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REVISITING THE IMPACT OF FRAGILITY INDICES ON ECONOMIC GROWTH: NEW INSIGHTS FROM SUB-SAHARAN AFRICA

Master Thesis

John Oludamilola SEKUNMADE

Supervisor

Assist. Prof. Dr. BAŞAK ÖZARSLAN DOĞAN

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	Signature
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ABSTRACT

This research examines the impact of fragility indices on economic growth in Sub-Saharan Africa from 2006 to 2019. The variables of interest for this study include economic decline, economic inequality, human flight and brain drain, external intervention, and economic growth. The research objectives are to investigate the connection between the fragility indices and economic growth and to empirically determine the impact of fragility indices on economic growth. The data were tested for cross-dependence using Breusch-Pagan LM test; the existence of cointegration was ascertained in our variable using the Westerlund cointegration test. Fully modified ordinary least squares estimation technique was adopted for the first objective and the findings showed that only external intervention indices had a positive impact on economic growth. In achieving our second objective, we adopted mean group, augmented mean group, and common correlated effect mean group estimation technique and found that the coefficient of economic decline, economic inequality, and human flight and brain drain had a negative impact on economic growth, while external intervention had a positive impact. The research study recommends that the governments of fragile countries should develop corrective measures to remove these indicators to ensure progressive growth. Also, the state administrations need to ensure that suitable policies are put in place to encourage research and development. This will limit the problem of human flight and brain drain which are the major problems of fragile countries.

Keywords: fragility indices, economic growth, foreign direct investment, sub-saharan Africa

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ABBREVIATIONS

GDP	**:**	Gross Domestic Product
ECD	**:**	Economic Decline
ECI	**:**	Economic Inequality
HFD	**:**	Human Flight and Brain Drain
EXI	**:**	External Intervention
IMF	**:**	International Monetary Fund
FSI	**:**	Fragile States Index
MG	**:**	Mean Group
AMG	**:**	Augmented Mean Group
CCEMG	**:**	Common Correlated Effect Mean Group
RMSE	**:**	Root Mean Square Error
FMOLS	**:**	Fully Modified Ordinary Least Squares
DOLS	:	Dynamic Ordinary Least Squares
CIPS	**:**	Cross-section Augmented Im, Pesaran and Shin
SSA	**:**	Sub-Saharan Africa
OECD	**:**	Organization for Economic Co-operation and Development

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PREFACE

Fragility is when state structures lack political will and/or capacity to provide the basic functions needed for poverty reduction, development, and safeguarding the security and human rights of their populations.

There is a connection between fragility and non-availability of basic services in an economy, which hampers the production system and causes a deficit of human capital which is very important for economic growth. Likewise, it discourages growth stimulants like domestic and foreign investment.

The existing research studies investigating the impact of fragility indices on economic growth failed to highlight the major indicators that account for the fragility. However, there is a need for more discourse on fragile states.

The findings of this research showed that economic decline (ECD), economic inequality (ECI), and human flight and brain drain (HFD) had a significant and negative impact on economic growth, whereas external intervention (EXI) had a positive and significant impact on economic growth among the selected states during the period of the study. It is thus recommended that illicit trade and other factors that inhibit uniform growth should be eradicated, so that an economic equilibrium can be established. This can be achieved by sensitizing the general populace and make available a working system that can regulate the market and stabilize the economy. Also, the respective governments should adopt appropriate foreign trade strategies that will enhance positive externalities with a view to stimulate economic growth.

This study would not have been successfully completed without the guidance of my supervisor, Assist. Prof. Dr. BAŞAK ÖZARSLAN DOĞAN. She unreservedly demonstrated her intellectual maturity in terms of advice, constructive criticism, and encouragement.

I am also indebted to this university for the opportunity to be under the tutelage of experienced and highly intellectual professors in the Department of Economics and Finance.

It is a great honor for me to be an alumnus of this reputable academic institution and I am proud to carry its emblem throughout my academic and professional career.

CHAPTER ONE

1.0 INTRODUCTION

The concept of fragile states has become ubiquitous. The failing or fragile state is referred to as a source of grave security threats, as a particularly challenging context for development assistance, and as an impediment to the achievement of human development goals. The term 'failed state' appears to have emerged in the early 1990s and was used in reference to dramatic cases of state collapse, generally occasioned by severe internal conflict. Indeed, one of the earliest attempts to measure the incidence of state failure was made by the George Mason University's state failure task force which took events such as revolutionary war, regime change and genocide as instances of state failure (Amaizo et al, 2017). Typical failed states are, according to this definition, Yugoslavia, Rwanda, Somalia and Afghanistan, where severe conflict meant that no governing authority has effective control over the territory. Obviously, such circumstances are associated with a variety of crises which would be of concern to the international community: forced displacement and refugee flows, violations of humanitarian law and international criminal law, massive destruction of human and physical capital, and possible 'ungoverned spaces' which might become operational homes to terrorist organizations or conduits for transborder flows of people, drugs, and weapons (Nehal, 2016).

Many poor populations in Asia and the Pacific live in countries with weak governance, ineffective public administration and rule of law, and civil unrest. These countries have been referred to as weakly performing countries, fragile states, low-income countries under stress, and countries in fragile and conflict-affected situations (or FCAS). The Pacific Island countries are especially subject to vulnerabilities due to limited land areas and populations as well as small domestic markets, geographical isolation and dispersion, poor access to international markets, and exposure to shocks including climate change (OECD, 2018). Fragility is costly for a country and its citizens, for neighboring countries, and for the global community. From the viewpoint of development assistance, the policies, principles, and operational approaches that development agencies normally apply tend to be ineffective. These measures may even risk adding to the difficulties fragile countries already face when trying to establish effective and legitimate institutions and leadership needed to transit to stability and

sustained development. Any attempts to engage in these situations effectively and in an innovative manner are likely to entail major human, social, economic, and security costs (Asian Development Bank, 2016).

Despite the continued debate on the definition of the concept of fragile states and the different typologies, most analysts include countries trapped in violent conflict or crisis and those recovering from crisis or conflict, generally characterized by weak state capacity that leaves citizens vulnerable to social, political and economic shocks (Cammack et al., 2018).The weakness of state institutions, deteriorating governance environments, lack of capacity and/or disruption relating to ongoing or recent armed conflict, crisis, or violent insecurity are major characteristics of fragility. Fragility impacts negatively on economic growth, social development, and job creation, which also have the potential to aggravate state fragility and further dent growth and stability prospects (Collier, 2017). Despite these accepted generalizations about fragility, this type of classification masks the diversity of the scope and form of fragile states. Considering the diversity of the nature of fragility, some analysts have questioned the logic of these broad classifications used in development discourse. Capacity Building Foundation (2019) alluded to the high levels of fragility in African countries, highlighted the major causes, and identified the necessary remedial actions. The report highlights that despite its good economic growth performance, the African continent still has a long history fraught with civil war and instability. These observations highlight the widespread prevalence of fragility and conflict in the continent. Among other effects, the report echoes the fact that fragility results in high levels of poverty and inequality which become sources of further instability. Further, the report alludes to the challenges of post-conflict recovery and notes that extricating a country from fragility requires addressing the often-dynamic causes in a sustainable manner.

Fragility may take many different forms and can be economic, political, social or all together. In some of the worst cases, fragility has been associated with open conflict. Many countries in Sub-Saharan Africa (SSA) have suffered civil wars, and some of them suffer from widespread violence, the threat of widespread violence, or civil war in the present. Whatever form it takes, fragility is strongly associated with underdevelopment. It is highly likely that fragility and underdevelopment will feed on and sustain each other (McKay &Thorbecke, 2017). The democratic governance in fragile states is often chaotic because of the urge and tendency of administration

change which throws the country into conflict and unrest. If there is a smooth administration, then the country is safe, and there will be a massive improvement in the operation, savings, and finance sector of the economy. The extant literature has found a strong correlation between political unrest and corruption, which is one of the demeaning factors of fragile states (IMF, 2015).

Against this backdrop, the major objective of this research is to investigate the impact of fragility indices on the economic growth of the ten most fragile African countries from 2006 to 2019. It takes into account the factors for mensuration offered by Fund For Peace. The empirical evidence obtained from this study is expected to be of some worth to policy analysts, suggesting the progression of state stability and stimulate economic growth of the selected fragile SSA countries.

1.1 STATEMENT OF PROBLEM

Fragility and conflict are among the greatest development challenges of our time. More effective and better coordinated efforts that are tailored to each individual situation must be made to assist countries affected by fragility and conflict. Countries in transition manage political, security, economic, and environmental stresses that make them and their citizen vulnerable. According to the African Development Bank Group (ADBG, 2013), four of five fragile states around the world are situated in Africa. For the past decade, Africa has exhibited strong economic growth, but this has not translated into a corresponding improvement in the lives of the people.

Many initiatives such as Millennium Development Goals developed by United Nations are geared towards international and local development, most of them in favour of Africa countries; for example, new EU funding for African Peace and Security (OECD, 2018). However, this is not reflected in the economic and social status. Unfortunately, these initiatives have caused challenges for many African countries like Sudan, Nigeria, Uganda, Congo, and Ethiopia because of bad policy environments that led to high poverty rates, political unrest, and increased debt. This hindered the development in many African states; for instance, the recent political and economic imbalance in Somalia (Ibrahim et al., 2020). This research study is thus interested in knowing the major fragility indices inhibiting these initiatives and the reasons for their negative effect on economic development in SSA.

1.2 RESEARCH QUESTIONS

i. Is there a connection between fragility indices and economic growth?

ii. Do fragility indices have impacts on economic growth?

1.3 OBJECTIVES OF THE RESEARCH

i. To investigate the connection between fragility indices and economic growth.

ii. To empirically determine the impacts of fragility indices on economic growth.

1.4 SCOPE OF THE STUDY

In this study, the empirical investigation of fragility indices on economic growth of certain African countries such as Democratic Republic of Congo, Central African Republic, Chad, Sudan, Zimbabwe, Burundi, Cameroon, Nigeria, Guinea, and Mali is restricted to a period covering 14 years (2006–2019).These countries have been selected because they are considered the most fragile states in SSA, according to a report published by the Fund For Peace think tank (Messner et al., 2017).

Specifically, the fragility indices shared among the SSA countries in this research are heterogeneous, which allowed us to share insights into the peculiarities of each country. The Democratic Republic of Congo located in Central Africa is known to be battling with the serious problem of bad governance (Muzong, 2015). Similarly, the Central African Republic suffers the neighborhood effect (Beninga et al., 2018). Another Central African country, namely Chad, has a fragility index because of religious extremism (Owono, 2013). Further, Sudan has faced serious economic collapse and worsening levels of poverty, according to a report published by the Sudan Household Health Survey (SHHS, 2016).In the southeast, Zimbabwe's ideological extremism has threatened peace for the past few years (Muzondidya, 2017).Superpower rivalry has been a major index responsible for fragility in Burundi, East Africa (Turner, 2016), while Cameroon is blessed with natural resources but does not benefit from it (Forga et al., 2014).Nigeria, as the most populous black nation, has been battling with the problem of economic and social exclusion (Igwe,2019), whereas the problem of illicit small arms proliferation is peculiar to Guinea in West Africa

(Ebo, 2016), and Mali is reportedly in a state weakness and collapse (Chauzalet al., 2015).

1.5 SIGNIFICANCE OF RESEARCH

It is expected that this study contributes to the existing research work done on this topic, which has produced mixed results. This current research extends knowledge and pinpoints major variables exhibiting fragility features and posing a threat on the economic growth of SSA countries. More so, the findings derived from it may be useful for policy formulation as it recognizes the significance of the adopted variables in determining economic growth. Government agencies, researchers, and investors can benefit from this study as it describes how state fragility slows or inhibits economic process in Africa.

1.6 ARRANGEMENT OF CHAPTERS

To clarify the structure of our research study, each chapter is briefly summarized below. Each chapter has its own purpose and serves a particular function; together they present a complete picture of the study.

Chapter One – This chapter will introduce our research topic and explain the concept of fragility, from its application on a global scale to its more specific application in Asia, Europe, and Sub-Saharan Africa. Additionally, several previous studies have indicated the existing research gaps that the present study aims to fill. Regarding its purpose and justification, the statement of the problem narrows the scope and forms the basis for formulating the research questions and adds to the existing literature on fragility in SSA. Further presented are the characteristics of the fragility indices of each country and their implications on policy makers and other stakeholders. Last, the key terms used in this research will be defined to clarify their contextual meaning.

Chapter Two–This chapter will present a review of past studies on fragility and its impact on the economy. The theoretical framework that connects the variables adopted for this study is conceptualized with the view to understand its link with economic growth. Furthermore, we review the theoretical literature to understand how different studies are related to our research. To further establish evidence that there are still lapses in the study of fragile states in SSA countries, the relevant empirical studies are reviewed. To mitigate the effects of fragility, we discuss the significance of

government stability. The endogenous growth model posits that innovation, research, and development play an important role in economic development. The gaps both in theoretical and empirical studies will be briefly explained and illustrated in a theoretical diagram that shows how the adopted variables impact economic growth in our research.

