

**SIMON DIEDONG DOMBO UNIVERSITY OF BUSINESS AND  
INTEGRATED DEVELOPMENT STUDIES**

**PUBLIC DEBT AND UNEMPLOYMENT IN SUB-SAHARAN AFRICA: THE  
ROLE OF INSTITUTIONAL FRAMEWORK**

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**2023**

SIMON DIEDONG DOMBO UNIVERSITY OF BUSINESS AND INTEGRATED  
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PUBLIC DEBT AND UNEMPLOYMENT IN SUB-SAHARAN AFRICA: THE  
ROLE OF INSTITUTIONAL FRAMEWORK

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THESIS SUBMITTED TO THE DEPARTMENT OF ECONOMICS AND  
ENTREPRENEURSHIP DEVELOPMENT, FACULTY OF SOCIAL  
SCIENCES AND ARTS, SIMON DIEDONG DOMBO UNIVERSITY  
OF BUSINESS AND INTEGRATED DEVELOPMENT STUDIES,  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR  
THE AWARD OF MASTER OF PHILOSOPHY  
IN DEVELOPMENT ECONOMICS

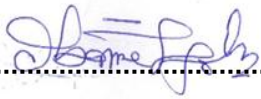
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## DECLARATION

### Student's Declaration

I hereby declare that this dissertation/thesis is the result of my original work and that no part of it has been presented for another degree in this University or elsewhere.

Candidate's Signature: .....  ..... Date: 05/06/2023

DANIEL TANG

### Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation/thesis was supervised following the guidelines on supervision of dissertation/thesis laid down by the SIMON DIEDONG DOMBO UNIVERSITY OF BUSINESS AND INTEGRATED DEVELOPMENT STUDIES.

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PROF. ISSAHAKU HARUNA

## **ABSTRACT**

The study sought to investigate the role of institutional framework in the relationship between public debt and unemployment in the Sub-Saharan Africa (SSA) region. The study used annual panel data of 36 selected SSA economies covering the period 1996 to 2020. The System Generalized Method of Moments was used as the main empirical estimation strategy for investigating the relationship among public debt, unemployment and institutional framework. Findings from the study indicated that public debt acquisition is not contributing to reducing the unemployment situation in the SSA region. Again, it was revealed that institutional framework had a negative and significant effect on public debt accumulation. Finally, it was revealed that institutional quality serves as a good moderator, which ensures the inverse relationship between public debt and unemployment. The conclusions arrived from the research outlined that the acquisition of debts is not channelled to employment creation in the SSA region. Subsequently, the development of stronger institutions reduces the acquisition of excess debts to manage SSA economies. In the light of stronger institutions, debts can be channelled to create employment. Therefore, it was recommended that SSA economies should comprehensively improve institutional quality before strides could be made in effectively utilising debts to create employment.

## **ACKNOWLEDGEMENT**

I thank the Almighty God for granting me the grace to complete this study. Secondly, my special appreciation goes to my supportive supervisor, Prof. Issahaku Haruna, whose guidance has brought me this far. And finally, Esmond N. Kuuyelleh (PhD), I remain indebted to you for inspiring me from the beginning of this study.

## **DEDICATION**

To my wife, Edith and children, Denzel, Derron and Delvin.

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# CHAPTER ONE

## INTRODUCTION

### **1.0 Background to the Study**

Generally, countries finance their budgets from revenues realised from economic activities. The revenues from natural resources, direct taxes, indirect taxes, fees and fines are used to finance expenditures on infrastructure like roads, schools and hospitals as well as social interventions to improve the standard of living of citizens. Therefore, maximising the returns on natural resources, ensuring efficiency in the collection of revenue and reducing the gaps in personal income and corporate income taxes provide the required fiscal space for critical expenditures in social services and infrastructure to spur growth and reduce poverty. Governments avoid running budget deficits by ensuring that domestic revenues generated are sufficient to cover total expenditure.

However, mobilising sufficient revenues through taxes and levies to fund the central government's budgetary initiative has been challenging for most developing economies (Gwaindepi, 2021). This challenge results in governments resorting to borrowing from domestic and foreign sources to fund developmental projects to create employment and reduce the incidence of poverty. National budgets usually capture sizeable expenditures in infrastructure, health, education, social intervention initiatives and consumption, which cannot often be met with domestically mobilised tax revenues. Central governments then make efforts not to run into budgetary deficits; thus, the budgeted expenditure exceeds the targeted revenue to be mobilised. In financing such budget deficits, expenditure is reduced, the tax net is deepened and expanded and further domestic and external debts are acquired, depending on what significantly appeals.

