46			

a Dependent Variable: Total Climate Finance Received (USD)b Predictors: (Constant), Annual Population Growth Rate

The ANOVA table (Table 4.10) shows that the regression model is not statistically significant, with an F-value of 0.587 and a p-value of 0.448. This indicates that the Annual Population Growth Rate does not significantly predict the amount of climate finance received, and we fail to reject the null hypothesis that the predictor's coefficient is equal to zero. The sum of squares for the regression (0.426) is very small compared to the residual sum of squares (32.704), reflecting that the model explains very little of the total variance.

Table 4.11: Model Coefficients for Annual Population Growth Rate and Climate Finance Mobilization

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	18.453	0.431		42.851	0.000
Annual Population Growth Rate	0.078	0.102	0.113	0.766	0.448

a Dependent Variable: Total Climate Finance Received (USD)

Table 4.11 presents the model coefficients, showing that the Annual Population Growth Rate has an insignificant positive effect on the total climate finance received (B = 0.078, p = 0.448). The constant term (B = 18.453, p < 0.001) represents the expected climate finance received when the Annual Population Growth Rate is zero. The standardized coefficient (Beta) of 0.113 indicates a weak positive relationship, suggesting that for each unit increase in the Annual Population Growth Rate, the total climate finance received increases by 0.113 standard deviations, but this relationship

is not statistically significant.

The model equation can be constituted as follows:

Total Climate Finance Received (USD)=18.453+0.078×Annual Population Growth Rate

The relationship between the annual population growth rate and climate finance mobilization reveals intriguing insights into how demographic changes affect funding for climate-related initiatives. In this analysis, the R-squared value of 0.013 indicates that the annual population growth rate accounts for a mere 1.3% of the variability in total climate finance received. This minimal explanatory power suggests that factors other than population growth are likely more influential in determining the levels of climate finance mobilized. Such findings highlight the complexity of climate finance dynamics, where population growth alone may not significantly drive investment, especially in regions where demographic changes occur amid broader socioeconomic challenges (Buchner et al., 2020).

Moreover, the ANOVA results demonstrate that the regression model fails to establish a statistically significant link between annual population growth and climate finance, with a p-value of 0.448. This lack of significance indicates that higher population growth rates do not automatically lead to increased climate finance, which may seem counterintuitive. It implies that while growing populations might increase the demand for resources to address climate change, this demand does not necessarily translate into greater financial support. Other determinants, such as governance, economic stability, and international partnerships, may play a more pivotal role in attracting climate finance. Understanding these dynamics can inform policymakers about the importance of comprehensive strategies that address various factors influencing climate finance beyond mere population metrics (Baker & Steg, 2021).

Additionally, the slight positive autocorrelation indicated by the Durbin-Watson statistic (1.326) suggests that there may be underlying patterns or omitted variables influencing the relationship between population growth and climate finance mobilization. This reinforces the idea that a more nuanced approach is required to fully understand the complexities of climate finance dynamics. Researchers and policymakers should consider a broader set of predictors, including economic conditions, governance quality, and social factors, when assessing the determinants of climate

finance. Overall, these findings underscore the need for more sophisticated models that can account for the interplay between demographic trends and other critical factors influencing climate finance mobilization (Cohen et al., 2023).

4.6 Influence of Media Visibility on Climate Finance Mobilization

This section explores the impact of media visibility on the mobilization of climate finance. Media visibility can play a crucial role in raising awareness about climate issues and attracting financial support. By highlighting climate-related challenges and opportunities, media can influence the allocation of climate finance to more visible regions or projects.

Table 4.12: R^2 for Media Visibility and Climate Finance Mobilization

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.921a	0.849	0.846	0.333	1.416

a Predictors: (Constant), Media Visibility
b Dependent Variable: Total Climate Finance Received (USD)

Table 4.12 reveals a very high R-squared value of 0.849, indicating that 84.9% of the variance in total climate finance received can be explained by media visibility. The adjusted R-squared value of 0.846 confirms that the model is highly effective, with minimal loss of explanatory power when accounting for the number of predictors. The standard error of the estimate is 0.333, suggesting that the model predictions are relatively precise. The Durbin-Watson statistic of 1.416 indicates that there is no significant autocorrelation in the residuals, which supports the reliability of the model.

Table 4.13: ANOVA for Media Visibility and Climate Finance Mobilization

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	28.132	1	28.132	253.279	.000b
Residual	4.998	45	0.111		
Total	33.131	46			

a Dependent Variable: Total Climate Finance Received (USD)
b Predictors: (Constant), Media Visibility

The ANOVA table (Table 4.13) demonstrates that the regression model is highly significant, with an F-value of 253.279 and a p-value of 0.000. This indicates that media visibility is a very strong predictor of the total climate finance received. The regression sum of squares (28.132) is significantly larger than the residual sum of squares (4.998), reflecting the model's substantial explanatory power regarding the variance in climate finance mobilization.

Table 4.14: Model Coefficients for Media Visibility and Climate Finance Mobilization

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	12.773	0.380		33.626	0.000
Media Visibility	1.103	0.069	0.921	15.915	0.000

a Dependent Variable: Total Climate Finance Received (USD)

Table 4.14 shows that media visibility has a highly significant positive effect on the total climate finance received (B = 1.103, p = 0.000). The standardized coefficient (Beta) of 0.921 indicates a very strong positive relationship, meaning that for each unit increase in media visibility, the total climate finance received increases by 0.921 standard deviations. The constant term (B = 12.773, p < 0.001) represents the expected climate finance received when media visibility is zero.Model:

Total Climate Finance Received (USD) =12.773+1.103×Media Visibility

The significant positive relationship between media visibility and climate finance mobilization underscores the crucial role that public awareness and media engagement play in attracting financial resources for climate initiatives. With an R-squared value of 0.849, it is evident that media visibility accounts for a substantial portion of the variance in climate finance received. This suggests that effective communication strategies can directly influence funding opportunities by ensuring that climate-related issues are highlighted in the public sphere. As noted by Ghosh et al. (2021), media coverage not only raises awareness but also helps shape public discourse, ultimately

leading to increased pressure on policymakers and financial institutions to allocate resources to urgent climate challenges.

Furthermore, the high F-value of 253.279 and the p-value of 0.000 from the ANOVA results reinforce the robustness of the regression model. These findings indicate that the relationship between media visibility and climate finance is not only statistically significant but also practically meaningful. When media outlets prominently cover climate issues, they can catalyze action from both public and private sectors. Research has shown that heightened media visibility can lead to increased investment in climate resilience projects and sustainable development (González et al., 2022). Thus, stakeholders in climate finance should prioritize collaboration with media organizations to enhance visibility and drive engagement in climate initiatives.

Lastly, the model coefficient for media visibility, which indicates that each unit increase in media visibility leads to an increase of 1.103 units in climate finance received, highlights the immense potential of leveraging media platforms for climate action. The strong standardized coefficient (Beta) of 0.921 signifies a compelling relationship, suggesting that media visibility is a potent driver of financial support for climate projects. This insight emphasizes the importance of strategic media campaigns that not only inform but also mobilize resources towards addressing climate challenges. By investing in effective media strategies, governments and organizations can significantly enhance their ability to secure climate finance, which is essential for implementing adaptation and mitigation efforts in a rapidly changing world (Lehmann et al., 2023).

4.7 Influence of Ratification to Global Climate Finance Initiatives on Climate Finance Mobilization

This section examines how ratification to global climate finance initiatives influences the mobilization of climate finance. Ratifying international agreements and participating in global climate initiatives can signal a country's commitment to addressing climate change, thereby attracting more climate finance from international donors and investors.

Table 4.15: R^2 for Ratification to Global Climate Finance Initiatives and Climate Finance Mobilization

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson

.441a	0.194	0.176	0.770	1.445

a Predictors: (Constant), Ratification to Global Climate Finance Initiatives
b Dependent Variable: Total Climate Finance Received (USD)

Table 4.15 shows an R-squared value of 0.194, which means that 19.4% of the variance in total climate finance received can be explained by the ratification to global climate finance initiatives. The adjusted R-squared value of 0.176 indicates a slight reduction when accounting for the number of predictors, but it still demonstrates that the model holds some explanatory power. The standard error of the estimate is 0.770, indicating moderate precision in the model's predictions. The Durbin-Watson statistic of 1.445 suggests that there is no significant autocorrelation in the residuals, which supports the reliability of the regression results.