Chapter Three–This chapter will cover the descriptive and inferential statistics adopted in this research. The research design explained how the research objectives were achieved, followed by the sources of our data. The dependent variable GDP as proxy for economic growth, and the data was sourced from World Development Indicators. The independent variables were ECD, ECI, HFD, and EXI, and the data were sourced from Fragile State Index (FSI). The model specification adapted from previous empirical models was reviewed, and the empirical findings revealed a long-run equilibrium relationship among the investigated variables. Also clarified will be the method of analysis that shows the different econometrics techniques to achieve our research objectives.

Chapter Four–This chapter will present the result and analysis of the variables adopted in this research, in addition to relating the outcome with suitable economic theory, previous research and economic intuition that can enhance policy formulation. Descriptive statistics was used to understand the structure of our data sets and show the impact they had on our research. After confirming that the datasets were normally distributed, we checked for existence of correlation, and we observed the absence of multicollinearity among the variables. As our study was a panel study, we checked for cross dependence before ascertaining the unit root which confirmed to be stationary at first difference. Further, the Westerlund cointegration test was used to check for long run relationship among our variables and FMOLS for robustness and to achieve our first objective. Panel MG, AMG and CCEMG were used use as diagnostics tests and to achieve our second objective. To ascertain the causality relationship among our variables we applied the Dumitrescu-Hurlincausality test.

Chapter Five – This chapter will outline the summary of findings. We observed that ECD, ECI and HFD have a significant impact on economic growth, while EXI have a positive and significant impact on economic growth among the selected states in the investigated period. There was a significant interactive effect amongst the fragility

indices and economic growth. We concluded that ECD had a negative significant impact on economic growth among the observed variables and countries, while the impact of ECI, HFD was also significant. EXI posited a positive and significant impact on economic growth within the scope of study. Based on our findings, we recommend that illicit trade and similar activities inhibiting uniform growth should be eradicated to achieve equilibrium in the economy. Based on our research outcome, we suggested avenues for future studies to cover the gaps that we were unable to fill in this research.

1.7 DEFINITION OF KEY TERMS

Four key terms used in this research are explained in the sections below to clarify their denotation and determine the role they play in the specific context of this study.

1.7.1 FRAGILITY INDICES

The Fragile States Index is based on a conflict assessment system tool framework (CAST) developed by Fund for Peace (FFP) in 1957 to assess the vulnerability of states to collapse. The CAST framework was originally designed to measure this vulnerability and assess how it might affect projects in the field. It continues to be used by policy makers, field practitioners, and local community networks. The methodology includes both qualitative and quantitative indicators, relies on public source data, and produces quantifiable results. 12 conflict risk indicators are used to measure the condition of a state at any given moment. The indicators provide a snapshot in time that can be measured against other snapshots in a time series to determine whether conditions are improving or worsening (Messner et al., 2017).

The concept of fragility is rather elusive. Failure, vulnerability, and weakness have often been used as synonymous of fragility, for example, by Fund for Peace, United States Agency for International Development, and Brookings Institution. Fragility is defined differently by various international organizations. For example, the Department for International Development in the United Kingdom defines fragile states as those states whose government cannot or will not deliver core functions to its people. According to the World Bank, fragile states are defined as low-income countries scoring 3.2 and below (over a 1–6 range) on the Country Policy and Institutional Assessment (CPIA). The OECD Development Assistance Committee

(DAC) defines fragile states as those countries that fall in the bottom two CPIA quintiles as well as those which are not rated (Yiagadeesen, 2018).

Thus, there is no standard definition of the term 'fragility' or 'fragile state', and opinions are divided among scholars. However, most development agencies understand fragility as a state's failure to provide the basic needs and carry out functions that will make life easy for its citizens (Mcloughlin, 2012). The major features of fragile states incorporate failure to provide basic security, maintenance of law and justice, and provision of economic benefits and efficient voting (Mcloughlin, 2012).

Fragile states are characterised by low economic progression rates and uneven income distribution, despite wealth distribution and financial gains (Hilker, 2012). This is evident in the literature on state fragility which suggests a correlation between state fragility and low level of economic progression. Further, there is a proven link between state fragility and economic development emanating from conflict-affected areas, in addition to economic underdevelopment (Mcloughlin, 2012).

1.7.2 ECONOMIC GROWTH

The term 'economic growth' is commonly understood as a positive modification within the production's level and services in a country. During this stage, there is an upshot in the activities of the securities market, science, and technology advancement and an increased quality and higher stage of the capital market's attainment. In this study, economic growth is pictured by the gross domestic product (GDP) or the value of all products and services produced in a country over a particular period (Ogundipe et al., 2013). Policy makers want to achieve continuous economic growth because it is one of the major indicators of effective macroeconomic policy (Olorogun, 2021). Ideally, GDP is equal to the total economic output of a country. It is the value of all end products and services created at intervals within the jurisdiction of a country in a particular year (Ram, 2006).

According to the Keynesian macro-economic model, inadequate overall demand can lead to prolonged periods of high unemployment. An economy's output of goods and services is the sum of four components: consumption, investment, government expenditure, and net exports (Keynes, 1973). GDP is typically calculated

on annual basis and includes all personal and public consumption, government outlays, investment, exports, and imports that occur at intervals in an outlined territory (Kairo et al., 2017). In reference to this, Pham (2009) describes economic growth as the increase within the quantity of products and services made in an economy that is measured by progressive changes in a country's GDP. It reflects the rise in value as mirrored by the capability of products and services, either on a big or small increment rate (Olugbenga &Owoeye, 2007).

According to Solow as cited in Oteng-Abayie (2015), economic process can be viewed as a positive modification within the production level by a country over a certain period. Generally, economic process is the expansion in a country's productive capability coupled with an increase in capital stock, technological advancement, refinement within the standard, and magnitude of accomplishment.

1.7.3 FOREIGN DIRECT INVESTMENT

Foreign direct investment (FDI) can be viewed from home and host or inflow and outflow direction-of-investment perspectives. Irrespective the angle, FDI generally means 'a direct investment from foreign investors.' Campos and Yuko (2017) define FDI as an investment in the form of a controlling ownership in a business in one country by an entity based in another country. Similarly, Ayanwale (2018) describes it as an investment in business interests made by a company or individual from one country in the form of either establishing business operations or acquiring business assets in the other country, such as ownership or controlling interest in a foreign company.

Based on these definitions, FDI can be used to describe inflow and outflow. If it denotes inflow, it refers to interest of foreign investors or companies in home investment enterprises; otherwise, it refers to interest of local investors or companies in foreign investment enterprises (Udoh &Egwaikhide, 2018). FDI inflow is arguably more likely to lead to economic growth (Singh, 2005; Asiedu, 2012; Goldsmith, 2015). It is like capital flight on the part of the investors' home country to the investment receiving country (Udoh &Egwaikhide, 2008). Hence, the conceptual definition of the term FDI inflow shall be retained for this current study.

1.7.4 SUB-SAHARAN AFRICA

Sub-Saharan Africa is the term used to describe the area of the African continent situated south of the Sahara Desert. Geographically, the demarcation line is the southern edge of the Sahara. Since the end of the last ice age, the north and sub-Saharan regions of Africa have been separated by the extremely harsh climate of the sparsely populated Sahara, thus forming an effective barrier interrupted by the Nile River. The regions are distinct culturally as well as geographically (New World Encyclopedia, 2020)

The Democratic Republic of Congo in Central Africa suffers from bad governance. Upon gaining independence in 1960, Mobutu SeseSeko was the commander in chief of DRC for 32 years. He came to power during an insurgency in 1965.Despite the long rule of his regime; it has failed to achieve stable governance, which has led to economic decline in the past years (Muzong, 2015). Further, the Central African Republic has been facing fragility index of neighborhood effect. Violence in the Eastern and Western Central African Republic (CAR) redoubled and spread to other provinces in 2018 because the government in Bangui was unable to expand its control outside the capital, which inhibited economic growth (Beninga et al., 2018).

Chad is another Central African country is included in the fragility index due to religious extremism. The militant extremist groups target mostly civilian areas, typically by employing suicide bombers (Owono, 2013). In the north, Sudan has experienced economic collapse and reached alarming poverty levels. In reference to the Sudan Household Health Survey (SHHS, 2016), 29.6 percent of children below the age of five years in North Sudan were found to be under nourished, with 7.2 percent severely under nourished. This implies in lay terms that just about 30 percent of Sudanese children have body weights that are far below their age (IMF, 2013).

In the Southeast African country of Zimbabwe, ideological exclusion has been posing a continuous threat to peace. The current restructuring of land and resources has not only been chaotic and destructive but also discordant. The government in the country has resorted to authoritarian nationalism and uses identity politics to buffer the new power structures. These policies have created divisive ethnic politics in the country which championed majority over minority rights. Vital questions about

identity, citizenship, nationhood, rights, and titles have been raised in many post-independence countries which threaten their stability (Muzondidya, 2017). Superpower rivalry has been a major index responsible for fragility in Burundi, East Africa. The first democratically elected president was Melchior Ndadaye leading the Hutu party Frodebu (Front pour la Démocratie au Burundi). However, his administration lasted only for three months and ended with his assassination. Soon, the elected government disintegrated into rival factions and civil war ensued. About 300,000 lives have been lost since 1993, and thousands of Burundians have fled their home country (Turner, 2016).

Cameroon has been blessed with an abundance of natural resources. Nevertheless, it only shows slow economic process and rising poverty levels. This may well be the result of poor management of its natural resources, which prevents Cameroon from reaching its actual potential (Forga et al., 2014). In the region of West Africa, the populous state of Nigeria has been plagued with economic and social exclusion. The political elites in charge of the national agenda manipulate the ethnic identities, which makes it liable to inner conflicts. Most power is centered in the northern part of the country, which creates tensions with the marginalized western and eastern parts. This policy has given rise to political unrest and hinders economic growth (Igwe, 2019).

The problem of illicit small arms proliferation is most pronounced in the West African country of Guinea. This can be traced back to the creation of a national militia following independence followed by an attempted coup in1976. The military take-over of 1984 fueled the proliferation of arms as stockpiled weapons were either pillaged or distributed to pro-putsch troopers. The new camp failed to conduct a weapons assortment program, and militia members were neither disarmed nor demobilized, thus creating the country to be additional vulnerable and liable to fragility (Ebo,2016).

Another West African country relevant to this research study is Mali which is also in a state of political instability and imminent collapse. From January to April 2012, Mali underwent the fourth Tuareg revolt of its post-colonial history; all the northern cities were taken over by Islamists who organized a military coup. The large growth in criminal and terrorist activities, in addition to constant threats against

Western nationals, led to increased foreign interference and made the country susceptible to fragility (Chauzal et. al., 2015).

1.8 CONCLUSION

This chapter has given a brief overview of the implications for economic growth. This has led us to the statement of the problem to know the impact of fragility indices on economic growth among SSA countries. It has then proceeded to the two main research questions formulated to achieve the research goals of this research. The objectives are aligned with the research questions to have consistency throughout the research. The scope of the study has been detailed before justifying the significance of the research. We have further defined the key terms to offer a higher level of comprehension and understanding.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

Reviewing the existing literature on state fragility provides three distinct perspectives on the subject: causes, effects, and resolution approaches. The group of fragile states encompasses a significant number of developing countries with weak governance capacity to carry out essential public services, offer limited personal security for their citizens, and include competing national identities that often erode the legitimacy of the state. Even though many developing countries suffer from some of these problems, scholars agree that only those states fall into the category of fragile states whose internal problems have grown to such an extent as to threaten their stability (Kaplan, 2018). Fragile states include those states that have collapsed with no functioning government (e.g., Somalia, Yemen), or are functioning at a bare minimum (i.e., failed states) such as Nigeria or Zimbabwe. In some cases, the regime operates reasonably well but is unable to impose its rule throughout the country (e.g., Philippines, Colombia). The OECD observes that states are fragile when governments and state structures lack the capacity or political will to deliver essential services such as security, good governance, and poverty reduction (OECD, 2015).

The state fragility literature can be divided into three major categories. The first group of studies deals with some of the major causes of fragility. Sachs (2016) suggests four types of economic failure that lead to income inequality which in turn lead to state fragility: poverty trap, state bankruptcy (i.e., failure to repay loans to foreign creditors), liquidity crisis (i.e., sudden reversal of capital flows), and transition crisis (i.e., major change in political or economic regimes). The first two types of economic failure generally cause long-term state fragility, while the last two types are perceived to cause short-term fragility. Torres and Anderson (2018) suggest that a key contributing factor to state fragility is the state's incompetence in economic management and lack of administrative capacity to translate goals into resource allocation. Further, Rotberg (2014) observes that when a state's infrastructure is weak, the profit sharing of resources increases the level of fragility. Esty et al. (2018) identify four types of conflict as resulting in state fragility: revolutionary wars, ethnic wars, disruptive regime transitions, and genocide.

The second category of research examines state fragility and its effects on society. Collier et al. (2017) observes that a good part of the economic damage from state fragility consists of the cost imposed on neighboring countries. The estimated cost to a neighboring state is about 3.41 percent of its GDP, not including the non-economic consequences of spillovers such as violence, organized crime, refugees, and contagious diseases. The negative economic ramifications of state fragility are felt in the neighboring countries (Sachs, 2019). The weak nature of fragile states is also a fertile ground for drug trafficking, organized crime, and other forms of criminal activity.