Nonetheless, economic efficiency indicates that contracted public debt should be utilised for income-generating and productive activities. Ugwuanyi and Ugwunta (2017) argued that when governments channel funds into productive and income-generating activities, that leads to employment. Extant literature suggests that excess debts can or may not spur economic growth and reduce poverty through employment, depending on what debts are used for (Asafo et al., 2019; Kengdo et al., 2020). On the condition that debts are contracted for consumption, economic activities are not

stimulated to generate employment. When debts are contracted for social intervention projects, infrastructure activities and other income-generating activities, the rippling effect promotes employment. Consequently, given the potential role of borrowing or acquiring public debts to enhancing economic growth, channelling debts into prudent economic ventures promote employment in developing countries.

Empirically, it is well established that increasing employment constitutes an essential component that crowds in economic growth (Fox & Gandhi, 2021). The focus on increasing employment reduces poverty, enhances equality in the distribution of resources and reduces social unrest in developing economies. Thus, acquiring public debt for social intervention initiatives that promote employment ensures the economically effective utilisation of debts. Higher rates of unemployment have been associated with developing economies. The economic structures and systems of developing economies are crucial to translating debts into employment.

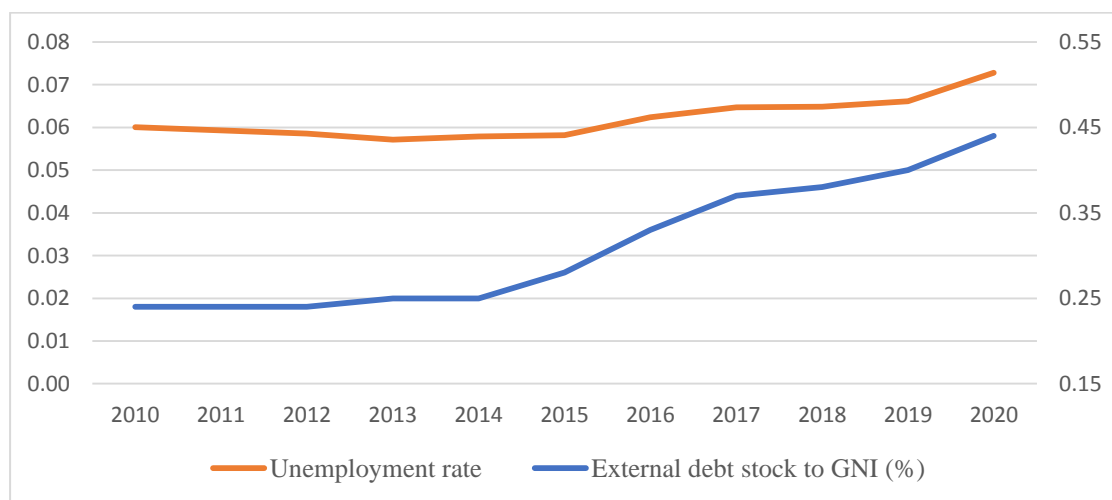
For a long time, there have been significant acquisitions of external debt by the Sub-Saharan African (SSA) countries (International Monetary Fund, 2020). Development-driven initiatives have been implemented in the SSA region, focusing on reducing poverty and improving infrastructure and the health of the population. These social intervention initiatives progressively remedied the development gaps the Western countries left after colonisation. However, the inflow of foreign finance to the SSA has resulted in the accumulation of unsustainable external debt levels. These accumulated debts' principal and interest payments now challenge the sub-region's growth and development prospects. Thus, in light of these challenges, it would be desirable for public borrowing to create the desired impact in SSA countries, such as improvement in employment.

Fox and Gandhi (2021) argued that the levels of unemployment have been rife amidst the series of social interventions by the governments of the SSA countries. Borrowings and investments in most of these intervention programmes have received endorsement from the IMF and World Bank, yet unemployment rates remain significantly high in the SSA. According to the World Bank (2021), the debt position of Sub-Saharan African countries (excluding high-income countries) stood at \$702 billion in 2020. The report further indicated that the region had accumulated more debts than it could finance. However, should these debts translate to creating

employment and stimulating economic activities, the SSA region would receive the rippling benefits from the debts.

