CHAPTER I

INTRODUCTION

1.1 Background to the Study

Financial stability plays a pivotal role in fostering economic development and growth, particularly in Sub-Saharan Africa (SSA), where significant barriers persist in the form of destitution and limited availability of financial services (Oanh, 2023). Financial stability is defined as the ability of financial systems to withstand and recuperate disruptions while maintaining critical operations (Kulu & Osei, 2024). This is a crucial determinant that facilitates efficient distribution of resources, access to credit, and accumulation of savings (Athari, 2024; Harun & Gunadi, 2022). The safeguarding effect of stability prevents financial crises from wreaking havoc on low-income economies, including those in Sub-Saharan Africa (World Bank Group, 2022).

A significant concern that demands urgent consideration is the limited accessibility of financial services to a significant portion of the SSA population (Cerchia & Spătariu, 2022; Ozili, 2024). Despite having a population of over one billion, the proportion of SSA residents with official accounts is merely 43%, which is in stark contrast to the global average of 69% (Tsuchiya, 2023; World Bank Group, 2022). In addition, Demirgüç-Kunt et al. (2022) and the World Bank Group (2022) stated that the absence of financial inclusion hinders economic growth and perpetuates poverty, thus creating a self-informing cycle. Recently, initiatives promoting financial inclusion and literacy have emerged as viable alternatives (Singh & Mallick, 2024). Financial literacy programs empower individuals to effectively oversee their monetary affairs, whereas financial inclusion initiatives aim to expand the reach of financial services for individuals who do not have bank accounts or restricted access to banking facilities (Aman et al., 2024). Undoubtedly, these endeavours have contributed to the advancement and prosperity of low-income countries, specifically those located in SSA (Adedokun & Ağa, 2021; Van et al., 2021).

A significant concern that demands urgent consideration is the limited accessibility of financial services to a significant portion of the SSA population (Osei, 2021). With few people having official accounts, exploring alternative financial service delivery mechanisms is crucial (Zhang et al., 2023). FinTech has emerged as a promising solution that offers innovative and accessible financial products and services through mobile phones and other digital platforms (Demir et al., 2022; Zetzsche & Buckley, 2019). This study investigates the potential of Fintech to promote financial inclusion, particularly for marginalised communities in SSA.

However, climate change has emerged as a novel threat that has a significant impact on SSA's financial stability (Jebli & Hakimi, 2023; Ngalawa & Derera, 2023). Physical risks, including infrastructure damage agricultural disasters, and transition risks stemming from policy changes and regulations, have significant economic and financial ramifications (World Bank, 2021). Similarly, Demirgüç-Kunt et al. (2022) argued that the vulnerabilities of SSA to severe weather phenomena and their heavy dependence on agriculture exacerbate these risks. This study investigates five key relationships, assesses their influence on financial stability, and delineates a sustainable and viable course of action. While prior research has acknowledged the positive influence of financial literacy on inclusion (Hwang & Park, 2023), there remains a dearth of detailed examinations of the potential moderating factors that may govern this association.

Beyond the acknowledgement of this relationship, this study concentrates on tailoring financial literacy initiatives to specific circumstances and demographic groups in SSA. Moreover, to maximise the effectiveness of financial inclusion initiatives, it is vital to have a detailed understanding of the diverse needs and barriers faced by different demographic groups in SSA, such as farmers, women, and micro-entrepreneurs. These groups often face unique challenges in accessing financial services because of factors such as limited formal documentation, geographical remoteness, and gender-based discrimination (Saluja et al., 2023). Consequently, this promotes prudent financial management and augments financial stability through the increased participation of enterprises and individuals in the official financial system, thereby facilitating access to vital services (Haridh, 2022). The situation is not different in other continents such as Asia. For instance, in Indonesia, farming communities are not yet seen as an attractive segment for traditional financial institutions because of the perceived high credit risks. Fintech, however, fintech has the potential to bridge this gap by offering alternative credit assessment methods and fostering financial inclusion for these communities (Rahadiantino & Rini, 2021).