The third category of research investigates focuses on state fragility. Reversing state fragility has been the focus of the efforts concerted by the international community. There is some empirical evidence on the positive effects of foreign aid as part of the reconstruction effort in post-conflict situations. Rajan and Subramanian (2015) suggest that the goal of such efforts should be to create economic growth and alleviation of poverty through instituting full democracy and promotion of international trade. Further, Estey et al. (1998) find that involvement in international trade (i.e., trade openness) is associated with lower risk of state fragility. Klotzle (2016) suggests more emphasis on regional solutions such as economic integration, development programs, and peace building conferences. In another study, Kaplan (2018) highlights the importance of creating a business-friendly climate to attract FDI because of its benefits in creating jobs and transferring technical and management know-how.

The theoretical framework pertaining to fragile states has been based on the state as the primary unit of analysis. While earlier studies have focused on the important role of the state in dealing with institutional breakdown (Huntington, 1968), later studies observed the declining role of the state due to internal subgroups and economic interdependence, leading to reduced state sovereignty, governance, and capacity over time (Rosenau, 1990). The important role of institutions for economic progress has been emphasized in many studies (e.g., Hanekom& Luiz, 2017; Kaplan, 2018). Conflict often leads to institutional voids and multinationals are forced to engage in novel cross sector partnerships to compensate for these institutional gaps. In this respect Rivera-Santos, Rufin, and Kolk (2012) observe that other institutional mechanisms such as informal contracts or in-kind contributions emerge to substitute for the lack of formal institutions in countries with limited statehood. This requires

multinational firms to collaborate across organizational boundaries, which can provide new opportunities for learning and innovation. In the context of fragile states beset by violent conflict, multinational firms can go beyond ensuring physical security of their businesses. They can contribute to social and community development, enhancing the capacity of the state through workshops on good governance, making FDI conditional on the state undertaking corrective policies, or fostering community relations (Luiz & Stewart, 2014).

2.1 THEORETICAL FRAMEWORK

To explain the theoretical link between fragility and economic growth, we examine the functionalist theory developed by the eminent sociologist Emile Durkheim in the 19th century. We chose this theory because it gives insight on what makes a society operate effectively taking into consideration the structural connectivity. The holistic view of society is such that every facet interconnect and a malfunction of a piece affect other and this theory makes us to understand how impactful the interactive role plays in functional running of a society.

2.1.1 FUNCTIONALIST THEORY

Functionalism posits that society is more than the sum of its parts; rather, each aspect of it works for the stability of the whole. Durkheim envisioned society as an organism since each component plays a necessary role but cannot function alone. When one-part experiences a crisis, others must adapt to fill the void in some way. The different parts of society are primarily composed of social institutions, each designed to fill different needs. Family, government, economy, media, education, and religion are important to understanding this theory. According to functionalism, an institution only exists because it serves a vital role in the functioning of society and if it no longer serves a role, an institution will die away.

In many societies, the government provides education for the younger generation, who in turn pays the taxes the state needs to keep it running. However, in fragile states most basic needs are catered for by individuals, which make these states susceptible to fragility because of high inequality which hinders economic growth. The family relies on the school to educate its children, gain qualifications, and enter the workforce, so they can raise and support their own families in the future. In the process, the children become law abiding, taxpaying citizens who support the state. From the

functionalist perspective, if all goes well, the parts of society produce order, stability, and productivity. If all does not go well, the parts of society must adapt to produce new forms of order, stability, and productivity.

Functionalism emphasizes the consensus and order that exist in society, focusing on social stability and shared public values. From this perspective, disorganization in the system, such as caused by the deviant behavior of one group, leads to change because societal components must adjust to achieve stability. When one part of the system is dysfunctional, it affects all other parts and creates social problems, prompting social change.

2.1.2 HARMONIZING THE THEORY

The theories suitable for describing the workings of ECD, ECI, HFD, EXI in connection with economic growth has been described in the previous section. Although the theories might seem unrelated, they can be applied to the domain of economic activities and are somewhat connected. Looking at it from the angle of the functionalism which emphasizes the consensus and order that exist in society, focusing on social stability and shared public values, then ECD, ECI, and HFD can be explained. This is especially the case when the government fails to provide an adequate institutional framework for private enterprises to operate freely without government intervention, protection of property right, and availability of policies to encourage entrepreneurship. More so, external intervention can enliven FDI inflow. The interaction between these variables has commanded a great deal of research effort in the form of previous studies.

2.2 REVIEW OF THEORETICAL LITERATURE

To explore the factors influencing state fragility it is important to discuss what defines a state. Within this research, the definition of a sovereign state is influenced by Di John (2016) and can be defined as a state that possesses authoritative power for the government which carries legitimacy in the eyes of its citizens and international actors and has the capacity to provide basic services for its citizens.

The concept of state failure emerged during the 1990s and meant that the state was “utterly incapable of sustaining itself as a member of the international community” (Helman& Ratner, 1993 cited in Di John, 2016). In the following decade, state failure

was the main concept used in the discourse of unstable states, but over the years the concept of fragile states has received more attention, as it contains different levels of instability (Di John, 2016).

State failure is, however, still used as a sublevel of fragility and represents, together with collapsed state, the final stage of state fragility. The definitions of this term vary, and each author on the subject has their own definition of 'weak', 'failing', 'failed', and 'collapsed' states. Rotberg (2017) focuses his research on failed states and explains that failure may arise within several dimensions throughout society, such as economic performance, the security sector, and the quality of the political representation in the state. His point is that in most cases, fragility might show in one or a few of these dimensions or, as in Somalia, in all of them simultaneously. Another popular Western concept explaining what causes state fragility is the concept of good governance. Within the development field this term is used as a synonym for a state that is run through several institutions and policies based on democratic values.

The idea is that a state needs good governance to be able to become a stable and functioning member of the global arena. Bad governance, on the other hand, will create an environment where civil wars are likely to repeat themselves due to a lack of legitimacy shown by the government (Smith, 2018). Examples of this brought forth by Smith are the absence of government accountability, lack of access to the political arena for the population as well as inadequate transparency shown by the elites. However, this concept has met criticism due to its narrow focus on administrative reforms, which overlooks social structures that can play a crucial part in stabilizing or de-stabilizing a state (Doornbos, 2019).

Another idea of fragility is proposed by Rothkopf (2018) who claims that all states could be defined as fragile, and that our current ranking is highly affected by the westernized understanding of fragility and stability. Rothkopf's critique of the fragile states discourse touches upon the idea that the concept of state fragility is a neo-colonial tool used by the West to force their values onto, mainly, former colonies (Ayers, 2017). From this point of view, former colonial and current global powers use programs such as the Responsibility to Protect (R2P) to violate the sovereignty of other states (Rothkopf, 2018). Another critique is aimed at the definition of state fragility in terms of state capacity. Many donor countries involved in foreign intervention use definitions that ignore the political nature of states (Larémont, 2015). When state reconstruction is understood as building social and political institutions from a

technical and objective point of view, it often results in structures that overlook the social and political struggles that may exist in society (Hameiri, 2017). As a result, development agencies have included the concept of 'legitimate politics' as a part of their state-building programs since 2011 (Larémont, 2016).

2.3 REVIEW OF EMPIRICAL STUDY

Several academic studies have been completed on fragile states and economic growth. Some of those studies are reviewed in this section with a bid to identify the gaps and the positioning of this current study within the body of the knowledge.

In a growth regression framework, Bertocchi and Guerzoni (2010) have conducted a panel analysis covering the period from 1992 to 1997 to explore the determinants of state fragility in a geographical area. Their findings show that establishments, particularly the civil liberties index and the variety of insurrections, are the most deciding factors of fragility, considering their likely occurrence. On the other hand, economic components like financial gain advancement and equity show a weak influence. Baliamoune-Lutz (2009) investigates the consequences of political establishments, openness to trade, and social cohesion on development in fragile states and observes that the effect of per capita financial gain interconnects with many alternative elements. On the far side, trade openness may very well be harmful to financial gain, whereas little enhancements in political establishments will have adverse effects.

Olorogun (2021) examines FDI and economic progress in Ghana. Using annual time series data obtained from the World Bank over a period from 1984 to 2018, he implements an ARDL approach and finds that external factors affirm positive impact on FDI attraction and economic development. Specifically, inflation and population have a long and short run substantial impact on attraction of FDI into Ghana. Similarly, at the micro level, financial expansion in the financial sector exerts a significant positive long- and short-term effect on FDI attraction.

According to Fosu (2009), 'policy syndromes' are significant indicators of expansion performance, with their absence accounting for nearly 3.0 rise within the annual per capita gross domestic product growth. Also, the analysis posits that governance exerts a positive direct and indirect impact on growth; the latter is via the

potential ability of governance to realize a syndrome free regime. Burnside and Dollar (2000) use a new database on foreign aid to examine the relationships among aid, economic policies, and growth per capita. It discloses that that aid had a positive impact on growth in developing countries. Monetary and trade policies, however, had little impact within the presence of poor policies. Sensible policies are necessary for growth. The standard of policy alone had only minimal impact on the allocation of aid. The study concludes that aid would be simpler when consistently conditioned on sensible policy.

The empirical study conducted by McGillivray (2008) uses a panel information from 1977 to 2001 and GMM as the estimation model. The study inspects potential connectivity between aid and economic process in fragile nations and finds that growth would have been 1.4 lower in extremely fragile states within the absence of aid, compared to 2.5 in alternative countries. Furthermore, highly fragile states viewed from a per capita financial gain growth perspective would absorb three times more aid. In the research conducted by Moussa et al (2016), the macroeconomic impact of economic freedom on FDI inflows in fragile and conflicted areas Sub-Saharan, Oceania and Post-Soviet Union is investigated. The findings reveal the highest positive impact of economic freedom on FDI under a fixed effects model in global cases, whereas the lowest ones are documented in Oceania and fragile-conflicted affected areas.

Furthermore, the analysis study by Collier (2017) adopts the World Bank's Country Policy and Institutional Assessment (CPIA) to measure state performance. The study finds that aid will prolong state failure, whereas aid through technical help will reduce it. Overall, a transparent impact of fragility on economic outcomes has proved exhausting to assess. One potential rationalization for the absence of a transparent causative running from fragility to development is the endogeneity of fragility. Olorogun (2021) explores a new model that specifies FDI-led growth theory for the Rwandan economy based on annual time series data from 1970 to 2018 obtained from the World Bank. He uses the Johansen cointegration and ARDL approaches due to the varied order of integration from the stationarity test by adopting unit root tests. All variables are established to wield a positive impact on economic development except financial development from the financial sector, which is significant in the short run but insignificant in the long run.

The study by Easterly and Levine (2017) shows that ethnic diversity in Africa affects social polarization and the subsequent formation of many rival interest teams, which increases the probability of choosing socially sub-optimal policies once ethnic representatives within the government fail to internalize the complete social value of their policies. In contrast, Sachs and Warner (1997) offer some calculations on the sources of slow economic process in the geographic area of SSA from 1965 to 1990, supported by a cross-country regression model. Findings show that poor economic policies play a necessary role within the slow growth. Additionally, lack of openness to international markets and geographical factors like lack of access to the ocean and tropical climate also contribute to Africa's slow economic growth. On another note, Torres (2005) argues that the other issue related to fragility is coupled to weak establishments; although impoverishment is coupled to fragility, it does not apply to all poor areas.

The findings of Moss, Pettersson, and van deWalle(2016) show that states which may raise a considerable proportion of their revenues from the international community are less responsible to their voters and underneath less pressure to keep up in style legitimacy. They are so, less seemingly to cultivate and invest in effective public institutions. The authors argue that in such geographic areas there is a negative association between aid and responsiveness and the quality of public establishments. On the other hand, Vallings and Moreno-Torres (2005) argue that ethnicity does not have direct impact on state fragility, whereas several studies maintain that ethnic fractionalization accounts for most Africa's slow growth which emanates from its instability. In this respect Bates (2000) offers that formation of human capital and ethnic diversity might be promoted by ethnic team but does not essentially cause political violence.

Alola et al (2020) investigate the relationship between trade globalization and Nigeria's economic advancement. The autoregressive distributed lags (ARDL) model is employed for the time series data: real GDP, openness, foreign direct investment, and population growth for the period from 1981 to 2017. The findings of this estimation reveal that population growth is significant but inhibits economic prosperity (real GDP) in the short term. However, the significant and long-run determinants of real GDP are population growth and trade openness rather than foreign direct investment.

In a bid to clarify how economic aid affects economic process which is expounded to external intervention during this study, Burnside and Dollar (2000) offer that social cohesion can be triggered by aid and can influence economic performance indirectly through deep growth determinants. However, in terms of aid effectiveness social cohesion may play an integral role. According to the World Bank (2009b), fragile states are susceptible to monetary shocks due to their reliance on allowances, terribly ex-gratia funding, primary artifact exports, and foreign aid. This impact is accelerated by bad administration, systematic debasement, restrictive and porous security services, and substantial level of nepotism. Therefore, conditions necessary for a crisis are reinforced by institutional arrangement, and state structures typically lack basic functions required for impoverishment reduction and human development.