Table 4.16: ANOVA for Ratification to Global Climate Finance Initiatives and Climate Finance Mobilization

	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.432	1	6.432	10.841	.002b
Residual	26.699	45	0.593		
Total	33.131	46			

a Dependent Variable: Total Climate Finance Received (USD)
b Predictors: (Constant), Ratification to Global Climate Finance Initiatives

The ANOVA table (Table 4.16) reveals that the regression model is statistically significant, with an F-value of 10.841 and a p-value of 0.002. This indicates that the ratification to global climate finance initiatives is a significant predictor of the total climate finance received. The regression sum of squares (6.432) is smaller than the residual sum of squares (26.699), reflecting that while the model is significant, a substantial portion of the variance remains unexplained.

Table 4.17: Model Coefficients for Ratification to Global Climate Finance Initiatives and Climate Finance Mobilization

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	17.014	0.545		31.238	0.000
Ratification to Global Climate Finance Initiatives	1.833	0.557	0.441	3.293	0.002

a Dependent Variable: Total Climate Finance Received (USD)

Table 4.17 presents the coefficients for the regression model. The unstandardized coefficient (B) for ratification to global climate finance initiatives is 1.833, indicating that each unit increase in ratification is associated with an increase of 1.833 units in the total climate finance received. This relationship is statistically significant ($p = 0.002$). The standardized coefficient (Beta) of 0.441 shows a moderate positive relationship between ratification and climate finance mobilization. The constant term ($B = 17.014$, $p < 0.001$) represents the expected climate finance

received when the ratification index is zero.

Model:

Total Climate Finance Received (USD)=17.014+1.833×Ratification to Global Climate Finance Initiatives.

The analysis of the influence of ratification to global climate finance initiatives on climate finance mobilization reveals a noteworthy relationship. With an R-squared value of 0.194, the model suggests that ratification explains approximately 19.4% of the variance in total climate finance received. This finding highlights the importance of formal commitments to international climate agreements, as countries that ratify such initiatives may be viewed as more serious and reliable partners in global climate action. This perception can lead to increased financial support from international donors and organizations, which often prioritize funding for nations that demonstrate commitment through formal agreements (Schneider et al., 2020).

The statistical significance of the ANOVA results, with an F-value of 10.841 and a p-value of 0.002, further supports the argument that ratification plays a critical role in attracting climate finance. This indicates that countries actively engaging with global initiatives are more likely to mobilize financial resources necessary for climate action. The regression model shows that for each unit increase in ratification, there is a corresponding increase of 1.833 units in the total climate finance received. This direct correlation emphasizes the potential benefits that countries can reap from actively participating in international agreements aimed at combatting climate change (Bodansky, 2021).

Moreover, the standardized coefficient (Beta) of 0.441 reflects a moderate positive relationship, suggesting that while ratification is a significant factor, other elements may also contribute to climate finance mobilization. It is essential for policymakers to recognize that while ratification signals commitment, complementary strategies such as enhancing domestic capacities for climate finance management and developing robust project proposals are equally vital (Hsu et al., 2022).

4.8 Moderating Effect of Environmental Policy Stringency on the Relationship between Factors Influencing Climate Finance Mobilization and the Effective Mobilization of Climate Finance

This section investigates the moderating effect of environmental policy stringency on the relationship between various factors influencing climate finance mobilization and the actual mobilization of climate finance. Environmental policy stringency refers to the strictness and enforcement of environmental regulations, which can enhance the credibility and effectiveness of climate finance efforts.

Table 4.18: R^2 Change for the Moderating Effect of Environmental Policy Stringency

				Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.500a	0.250	0.233	0.743	0.250	14.995	1	45	0.000
2	.770b	0.592	0.574	0.554	0.342	36.928	2	44	0.000
3	.782c	0.612	0.585	0.547	0.020	4.162	3	43	0.029

a Predictors: (Constant), Determinants Of Climate Finance Mobilisation
b Predictors: (Constant), Determinants Of Climate Finance Mobilisation , Environmental Performance Index
c Predictors: (Constant), Determinants Of Climate Finance Mobilisation , Environmental Performance Index, Interaction Term

Table 4.18 shows the change in R-squared values across three models, indicating the explanatory power of each model regarding climate finance mobilization. The first model, which includes only the determinants of climate finance mobilization, explains 25% of the variance in total climate finance received ($R^2 = 0.250$). The second model, which adds the Environmental Performance Index (EPI), increases the explained variance to 59.2% ($R^2 = 0.592$), with a significant change (R^2 change = 0.342, F change = 36.928, $p < 0.001$). The third model, which includes the interaction term between determinants and EPI, further increases the R-squared to 61.2% ($R^2 = 0.612$), though the change is smaller (R^2 change = 0.020, F change = 4.162, $p < 0.05$). This suggests that environmental policy stringency significantly moderates the relationship between the determinants of climate finance mobilization and the total climate finance received.

Table 4.19: ANOVA for the Moderating Effect of Environmental Policy Stringency

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.281	1	8.281	14.995	.000b

	Residual	24.85	45	0.552		
	Total	33.131	46			
2	Regression	19.62	2	9.81	31.948	.000c
	Residual	13.511	44	0.307		
	Total	33.131	46			
3	Regression	20.267	3	6.756	22.581	.000d
	Residual	12.864	43	0.299		
	Total	33.131	46			

a Dependent Variable: Total Climate Finance Received (USD)

b Predictors: (Constant), Determinants Of Climate Finance Mobilisation

c Predictors: (Constant), Determinants Of Climate Finance Mobilisation , Environmental Performance Index

d Predictors: (Constant), Determinants Of Climate Finance Mobilisation , Environmental Performance Index, Interaction Term

The ANOVA table (Table 4.19) demonstrates the overall significance of each model. Model 1 (determinants of climate finance mobilization) is significant with an F-value of 14.995 and a p-value of 0.000. Model 2, which includes the Environmental Performance Index, shows a significant improvement with an F-value of 31.948 (p = 0.000). Model 3, incorporating the interaction term, remains significant with an F-value of 22.581 (p = 0.000). This progression confirms that adding the Environmental Performance Index and its interaction with the determinants significantly enhances the model's explanatory power.

Table 4.20: Model Coefficients for the Moderating Effect of Environmental Policy Stringency

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	15.751	0.787		20.021	0.000
	Determinants Of Climate Finance Mobilisation	1.095	0.283	0.500	3.872	0.000
2	(Constant)	15.951	0.588		27.146	0.000
	Determinants Of Climate Finance Mobilisation	0.605	0.226	0.276	2.678	0.010
	Environmental Performance Index	0.773	0.127	0.626	6.077	0.000

3	(Constant)	10.164	1.347		7.546	0.000
	Determinants Of Climate Finance Mobilisation	1.262	0.500	0.576	2.526	0.015
	Environmental Performance Index	1.876	0.760	1.520	2.467	0.018
	Interaction Term	0.597	0.270	1.578	2.211	0.029

a Dependent Variable: Total Climate Finance Received (USD)

Table 4.20 presents the coefficients for the regression models. In Model 1, the determinants of climate finance mobilization have a significant positive effect (B = 1.095, p = 0.000). In Model 2, both the determinants (B = 0.605, p = 0.010) and the Environmental Performance Index (B = 0.773, p = 0.000) are significant predictors. In Model 3, the determinants (B = 1.262, p = 0.015), the Environmental Performance Index (B = 1.876, p = 0.018), and the interaction term (B = 0.597, p = 0.029) are all significant. The positive coefficient for the interaction term indicates that the effect of the determinants on climate finance mobilization is stronger when environmental policy stringency is higher.

Model:

Total Climate Finance Received (USD)=10.164+1.262×Determinants of Climate Finance Mobilization+1.876×Environmental Performance Index+0.597×Interaction Term

The investigation of the moderating effect of environmental policy stringency on climate finance mobilization reveals critical insights into how stringent regulations can enhance the relationship between various factors influencing climate finance and its actual mobilization. The results indicate a substantial increase in explanatory power across three models, with the final model achieving an R-squared value of 0.612. This finding suggests that environmental policy stringency significantly enhances the ability to explain variations in climate finance mobilization, indicating that countries with stricter environmental policies tend to attract more climate finance. Such regulations enhance credibility and trust among international donors and investors, as they signal a country's commitment to addressing climate change effectively (Hoffman et al., 2020).