Financial inclusion has considerable potential as an instrument to mitigate the adverse effects of climate change (He et al., 2022). Organisations and individuals gain the ability to adapt to and mitigate the adverse effects of climate change by promoting the accessibility of financial products and services, including digital financial services and microfinance (Thakur and Gautam, 2023). Thus, this study examines the potential contributions of different forms of financial inclusion to the formulation of climate change-resilient strategies in SSA (Riasanow et al., 2021). For example, the implementation of microloan programmes could enable agricultural practitioners to allocate financial resources towards the procurement of irrigation systems or drought-resistant crops. Similarly, digital platforms have the potential to optimise the coordination of disaster relief efforts (Zhai et al., 2023). By advocating for financial inclusion, it is possible to foster the growth of communities that are better equipped to navigate the challenges posed by climate change, thereby safeguarding financial stability in the long run.

There are several facets to the relationship between economic development and climate change. While economic expansion may offer potential solutions to climate challenges, it can also contribute to the worsening of environmental conditions and the emission of greenhouse gases. Therefore, the study also examines the development of economic growth strategies in SSA that could successfully reconcile climate objectives with development objectives, thereby reducing the negative financial stability impacts of climate change (Brunetti et al., 2021; Mhlanga, 2022a). This involves promoting sustainable practices, directing financial investments towards renewable energy, and fostering climate-sensitive agricultural methods (Monem, 2021; Raihan et al., 2022). Through the implementation of these measures, it is possible to ensure that economic growth does not compromise ecological sustainability, thereby laying the groundwork for long-lasting fiscal stability in the region (Cao et al., 2022; Raihan et al., 2022).

Furthermore, the implementation of technology in the provision of financial services has surfaced as a potential driver of financial stability (Boot et al. 2021).

FinTech has the potential to improve efficiency and expand financial inclusion through the implementation of innovative technologies like digital wallets and mobile banking, thereby fortifying financial systems (Demir et al., 2022; Zetzsche & Buckley, 2019). A sustained economic environment fosters confidence and encourages investment in technological advancements, thereby facilitating the adoption of FinTech solutions that have the potential to enhance financial stability even further (Yeyouomo et al., 2023). To fortify the financial systems in SSA, it is imperative to align FinTech solutions with the unique challenges and requirements of the region (Hussain & Rasheed, 2023). This will facilitate the efficient application of technology and bolster resilience (Lee, 2022).

Stability in the financial sector serves as the cornerstone for sustained economic growth. Thus, examining how financial development and regulatory quality moderate the relationship between financial stability and economic growth in SSA as an urgent a novel approach. Steered by strong regulations, a sophisticated financial system promotes efficient resource allocation, incentivises investment, and mitigates risks, thereby stimulating economic growth (Oanh 2023). Conversely, robust economic growth could potentially redirect resources towards fortifying financial institutions, thereby establishing a virtuous cycle of stability and affluence (Ziyadullayevich, 2022). By understanding the interaction and consequences of these factors, an environment can be created that promotes long-term economic expansion and financial stability in the region.

The objective of this research is to augment comprehension of the complex interconnections among the variables that influence financial stability in SSA. The purpose is to furnish policy recommendations grounded in empirical evidence that facilitate the development of economically stable and resilient systems in the region. The provided information has the potential to inform the formulation of policies that seek to promote financial inclusion, literacy, and the utilisation of FinTech. Such policies would serve to mitigate the detrimental impacts of climate change while simultaneously fostering economic growth. In conclusion, this will aid in the establishment of a more stable and prosperous economic climate for the SSA region. This study also provides a significant contribution to the achievement of a future wherein financial stability is pivotal in advancing sustainable and equitable development in SSA.

1.2 Research Problem

SSA faces unique challenges in achieving sustainable development, and financial inclusion is a critical issue (Jonker & Kosse, 2022; Liu et al., 2023). Many individuals in the region lack access to essential financial services like banking, loans, and insurance, which hinders economic opportunities and increases vulnerability to external shocks (Fahmy & Ghoneim, 2023; Singh & Mallick, 2024). This lack of financial inclusion traps individuals and communities in poverty cycles, limiting their ability to invest in their livelihoods and build resilience against unexpected events (Khan & Khan, 2023). Climate change further threatens the financial stability of SSA, with extreme weather events and environmental degradation impacting infrastructure, livelihoods, and asset values (He et al., 2022). Financial institutions are also at risk from climate-related disasters, potentially affecting their ability to provide essential services and maintain overall financial stability (Mhlanga, 2022b). Understanding the interconnected nature of these challenges is crucial for developing effective policies to advance sustainable development in the region.