In the light of the potential benefits of financing budget deficits with debts, researchers in the SSA region have investigated their governments' effective utilisation of public debts. Scholars have demonstrated the implications of public debt on macroeconomic indicators (Joshua et al., 2021; Edo et al., 2020). Among the various implications of public debt researched, its implication on employment seems not to have been researched, vividly focusing on the SSA region. Therefore, it is essential to examine the relationship between public debt and unemployment in the SSA region. This is because governments should focus on the prudent use of the rising debts to reduce the unemployment canker in the SSA region.

From Figure 1.1, it could be observed that the pattern of external debt and unemployment rate are moving together. In the early parts of the decade of observation, external debt stock and unemployment rates subtly increased and decreased, respectively. External debt flows to SSA rose sharply after 2014, with a steady rise in the unemployment rate. The rising debt to GNI ratio implies that the SSA economies cannot pay their debts due to debt rising faster than their income. These trends naively portray that the external debt flows to the SSA region are not stimulating employment as desired. Consequently, Mensah et al. (2018) argued that the effective utilisation of public borrowings depends on good governance or the institutional capacity of economies.



**Figure 1.1: Trends in External Debt Stock and the Unemployment Rate in SSA**

**Source: World Bank**

Recent literature suggests that good governance is necessary for handling public debt accumulation (Daud, 2020; Sani et al., 2019; Mensah et al., 2018). Good governance, defined by the institutional framework of economies, is needed to ensure compliance with policies and sustainability of social intervention programmes implemented to achieve some policy objective. Sani et al. (2019) indicate that the implications of poor governance are detrimental to economic growth. Poor governance cripples the institutional capacity to ensure that a viable economic environment is provided to stimulate economic activities.

Iwuoha (2020) explained that the potential desirable effect of translating public debt into spurring employment is contingent on institutional structures or framework of economies. Favourable institutional framework augurs well for the effective utilisation of public debts. Mensah et al. (2018) submitted that deepening institutional framework enhances economic growth. However, jobless growth will not be sufficient to reduce unemployment. The complementary effect of the institutional framework and public debt in enhancing employment in the SSA region is desired. Therefore, the relationship between public debt and unemployment of the SSA region in the context of the role of the institutional framework must be investigated. Appendix A depicts the trend estimates of the world governance indicators for SSA. It could be observed that reports on the institutional framework indicators have generally been estimated to be negative and not shown to be improving. This portrays a bad picture of the institutional framework of SSA economies. Control of corruption shows a declining trend over the period, though peaking in 2008-2009. This portrays that the control of corruption has been a challenge for governments in the SSA region. Public power in economies of the SSA is generally perceived to be exercised for private gain.

Likewise, the trend in government effectiveness indicates a declining trend over the era. Thus, the public sector's quality of services, devoid of political pressure, is continuously perceived to be deteriorating. However, political stability and the absence of violence have been stable but subtly declining for the past decade. In the past decade, the likelihood of instabilities and politically-motivated turbulence was perceived to occur. Regulatory quality and the rule of law depict a tumbling trend over time in the SSA economies. This indicates that there are some rigidities in the governments' ability to formulate and implement sound policies with uncertainty in the residents' confidence about those policies. Given the perceived guaranteed

freedom to residents and the smooth transfer of power to the opposition by most governments in the SSA region, the estimates for voice and accountability of economies in the region are gradually increasing.

### **1.1 Statement of the Problem**

According to the World Bank (2022), the SSA unemployment rate stood at approximately 6.8% as of 2021 with future projections indicating a surge. This economic challenge has become a menace setting back the economic development of SSA countries. For instance, youth unemployment is widespread in SSA. The youth unemployment rates were approximately 11.3% and 12.4% as of 2018 and 2021, respectively (World Bank, 2022). The low standard of living and unfavourable economic environment prevalent in the region make the unemployment situation a social menace (Hino & Ranis, 2014). The youthful (15 to 24 years) population is projected, by 2045, to grow to 400 million in the SSA region. This implies that the onus falls on SSA governments to put in place favourable structures that would absorb the unemployed. Implementing social intervention programmes that remedy unemployment may require huge borrowings. However, the SSA region has recorded its highest debt burden for the past decade.