The empirical study conducted by Velde et al. (2009) reveals that the consequences of the calamity are apparent in the studied countries even though in completely different extents. Variations occurs in each country's level of openness, aid and payment dependency, monetary integration, economic and trade structures, and establishments. The result shows that most SSA countries decline personal monetary flows (i.e., security finance flows, foreign inflows, and bond availability); trade value deficit; qualified staff deficiency relatable to human flight.

Furthermore, Bekun et al. (2020) re-examine the connection between FDI, financial development, total labor force, gross capital formation, and economic growth using Nigeria as a representation for SSA states. Empirical investigation traces a long-run equilibrium relationship among the variables over the sampled period. Furthermore, the empirical results show that FDI influences GDP, which suggests that FDI influences economic growth.

The review of these different studies shows that there are still lapses in the mensuration for determining the core indicators among fragile states. The present study tries to increase the literature on fragility and economic growth by examining the key role of fragility indicators adopted for this study on economic growth of 10 fragile states in SSA. Hence, this study contributes to the framework of information on the difficulty of fragility and economic growth. The study conjointly applies several panels' econometric techniques to make sure that the calculable results are reliable and robust.

2.4 MITIGATING FRAGILITY THROUGH STABILITY

Stability in politics can be defined as a calm political state or peaceful political atmosphere. When the condition of politics of a state remains certain, high propensity to progress, growth and development is certain. It is commonly believed that political stability supports economic development. It helps in keeping the populace well-integrated while maintaining legitimacy in all territories. State building and progress also has a positive stabilizing effect on the government. Itis impossible for a state to progress without embracing industrialization and having an organized system that considers human development through its political policies, because unemployment, poverty, crime will be part of such an economy (Global Economic Prospects, 2017). The factors presented below play a vital role in mitigating the fragility effect in an economy.

2.4. i. State capacity and public goods

An underlying factor of stability in any government is its capacity to fully discharge public goods. Through state capacity, a government can retain knowledge to drive the national economy. The capability of a government to control the vital sectors in the economy will determine how stable such the state economy will be. For instance, when a government fails to provide basic amenities such as public health, sanitation, and energy and leaves it to private providers, the stability of the administration cannot be guaranteed. According to Balázs (2007), policy-based selective aid allocation does not help failing states to overcome internal problems and reintegrate them into the system. This should be taken under consideration when formulating policy criteria for aid allocation.

A government that lacks capability in this area will likely face instability because private companies are profit-driven and do not consider the public interest. Consequently, the provision of public goods must be non-excludable and non-competitive to ensure the stability of a government. This means that there is a high probability of political instability if a state economy does not control public goods and services.

2.4. ii. Good governance and absence of corruption

Good governance and no corruption are major components of government stability, as a porous administration cannot sustain political stability. Good governance and corruption-free administration go together because it is impossible for a corrupt administration safeguard the rights and interests of its citizens irrespective of personal gains.

A research study by Adefeso, (2018) examined how corruption management and polity unrest affect development in African countries. General methodology of moment (GMM) is adopted as analytical tools to examine the period between 1996 and 2016. The outcome of the research indicates that corruption is managed inefficiently in Africa countries, which results in political instability. Further, Alola et. al (2019) examined the impact of corruption indices and insurgency on the Nigerian tourism sector, using Autoregressive distributed lag (ARDL) as the analysis tool. The result shows a significant long-run relationship of insurgency-corruption indices on tourism. Also, the performance of the tourism sector is significantly hampered by insurgency, thereby reducing tourist arrivals.

Good governance and corruption are one of the setback forces that affect third world economies and fragile states. An economy without good governance cannot be proactive and will not have the interest of the whole nation in mind. This will cause polity issues that disturb the public peace and may lead to civil unrest and revolution.

2.4. iii. Legal and rational state

There are always judicial arms in any government system, whether in form of a military regime or a democratic one. Lapses in the judicial system will negatively affect political stability. Creating and monitoring the laws and rules that support the state economy is the duty of the judiciary. As reflected in the European report on development (2009), bilateral migration contracts that facilitate the expatriation of a fixed number of professionals from Africa to Europe ought to be enlarged. Such contracts ought to be designed to permit and encourage the returnqualified professionals to their home countries.

When contracts are bridged, and there are no means to curtail actions either by corporation or individuals, tension arises in the economy, which can impede the

country's stability. A just and egalitarian society will enjoy more stability because the laws apply equally to all parties and groups. Conflict is inevitable in any society, but when the law fails to address important disputes, they might turn into nationwide protests and violence. For instance, when contracts are not awarded by merit or the law is infringed, public tension will rise. A rational state that applies proper checks and balance will be less likely to experience public upheaval. The payment of taxes and levies by the citizens will be an obligation and not an option, and the privileged members of society are not exempted from it.

2.4. iv. Economic integration

Some studies suggest that globalization might be responsible for uneven income distribution. When an economy operates an open economy, there will be increase in knowledge, which will ultimately add to the revenue of such economy.

The analysis conducted by Bandiera et al. (2019) highlightsthree topics associated with state effectiveness and economic governance that are essential for delivering higher rates of comprehensive growth in low-income countries. The primary function is to address fragility and build a functioning and effective state—one that may deliver on planning and implementing a set of economic development policies. The second function is to ensure direct government involvement in impoverishment reduction programs to increase productivity. The third function is that to improve the effectiveness of state policies and state capability through gathering sufficient resources, disbursement, and implementation of the economic policies.

Surprisingly, economic integration can also contribute towards economic instability. When an economy is fully integrated, it is expected that the accumulated merits should outweigh and outnumber the demerits, but this is not always the case. Stability in an economy is only achieved when the merit of economic integration outweighs its demerit. However, often environmental degradation causes loss of resources including both natural and artificial such as public goods and infrastructure. This poses a threat to the stability of the government, as the accumulated funds will be reinvested in setting up the degraded resources which might negatively affect the economy stability.

2.4.1 FACTORS ENHANCING STABILITY

To assess government stability which relates to good governance, some factors are considered during this study. Government stability is hereby viewed from these major characteristics.

2.4.1. i. Role of rule of law: This determines the extent to which state or government stability can be measured in first world economies. In a healthy and robust economy there is optimal function in the judicial branch of government.

Furthermore, as mirrored in the findings of Miner et al. (2015), it was concluded that the risk of conflict can increase the amount of economic gain; the lower the speed of growth the larger is the dependence on primary commodities. In an earlier study of Miner (2001), a correlation exists once one group is dominant and when the right law is applied objectively and without compromise. This will increase the citizen's trust in the government and prevent public protests and support social cohesion.

2.4.1. ii. Role of transparency: A government that favors transparency has a higher degree of achieving government stability. The findings of Collier et al. (2009) posit that the opportunity-grievance-feasibility framework is useful for conceptualizing the affiliation between economic development and conflict, but opinions differ on the driving factors unit. The underlying motivating mechanisms unit disputed, as unit the definitions of ideas (e.g., fragile, and conflict-affected states) and thus the ways in which they are accustomed (e.g., growth in GDP).

It should be noted that a government cannot exist in isolation without the people and these people believe whatever is going on in the administration should not be obscure as they want to know what the government has in stock for them. So, a state where the governments are not trustworthy due to personal interest tends to have Instability because people will question the administration, and this might lead into civil war which will distort stability in such economy.

2.4.1. iii. Role of responsiveness: To measure stability in a government, there should be quick response in such economy. This will make the citizen to have faith in the administration because they know that their need or request will be treated without delay and as such peace will continue to reign in such economy.

2.4.1. iv. Role of consensus orientation: When the interests of the stakeholders are put into consideration by the administrator, there is high propensity to stability in such economy. The stakeholders' views and opinion go a long way in a successful government who cherish stability. There should be timely interaction with the people and stakeholders as this will make them understand that they are integral and part of the government which will ultimately result into calmness in such state.

2.4.1. v. Role of equity and inclusiveness: A government that practices equal right for all will have stability in administration. The research outcome by (Michalopoulos et al., 2011) shows that the random drawing of borders because of European constitution specifically fosters conflict.

When people rights are trampled because of social class, there will be unrest in such economy because of protest and chaos, but when all the social classes are treated as one and made to belief and convinced, they are part of the government, there will be peace which will have a positive effect on stability of the country.

2.4.1. vi. Role of effectiveness and efficiency: There is no effective and efficient governance without stability. A recent paper by Hjortet al.(2019) shows that native policymakers not only exhibit important demand for research-based information, but they also reply to the analysis findings and use them in future higher cognitive processes. When an administration knows what is right and performs its functions in a proficient and timely manner, there will be no cause for public alarm, protests, and subsequent political instability. When the public is at peace and the citizens' basic expectations are met, there will be progress in the economy and prompt action will be taken when due.

2.4.1. vii. Role of accountability: Proper accountability in governance is one of the major measurements of a good administration. When public representatives and appointed officials are held responsible for their actions, complacency will not set in because capable and experienced individuals will be placed in the right positions. When questions are answered and proactive measures are taken, the administration will be in a stable position.

2.4.1. viii. Role of participation: Good governance entails the practice of equal opportunities for all, irrespective of individual differences. When the citizens are assured that their interests are equally represented, and when there is no discrimination to work due to gender or ethnicity, it will create a shared sense of belonging and responsibility, which will instill stability across the country. According to Vallings et al. (2005), the international community must have a better understanding of the reasons responsible for state failure to derive generic policy implications and operational recommendations.

2.5 THE ENDOGENOUS GROWTH MODEL

Endogenous growth theory was developed as a response to the shortcoming of the Solow-Swan neoclassical growth model developed from Solow (1956). It is a new theory which explains the long-run growth rate of an economy based on endogenous factors as against exogenous factors of the neoclassical growth theory (Martin &Sunley 1998).

In this theory, endogenous forces rather than exogenous forces are indispensable for economic growth. According to this theory, the key contributors to economic growth are investment in human capital, innovation, and information. The theory focuses on positive externalities and result effects of a knowledge-based economy, which support economic development. The endogenous growth theory primarily holds that policy measures play a significant role in the long-run growth rate of an economy. For instance, subsidies for research and development or education increase the expansion rate in endogenous growth models by increasing the inducement for innovation (Nerlove& Arrow, 1962).

Endogenous growth economists believe that enhancements in productivity will be joined onto a quicker pace of innovation and investment in human capital:

- The requirement for sturdy government and private sector establishments to support innovation and supply incentives for people and businesses to be creative.

- Knowledge industries (i.e., telecommunications, code, or biotechnology) are increasingly important in both developed and developing countries.

The main purports of the endogenous growth theory are as follows:

- Government policies will raise a country's rate of growth when they create honest competition in the markets, stimulate production, and develop new ideas.

- The capital investment has higher return to scale, especially in the areas of the health, telecommunication, and education infrastructure.

- Research and development in the private sectors may be the pivot engine for technical breakthrough.

- Business enterprises need to be protected by laws that regulate property rights and patents. This will serve as source of motivation and encouragement to invest in research and development.

- The key growth ingredient may be investment in human capital to raise the quality of the labor force.

- Entrepreneurs need the backing of the government and must be considered when deciding new policies. These policies must favor entrepreneurs so that the supply chains will not be disrupted.

2.6 GAPS IN THEORETICAL AND EMPIRICAL LITERATURE

Having undertaken the review of theoretical and empirical studies, we noticed that fragility on economic growth is still a topical issue, because most theoretical studies identify fragility as the inability of a state to perform basic economic functions. Also, the reviewed empirical studies have failed to identify the major fragility indices that affect economic growth. Against this backdrop, our research aims to fill this gap and determine the connection and the impact these fragility indices have on economic growth in selected SSA countries.

2.7 THEORETICAL FRAMEWORK DIAGRAM

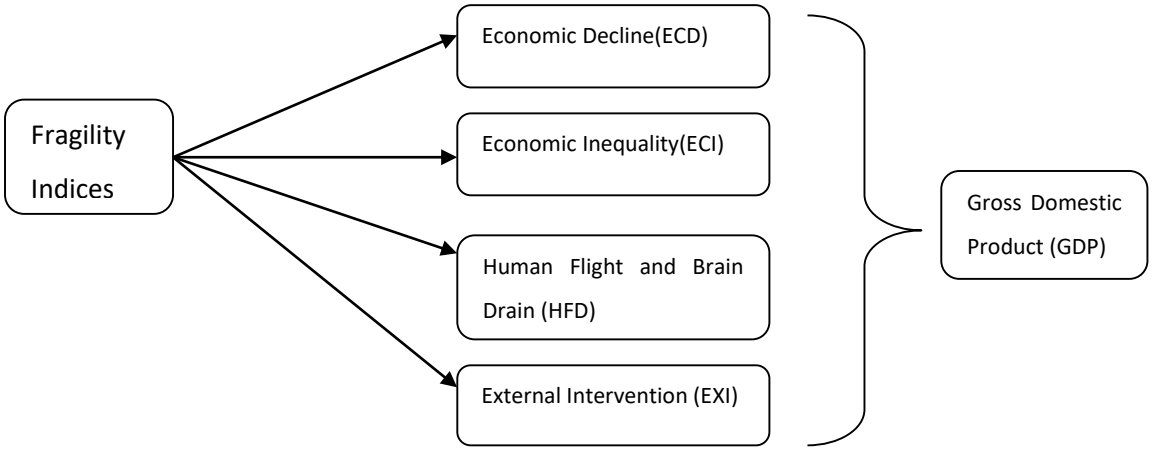

Fig 2.1: Theoretical Framework

The theoretical framework above depicts the nexus between fragility and economic growth. Here we observed how the fragility indices impacts economic growth. Fragility or the inability of a state to perform effectively by providing basic social amenities is weighted against these major indices. The theoretical framework diagram illustrates how these fragility indices are linked with economic growth in SSA countries. Technically, all these indices represent forms of fragility and are adopted as the independent variables in this research study.