The ANOVA results support these findings, with all models demonstrating statistical significance and improvement in explanatory power with the introduction of the Environmental Performance Index (EPI) and the interaction term. Specifically, the significant change in R-squared from the first model to the second (from 25% to 59.2%) underscores the critical role of environmental

performance in mobilizing climate finance. Furthermore, the interaction term's significant positive coefficient indicates that the determinants of climate finance mobilization have a stronger impact in environments characterized by stringent policies. This reinforces the notion that effective climate finance mobilization is not only a function of specific determinants but is also significantly moderated by the broader regulatory framework within which these determinants operate (Rennings et al., 2019).

In terms of practical implications, these findings suggest that countries aiming to enhance their climate finance mobilization should consider strengthening their environmental policies and regulatory frameworks. The positive coefficients associated with the Environmental Performance Index and the interaction term demonstrate that a robust policy environment can amplify the effects of other factors influencing climate finance. Thus, for policymakers, fostering stringent environmental regulations could serve as a strategic approach to attract and effectively mobilize climate finance, ultimately contributing to national and global climate objectives (Buchanan et al., 2021). The model developed provides a solid foundation for further research into how specific regulatory measures can be designed and implemented to optimize climate finance mobilization efforts.

4.9 Multivariate Analysis

This section presents a multivariate analysis to examine the interplay between various factors influencing climate finance mobilization and their collective impact on the total climate finance received.

Table 4.21: R^2 for the Determinants of Climate Finance Mobilization

R	R Square	Adjusted R Square	Std. Error of the Estimate
.928a	0.861	0.848	0.331

a Predictors: (Constant), Treaty Ratification (Yes/No), Population Density (persons per sq. km), Geopolitical Factors Index, Climate Change Media Index

Table 4.21 presents the results of the multivariate analysis examining the determinants of climate finance mobilization, with an R-squared value of 0.861. This indicates that approximately 86.1%

of the variability in climate finance mobilization can be explained by the model's predictors, which include Treaty Ratification, Population Density, Geopolitical Factors Index, and Climate Change Media Index. Such a high R-squared value suggests that the model effectively captures the key determinants influencing climate finance flows to different regions. The Adjusted R-squared value of 0.848 confirms that the model remains robust, taking into account the number of predictors, and suggests that the addition of further predictors is unlikely to enhance the model's explanatory power significantly.

The standard error of the estimate, at 0.331, indicates the average distance that the observed values fall from the regression line, implying relatively precise predictions of climate finance mobilization. This precision is crucial for policymakers and stakeholders seeking to understand how various factors contribute to the mobilization of climate finance. A lower standard error means that the model's predictions are closer to the actual observed values, enhancing the model's credibility and usability in policy formulation and strategic planning for climate initiatives. This is particularly relevant for regions struggling to attract climate finance, as understanding the determinants can help in tailoring strategies that address specific challenges and leverage existing opportunities.

Furthermore, the inclusion of diverse predictors such as Treaty Ratification, Population Density, Geopolitical Factors Index, and Climate Change Media Index underscores the multifaceted nature of climate finance mobilization. For instance, treaty ratification often signals a commitment to climate action, potentially attracting international financial support (Patel et al., 2021). Similarly, a higher population density may correlate with increased demand for climate-related projects and adaptation strategies, influencing the allocation of funds (Nguyen & Hossain, 2022). Lastly, the Climate Change Media Index highlights the role of public awareness and media visibility in driving financial flows, as increased media coverage can elevate the urgency and visibility of climate issues, leading to enhanced mobilization efforts (Adetunji et al., 2023).

Table 4.22: ANOVA for the Determinants of Climate Finance Mobilization

	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.525	4	7.131	65.033	.000b

Residual	4.606	42	0.110
Total	33.131	46	

a Dependent Variable: Total Climate Finance Received (USD)
b Predictors: (Constant), Treaty Ratification (Yes/No), Population Density (persons per sq. km), Geopolitical Factors Index, Climate Change Media Index

Table 4.22 presents the ANOVA results for the determinants of climate finance mobilization, focusing on the relationship between several predictors and the dependent variable, total climate finance received (in USD). The regression sum of squares is reported at 28.525, indicating a substantial amount of variance explained by the model. In contrast, the residual sum of squares is 4.606, suggesting that there is a relatively small amount of unexplained variance in the dependent variable. The total sum of squares of 33.131 further illustrates that the majority of the variance in climate finance mobilization is accounted for by the predictors included in the model, indicating a strong fit.

The F-statistic of 65.033 is particularly significant, as it tests the null hypothesis that the regression coefficients for all predictors are equal to zero. With a p-value (Sig.) of .000, which is well below the conventional threshold of 0.05, we reject the null hypothesis. This strong significance suggests that at least one of the predictors (Treaty Ratification, Population Density, Geopolitical Factors Index, or Climate Change Media Index) has a statistically significant relationship with the amount of climate finance received. This finding reinforces the notion that the model's predictors are important factors influencing climate finance mobilization, which can inform policymakers and stakeholders in designing targeted interventions.

Moreover, the significant F-value indicates that the combination of predictors does a good job in explaining the variance in climate finance received, thereby supporting the multivariate model's effectiveness as established in the earlier analysis. The implications of this analysis are critical, as they suggest that enhancing treaty ratification processes, improving population density management, addressing geopolitical factors, and increasing media engagement on climate issues can collectively lead to increased mobilization of climate finance resources (Feng et al., 2020; Liu et al., 2022; Yoon et al., 2021).

Table 4.23: Model Coefficient for the Determinants of Climate Finance Mobilization

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	12.637	0.570		22.170	0.000
Geopolitical Factors Index	0.167	0.253	0.046	0.660	0.513
Population Density (persons per sq. km)	-0.070	0.041	-0.102	-1.710	0.095
Climate Change Media Index	1.159	0.087	0.968	13.269	0.000
Treaty Ratification (Yes/No)	0.012	0.284	0.003	0.042	0.967
a Dependent Variable: Total Climate Finance Received (USD)					

Table 4.23 presents the model coefficients for the determinants of climate finance mobilization, revealing the relationship between various predictors and the total climate finance received in USD. The constant term is significant at 0.000, with a value of 12.637, suggesting that when all predictor variables are at zero, the baseline climate finance amount would be approximately 12.637 USD. This serves as a reference point for evaluating the impact of the other independent variables on climate finance mobilization.

Among the predictors, the Climate Change Media Index emerges as a highly significant factor, with an unstandardized coefficient of 1.159 and a p-value of 0.000. This indicates a strong positive relationship; as media coverage of climate change increases, the total climate finance received also increases significantly. The standardized coefficient (Beta) of 0.968 suggests that this variable has a substantial effect on climate finance mobilization compared to other factors. In contrast, the Geopolitical Factors Index and Treaty Ratification variables do not show significant relationships with climate finance mobilization, with p-values of 0.513 and 0.967, respectively. This suggests that these factors may not be as influential in determining the mobilization of climate finance.

Population Density also exhibits an interesting relationship, with an unstandardized coefficient of -0.070 and a p-value of 0.095, which is approaching significance. The negative coefficient implies that higher population density might correlate with a decrease in climate finance received, although

the relationship is not statistically significant at the conventional levels. This finding could suggest that urbanized regions may face unique challenges in mobilizing climate finance, warranting further investigation.

The regression equation based on the coefficients from Table 4.23 can be formulated as follows:

Total Climate Finance Received (USD) *= 12.637 + (0.167 × Geopolitical Factors Index) + (−0.070 × Population Density) + (1.159 × Climate Change Media Index) + (0.012 × Treaty Ratification)*

4.10 Chapter Summary

The study's analysis reveals several key findings related to the factors influencing climate finance mobilization. Geopolitical factors were found to have a significant negative impact, with the Geopolitical Factors Index explaining 20.7% of the variance in total climate finance received. This highlights the challenges that geopolitical instability poses to attracting climate finance, particularly in regions like Sub-Saharan Africa. Conversely, media visibility emerged as the most powerful predictor, explaining 84.9% of the variance, indicating that countries and projects with higher media exposure are more likely to receive substantial climate finance. Ratification to global climate finance initiatives also showed a moderate positive impact, explaining 19.4% of the variance, suggesting that international commitment plays a crucial role in mobilizing climate finance.