According to World Bank (2021), the debt position of SSA countries (excluding high-income countries) stood at \$702 billion in 2020, rising from a debt of \$305 billion in 2010. From the report, developments from economies in the region indicate threats of economic vulnerabilities. For instance, the debt to GNI ratio for Angola, Cape Verde, Mozambique and Zambia was beyond 100 percent in 2020. Angola has recorded one of the sharpest rises in accumulated Chinese debts. Between 2010 and 2020, Mozambique and Zambia's debt to GNI ratio increased by 99 and 138 percentage points, respectively. Further, before the pandemic, Nigeria and Ghana had chalked 17 percent rise in external debts between 2018 and 2019. These developments in the SSA region confer greater responsibility on the governments to translate these debts into supporting infrastructure, creating an enabling environment for businesses to thrive and stimulating economic activity to remedy the region's unemployment situation.

Existing literature on the effect of public debt on unemployment in the context of the SSA region appears to be limited. Other literature on the relationship between public debt and unemployment has panned out dissenting findings. For instance, some strand

of research reveals that central government debt has a positive relationship with unemployment (Shuaibu et al., 2021; Topal et al., 2018; Fedeli & Forte, 2012). On the other hand, other strands of research found a negative relationship between central government debt and unemployment (Igberi et al., 2016; Korol & Cherkas, 2015). Besides, other findings indicate no significant relationship between public debt and unemployment (Iwuoha, 2020; Maqbool et al., 2013).

These disparities in literature necessitate an assessment of the role of institutions in the debt and unemployment nexus. It appears the role of institutions in the debt-unemployment nexus has been neglected from extant literature. Strong institutions boost economic activities and influence macroeconomic outcomes (North, 1990; Acemolgu, 2008). Some studies have confirmed that stronger institutions reduce unemployment (Kilishi et al., 2021; Shabbir et al., 2019; Prachkovski, 2016). Thus, stronger institutions require development-driven reforms that facilitate accountability, transparency and efficiency in the utilisation of public debt.

Consequently, this empirical study differs significantly from previous works (such as Daud, 2020; Sani et al., 2019; Mensah et al., 2018), which focused on the debt-growth nexus. This study fills a gap by examining the moderating role of institutional framework in the debt-unemployment nexus.

## **1.2 Research Questions**

The questions that the study will answer are;

1. What is the effect of public debt on unemployment in SSA?
2. What is the relationship between public debt and institutional framework in SSA?
3. What is the moderating effect of institutional framework in the relationship between public debt and unemployment in SSA?

## **1.3 Research Objectives**

The broad objective of this study is to assess the role of the institutional framework in the relationship between public debt and unemployment in SSA. Specifically, the study seeks to;

1. Examine the impact of public debt on unemployment in SSA.

2. Determine the relationship between public debt and institutional framework in SSA.
3. Assess the moderating effect of the institutional framework on the relationship between public debt and unemployment in SSA.

#### **1.4 Research Hypotheses**

In line with the three objectives of the study, an equal number of research hypotheses will be tested. These research hypotheses are:

- i. **H<sub>O</sub>**: There is no significant effect of public debt on unemployment in SSA.  
**H<sub>A</sub>**: There is a significant effect of public debt on unemployment in SSA.
- ii. **H<sub>O</sub>**: There is no significant relationship between public debt and institutional framework in SSA.  
**H<sub>A</sub>**: There is significant relationship between public debt and institutional framework in SSA.
- iii. **H<sub>O</sub>**: There is no significant moderating effect of institutional framework on the relationship between public debt and unemployment in SSA.  
**H<sub>A</sub>**: There is significant moderating effect of institutional framework on the relationship between public debt and unemployment in SSA.

#### **1.5 Significance of the Study**

Youth unemployment is a critical challenge in Africa that needs urgent attention. The youthful (15 to 24 years) population is projected, by 2045, to grow to 400 million in the SSA region, outpacing other regions (Hino & Ranis, 2014). Thus, this current investigation seeks to highlight the prospects of using public debt to reduce unemployment and create employment in the SSA. The outcome of this investigation will guide SSA governments in the prudent and efficient management of public debt and the policy choices needed to solve the unemployment problem in the short and long term. Therefore, this study is necessary to provide insight into the public debt and unemployment dynamics in the SSA. Employing the role of the institutional framework in the relationship aids targeted policy response on the indicators that help translate public debt to improve the region's unemployment situation. The focus on the essential indicators by policymakers, civil societies and opinion leaders would aid in keeping SSA governments on their toes on the specific issues to address to ensure good governance in spurring employment from debts.

Finally, this research would contribute to the repository of empirical works on the relationship between public debt and unemployment in SSA. This would serve as a reference document for scholars, governments, think tanks and the general populace of SSA countries.