Previous studies have individually explored the influence of financial literacy, financial inclusion, climate change, economic growth, and financial stability on SSA countries (Adedokun & Ağa, 2023; Baptista et al., 2022a; Dwijayanti et al., 2022; Monem, 2021; Oanh, 2023; Ozili, 2024; Ozili et al., 2023), but these factors need to be analysed in a more integrated manner. This study addresses this gap by using a comprehensive framework to examine the relationship between financial literacy and financial inclusion, climate change and financial inclusion, financial stability and climate change, Fintech adoption and climate change, and economic growth and financial stability in sub-Saharan African countries. This study further examines the moderating effect of Fintech adoption on the relationship between financial literacy and financial inclusion, the moderating role of Fintech adoption and financial stability on the relationship between financial inclusion and climate change, the moderating effect of economic growth on the association between climate change and financial stability, the moderating influence of financial stability on the link between Fintech adoption and climate change, and the joint moderating effects of financial development and regulatory quality on the relationship between economic growth and financial stability.

FinTech, a relatively understudied area, has the potential to revolutionize financial access and enhance climate adaptation efforts in SSA (Adjasi et al., 2023; Beaton & Bazarbash, 2020; Song & Hao, 2024). By exploring how FinTech can influence the connections among financial literacy, financial inclusion, and climate change, this study provides insights into how technology can shape the financial landscape of the SSA region. Economic growth, financial stability, FinTech adoption, and financial development are crucial in SSA countries to combat climate change (Ofoeda et al., 2024; Raihan et al., 2022). Economic growth can support climate-resilient infrastructure and green technologies but can also exacerbate climate change by increasing resource consumption (Cao et al., 2022). Financial stability helps manage risks from extreme weather events and resource scarcity (Elsayed, 2020). FinTech adoption can facilitate climate-friendly investments; however, its effectiveness depends on a stable financial system (Ayaz et al. 2023). Financial development and regulatory quality work together to channel resources towards sustainable economic growth, minimise environmental damage, and foster financial stability in the face of climate change (Lee et al., 2021). Therefore, the study explored the following research questions:

1. What is the relationship between FinTech adoption, financial literacy and financial inclusion in SSA countries?
2. What is the relationship between FinTech adoption, financial stability, financial inclusion and climate change in SSA countries?
3. What is the association between economic growth, climate change and financial Stability in SSA countries?
4. What is the relationship between financial stability, FinTech adoption and climate change in SSA countries?
5. What is the relationship between financial development, regulatory quality, economic growth and financial stability in SSA countries?

The outcome of the study provides policymakers and stakeholders with data to create effective policies that can enhance financial inclusivity, address climate risks, and support sustainable economic growth in the region. The exploration of the moderating effects guides initiatives to improve financial literacy, encourage the use of financial technology, and ensure financial security (Huang et al., 2023). The study stands out for its comprehensive approach, which examines the relationships between various factors in SSA countries. It particularly highlights the influence of FinTech implementation on financial inclusion, stability, climate change adaptation, and economic growth. Through the application of the robust system generalised moment method (GMM) model to address potential endogeneity issues, the study ensures methodological rigour and enhances the credibility of its findings (Cheng & Gong, 2020; Humphrey, 2019; Ma & Li, 2021; Renzhi & Baek, 2020).

Through its exploration of ways to promote financial inclusion and economic growth while addressing climate risks, this study contributes to enhancing climate resilience in the SSA region. Also, through proposing evidence-based policy recommendations, the study paves the way for a more prosperous and sustainable future in SSA. The adoption of an all-encompassing approach positions the study to offer valuable insights into the complex interconnections between financial inclusion, climate change, and economic development, thereby informing the development of effective strategies for a more sustainable and resilient future in the region.

1.3 Research Objectives

The main objective of this study is to examines the relationship between financial stability, financial literacy, inclusion, climate change and economic growth in Sub-Saharan Africa countries. The study examines the moderating effects of FinTech on financial literacy and financial inclusion. It also aims to assess the moderating effects of financial stability and FinTech on climate change and financial inclusion, as well as the moderating effects of economic growth and financial stability on FinTech adoption and climate change. Additionally, the study investigates the moderating effect of regulatory quality and financial development on the correlation between financial stability and economic growth.