2.8 CONCLUSION

This chapter has provided a clear understanding of the meaning of fragility and economic growth as reflected in previous research work. Subsequently, it has explained the theoretical link between fragility and economic growth based on the functionalist theory developed by Durkheim. His theory has been harmonized to suit the scope and focus of this study and linked it with our variables of ECD, ECI, and HFD. Those variables apply when the government fails to provide an adequate institutional framework for private enterprises to operate freely without government intervention, ensured protection of property rights, and available policies to encourage entrepreneurship. More so, external intervention can enliven FDI inflow.

The chapter proceeded in reviewing the theoretical literature to show that previous studies have failed to examine the major fragility indices that affect economic growth especially in SSA. Empirical studies have shown varied opinions on adequate

ways to mitigate fragility and expatiate on factors that can enhance this stability for uniform growth. Further, the endogenous growth model has been reviewed, which posits that endogenous forces are necessary to achieve economic growth. The chapter has conceptualized the existing gaps in the theoretical and empirical literature and incorporated them into our theoretical framework to determine the way they interconnect.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

This chapter presents the methods adopted for this study and reviews the chosen research design which represents the roadmap of this current study. The study investigates the impact of fragility indices on economic growth among 10 countries in SSA with dataset spanning between 2006 and 2019. The variables utilized were transformed into their natural logarithm to make the series conform to normality. A direct negative relationship is expected among economic decline (ECD), economic inequality (ECI), human flight and brain drain (HFD) and gross domestic product (GDP). It is assumed that more ECD, ECI and HFD will bring about decrease GDP. (i.e., $\beta_1, \beta_2, \beta_3 < 0$). As for external intervention (EXI), the sign effect can be positive or negative. (i.e., $\beta_4 >$ or <0).

We adopted different econometrics tools to analyze our data and ensured that our result did not contain invalid estimates. Furthermore, the source of data for both dependent and independent variables for this research was derived from World Bank indicators and Fund for Peace. We then proceeded to specify the model for our data by subjecting the variables to proper analysis using inferential statistics to achieve efficient results that were robust and suitable for policy recommendations.

3.1 RESEARCH DESIGN

The study commenced with introducing the reasons for conducting this research. We developed relevant questions and objectives to provide solutions to an existing problem in this area of study. The research questions and objectives are presented in a tabular form in Table 3.1 below.

Table 3.1 Research Questions and Objectives

Questions	Objectives
i. Is there any connection between fragility indices and economic growth?	To investigate the connection between fragility indices and economic growth.
ii. Do fragility indices have impacts on economic growth?	To empirically determine the impacts of fragility indices on economic growth.

Having developed the relevant research questions and objectives to explore the stated problem, we linked it to functionalist theory that emphasizes on consensus and order regulating society, focusing on social stability and shared public values. We observed that ECD, ECI, and HFD influence economic growth when the government fails to provide an adequate institutional framework for private enterprises to operate freely without government intervention, protects property rights, and devises policies to encourage entrepreneurship. More so, EXI can enliven FDI inflow.

We proceeded by defining the model for this research following current empirical models and employed descriptive statistics to describe the structure and datasets properties and ascertain the normal distribution. Correlation analysis was conducted to quantify the degree to which our variables were related. The data consisting of a panel study that involved 10 fragile SSA country indicated cross-sectional dependence which could lead to invalid test statistics. To mitigate this, we adopted cross-section augmented Im-Pesaran-Shin (CIPS) second-generation test as it allows cross-sectional dependence among the series and provides more accurate results compared with first-generation unit root. We found stationarity at first difference. Westerlund cointegration test can be used both in existence and non-existence of cross-sectional dependency and was employed to confirm long- run relationships among the variables.

To achieve our first objective fully modified ordinary least squares (FMOLS) was used as robustness check and to determine the connection between fragility indices and economic growth. In achieving our second objective to empirically determine the impact of fragility on economic growth we utilized panel mean group (PMG), augmented mean group (AMG), and common correlated effect mean group (CCEMG), in addition to attesting the causal relationship among the variables using the Dumitrescu-Hurlin causality test.

3.2 SOURCES OF DATA

Panel data spanning from 2006 to 2019 was used for this study extracted from the Fragile State Index (FSI) obtained from Fund for Peace (https://fragilestatesindex.org), and the dependent GDP variable data from World Development Indicators (https://data.worldbank.org).

This research employed GDP as proxy for economic growth while the independent variables adopted for this study were the measurement of fragility indices ECD, ECI, HFD, and EXI on Congo Democratic Republic, Central African Republic, Chad, Sudan, Zimbabwe, Burundi, Cameroon, Nigeria, Guinea, and Mali.

3.3 MODEL SPECIFICATION

The model adopted for this study was adapted from previous empirical models (Saba &Ngepah, 2019). The empirical findings of their study revealed a long-run equilibrium relationship among the investigated variables, which is in tandem with the current study. Hence, the current model is presented in as:

$GDP = f\ (ECD, ECI, HFD, EXI)$ …….1

where

GDP represents Gross Domestic Product and is a proxy for economic growth.

The lists of the independent variables are the fragile state indexes/indicators

In logarithm forms, equation 1 becomes

$lnGDP_{i,t} = \beta_0 + \beta_1 ECD_{i,t} + \beta_2 ECI_{i,t} + \beta_3 HFD_{i,t} + \beta_4 EXI_{i,t} + e_{i,t}$.....2

where

$\beta_0$represents constant of the panel estimate,

ECD represents the Economic Decline,

ECI represents Economic Inequality,

HFD represents Human Flight and Brain Drain,

EXI represents External Intervention,

e represents the error term for every cross section i(i=1,2,…….,10), and

year period t (t = 2006, 2007….,2019)

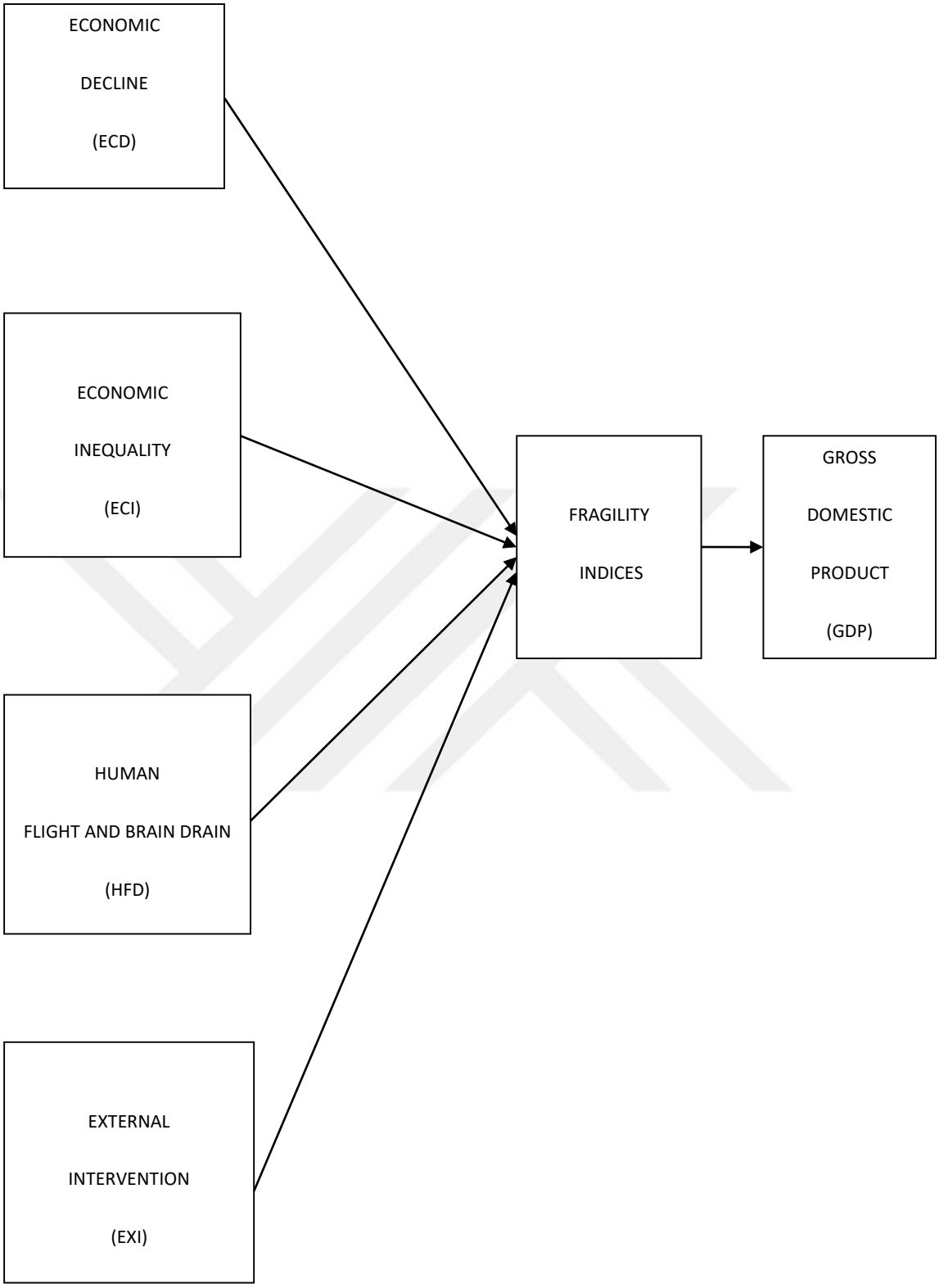

Figure 3.1 Model Specification Diagram

3.4 METHOD OF ANALYSIS

Both descriptive and inferential statistical techniques were employed for the analysis (Ngepah et al., 2019). The descriptive statistics, specifically the use of line graph, was used for trend analysis. Other descriptive statistics methods like mean, variance, skewness, and kurtosis statistics were used to describe the structure and properties of the datasets.

As for the inferential statistics, the data were tested for cross-dependence using Breusch-Pagan LM test; however, there was evidence of cross-dependence among the variables which could lead to invalid test statistics and inefficient estimator values. To mitigate this effect, we conducted a CIPS second-generation unit root (Pesaran, 2007); there upon, the variables became stationary.

We proceeded by confirming the existence of cointegration in our variable using the Westerlund cointegration test. FMOLS was adopted for robustness check and to investigate the connection among the variables. Subsequently, AMG estimator, CCEMG and MG second-generation estimator were used for diagnostics of the model and to empirically determine the impact of fragility indices on economic growth, in addition to the Dumitrescu-Hurlin causality test to determine the causal relationship among the variables.

3.5 CONCLUSION

This chapter has briefly presented the research methods adopted for this research in view of the chosen research design, data sources, and model specification. Further, the appropriate econometric analysis to achieve our research objectives has been explained following the method of analysis, thereby making our research fit for policy recommendation.

CHAPTER FOUR

RESULT AND ANALYSIS

4.0 INTRODUCTION

This chapter presents the result of the analysis and interpretation in line with the past studies to generate suitable policy recommendations, followed by the descriptive statistics explaining the values of the dataset. We further show the correlation existence among the variables, and our result indicated that there is no existence of multicollinearity that can reduce the precision of the estimated coefficient and weaken the statistical power of our regression model.

Furthermore, we tested for cross-dependence among the variables by using Breusch-Pagan LM to avoid wrong estimates in our panel study model. CIPS second-generation was used for panel unit root test before ascertaining the existence of long-run relationships among our variables using the Westerlund cointegration test. To investigate the connection between fragility indices and economic growth, FMOLS estimation was carried out, confirming the consistency and robustness of our results. Panel MG, AMG and CCEMG were used as diagnostic tests to empirically determine the impact of fragility indices on economic growth, while the relationships among the variables were determined using the Dumitrescu-Hurlin causality test.

4.1 DESCRIPTIVE STATISTICS

The descriptive statistics, specifically the use of line graph (see Appendix), was used to show the trend analysis. Other descriptive statistics methods like mean, standard deviation, skewness, and kurtosis statistics were used to describe the structure and dataset properties. The summary statistics of the variables is presented in Table 4.1 below. It could be observed from the kurtosis results that it is platykurtic, which implies a flatted curve with lower values among the observed variables. Also, the skewness measuring the degree of asymmetry of the series had no outlier, which indicated that the variables were normally distributed.

For the Democratic Republic of Congo, we could observe that the mean and median of the GDP was 3.018 and 3.099 respectively, with skewness and kurtosis at 0.108 and -1.205 respectively. ECD had a mean and median of 8.314 and 8.30 respectively, with skewness and kurtosis at 0.436 and -0.785 respectively. ECD, ECI,

HFD, and EXI had almost the same value, which indicated that there were no outliers in the variables, thus implying that there was an association among the variables, which made them fit for analysis. We could also observe that kurtosis and skewness were normally distributed when comparing all the variables for Congo.