### **1.6 Scope of the Study**

The research is limited to the effect of public debt on unemployment in the SSA region. Secondary time series data of macroeconomic variables of economies in the SSA spanning between 1996 and 2020 were used. Further, the research is limited to the model, variables, period and countries in the SSA. The data for all the macroeconomic variables were sourced from the IMF and World Bank.

### **1.7 Organization of the Study**

This research was planned in five main chapters. The introductory chapter comprises the study's background, problem statement, research questions, research objectives, research hypotheses, the study's significance, the scope of the study and organisation. Chapter two covers a review of relevant theoretical and empirical literature. Chapter three presents the study's methodology, covering the theoretical and empirical models and the variables used for the study. Chapter four presents the results of the empirical analysis, while the final chapter presents a summary of the findings, conclusions, recommendations and directions for future research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter reviews the relevant literature on public debt, unemployment and institutional framework. First, the chapter presents the conceptual review of the phenomenon under study. The relevant theoretical literature underpinning the study was reviewed to present the theoretical link among the variables. Finally, empirical studies demonstrating scholarly contributions to literature on the relationship between public debt and unemployment, institutional quality and public debt, and institutional quality and unemployment were also presented.

#### **2.1 Conceptual Review**

This section presents the conceptual review of public debt, unemployment and institutions.

##### **2.1.1 The Concept of Public Debt**

Fundamentally, debts are financial instruments with financial claims that demand the financial obligation of payment of the principal and interest by the debtor to the creditor at a later period. Public debt is the share of total borrowings having a direct claim on government revenues. Therefore, public debts are debts contracted by the central government. The indebtedness of a government provides a metric for an economy's public debt. Public debt captures debts denominated in both domestic and foreign currency concerning the borrower. Public debt comprises domestic (internal) and foreign (external) debts the government acquires to meet its budgeted expenditure. Both sources of debt come with merits and demerits. There is a standing trade-off between risk exposures and borrowing costs that needs to be compared to ensure the sustainability of debts acquired. Domestic debts are the portion of public debt denominated in the country's domestic currency, borrowed from domestic or indigenous lenders and institutions such as the citizenry, commercial banks and other financial institutions. These debts are acquired by the sale of treasury bills or other securities to the public and loans from other institutions. Due to avoidable exchange rate risks and expensive interest payments, domestic debts are essential for mobilizing resources in developing countries.

Panizza (2008) argued that though acquiring foreign debt increases an economy's access to additional resources, domestic debt acquisition transfer resources within the economy. External debts provide a huge quantum of funds, which cannot be raised domestically to meet economies' expenditures. This is the portion of a country's debt that was borrowed from foreign lenders and denominated in a foreign currency (Ajayi & Khan, 2000; Arnone et al., 2005). This comprises loans on an interest basis from foreign countries and other external multi-lateral financial bodies, which must usually be paid in the currency in which the loan was made. Central and federal banks in developing economies cannot print the currency needed to finance their foreign borrowings; consequently, foreign debt acquisition comes with threats of debt crises (Panizza, 2008).

Further, domestic debt is charged to the government's budget and financed by government revenues with or without additional acquisition of debts. Foreign debt (from foreign public and private entities), to claim on revenues, could be charged on the balance of payment and repaid from foreign reserves with or without additional acquisition of debts. Thus, both instruments should be managed with prudence to ensure fiscal and external account solvency.

Debt acquisition is essential in the development of economies as it enables the economies to fund vital development-driven projects and programs. However, the burden of meeting such financial obligation can devastate an economy's finances, which in the worst-case scenario leads to the default of the obligation (Hakura, 2020). Besides, in as much as borrowing is essential, the challenge has always been meeting essential developmental goals and managing the possible threats that come with those debts. Panizza (2008) contended that the actual sources of vulnerabilities in debt acquisition are the mismatches in currencies, maturities and economies holding open capital accounts. For instance, economies with piles of long-term debt obligations in the domestic currency like the US are more resistant to sudden shocks from the global financial market than economies with piles of short-term debt obligations.