The study explores the following specific objectives with sub-research objectives as follow:

1. To examine the relationship between FinTech adoption, financial literacy and financial inclusion in SSA countries

    a. To examine the relationship between financial literacy and financial inclusion in SSA countries,
    b. To examine the moderating effects of FinTech adoption on the relationship between financial literacy and financial inclusion in SSA countries

2. To assess the relationship between FinTech adoption, financial stability, financial inclusion and climate change in SSA countries,

    a. To assess the relationship between financial inclusion and climate change in SSA countries,
    b. To assess the moderating roles of FinTech adoption on the nexus between financial inclusion and climate change in SSA countries,
    c. To assess the moderating role of financial stability on the nexus between financial inclusion and climate change in SSA countries,

3. To explore the association between economic growth, climate change and financial Stability in SSA countries,

    a. To explore the association between climate change and and financial Stability in SSA countries,
    b. To explore the moderating effect of economic growth on the association between climate change and financial Stability in SSA countries,

4. To examine the relationship financial stability, FinTech adoption and climate change in SSA countries

    a. To examine the relationship between FinTech adoption and climate change in SSA countries
    b. To examine the moderating influence of financial stability on the link between FinTech adoption and climate change in SSA countries
5. To examine relationship between financial development, regulatory quality, economic growth and financial stability in SSA countries,

a. To examine relationship between economic growth and financial stability in SSA countries,
b. To examine the moderating influence of financial development on the relationship between economic growth and financial stability in SSA countries,
c. To examine the moderating influence of regulatory quality on the relationship between economic growth and financial stability in SSA countries,
d. To examine the joint moderating influence of financial development and regulatory quality on the relationship between economic growth and financial stability in SSA countries.

1.4 Significance of Research

The study delves into the relationship between financial inclusion, financial stability, climate change, economic growth, and financial literacy in SSA countries. This region is crucial yet underexplored in terms of these interconnected factors. Understanding these dynamics has the potential to not only advance academic research but also to drive positive changes in various others. The significance of the study extends across various areas including theory, policy, practice, and social understanding, making valuable contributions in each of these domains.

1.4.1 Theoretical significance

This study makes a significant contribution to the existing knowledge by addressing two key knowledge gaps. Firstly, it focuses on understanding the interdependencies among various components of the financial system in SSA. While previous research has explored the impacts of financial inclusion, climate change, financial stability, and economic development separately, this study takes a holistic approach to examine how these elements are interconnected. By analyzing the complex relationships between these factors, the study aims to provide a more comprehensive understanding of the SSA financial system and how changes in one component can have ripple effects on others. This approach not only enhances theoretical knowledge but also lays the foundation for the development of more effective policies to tackle the interconnected challenges in the region.

Secondly, the study delves into the relatively unexplored area of how FinTech influences the relationships between economic development, climate change, and financial inclusion in SSA. FinTech, with its rapidly evolving technologies, has the potential to transform financial accessibility and support efforts to address climate change in the region. However, the specific impacts of FinTech on these critical processes have not been extensively studied. By investigating the potential effects of FinTech implementation on the interactions among economic development, climate change, and financial inclusion, the research aims to advance theoretical understanding in this area. This enhanced comprehension could inform future research directions and guide the development of policies in the ever-changing technological landscape, leading to innovative solutions for the complex challenges faced by the financial sector in SSA.

1.4.2 Policy significance

On the policy front, the study delves into the underexplored correlation between FinTech, climate change, financial inclusion, and economic growth in SSA. FinTech, as a rapidly evolving technological ecosystem, holds significant potential for enhancing financial access and supporting climate change mitigation efforts in the region. However, the exact impact of FinTech on these processes remains uncertain. Through investigating the integration of FinTech and its potential consequences on the relationships between these components, the research contributes to theoretical knowledge on how FinTech can drive sustainable economic growth, address climate change challenges, and improve financial inclusion in SSA.

The findings of this research not only enhance our understanding of the SSA financial system but also provide a foundation for developing more efficient policies and actions to tackle the interconnected challenges faced by the region. By highlighting the potential benefits of integrating FinTech into the financial system, the study paves the way for innovative solutions to complex issues in SSA. Advancements in theoretical knowledge may impact future research projects and guide the development of policies in the rapidly evolving technical field. This will ultimately result in innovative solutions to the complex issues faced in the area.