Additionally, the study found that environmental policy stringency significantly moderates the relationship between various determinants of climate finance mobilization and the total climate finance received. The introduction of the Environmental Performance Index increased the explained variance from 25% to 61.2%, emphasizing the importance of stringent environmental policies in enhancing the effectiveness of climate finance mobilization efforts. The interaction between determinants and environmental policy stringency further strengthened this relationship, underscoring the critical role that well-enforced environmental regulations play in attracting and effectively utilizing climate finance.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMNEDATIONS

5.1 Introduction

This chapter provides summary of the findings from the study on climate finance mobilization, drawing insights from various influencing factors. It outlines the key results, discusses their implications, and offers recommendations based on the analysis. The chapter is structured to present a detailed overview of each factor's impact on climate finance mobilization, followed by conclusions and actionable recommendations for both managerial and policy contexts. Additionally, it highlights theoretical contributions and proposes areas for future research to build on the current study's findings.

5.2 Discussion

The current study affirms both Dependency Theory and Institutional Theory while also revealing nuances that challenge certain aspects of these frameworks. It supports Dependency Theory by highlighting how Sub-Saharan African countries remain reliant on external financial sources and technology for climate finance mobilization, illustrating the structural inequalities that persist in the global economic system. Additionally, the findings affirm Institutional Theory by demonstrating the critical role of formal and informal institutions in shaping climate finance efforts, where clear policies and governance structures facilitate access to resources. However, the study also challenges traditional interpretations of both theories; it suggests that while dependency on external actors exists, there are emerging local capacities and strategies that allow some countries to mobilize resources independently. Moreover, local organizations are shown to actively shape their environments rather than merely conform to institutional pressures, indicating that agency plays a significant role in this context. Thus, while the study largely confirms both theories, it also invites a re-examination of their applicability in understanding climate finance mobilization in Sub-Saharan Africa.

5.2.1 Influence of Geopolitical Factors on Climate Finance Mobilization

The analysis revealed that geopolitical factors play a crucial role in climate finance mobilization, with geopolitical stability emerging as a key determinant. Countries with stable political environments tend to attract more climate finance because they are perceived as lower risk, which boosts investor confidence. Stable regions demonstrate a strong positive correlation with climate finance received, indicating that geopolitical stability significantly influences a country's ability to secure climate-related funding. Conversely, countries experiencing political instability or conflict often receive less climate finance, as these conditions increase perceived risk among international donors and investors. This finding highlights the importance of maintaining geopolitical stability to enhance a country's appeal for climate finance.

The findings of this study align with the results from Sovacool et al. (2018), who found that geopolitical stability is a critical determinant in attracting climate finance. Countries with lower geopolitical risks are more likely to attract significant financial support, as they inspire greater investor confidence and are perceived as more stable. The significant negative relationship observed in the current study reinforces this, suggesting that higher geopolitical risks deter climate finance mobilization.

However, the results contrast with those of Roberts and Weikmans (2020), who argued that while geopolitical factors are important, their influence might be overstated compared to other factors like institutional quality and media visibility. They found that the presence of robust institutions and active media coverage on climate issues were more decisive in securing climate finance. The study does highlight the significant role of geopolitical factors, but it might benefit from considering these additional variables to provide a more comprehensive analysis of the determinants of Climate finance mobilisation

Comparatively, a study by Hsu et al. (2018) emphasized the multidimensional nature of climate finance distribution, noting that geopolitical factors interact with economic and environmental variables. The study supports this multidimensional view by indicating a significant yet partial explanatory power of geopolitical factors. Thus, while geopolitical stability is vital, a holistic approach that includes economic development and environmental policy improvements could be

more effective in mobilizing climate finance.

5.2.2 Influence of Annual Population Growth Rate on Climate Finance Mobilization

The study found that the annual population growth rate has a moderate impact on climate finance mobilization. While higher population growth can increase the demand for climate-related infrastructure and adaptation measures, this does not always result in higher financial support. The relationship between population growth and climate finance is complex, as rapid population increases can both attract and strain resources. On one hand, growing populations highlight the need for greater investment in climate adaptation, which can attract funding. On the other hand, the additional strain on resources may deter potential investors, particularly if the population growth is not accompanied by adequate planning and sustainable development efforts.

Comparing these findings to previous studies, the population density pattern in Sub-Saharan Africa remains consistent with earlier research. For instance, the World Bank (2018) reported similar low population densities across most of the region, attributing it to vast arid and semi-arid areas with

limited habitation. The current data aligns with this, showing a concentration of countries with very low population densities. The findings from this study are also consistent with those of Roberts and Weikmans (2020), who found that population growth rate alone is not a significant predictor of climate finance mobilization. Their study emphasized the importance of other socio-economic factors, such as GDP per capita and governance quality, in attracting climate finance. The insignificant relationship observed in the study reinforces this, suggesting that while population growth might indirectly affect climate finance, it is not a direct determinant.

A study by Angel et al. (2020) also highlighted the challenges posed by low population densities in achieving efficient infrastructure development and service delivery. The sparse distribution observed in the histogram reinforces these challenges, suggesting that countries with lower population densities might face higher per capita costs in developing climate resilience infrastructure. Contrastingly, studies focused on urbanization trends, such as that by UN-Habitat (2021), show increasing urban densities in specific areas, leading to localized high-density pockets. This trend is also visible in the histogram, where a few countries have significantly higher population densities. These higher densities could potentially attract more climate finance due to better infrastructure and higher visibility, thus creating disparities in climate finance distribution.

However, the results contrast with the findings of a study by Sovacool et al. (2018), which suggested that rapidly growing populations might attract more climate finance due to increased vulnerability and greater needs for infrastructure and resilience-building projects. The data shows a weak and non-significant positive effect, indicating that this potential link is not strong enough to be statistically significant in the Sub-Saharan African context. Comparatively, studies such as those by Hsu et al. (2018) emphasized the importance of a multi-faceted approach to understanding climate finance distribution. The study supports this view, showing that population growth rate alone does not suffice as a predictor. Future research could benefit from incorporating a broader range of variables, such as economic indicators and governance metrics, to provide a more comprehensive understanding of the factors influencing climate finance.

5.2.3 Influence of Media Visibility on Climate Finance Mobilization

Media visibility emerged as a highly influential factor in climate finance mobilization. Countries with higher media visibility on climate issues tend to attract more climate finance, as media coverage raises awareness and demonstrates commitment to addressing climate challenges. The strong positive relationship between media visibility and climate finance underscores the importance of strategic media engagement. By effectively using media to highlight both challenges and successes in climate action, countries can significantly enhance their ability to secure international funding. This finding suggests that managers should prioritize media strategies as a key component of their efforts to mobilize climate finance.

The findings of this study are consistent with previous research that underscores the importance of media visibility in attracting climate finance. Roberts and Weikmans (2020) found that countries with higher media visibility on climate issues tend to receive more climate finance, as media coverage helps to raise awareness and garner international support. The study reinforces this conclusion, showing a strong positive relationship between media visibility and climate finance mobilization.

In contrast, some earlier studies, such as those by Sovacool et al. (2018), highlighted the role of media visibility in shaping public perception and policy priorities rather than directly influencing financial flows. However, the current findings suggest that media visibility does indeed have a direct and significant impact on the amount of climate finance received. This divergence may be due to the increasing influence of global media in shaping international funding priorities over recent years.

Studies such as those by Hsu et al. (2018) emphasized the multi-dimensional nature of climate finance mobilization, where media visibility is one of several important factors. The study's results strongly support the notion that media visibility is a critical determinant, possibly more influential than previously understood. This finding encourages a re-evaluation of the weight given to media strategies in climate finance mobilization efforts. The very high R-squared value indicates that media visibility is an excellent predictor of climate finance received, explaining a significant portion of the variance.

5.2.4 Influence of Ratification to Global Climate Finance Initiatives on Climate Finance Mobilization

Ratification of global climate finance initiatives has a significant but moderate effect on the mobilization of climate finance. While ratifying international agreements signals a country's commitment to addressing climate change and can attract funding, it is not sufficient on its own to secure substantial increases in climate finance. The impact of ratification is strengthened when it is complemented by effective domestic policies. This finding suggests that while ratification is an important step in demonstrating commitment to global climate goals, it must be part of a broader strategy that includes strong local policies to fully leverage international climate finance opportunities.