The literature agrees that public borrowings are essential fiscal options to mobilise funds for economic development (Amadi-Robert & Amadi, 2021; Siddiqui, 2019; Hakura, 2020, Panizza, 2008). However, what appears to be contentious in literature is the manner debts are used. Economies endeavour to manage debts at sustainable levels to ensure that it does not adversely affect the economy. Though this current

study argues for using debts to engineer employment, excessive debts could lead to sustainability issues and the likelihood of debt distress. In effect, debt distress and defaults can lead to defaulting economies losing access to further finance in domestic and international financial markets. Consequently, Hakura (2020) recommends three major considerations for economies to contract new debts. These include;

- (i) New debts to be acquired should conform with fiscal spending and deficit plans. Such new debts should be prudently acquired to ensure the sustainability of public debts.
- (ii) Economies should adopt the approach of assessing the returns from acquiring debts in relation to the cost of acquiring the debts. Borrowing to finance social and development-driven projects leads to generating income that can net the cost of servicing the debts.
- (iii) Economies should improve upon debt reporting to enhance the management of debts. Transparency in debt statistics would encourage responsible lending.

The rising external debts in SSA economies in recent years spur concerns about whether SSA economies utilise such facilities gainfully and can sustain the increasing heights of debts. Mensah et al. (2018) stated that from the numerous challenges facing the SSA economies, they are constrained in accessing funds to engineer their development, while attempts to acquire debts to enhance investment have run the economies into a revolving cycle of debts. Calderon et al. (2018), in a World Bank report, indicated that the SSA has always had low scores for infrastructural development which would require excessive debts to improve. However, according to Amadi-Robert and Amadi (2021), economies adopt aggressive fiscal policies to retire debts within the shortest possible time, yet to no success.

However, the World Bank (2021) report indicated that the debt position of SSA (excluding high-income countries) stood at \$702 billion in 2020, while infrastructural development is still woefully inadequate. Improvement in the infrastructural base of the SSA region creates employment in the short term and supports private sector investment and operational expansions to create new employment opportunities in the long term. In all, SSA's debt should be sustainable.

Debts will be sustainable in the SSA if the governments can satisfy their financial obligations of paying debts without financial assistance or running into default

(Hakura, 2020). Since debts are publicly guaranteed, any failure of state-owned enterprises in servicing debt obligations due to losses, the central government becomes burdened with such debts.

### **2.1.2 The Concept of Unemployment**

According to the International Labour Organisation (ILO) (2012, p.4), “unemployment occurs in a situation in which there is an excess of job seekers (labour demand) in relation to the actual number of available jobs offered (labour supply).” Job seekers in this context imply persons who are able, available and willing to work at the existing wage rate. Thus, these are people actively searching for jobs but cannot find jobs. Albeit this definition of unemployment, wage-earners or the employed also pursue other employment opportunities to improve their earnings or working conditions. This puts pressure on the few vacancies available for the unemployed. This is because those employed usually hold onto jobs while they join the unemployed to pursue the few available vacancies.

The standard definition of unemployment by the ILO states that unemployed persons are persons aged 15 or above who are without jobs and have been actively seeking for jobs in the past four weeks and are available to begin work in the next two weeks (ILO, 2012). Further, the unemployment rate in an economy is expressed as the proportion of the quantity of unemployed persons to the quantity of the total labour force. Unemployment is described as the percentage of the labour force willing to work but unable to find a job (IMF, 2008). Usually, unemployment is perceived when individuals do not have a job. The ILO indicates that when an individual is not working and is currently available and searching for work, then such an individual is jobless and unemployed.

The ILO uses the labour force framework to define unemployment rates. The framework segregates the working-age class into three mutually exclusive and exhaustive categories, conforming to established standards; employed, unemployed, and out of the labour force. Therefore, the labour force is constituted of the employed and unemployed classes. At any point in time, this is fundamentally a measure of the labour supply of an economy (Dalmar et al., 2017). Unemployment also reflects the underutilisation of labour.

In developing economies, the concept of unemployment is mainly focused on the formal labour market and usually forms a small proportion of the informal labour market (ILO, 2012). Therefore, investment in programs or policies should focus on the nature of unemployment prevalent in the labour market. However, literature suggests that investments in addressing unemployment situations should be made with recourse to an economy's political, social and institutional structures to clearly understand the metric for unemployment (Benanav, 2019; Sengenberger, 2011).

Labour market metrics for unemployment have changed over the years to vividly describe the nature of economies' labour market. Emerging indicators have been advanced and the existing indicators improved to capture the regional and cultural disparities in measuring unemployment. Authorities have levelled sound criticisms against the metric for unemployment, particularly the number and rate of jobless workers. Nonetheless, scholars argue that the metric for unemployment has reached its apex limit (Benanav, 2019; Baah-Boateng, 2015; Sengenberger, 2011). Sengenberger (2011) argue that the unemployment rate is a vague representation of the labour market outcomes. The metric for unemployment is blamed to under- or over-estimate the appropriate magnitude of labour force underutilisation, contingent on the institutional framework and social policies of economies.