The Central African Republic variables measured at 2.039 and 2.069 for mean and median of GDP. The mean values for ECD, ECI, HFD and EXI measured at 8.361, 9.320, 6.415, and 9.438 respectively. We could also deduce from the descriptive statistics that the median, minimum, and maximum values were close to the values observed for the Congo. This might be because these countries share borders, so there is a likely spillover effect of fragility indices between them. Both the skewness and kurtosis for each variable were also normally distributed.

The mean and median values of the Republic of Chad were observed to be the lowest among the observed countries during this research. The values were 1.1110 and 1.11 respectively with platykurtic kurtosis and normal skewness when we observed the variables. The mean and median of Sudan had the highest value with 5.09 and 5.28 respectively, while other variables were normally distributed.

The remaining countries Zimbabwe, Burundi, Cameroon, Nigeria, Guinea, and Mali were also observed to follow the same trend as far as statistical properties were concerned. This implied that the fragility indices adopted in this research had a uniform effect and that the variables were normally distributed, in addition to the absent outliers, which would have disproportionate effects on our statistical results and lead to misleading interpretations. The implication of the results among the observed countries in this research showed that they were fragile.

Table 4.1: Descriptive Statistics of the Variable

Country	Variable	Mean	Median	Min.	Max.	Skewness	Kurtosis
Congo Democratic Republic	LGDP	3.018	3.099	1.4410	4.738	0.108469	-1.205802
	ECD	8.314286	8.300000	7.900000	8.800000	0.436079	-0.785733
	ECI	8.892688	8.900000	8.400000	9.500000	0,170074	-0.565378
	HFD	7.395582	7.300000	6.600000	8.100000	0.057563	-1.319270
	EXI	9.664286	9.700000	9.400000	10.00000	0.397961	0.951199
Central African Republic	LGDP	2.0309	2.0609	1.6909	2.5109	0.281076	-0.817322
	ECD	8.361538	8.400000	7.700000	9.100000	0.012156	-0.163542
	ECI	9.320689	9.200000	8.600000	10.00000	0.003400	-1,530890
	HFD	6.415385	6.100000	5.500000	7.500000	0.128262	-1.893111
	EXI	9.438462	9.500000	9.000000	9.900000	-0.076605	-1.166149
Chad	LGDP	1.1110	1.110	8.6409	1.3910	0.316259	-0.241343
	ECD	8.323076	8.300000	7.700000	9.000000	0.292262	-0.174422
	ECI	9.057127	9.100000	8.600000	9.342648	-0.483151	-0.204738
	HFD	8.248514	8.300000	7.700000	8.900000	0.202044	-1.447334
	EXI	8.615385	8.300000	7.800000	9.700000	0.552915	-1.306175
Sudan	LGDP	5.0910	5.2810	1.8910	7.4310	-0.916198	1.048070
	ECD	7.707692	7.800000	6.400000	8.700000	-0.361147	-0.837109
	ECI	8.492308	8.500000	7.400000	9.600000	0.029635	-1.677693

	HFD	8.676923	8.700000	8.200000	9.100000	-0,295973	-1,207961
	EXI	9.630769	9.700000	8.900000	10.00000	-1.266520	1.56496
Zimbabwe	LGDP	1.6110	1.9110	4.4209	2.4310	-0.761569	-0.637732
	ECD	8.923077	8.600000	8.000000	10.00000	0.518261	-1.270295
	ECI	8.776923	8.600000	7.900000	9.700000	0.205316	-1.641389
	HFD	8,684615	8.600000	7.300000	10.00000	0.125531	-1.242772
	EXI	7.507692	7.600000	7.000000	7.800000	-1.106778	0.469879
Burundi	LGDP	2.4509	2.4509	1.3609	3.1709	-0.441951	-1.118058
	ECD	8.365567	8.200000	8.000000	9.100000	0.805040	-0.320332
	ECI	7.844452	7.700000	6,977876	8.800000	0.332342	-1.142188
	HFD	6.353846	6.500000	5.900000	6.800000	-0.198435	-0.931042
	EXI	8.738461	8.700000	8.400000	9.000000	-0.156209	-1.305867
Cameroon	LGDP	3.110	3.0910	2.2410	3.8810	0.062863	-0.779959
	ECD	6.452820	6.500000	5.900000	7.00000	0.218750	-1.235599
	ECI	8.098082	8.100000	7.475067	8.900000	0,234451	-1.628833
	HFD	7.678879	7.600000	7.200000	8.100000	-0.022223	-0.639465
	EXI	7.107692	7.0000000	6.500000	8.000000	0.649633	0.104201
Nigeria	LGDP	4.1111	4.0511	2.7611	5.6811	0.166535	-0.436123
	ECD	7.195769	7.500000	5.400000	8.044998	-1.263248	0.934445
	ECI	8.900000	8.900000	8.100000	9.500000	-0.668147	0.208230
	HFD	7.575622	7.400000	6.90000	8.500000	0.513527	-1.211164

	EXI	6.230769	6.200000	5.700000	6.900000	0.500811	0.116391
Guinea	LGDP	8.6109	8.3809	6.2809	1.3610	1.226941	0.8444841
	ECD	8.892308	8.900000	8.500000	9.400000	0.315545	-1.081062
	ECI	8.070852	8.100000	7.300000	8.900000	0.049505	-1.352951
	HFD	7.838555	7.700000	7.100000	8.600000	0.175856	-1.582447
	EXI	7.569231	7.600000	6.800000	8.500000	0.2589271	-0.416177
Mali	LGDP	1.310	1.3110	8.1509	1.7510	-0.007289	-0.526755
	ECD	7.973961	7.900000	7.400000	8.700000	0.306944	-0.599715
	ECI	6.983358	7.000000	6.400000	7.600000	0.137440	-0.932643
	HFD	7.935460	7.900000	7.300000	8.700000	0.082987	-1.708347
	EXI	8.115385	8.000000	6.600000	9.600000	0.128679	-2.019318

4.2 CORRELATION TEST

Correlation matrix was conducted to ascertain correlation relationship among the variables as shown in Table 4.2 below. The correlation that exists between each pair of explanatory variables must not be more than 0.8; if so, there is a tendency of multicollinearity (Bryman & Cramer, 1997). It could also be observed that there was no multicollinearity among the variables, which would reduce the precision of the estimated coefficient and weaken the statistical power of regression model.

Table 4.2: Correlation Test Result

Evidence of Correlation

Indicators	LGDP	ECD	ECI	HFD	EXI
LGDP	1.0000				
ECD	-0.4883	1.0000			
ECI	0.0589**	0.0371*	1.0000		
HFD	0.3492	0.0291*	0.1989	1.0000	
EXI	-0.4228	0.2664	0.2037	-0.0982	1.0000

*Statistical significance at 5%, **Statistical significance at 10%

According to our result, GDP was negatively related with ECD. This is in line with the a priori expectation. Additionally, ECI was statistically significant at 10 percent, while the EXI was negative related to GDP. This might be because of the negative externalities such as natural resources exploitation by rebel groups in Congo, as observed in Berdal et al. (2005). This affected the balance of power, thereby making the growth in the fragile states unstable.

4.3 CROSS-SECTIONAL TEST

Before choosing the appropriate unit root test and cointegration test in a panel study, it is crucial to test for cross-sectional dependence (Tugcu, 2018). Since T>N in this current research, Breusch-Pagan LM test was conducted to avoid invalid test statistics and to make the estimator efficient.

The test result shown in Table 4.3 below, however, indicates a cross-sectional dependence in the residuals of the panel data because the p-value < 0.05, therefore we

reject the null hypothesis (H0: There is no cross-section dependence) which implies the existence of cross-sectional dependence.

Table 4.3: Breusch-Pagan LM Result

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	250.7693	45	0.0000
Pesaran scaled LM	21.68999		0.0000
Pesaran CD	8.481742		0.0000

4.4 PANEL UNIT ROOT

Since the result indicated cross-sectional dependence, we applied CIPS second-generation test introduced by Pesaran (2007) as it allows cross-sectional dependence among the series and provide more accurate results as compared to first-generation unit root tests. The result is presented in Table 4.4 below. A significance level at one percent was observed at first difference which implies that the variables are stationary.

Table 4.4: Panel Unit Root Test

Findings from Panel CIPS Unit Root Test

Variable	Level		First Difference	
	Zt.bar	P-Value	Zt.bar	P-Value
LGDP	-3.08532	0.0010*	-13.0324	0.0000*
ECD	-3.77091	0.5218	-16.2745	0.0001*
ECI	-0.89001	0.1867	-23.5178	0.0000*
HFD	-0.99869	0.1590	-20.0557	0.0000*
EXI	-1.38582	0.0829	-19.4521	0.0000*

*Statistical significance at 1%

4.5 SWAMMY, PESARAN AND YAMAGATA HETEROGENEITY TEST

The prerequisite for being heterogeneous to be able to use the Westerlund test was ascertained. Since time is greater than cross section in this study, i.e., t > n, we performed Swammy, Pesaran and Yamagata heterogeneity test.

On the other hand, according to the results of the Swammy (1970) and Pesaran and Yamagata (2008) test conducted to investigate the heterogeneity given in the Table 4.5 below, it is seen that the null hypothesis regarding the homogeneity of the parameters of the models belonging to the estimated model was rejected. According to this finding, it is concluded that the parameters of the model are heterogeneous.

Table 4.5: Swammy, Pesaran and Yamagata Heterogeneity Test

Variables	Swammy(1970) Chi2 Test Statistic Value	Pesaran Yamagata Test	
Model	117222.12***	$\tilde{\Delta}$	$\tilde{\Delta}_{adj}$
		5.793***	7.663***

Test of parameter constancy: chi2(45) = 11722.12 Prob > chi2 = 0.0000

Note: () shows probability values. In addition, * indicates the significance levels of 0.10, **0.05 and *** 0.01.

4.6 COINTEGRATION TEST

The existence of cointegration was ascertained using the Westerlund cointegration test (Westerlund, 2017) as it can be used with or without cross-sectional dependency and are general enough to allow for a large degree of heterogeneity, both in the long-run cointegrating relationship and in the short-run dynamics, as indicated in Table 4.6 below. According to the p-values, the null hypothesis of no cointegration among the variables was rejected. Hence, there was cointegration among the observed variables, which implied a long-run relationship in our model. This confirmed the previous findings of Okafor et al. (2017).

Table 4.6: Westerlund Cointegration Test

Cointegration Evidence by Westerlund

Statistics	Value	Z-value	P-value
Gt	-1.216108	2.17018	0.0337**
Ga	-1.828508	-1.48599	0.9998
Pt	-2.932044	-1.92341	0.0017*
Pa	-2.514271	-2.53788	0.0060*

*Statistical Significance at 1%, **Statistical Significance at 5%

4.7 FULLYMODIFIED ORDINARY LEAST SQUARES (FMOLS)

To investigate the connection between fragility indices and economic growth, FMOLS as introduced and developed by Philips and Hansen (1990) was adopted; see Table 4.7 below.

Table 4.7: FMOLS Test

FMOLS Test Result		
Variables	FMOLS	
	Coefficient	P-Value
ECD	-0.130887	0.0283**
ECI	-0.151857	0.0549***
HFD	-0.178176	0.0211**
EXI	0.189961	0.0011*

*Statistical significance at 1%, **Statistical significance at 5%, ***Statistical significance at 10%

We could observe that the ECD coefficient in FMOLS was significant at five percent. According to our result, a percentage increase in ECD will have a diminishing impact on GDP. In discovering the connectivity between ECI and GDP, a statistical significance at 10 percent was observed in FMOLS test. This might probably be due to the spillover effect of illicit trade, high levels of corruption, and illicit financial transactions such as money laundering or embezzlement (Signe et al.,2020), resulting in uneven income distribution within the economy.

The empirical result in this research indicated that HFD had a significant impact on GDP at five percent using FMOLS. According to population theory, it is expected that the higher the population the better the economy should project because of human resources (Peterson, 2017). However, our result showed a negative effect on GDP. This is most likely due to the result of deteriorating working conditions and environmental neglect in these fragile states. These conditions prompt the outflux of skilled workers, thereby depriving the state economy of experts and professionals required to generate economic growth (Akokpari, 2017)

We can infer from the result that the EXI coefficient positively impacted GDP at a significant level of one percent. A one-unit change in EXI will cause an increase in the GDP by 0.189961 units. This means that within the studied countries a unit increase in EXI will have a positive impact on economic growth because of positive externalities such as FDI, bilateral trade agreements, and open trade.

4.8 PANELMEAN GROUP (MG), AUGMENTED MEAN GROUP (AMG) AND COMMON CORRELATED EFFECT MEAN GROUP (CCEMG)

We utilized MG estimator (Pesaran, 1995), AMG estimator (Eberhardt, 2005) and CCEMG (Pesaran, 2006) for diagnostics test as shown in Table 4.8 below. We observed from the result that the model estimates of CCEMG were more robust, considering that it had the least RMSE value.