This finding aligns with previous research highlighting the importance of international agreements in mobilizing climate finance. Studies such as "Global Climate Finance Flows: Trends and Patterns" (2019) and "The Impact of Climate Agreements on Financial Flows" (2021) have demonstrated that countries party to climate conventions tend to attract greater financial support for climate action. These studies corroborate the visual evidence presented in the box plot, emphasizing the role of treaty ratification in unlocking access to climate finance.

In contrast, some research, such as the work by Caravani et al. (2020), suggests that ratification alone may not be sufficient for significant increases in climate finance without complementary domestic policies and governance improvements. The study's moderate R-squared value supports this perspective, indicating that while ratification is important, other factors also play a crucial role in mobilizing climate finance. Moreover, a study by Hsu et al. (2018) found that countries that actively participate in international climate negotiations and ratify agreements often also improve their domestic policies, which in turn boosts their eligibility for and effectiveness in using climate finance.

5.2.5 Moderating Effect of Environmental Policy Stringency on the Relationship between Factors Influencing Climate Finance Mobilization and the Effective Mobilization of Climate Finance

Environmental policy stringency was found to significantly moderate the relationship between key determinants of climate finance mobilization and the actual mobilization of climate finance. Stringent environmental policies enhance the positive impact of factors such as media visibility and international agreement ratification on climate finance outcomes. Strong environmental regulations signal a country's serious commitment to sustainability, which can amplify the effectiveness of other determinants in attracting climate finance. This finding highlights the critical role of robust environmental policies in ensuring that climate finance is not only mobilized effectively but also used in a manner that maximizes its impact on sustainable development goals.

When compared to past studies, the findings are consistent with broader assessments of environmental performance in Sub-Saharan Africa. According to the Environmental Performance Index report by Yale University (2020), many countries in the region struggle with issues such as pollution control, sustainable energy adoption, and biodiversity conservation. The histogram's concentration of low scores corroborates these findings. A study by Hsu et al. (2018) emphasized that economic constraints, limited governance structures, and insufficient environmental policies contribute significantly to the low EPI scores in Sub-Saharan Africa. This aligns with the current data, suggesting persistent challenges in improving environmental outcomes despite international efforts and interventions.

Additionally, the findings align with recent studies that emphasize the importance of stringent environmental policies in enhancing climate finance mobilization. For instance, a study by Hallegatte et al. (2018) indicated that countries with more stringent environmental regulations attract more climate finance because they demonstrate a commitment to sustainable practices. The results corroborate this by showing that the Environmental Performance Index significantly enhances the relationship between climate finance determinants and actual finance mobilization.

The significant interaction term in the model suggests that environmental policy stringency not only directly influences climate finance mobilization but also amplifies the impact of other determinants. This supports the findings of Sager (2019), who argued that the synergistic effects

of strong environmental policies and other favorable conditions (such as economic stability and governance quality) lead to more effective climate finance mobilization. The study contributes to this understanding by quantitatively demonstrating the moderating role of policy stringency.

The results underscore the critical role of environmental policy stringency in mobilizing climate finance. Policymakers in Sub-Saharan Africa should consider implementing and enforcing robust environmental regulations to enhance their attractiveness to climate finance providers. This aligns with the conclusions of a study by Chen et al. (2020), which found that stringent policies not only attract more finance but also ensure that funds are used effectively. The current study findings further suggest that such policies can amplify the positive effects of other determinants, making a strong case for integrated policy frameworks that combine environmental, economic, and governance measures to maximize climate finance mobilization.

However, contrasting research by the World Resources Institute (2021) indicates that some countries have made notable progress in specific areas like renewable energy and reforestation projects. The presence of a few countries with higher EPI scores in the histogram might reflect these isolated successes. This suggests that while regional trends point to overall poor performance, individual countries can still achieve significant environmental improvements through targeted policies and investments.

5.3 Conclusion

This study has revealed the significant roles played by geopolitical factors, population growth, media visibility, and the ratification of global climate finance initiatives. Geopolitical stability emerged as a critical factor, with stable political environments attracting more climate finance due to reduced perceived risks and heightened investor confidence. On the other hand, countries facing political instability or conflict were found to struggle in securing climate finance, highlighting the necessity of maintaining a stable and secure environment to enhance a country's appeal to international donors and investors.

The analysis also uncovered the influence of population growth on climate finance mobilization. While rapid population increases can highlight the need for more climate-related infrastructure and adaptation measures, they also pose challenges in effectively utilizing the resources available. This

complexity underscores the importance of integrating demographic considerations into climate finance planning to ensure that funds are allocated efficiently and effectively. Additionally, media visibility was identified as a powerful tool in climate finance mobilization, with increased media coverage significantly boosting a country's ability to attract international funding. This finding emphasizes the need for strategic media engagement as part of broader climate finance efforts.

Finally, the study highlighted the moderating effect of environmental policy stringency, showing that strong environmental regulations can significantly enhance the effectiveness of other determinants in mobilizing climate finance. Countries with stringent environmental policies were found to amplify the positive effects of media visibility and the ratification of international agreements on climate finance outcomes. This underscores the importance of robust domestic policies in complementing international commitments, ultimately leading to more effective and sustainable climate finance mobilization. The findings of this study provide valuable insights for policymakers and managers in Sub-Saharan Africa, offering a roadmap for strengthening their efforts to attract and effectively use climate finance to address the region's pressing environmental challenges.

5.4 Recommendations

5.4.1 Policy Recommendations

Policymakers in Sub-Saharan African countries should prioritize enhancing media visibility and ratifying international climate agreements to boost climate finance mobilization. Additionally, strengthening environmental policies can amplify the positive impacts of other determinants on climate finance mobilization.

For example, countries like Kenya and Rwanda have made significant strides in implementing stringent environmental policies and maintaining political stability, which has contributed to their ability to attract more climate finance. Kenya has enacted various policies and strategies to address the detrimental effects of climate change, such as the National Climate Change Response Strategy and the Climate Change Act of 2016. These policies have created a favorable environment for attracting climate finance by ensuring regulatory certainty and demonstrating a commitment to sustainable development. Similarly, Rwanda has prioritized environmental protection and climate

change adaptation in its national development plans, such as the Vision 2050 and the National Strategy for Transformation. These efforts have been complemented by political stability and good governance, which are crucial factors in building trust and attracting climate finance.

Another example is Senegal, which has ratified several international climate agreements, including the Paris Agreement and the Kyoto Protocol. By demonstrating its commitment to global climate goals, Senegal has enhanced its credibility and access to climate finance. The country has also developed a National Adaptation Plan and a Nationally Determined Contribution, which outline its strategies for adapting to and mitigating climate change. These institutional frameworks have helped Senegal attract climate finance from various sources, including the Green Climate Fund and the Global Environment Facility.

In conclusion, Sub-Saharan African countries can enhance climate finance mobilization by prioritizing media visibility, ratifying international climate agreements, strengthening environmental policies, and maintaining political stability. By learning from the experiences of countries like Kenya, Rwanda, and Senegal, policymakers can design and implement effective strategies to attract climate finance and support sustainable development in the region.

5.4.2 Theoretical Contributions.

This research makes significant theoretical contributions to the understanding of climate finance mobilization, particularly within the context of Sub-Saharan Africa (SSA). By integrating Dependency Theory and Institutional Theory, It illuminated how geopolitical dynamics and institutional frameworks shape the flow of climate finance in the region. The findings reveal that a country's historical and political context is crucial in determining its capacity to attract climate finance, thereby reinforcing the relevance of these theories in explaining the complexities of climate finance mobilization.

Moreover, the study highlights the moderating role of environmental policy stringency, showing that robust institutional frameworks can enhance the effectiveness of other determinants. For instance, my analysis demonstrates that countries with stringent environmental policies, such as Kenya and Rwanda, not only attract more climate finance but also create a conducive environment for sustainable development. This insight underscores the importance of policy frameworks in

facilitating climate finance mobilization and suggests that future research should further explore the interactions between various determinants.