Though some scholars put forward profound argument about the adequacies with the unemployment rate metrics, Sengenberger (2011) suggests the investigation into comprehensive measurements that target the quantity of labour underutilisation and quality of employment in order to capture the current labour markets performance outcomes. Benanav (2019) contended that in so far as work for wages does not form part of social norms, a supposed appropriate metric for unemployment tends to be difficult to construct that will be suitable for the various regional groups around the world. Thus, the ILO is only pushed to review and adopt inadequate measurements, which are short-lived and criticised.

### **2.1.3 The Concept of Institutional Quality**

Institutional quality in the context of this study refers to the structures put in place to encourage good governance practices inherent in the administration of an economy. According to Shabbir et al. (2019, p.161), good governance can be defined as “the practice of economic, governmental and administrative powers to improve the living

standards of the general public.” Governance is associated with the institutional structures and framework through which political, social and economic decisions are made and implemented. Good governance entails using the state's resources optimally to improve the conditions or livelihoods of the general public. The by-products of good governance could be stalled depending on the institutional framework.

Further, Kaufmann et al. (1999) state that governance is the institutions and traditions through which an economy's power, authority and mandate are exercised. The World Bank proposes the rule of law, control of corruption, voice and accountability, political stability and absence of violence, regulatory quality and government effectiveness as the governance indicators. However, though the World Bank proposes governance indicators, no aggregate index representative of the whole index leads to the construction of aggregate indexes favouring researchers.

Several studies have made efforts to describe, measure and proxy good governance. The seminal works of La Porta et al. (1999) attempted to measure and ascertain significant determinants of quality governance among economies. The indicators used to capture quality governance were the size of government, public good provision, government intervention, political freedom and public sector efficiency, which in turn had several dimensions for their measurement. The testing of the theoretical model of how the determinants determine the variabilities in government performance revealed exogenous factors accounting for the variabilities emanating from the cultural, political and economic fundamentals of the economies. This indicated that the institutional framework within which governance indicators operate is broad.

Although La Porta et al. (1999) presented a strong case for quality governance indicators that are satisfying and detailed. Prachkovski (2016) contended that their measure appears to be indirect and mostly emphasises economic policies and political liberty. Prachkovski (2016) further argued about the absence of a standard index or proxy that aggregates all the distinct variables or indicators that contributorily measure quality governance. In the absence of an aggregate index, any empirically generated aggregate measure only partly provides the recommendations essential to developing quality institutions or governance systems because literature has so far not established weights on the sub-dimensions of good governance.

Rothstein and Teorell (2008), on the other hand, described the quality of government as the presence of impartial government institutions; thus, the exercise of policies by public officials in accordance to set rules and regulations regardless of any consideration of a citizen unless set by the law. The tenets of quality governance are based on democracy and fairness in the implementation of the power derived from democracy (Rothstein & Teorell, 2008). The fairness principle has implications on the non- and economic consequences of quality governance.

Further, immense contributions to the development of institutional and governance quality indicators could be observed in the works of Kaufmann et al. (1999, 2005, 2009). The motivation for these contributory studies has been occasioned by the proliferation of indicators that subjectively measure the dimensions of governance. Kaufmann et al. (1999) argued that good governance is associated with desirable developmental outcomes for economies. Kaufmann et al. (1999) investigated over 300 indicators of good governance practices using a cross-sectional study of more than 150 countries in order to provide evidence of indicators that enhance better governance which leads to desirable developmental outcomes.

From the works of Kaufmann et al. (1999), governance emanated and is described from how those in authority are selected, the capacity of an economy to execute proper policies and the recognition of citizens' rights and regulations which govern the interactions between citizens and the state. Consequently, the cluster of six indicators, such as political instability and violence, voice and accountability, represented the former theme; regulatory burden and government effectiveness captured the following theme; and rule of law and graft represented the latter theme (Kaufmann et al. 1999; 2005; 2009). The findings from Kaufmann et al. (1999) indicated a strong significant causal relationship between governance indicators and better development outcomes.