Table 4.8: Panel MG, AMG and the CCEMG Estimations

The MG, AMG, CCEMG Estimation Result

Variables	MG Test	AMG Test	CCEMG Test
ECD	-0.028**	-0.8025	-0.1232
ECI	-2.1742*	-2.5637*	-3.4103**
HFD	-0.5375	-0.7390	-0.1024*
EXI	1.6533*	1.8965	1.5679
C	65.706**	89.789*	-73.759**
T	1.6147	1.3015	1.2402
Wald	35.345*	28.892*	15.242*
RMSE	6.823	5.945	4.242

*Statistical Significance at 1%, **Statistical Significance at 5%

The indicators of economic decline (FSI, 2017) such as illicit trade, drug and human trafficking, capital flight, and high levels of corruption tend to slow economic growth, which was evident in our result. We found out that the coefficient of economic decline was significant at five percent. This denoted that a unit increase in ECD among the studied countries will lead to a statistically significant decrease in GDP, which was in tandem with the result produced in a previous study carried out by Adefeso (2018) which confirmed ineffective control of corruption and political instability in Guinea at -0.42 and -0.27 respectively. This indicated that on average governance crisis (e.g., Burundi when the president announced his plan to run a third term in 2015) was persistent and negatively impacted the growth and development in this region.

Also, a significant level at one percent was observed in HFD, thus confirming the result of Seyoum et al. (2020) which suggested that state fragility correlated with the dependent variable and the mediator, with HFD having a negative coefficient. However, a one percent increase in HFD among the observed countries will lead to a statistical significance fall in GDP by 0.5375 to 0.7390 percent. This implied that the increase in HFD can reduce GDP.

Furthermore, we observed that the ECI coefficient was statistically significant; suggesting that a one percent increase in ECI decreased GDP by 2.1742 to 2.5637 percent. This was in line with the finding of Hakura et al. (2014) which showed a negative association between growth and income inequality among fragile states. Its growth decomposition analysis suggested that addressing high inequality could significantly affect growth in SSA. Also, as evident in conflict theory which holds that stratification is dysfunctional and harmful in society, as social and economic inequality is perpetuated as it benefits the rich and powerful elite at the expense of the poor majority, thereby causing an uneven wealth distribution.

EXI exerted a positive significant impact on GDP at one percent, as evident from our result. This was most likely due to positive externalities and spillover effects of a knowledge-based economy, leading to economic development. This implied that a one percent increase in EXI will lead to an increase in GDP by 1.6533 to 1.8965 percent. This coincided with the result produced by Gelbard et al. (2015) where foreign aids have a positive impact on economic growth among fragile SSA countries. Also, the same was observed by Misati et al. (2012) namely that governance indicators played a positive and significant role in the economic performance of African economies.

In summary, our results confirmed that ECD had a negative significant impact on economic growth among the observed variables and countries, while the impact of ECI and HFD was also negative and significant. Further, EXI had a positive and significant impact on economic growth within the scope of study.

4.9 DUMITRESCU-HURLIN CAUSALITY TEST

In attesting the causal relationship among the variables in this research, we adopted Dumitrescu-Hurlin causality as shown in Table 4.9 below.

Table 4.9: Dumitrescu-Hurlin Causality Test

Dumitrescu-hurlin causality test result

Null Hypothesis:	Causality	W-Stat	Zbar-Stat	Prob.
ECD≠>LGDP	LGDP→ECD	1.51110	0.38136	0.7029
LGDP≠>ECD		3.62269	3.46554	0.0005*
ECI≠>LGDP	ECI→LGDP	2.44878	1.75093	0.0800***
LGDP≠>ECI		5.84116	6. 70581	2.1112
HFD≠>LGDP	LGDP→HFD	1.01389	0.34486	0.7302
LGDP≠>HFD		3.17325	2.80908	0.0050**
EXI≠>LGDP	EXI≠LGDP	1.08352	-0.24316	0.8079
LGDP≠>EXI		2.27460	1.49652	0.1345
ECI≠>ECD	ECI→ECD	2.84319	2.32700	0.0200***
ECD≠>ECI		1.98174	1.06877	0.2852
HFD≠>ECD	HFD↔ECD	3.63818	3.48816	0.0005*
ECD≠>HFD		2.51745	1.85123	0.0641
EXI≠>ECD	EXI≠ECD	1.07424	-0.25672	0.7974
ECD≠>ECI		1.49445	0.35704	0.7211
HFD≠>ECI	HFD→ECI	3.71155	3.59533	0.0003*
ECI≠>HFD		0.95523	-0.43053	0.6668
EXI≠>ECI	EXI≠ECI	1.01149	-0.34837	0.7276
ECI≠>EXI		1.32911	0.11555	0.9080
EXI≠>HFD	EXI→HFD	3.06691	2.65376	0.0080*
HFD≠>EXI		0.57024	-0.99285	0.3208

*Significance level at 1%, **Significance level at 5%, ***Significance level at 10%

Lag length: 2, (AIC)Akaike Information Criterion

Note: ≠ represents no Granger causality, → symbolized unidirectional causality, and ↔ represents bidirectional causality. ≠>symbolized 'does not granger cause'.

From the result, we found unidirectional causality between GDP and ECD at one percent significance, which was in accord with the finding of Ngepah et al (2019). Thus, we rejected the null hypothesis which states that there was no causal relationship between fragility indices and economic growth, meaning that the fragility indices had a significant impact on economic growth among the countries in this research. Also, unidirectional causality was observed among ECI and GDP, GDP and HFD, ECI and ECD, HFD and ECI, EXI and HFD respectively, thus leading to the rejection of the

null hypothesis. We also observed that there was no causality among EXI and GDP, EXI and ECD, EXI and ECI respectively.

There existed bidirectional causality between HFD and ECD at one percent significance, which confirmed the earlier finding of Saba et al. (2021). Thus, we rejected the null hypothesis. The implication was that both ECD and HFD should be given ultimate attention by government officials and policy makers in fragile SSA countries to support stable economic growth.

4.9.1 CONCLUSION

The chapter has presented and explained the analysis results in this study. This entailed descriptive statistics to describe the structure and datasets properties followed by the correlation matrix to ascertain correlation relationships among the variables. We observed no multicollinearity among the variables which were fit for analysis. Furthermore, we tested for cross-dependence and cross-sectional dependence mitigated through CIPS unit root test which rendered our variables stationary at first difference.

The chapter further presented and explained the result of the Westerlund cointegration test to ascertain the presence of long-run relationships in our model. It has achieved the first research objective by using FMOLS and has found that economic decline had a negative significant impact on economic growth among the observed variables. To achieve the second research objective the study utilized MG, AMG, and CCEMG and found out that the coefficient of economic decline is negative and significance. Furthermore, the ECI coefficient was statistically significant, and a percentage increase in ECI was linked to a decrease in GDP. Further, EXI exerted a positive and significant impact on GDP, thus establishing a causal relationship among the observed variables.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

5.0 SUMMARY OF FINDINGS

This study was carried out to revisit the impact of fragility indices on economic growth in SSA countries. The objectives of the study were to investigate the connection between fragility on economic growth and determine the impact of fragility on economic growth.

Findings against each of these objectives showed that:

- ECD, ECI and HFD had a significant and negative impact on economic growth, while EXI had a positive and significant impact on economic growth in the selected countries during the period of study.
- There was a significant interactive effect between the fragility indices and economic growth. Also, there was evidence of unidirectional and bi-directional causality among the variables.

5.1 CONCLUSION

This research study explored the concepts of fragility and economic growth. We observed that fragility issues are among the current issues in the field of development economics; however, the term 'fragility' has yet to be properly defined in this context. This research study tried to add to the existing literature by reviewing past studies and filling the research gaps that require further attention. Regarding the statement of the problem, we discovered that fragility is a broad concept, which prompted us to limit our indices to four major indicators: ECD, ECI, HFD, and EXI. We attempted to know the connection and impact these indicators have on economic growth as evidenced in the data concerning 10 fragile SSA countries. To suggest possible solutions to the problem we developed two research questions to achieve the objectives of this research.

In achieving the stated questions and objectives, we expanded on past literature studies and developed a theoretical framework to illustrate how the indices are connected to economic growth. We arrived at the model specification with a view to

subject our variables to estimation techniques. We initially checked for the existence of correlation among our variables to avoid multicollinearity and ensure that our datasets were fit for analysis. Since our research involved a panel study, we tested for cross-dependence to avoid invalid statistics. The data analysis indicated cross-dependency, and to mitigate this effect we adopted CIPS second-generation unit root, resulting in significance at first difference, which implied that the variables were stationary. We then used the Westerlund cointegration test to determine long-run relationship in our model.

To achieve our first objective to determine the connection between fragility and economic growth, we applied FMOLS and observed that the economic decline coefficient was negative and significant. We concluded that a percentage increase in the ECD will have a diminishing impact on GDP. In discovering the connection between ECI and GDP, a negative coefficient with statistical significance was observed through FMOLS. The empirical result indicated that HFD had a negative impact on GDP, and that it was significant. This showed that HFD served an important role in enhancing economic growth. We could further infer from the FMOLS result that the EXI coefficient positively and significantly impacted GDP.

To achieve our second objective we used MG, AMG, and CCEMG estimators and found that the economic decline was at a significant level. Thus, a unit increase in ECD among the studied countries will lead to a statistically significant decrease in GDP. Also, a negative coefficient was observed in HFD, which implied that an increase in HFD can reduce GDP. Furthermore, we observed that the ECI coefficient was statistically significant, and that a percentage increase in ECI is likely to decrease GDP. EXI exerted a positive and significant impact on GDP probably due to positive externalities and spillover effects of a knowledge-based economy.

In summary, the results suggested that ECD had a negative significant impact on economic growth among the observed variables, while the impact of ECI and HFD, were also significant. EXI had a positive and significant impact on economic growth within the scope of study.

5.2 POLICY RECOMMENDATIONS

There has been an increased interest among policy makers, development economists, and government officials to know how fragility indicators can be managed to project economic growth. However, the empirical evidence to determine which indicators have a significant effect is scarce and requires further attention in view of sustaining and driving the economy of fragile states. Therefore, our study utilized a panel of 10 fragile SSA economies covering the period from 2006 to 2019 and employed various panel econometric techniques to ensure reliability and robustness in our estimated result.

Our result confirmed that ECD, ECI, and HFD have a significant negative effect on economic growth. Thus, it is imperative for the governments of fragile states, policy makers, and international think tanks to develop effective corrective measures to control these indicators, so that there will be progressive growth. In tandem with the empirical analysis by Dalia *et al* (2016), it is suggested that illicit trade and other illegal activities that inhibit uniform growth should be eradicated, so that there can be equilibrium in the economy. This can be achieved by creating more awareness to this issue among the public and propose a suitable working system that can support a stable economy. Also, the government should adopt appropriate foreign trade strategies that will enhance positive externalities with a view to stimulate economic growth.

Further evidence showed that external intervention had a positive impact on economic growth; thus, there should more openness on part of the policy makers to integrate this positive indicator and improve the economy. When devising new policies for economic growth, officials must consider the role of this indicator and should support and encourage innovation, research, and development as evident in the empirical study by Carment *et al* (2007) who assess theoretical and policy implication among fragile states. Also, the existing macro-economic policies should be reviewed at intervals and be flexible enough to aid foreign direct investment which is a positive externality. This will attract multinational companies to invest in the fragile states' economy and provide more jobs for the public and enhance national growth and development.

Our result also indicated a strong connection between ECD and HFD, which has the potential to inhibit or slow economic growth, with an overall negative impact across the estimates in this study. Thus, there is an urgent need for the government to develop and maintain a good infrastructure (i.e., electricity and water supply, storage

and transport) and represent the interests of skilled workers and professionals. This will limit the problem of brain drain and ensure that all productive segments of society contribute their quota to the national economy and ensure economic growth and development in the long run. This recommendation is in line with empirical studies by Chami *et al* (2007).

5.3 RECOMMENDATIONS FOR FUTURE STUDY

Our findings helped us understand the nexus between fragility and economic growth in selected African countries, yet they may not be reflected in the conditions and dynamics of other fragile states not included in this study. For this reason, we suggest that the scope of future studies is expanded to cover more countries and regions when examining and proposing solutions to current fragility issues. Secondly, future studies could also consider the use of other indicators to measure fragility and cover longer periods of time, as this will add to the scope of knowledge within the field of study.