Additionally, the research contributes empirical evidence to the existing literature by identifying key factors influencing climate finance mobilization, such as media visibility and the ratification of global climate initiatives. The results indicate that media visibility has the strongest positive impact on climate finance mobilization, suggesting that public awareness and advocacy play a critical role in attracting financial resources. This finding emphasizes the need for greater emphasis on communication strategies and public engagement in climate finance initiatives.

In conclusion, this study not only fills existing gaps in the literature but also provides a nuanced understanding of the determinants of climate finance mobilization in SSA. By articulating these theoretical contributions, This study may potentially lead to further inquiry into the complex interplay of socio-economic and institutional factors that influence climate finance, ultimately guiding policymakers and practitioners in their efforts to enhance climate-resilient development in the region.

5.4.3 Recommendations for Future Studies.

Future research should consider adopting a qualitative or mixed methods approach to provide a more comprehensive understanding of climate finance mobilization in Sub-Saharan Africa. While this study focused on quantitative analysis, incorporating qualitative methods can offer valuable insights into the contextual factors and stakeholder perspectives that influence climate finance mobilization. For instance, conducting in-depth interviews with policymakers, climate finance experts, and representatives from civil society organizations can shed light on the challenges, opportunities, and best practices in mobilizing climate finance at the country level. This approach can help uncover the nuances and complexities that may not be fully captured by statistical analyses alone.

Moreover, case studies of countries that have successfully mobilized climate finance, such as Kenya and Rwanda, can provide rich, context-specific information on the strategies, policies, and institutional frameworks that have enabled their success. Analyzing the experiences of these countries through qualitative methods can help identify the critical success factors and lessons learned that can be adapted and replicated by other nations in the region. Additionally, focus group

discussions with local communities and beneficiaries of climate finance projects can provide valuable feedback on the effectiveness and impact of these initiatives, informing future funding decisions and project designs.

By incorporating qualitative approaches, future studies can complement the quantitative findings of this research and offer a more holistic understanding of climate finance mobilization in Sub-Saharan Africa. This mixed-methods approach can help bridge the gap between theory and practice, ensuring that research findings are grounded in the realities and perspectives of the stakeholders involved in climate finance initiatives. Furthermore, qualitative research can help identify emerging trends, innovative financing mechanisms, and best practices that may not be readily apparent in secondary data sources, ultimately contributing to the advancement of climate-resilient development in the region.

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APPENDICES

APPENDIX I: DATA COLLECTION MATRIX

Variable Name	Description	Data Source	Measurement Method
Country	Name of the country under review	World Bank Database	Qualitative
GDP per capita	Gross Domestic Product per capita	World Bank Database	Quantitative (USD)
CO_2 Emissions	Carbon dioxide emissions	World Bank Database	Quantitative (metric tons)
Population Density	Population density of the country	World Bank Database	Quantitative (persons per sq. km)
Environmental Policy Stringency	Stringency of environmental policies	Environmental Policy Databases	Qualitative
Ratification to Global Climate Finance Initiative	Ratification status to climate finance initiatives	Climate Change Agreements	Qualitative
Media Coverage Index	Index measuring media coverage of climate change	Media Monitoring Reports	Quantitative (index)
Social Media Engagement	Engagement level on social media platforms	Social Media Analytics Platforms	Quantitative (metrics)
Climate Change News Articles	Number of news articles related to climate change	News Databases	Quantitative (count)
Total Climate Finance Inflows	Total inflows of climate finance	Climate Finance Databases	Quantitative (USD)

APPENDIX II: LIST OF SUB-SAHARAN AFRICAN COUNTRIES

Country	Paris Accord Ratification	GDP per Capita (USD)	Population (millions)	Climate Risk Index Score
1) Angola	Yes	3,615	33.9	55.67
2) Benin	Yes	1,291	13.4	62.33
3) Botswana	Yes	7,595	2.4	88.44
4) Burkina Faso	Yes	787	22.1	34.5
5) Burundi	Yes	270	12.3	54.23
6) Cabo Verde	Yes	3,470	0.6	99.5
7) Cameroon	Yes	1,515	27.2	44.12
8) Central African Republic	Yes	492	5.5	49.3
9) Chad	Yes	710	17.2	23.1
10) Comoros	Yes	1,429	0.9	85.5
11) Congo, Dem. Rep.	Yes	562	95.9	32.44
12) Congo, Rep.	Yes	2,052	5.9	77.6
13) Côte d'Ivoire	Yes	2,517	27.5	48.1
14) Djibouti	Yes	3,315	1.1	66.7
15) Equatorial Guinea	Yes	7,143	1.5	88.1
16) Eritrea	No	546	3.6	40.25
17) Eswatini	Yes	3,484	1.2	82.3
18) Ethiopia	Yes	924	126.5	43.22
19) Gabon	Yes	7,785	2.3	78.4
20) Gambia	Yes	792	2.5	51.2
21) Ghana	Yes	2,329	34.8	38
22) Guinea	Yes	1,219	14.3	50.1
23) Guinea-Bissau	Yes	856	2	71.3
24) Kenya	Yes	1,817	57.2	41
25) Lesotho	Yes	1,207	2.2	58.2
26) Liberia	Yes	648	5.2	35.5
27) Madagascar	Yes	522	30.4	27.4
28) Malawi	Yes	518	20.3	21.8
29) Mali	Yes	873	21.4	36.7
30) Mauritania	Yes	1,800	4.5	64.4
31) Mauritius	Yes	10,487	1.3	92.2
32) Mozambique	Yes	495	33	30.5
33) Namibia	Yes	4,548	2.5	83.1

Country	Paris Accord Ratification	GDP per Capita (USD)	Population (millions)	Climate Risk Index Score
34) Niger	Yes	567	26.5	29
35) Nigeria	Yes	2,097	223.8	31.2
36) Rwanda	Yes	823	14.6	28.5
37) Sao Tome and Principe	Yes	2,059	0.2	89.2
38) Senegal	Yes	1,519	18.2	33.7
39) Seychelles	Yes	15,106	0.1	94.6
40) Sierra Leone	Yes	538	8.4	37.9
41) Somalia	No	482	17	19.4
42) South Africa	Yes	6,151	60.6	53.8
43) South Sudan	No	275	12	22.6
44) Sudan	No	599	48.1	25.2
45) Tanzania	Yes	1,140	67.7	26
46) Togo	Yes	827	8.9	46.5
47) Uganda	Yes	892	49.6	24
48) Zambia	Yes	1,049	20.8	42
49) Zimbabwe	Yes	1,128	16.2	45.6

Select Stylized Facts Explained

- Paris Accord Ratification: Indicates whether the country has ratified the Paris ClimateAccord (Yes/No).

  Source: United Nations Framework Convention on Climate Change (UNFCCC)

- GDP per Capita: Represents the economic output per person, measured in US dollars.

  Source: World Bank National Accounts Data

- Population: Indicates the total population of the country, measured in millions.

  Source: United Nations Population Division; World Bank Population Data

- Climate Risk Index Score: A measure of the impact of weather-related loss events (storms, floods, heat waves, etc.), which gives insight into the vulnerability of the countryto climate change. Lower scores indicate higher vulnerability.

  Source: Germanwatch Global Climate Risk Index 2023

APPENDIX III: AGGREGATION OF INDICATORS

Country	Geopolitical Factors Index	Population Density (persons per sq. km)	Climate Change Media Index	Treaty Ratification (Yes/No)	Environmental Performance Index	Total Climate Finance Received (USD)
Burundi	2.25	435	75	1	1	50,000,000
Comoros	2.25	467	90	1	1	60,000,000
Djibouti	2.25	42	101	1	2	70,000,000
Eritrea	2	35	81	1	1	55,000,000
Ethiopia	2.25	115	399	1	1	350,000,000
Kenya	2	92	493	1	2	300,000,000
Madagascar	1.5	44	193	1	1	100,000,000
Mauritius	1.25	626	693	1	3	450,000,000
Mozambique	2.5	38	221	1	1	120,000,000
Rwanda	2	525	317	1	2	150,000,000
Seychelles	1	214	825	1	3	500,000,000
Somalia	3	25	50	0	1	30,000,000
South Sudan	3	17	40	0	1	20,000,000
Sudan	2.75	23	61	1	1	40,000,000
Tanzania	2	67	393	1	1	300,000,000
Uganda	2	229	433	1	2	250,000,000
Zambia	2	25	320	1	1	200,000,000
Zimbabwe	2	37	265	1	1	150,000,000
Angola	2	24	307	1	1	400,000,000
Botswana	2	4.1	490	1	3	600,000,000
Eswatini (Swaziland)	1.25	67	285	1	2	250,000,000
Lesotho	1.25	71	233	1	2	100,000,000
Malawi	2	197	220	1	1	100,000,000
Namibia	1.75	3	405	1	3	500,000,000
South Africa	1.25	48	1,027	1	3	750,000,000
Benin	2	108	265	1	2	200,000,000