1.4.3 Practical significance

One key aspect of the research is the integration of climate-resilient financial instruments with FinTech to develop novel solutions. For example, combining FinTech platforms with weather insurance products or providing microloans for specific purposes could help promote climate-resilient agricultural practices. Additionally, the study aims to explore how the adoption of FinTech impacts the relationship between climate change and financial inclusion, potentially leading to the development of technology-based interventions that enhance financial access and resilience to climate-related challenges. Furthermore, the research seeks to contribute to the development of targeted financial literacy initiatives in SSA, taking into account the unique needs of different populations such as small enterprises, women, and rural communities. Tailoring financial education programs to address specific obstacles faced by these groups can empower individuals and improve their engagement with the financial system, ultimately promoting financial inclusion.

Moreover, the findings of the study could offer new perspectives on how SSA can adapt to climate change and achieve fiscal development. By highlighting the intricate connections between various components, the research may inspire policymakers and stakeholders to consider innovative approaches for sustainable development. This could involve questioning established practices and fostering discussions on strategies that incorporate technology, financial inclusivity, and climate-resilient measures to create a more sustainable and equitable future for the region.

1.4.4 Social significance

The study is crucial as it has the potential to bring about positive changes in SSA by addressing obstacles and fostering sustainability. Improving access to financial services and promoting financial literacy, the research aims to empower individuals to invest in their livelihoods, manage their finances effectively, and contribute to economic stability. This empowerment could lead to improved living standards, enabling people to meet their basic needs, invest in education and healthcare, and participate more actively in the economy. Additionally, the study may help communities better cope with the impacts of climate change by enhancing financial resilience through tools like savings accounts and micro-insurance.

The potential outcomes of this research extend beyond individual empowerment to encompass broader societal benefits. Thus, facilitating financial inclusion and resilience, the study could play a role in poverty alleviation, social mobility, and social stability in the region. Moreover, the study can enrich discussions on the interconnectedness of sustainable development, climate change, and financial systems. By highlighting these complex relationships, the research may encourage individuals, communities, and governments to consider the broader implications of their actions and make informed decisions that support financial inclusivity and climate resilience.

Furthermore, the study could inspire collaborative efforts among various stakeholders in SSA region to develop and implement effective solutions addressing environmental degradation, poverty, and inequality. By fostering cooperation and communication, the research aims to create a future that is equitable and environmentally sustainable for all. Ultimately, the study seeks to promote a fairer and more prosperous future by encouraging stakeholders to work together towards common goals.

1.5 Structure of Dissertation

Chapter I: Introduction

This chapter provides an overview of the background of the study on the current state of financial literacy, financial inclusion, climate change, economic growth, and financial stability in SSA countries. It also covers the research problem by identifying gaps in knowledge and areas for further research related to the topic. Besides, it specifies the research questions and objectives of the study. The chapter further discusses the potential impact of the study on the field and identifies the benefits to various stakeholders.

Chapter II: Literature Review Research Framework, and Hypotheses

The chapter reviews the main concepts, theories, propositions, laws, models, and formulas in the field, and defines and explains key concepts and theories related to financial literacy, financial inclusion, climate change, economic growth, financial stability, financial development, regulatory quality, and FinTech adoption.

It also presents summarizes and analyses existing research related to the topic, highlighting gaps and inconsistencies in the literature. Finally, it presents the researcher's stance on the research problem and the theoretical framework used to guide the study which is the grand theory development finance theory: middle range theories: general system theory, financial inclusion theory, social learning theory and applied theories: FinTech adoption theory, climate change adaptation theory and innovation diffusion theory.

Chapter III: Research Methods

The research methods describe the overall approach and strategy used in the study. The participants, population, and sample outline the characteristics of the study population and sample, including any inclusion or exclusion criteria used. The research instruments identify the tools used to collect data from secondary sources and the instruments used by the data sources to collect the data. The chapter further describes the specific steps taken to carry out the study, including any limitations or challenges encountered. Finally, it outlines the methods used to analyse and interpret the data collected, such as the two-step system GMM, and other econometric analysis and statistical tests.

Chapter IV: Findings and Discussion

Chapter IV presents the findings of the study, including quantitative data collected. It also analyses and interprets the results in the context of the research questions and objectives, drawing on relevant literature and theories. Besides, it considers the practical and theoretical implications of the findings for various stakeholders, including policymakers, financial institutions, and FinTech companies.

Chapter V: Conclusion, Implications, and Recommendations

This chapter summarizes the main findings and key insights from the study, discusses the implications of the study for the field identifies areas for further research and offers practical recommendations for policymakers, financial institutions, and FinTech companies based on the study's findings and implications.