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APPENDIXES

The Cross-Section Trend of Gross Domestic Product (GDP)

(2006-2019)

Source: World Bank Indicator

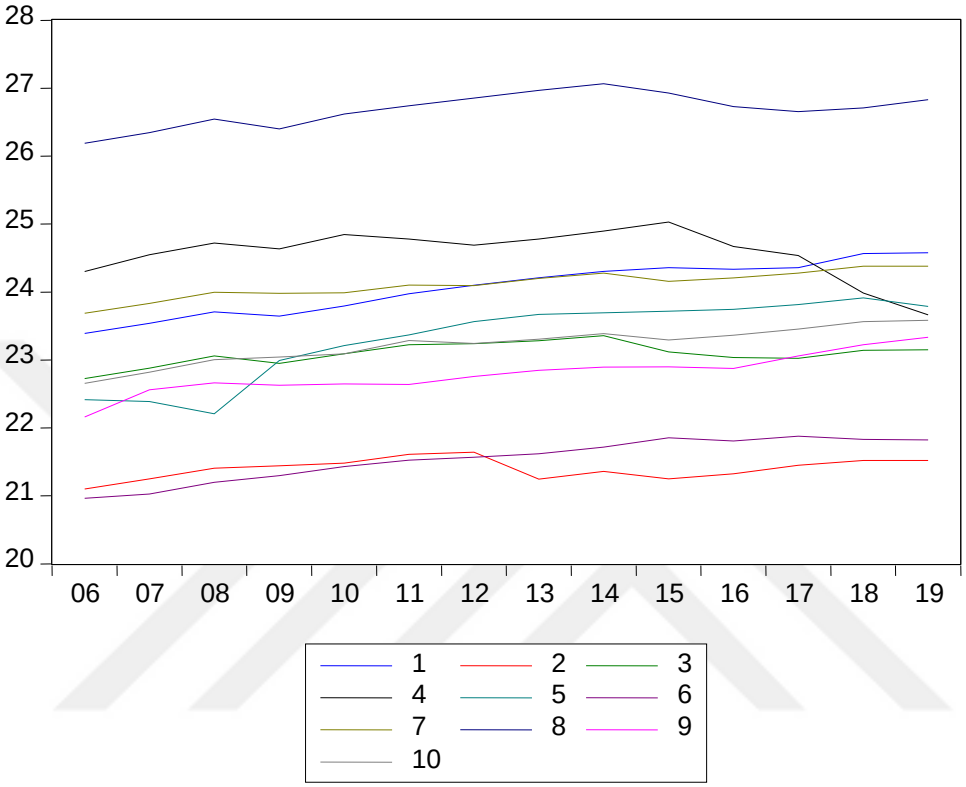

Figure 1: The numbers in the box represents the selected countries i.e. Congo Democratic Republic, Central African Republic, Chad, Sudan, Zimbabwe, Burundi, Cameroon, Nigeria, Guinea and Mali respectively.

The Cross-Section Trend of Economic Decline (ECD)

(2006-2019)

Source: Fragile States Index

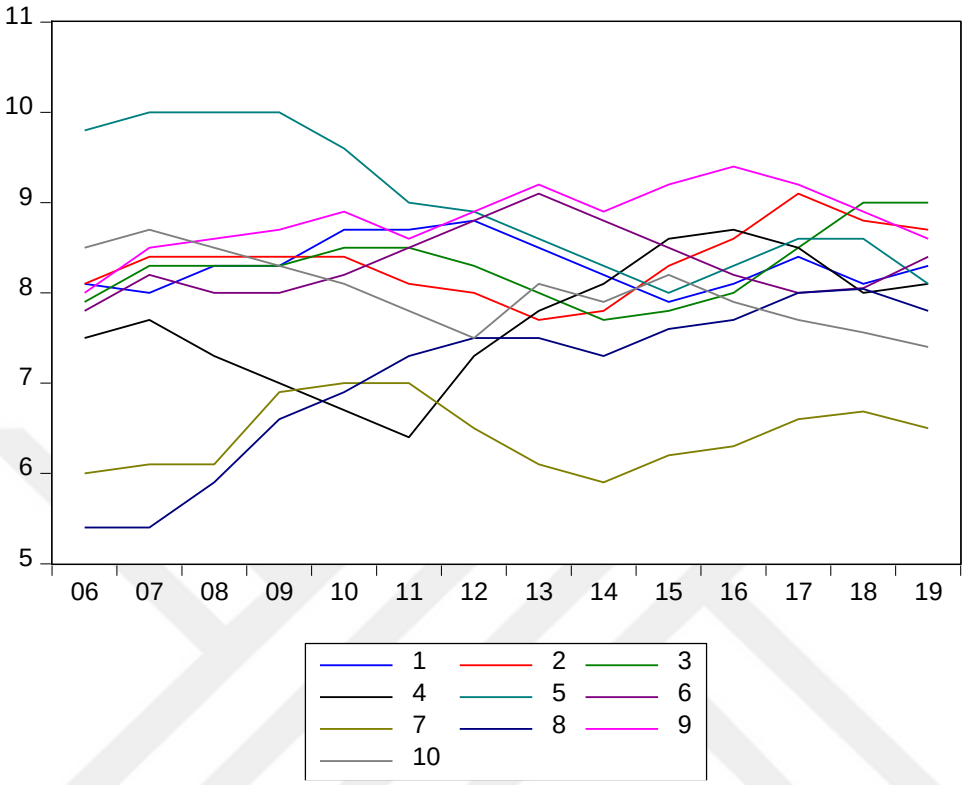

Figure 2: The numbers in the box represents the selected countries i.e. Congo Democratic Republic, Central African Republic, Chad, Sudan, Zimbabwe, Burundi, Cameroon, Nigeria, Guinea and Mali respectively.

The Cross-Section Trend of Economic Inequality (ECI)

(2006-2019)

Source: Fragile States Index

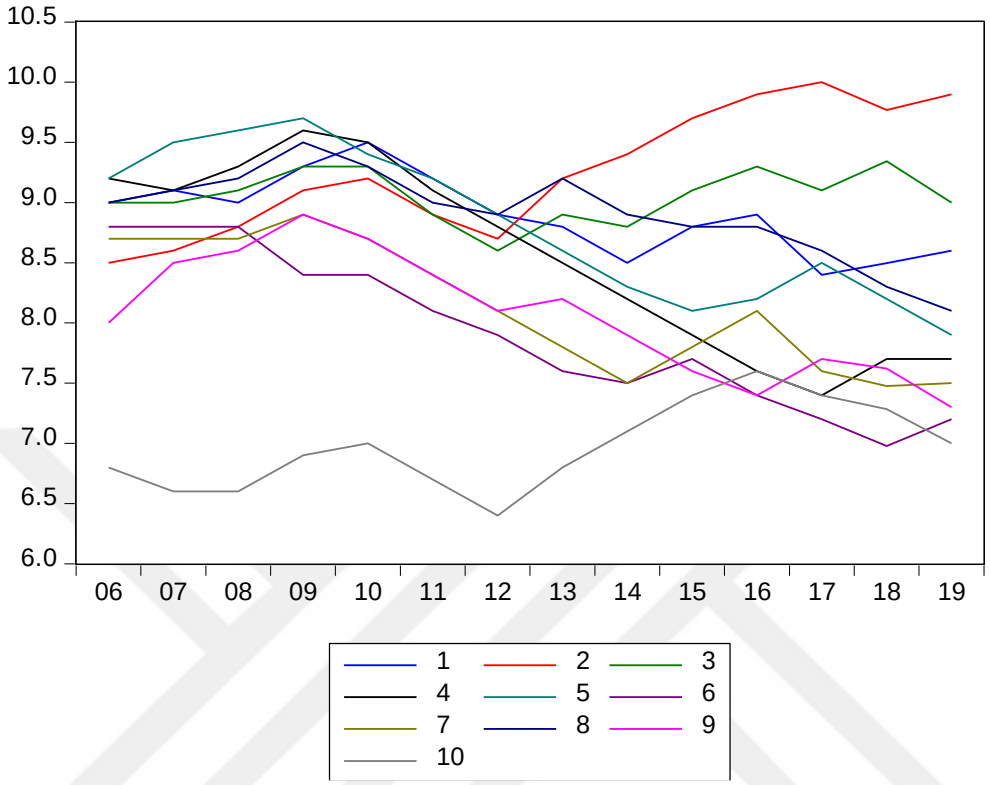

Figure 3: The numbers in the box represents the selected countries i.e. Congo Democratic Republic, Central African Republic, Chad, Sudan, Zimbabwe, Burundi, Cameroon, Nigeria, Guinea and Mali respectively.

The Cross-Section Trend of Human Flight and Brain Drain (HFD)

(2006-2019)

Source: Fragile States Index

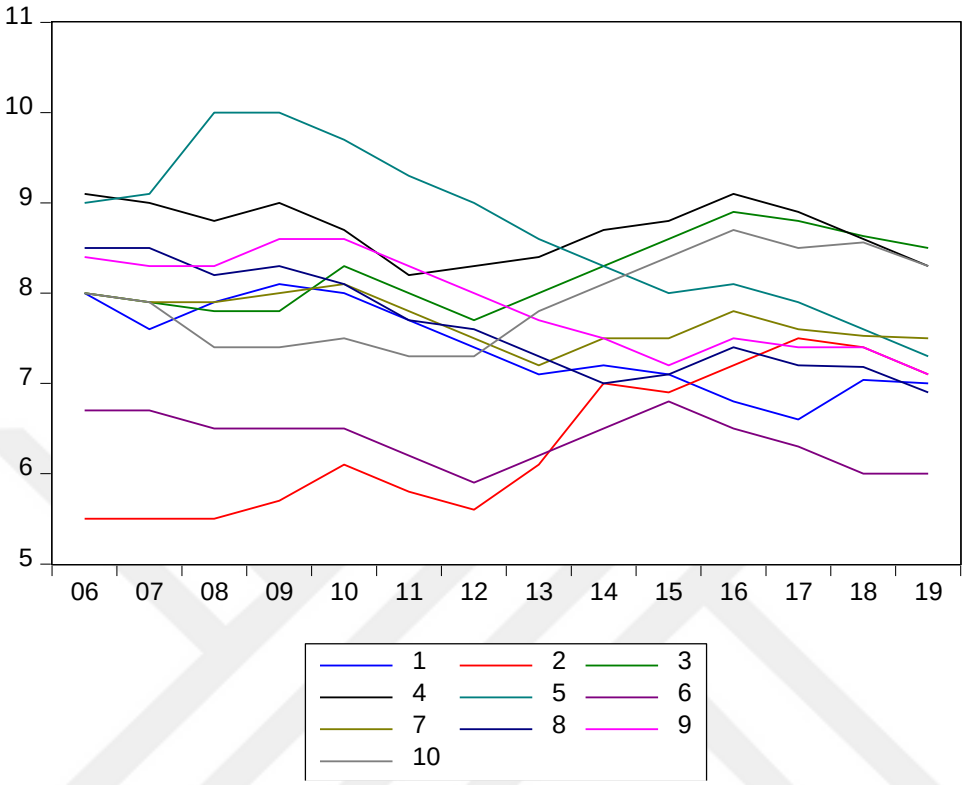

Figure 4: The numbers in the box represents the selected countries i.e. Congo Democratic Republic, Central African Republic, Chad, Sudan, Zimbabwe, Burundi, Cameroon, Nigeria, Guinea and Mali respectively.

The Cross-Section Trend of External Intervention (EXI)

(2006-2019)

Source: Fragile States Index

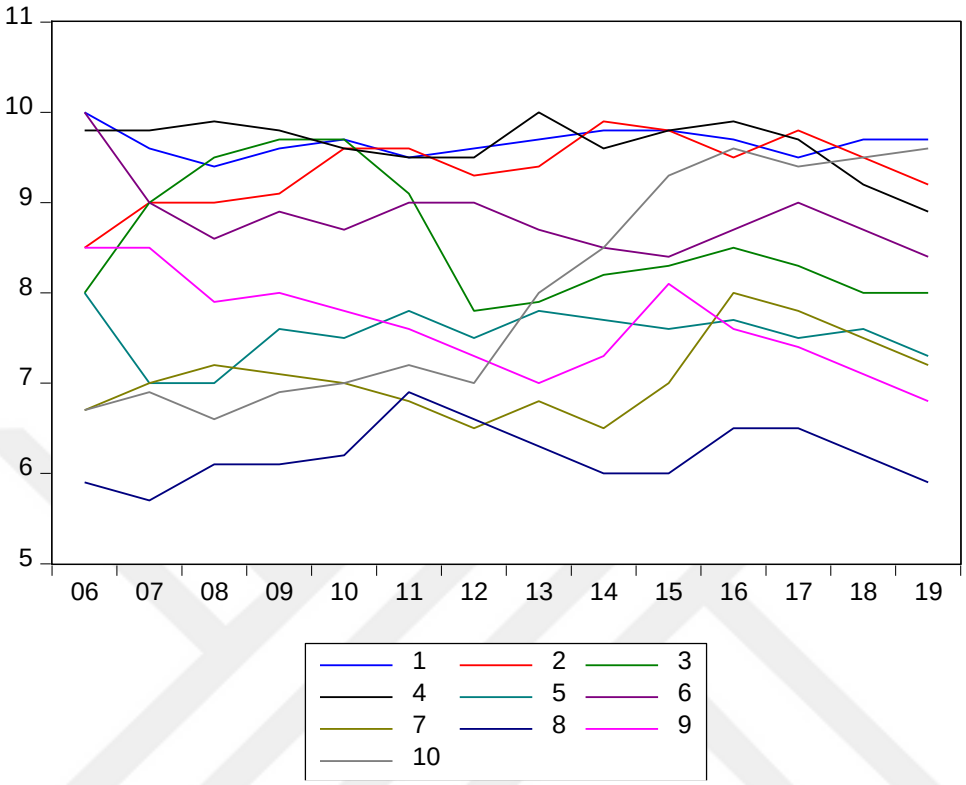

Figure 5: The numbers in the box represents the selected countries i.e. Congo Democratic Republic, Central African Republic, Chad, Sudan, Zimbabwe, Burundi, Cameroon, Nigeria, Guinea and Mali respectively.