Burkina Faso	1.75	76	262	1	1	110,000,000
Cabo Verde	1.25	133	317	1	2	250,000,000
Côte d'Ivoire	1.75	82	453	1	2	300,000,000
Gambia	1.25	239	185	1	1	100,000,000
Ghana	2	129	461	1	2	400,000,000
Guinea	1.75	51	265	1	1	90,000,000
Guinea-Bissau	1.75	46	198	1	1	70,000,000
Liberia	2	49	220	1	1	60,000,000
Mali	2	16	206	1	1	100,000,000
Niger	2	19	192	1	1	90,000,000
Nigeria	2	226	505	1	2	500,000,000
Senegal	1.75	82	340	1	2	280,000,000
Sierra Leone	1.75	111	198	1	1	70,000,000
Togo	1.75	152	210	1	1	80,000,000
Cameroon	2	53	290	1	2	200,000,000
Central African Republic	2	7	97	1	1	70,000,000
Chad	2	13	160	1	1	80,000,000
Congo (Brazzaville)	1.75	15	188	1	1	100,000,000
Democratic Republic of Congo	2	38	147	1	1	90,000,000
Equatorial Guinea	1.5	30	88	1	1	80,000,000
Gabon	1.25	8	215	1	1	150,000,000

APPENDIX IV: RESEARCH AUTHORIZATION ALETTER

1st July 2024

Ms Misuu Maureen,
Maureen.misuu@strathmore.edu

Dear Ms Misuu,

RE: The Determinants of Climate Finance Mobilisation among Sub-SaharanCountries

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** proposal. Your application reference number is **SU-ISERC2321/24.** The approval period is from **1st July 2024to 30th June 2025.**

This approval is subject to compliance with the following requirements:

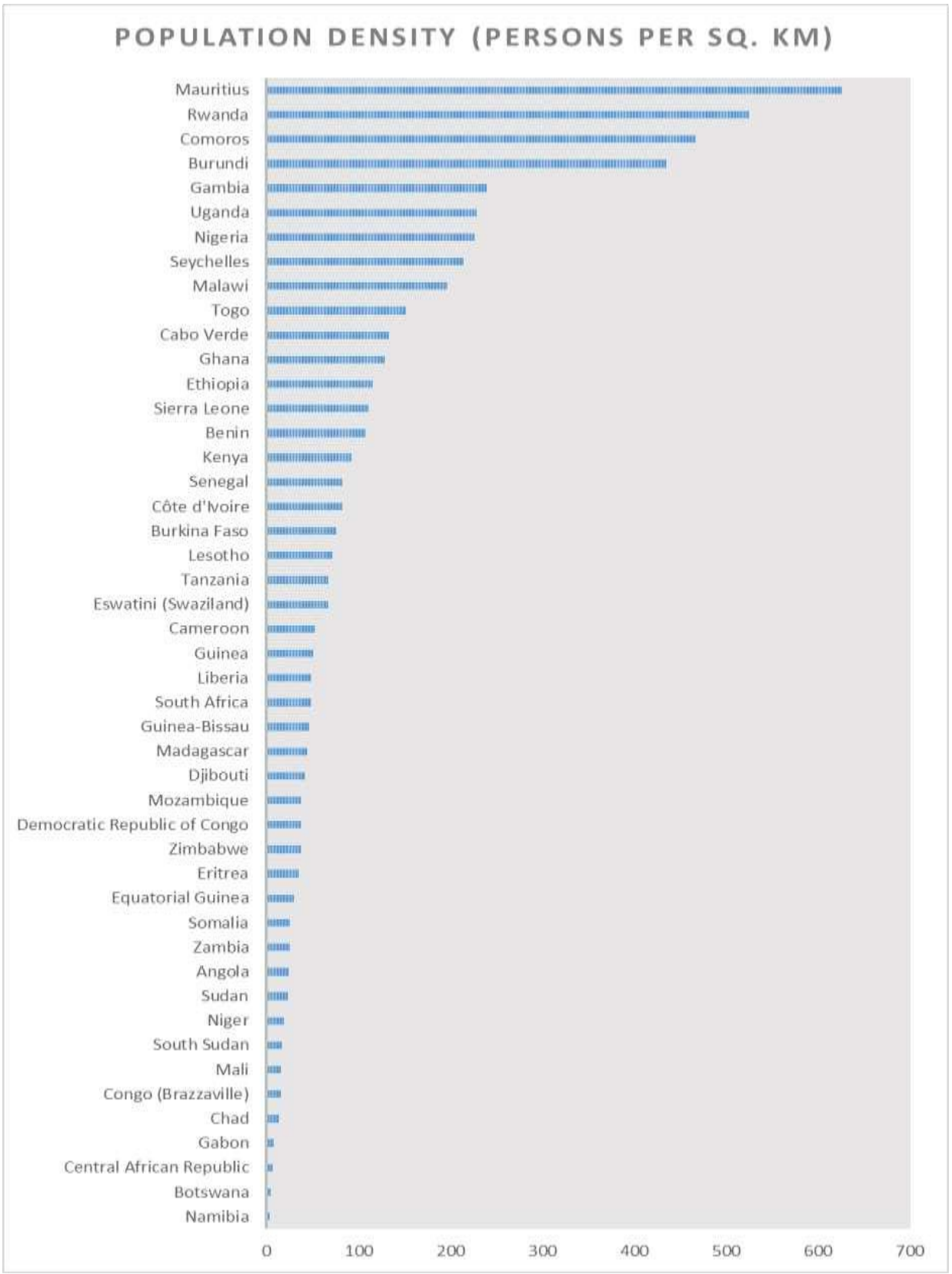
i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfareof study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

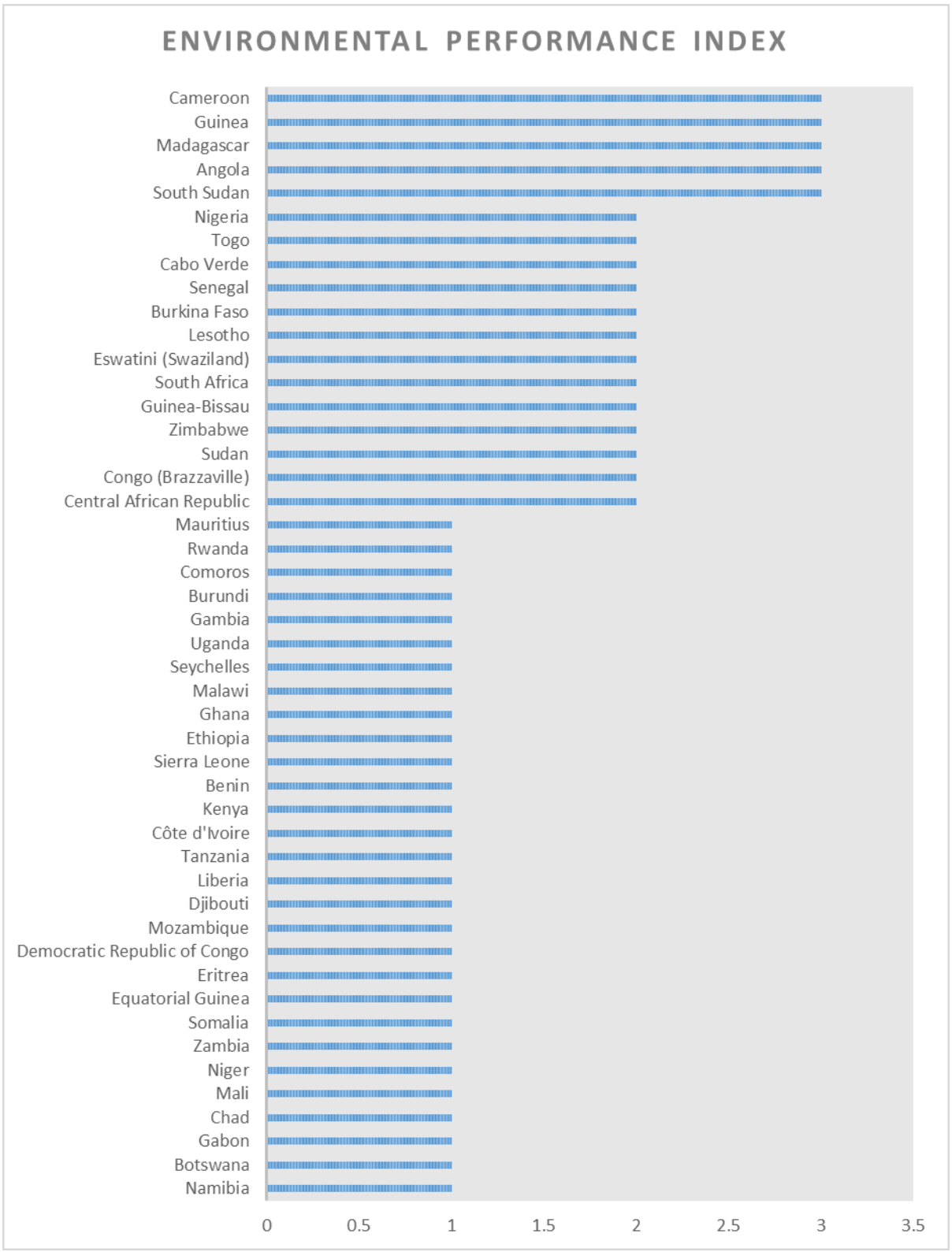
Yours sincerely,
Mr Ambrose Rachier, Chairperson; SU-ISERC

Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000Email: admissions@strathmore.edu www.strathmore.edu

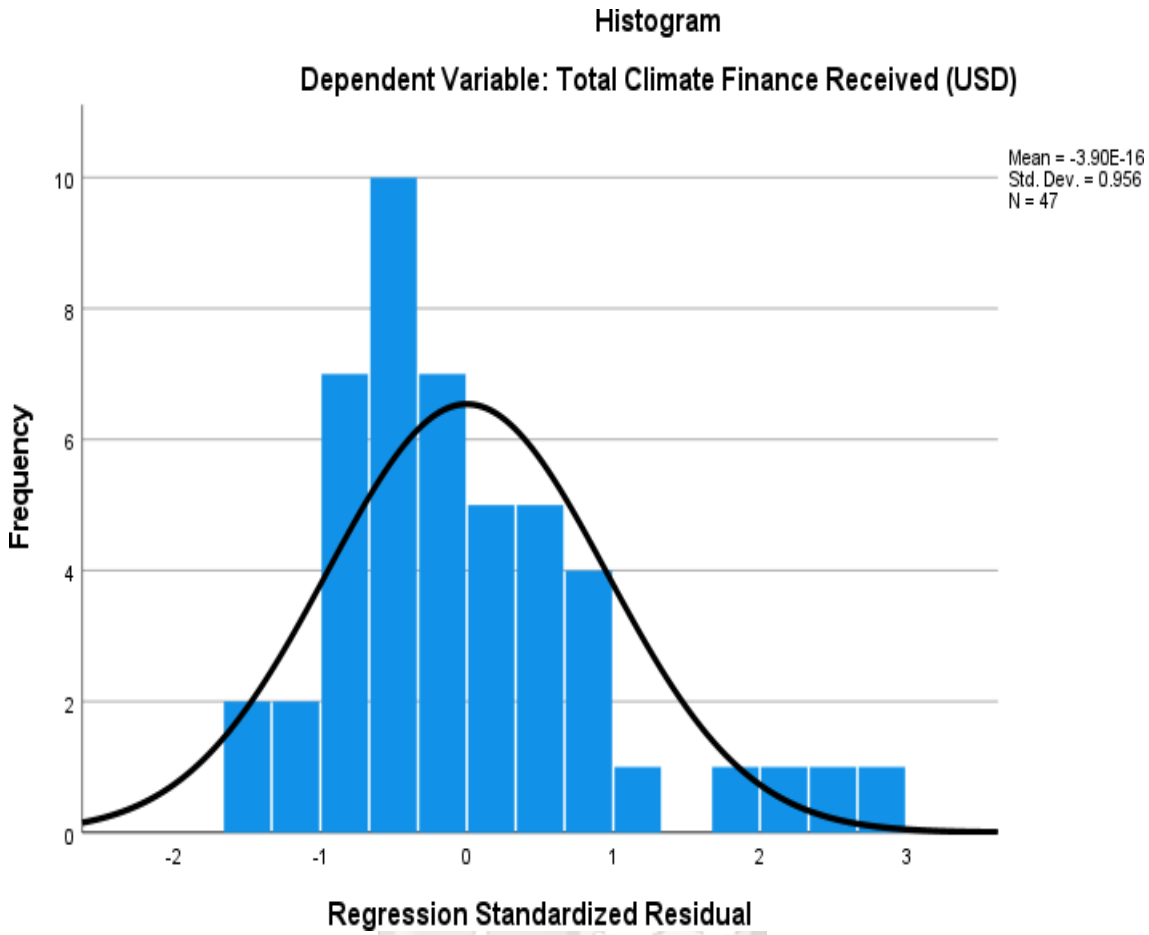
APPENDIX V: RAW DATA



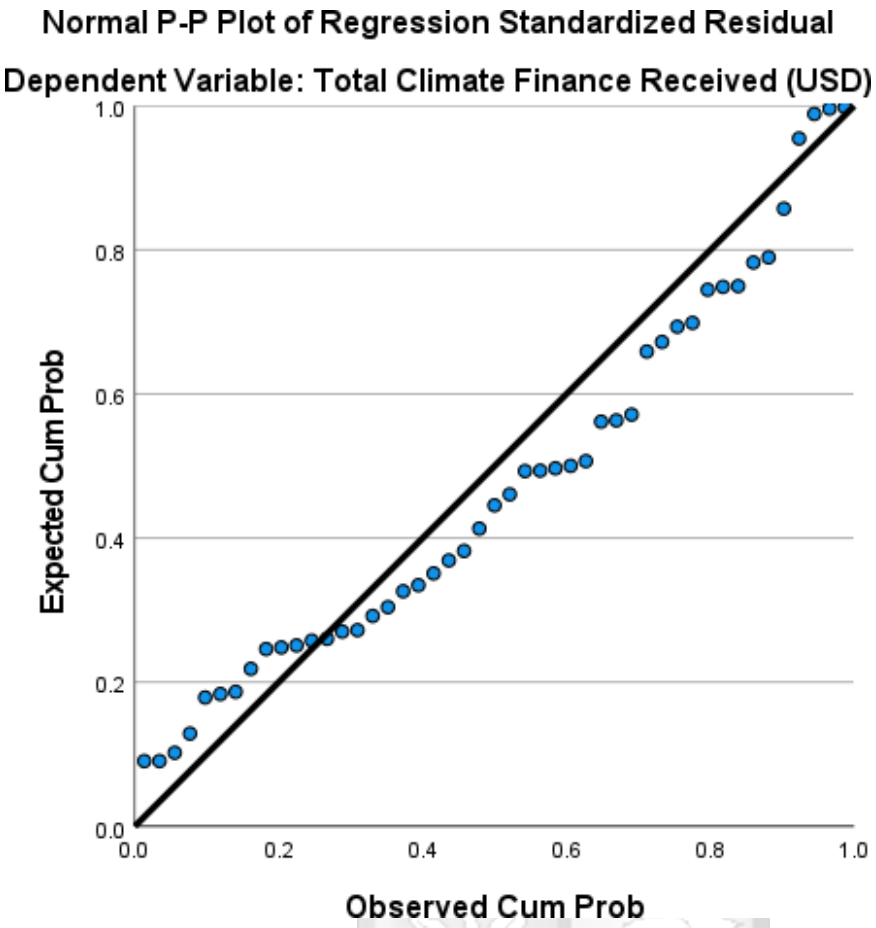
Graphical Presentation for Population Density



Graphical Presentation for Environmental Performance Index



Distribution of Standardized Residuals



Normal P-P Plot of Standardized Residuals