Kaufmann et al. (1999, 2005, 2009) refer to political instability and violence as the perception of the possibility of an overthrow of the government in power through violent or unconstitutional means. This indicator emphasises how governance is compromised due to the possibility of sudden changes in the federal government, which can truncate the laws of an economy and affect the citizen's ability to elect and change those in power peacefully.

Voice and accountability measure the perception of the level at which the country's citizens have the liberty to engage in the elections of governments. This indicator also covers press freedom, which is an active agent in monitoring and holding accountable those in power. It captures political rights and civil freedom. On the other hand, regulatory burden refers to the perception of the likelihood of enacting and implementing market-unfriendly policies like inadequacies in banking supervision, price controls, and the burden of imposition of extreme policies.

Government effectiveness captures the perceptions of the delivery of quality public service, sound bureaucratic practices, limitation of political pressure on the civil service and commitment of the government not to abuse power. Rule of law, on the other hand, measures the degree to which citizens and entities have confidence and uphold the rules and regulations in the economy. This indicator also considers the perception of the likelihood of ineffectiveness of the judiciary and vicious and non-vicious crimes.

Finally, graft refers to the measurement of the perception of the incidence of corruption (Kaufmann et al., 1999). Thus, this indicator measures the perceived exercise of public power for personal interest. In later studies (Kaufmann et al., 2005; 2009), the term "control of corruption" replaced the term "graft", though the description for the indicator never changed. Usually, corruption confers to a lack of respect for the proposer and receiver. The incidence of corruption is often occasioned between a politician or public official and private citizens or firms.

These indicators above form the World Governance Indicators (WGI) sponsored by the World Bank. This study, therefore, used the WGI as the proxy for the institutional framework. Thus, this study investigates the role of aggregate institutional quality (including the six indicators of governance) in the relationship between public debt and unemployment.

## **2.2 Theoretical Review**

This section presents a review of relevant theoretical literature on public debt, unemployment and institutions.

### **2.2.1 Classical Public Debt Theory**

Scholarly contributors like Smith (1937) to the classical public debt theory, take the stance that budget deficits are not an effective government policy tool (Tsoulfidis,

2007). The classicalists argued that the accumulation of public debts is detrimental to an economy, regardless of the source of debt; thus, foreign or domestic debts. Proponents of the classical theory dissent from the mercantilist assertion of public debt's interest financing from taxes. The reason is that in light of public debt build-up, financing the debt will result in increased taxes leading to investment outflows and the depreciation of the currency with a rippling adverse effect on domestic producers. Consequently, Smith (1937) argued that accumulating public debts retards the economic development of an economy in terms of wealth acquisition and prosperity. This is because resources that could be utilised to provide an enabling environment to improve private sector productivity are channeled to finance debts and interests. Nonetheless, the classicalists argue for balanced budgets; thus, total government expenditure should be met by total taxes or domestic funds accrued. Economies were therefore advised by the classicalists to run budget deficits in the event of national crises such as natural disasters and wars.

According to the classicalists, the effect of financing government expenditure with taxation has different implications than that of public borrowing. Increasing taxes reduces the expenditure of households and to a limited extent savings, while public debt accumulation erodes savings. Finances mobilised or borrowed by the government, especially from domestic sources, crowds out investment in the private sector in equal proportions. Thus, the main theme for the classical economist is that investment is identified with savings in the economy.

With inferences from the classical views on public debt, Tsoulfidis (2007) contended that taxation boosts new investment; thus, the build-up of private sector capital makes the productive sectors. On the other hand, public borrowing weakens an economy's productive capacity by channeling savings for, say, the maintenance of productive labour to the unproductive debt settlements (Tsoulfidis, 2007). Consequently, using taxation to finance government expenditure is more desirable than public borrowings since the latter deteriorates savings.

Smith (1937) recognised that the posture of governments towards public expenditure was usually unproductive. Thus, Churchman (2001) stated that borrowing to finance public expenditure declines the investible product and is subsequently unfavourable to building wealth in the society. However, the Ricardian equivalence theorem suggests

that financing public expenditure with either taxation or deficits is equivalent because an economy will have to settle its debts (Barro, 1979). This theorem connotes that contracting debts to finance public expenditure is more or less like taxation because taxes will be used to finance the debts.

On the contrary, Ricardo (1951) contributed to the assertion of equivalence of taxation and contracting of debts to finance public expenditure. Tsoulfidis (2007) argued that taxpayers do not see debts as accrued taxes of an equal amount; in effect, taxpayers save less when there are increments in taxes, causing an accumulated capital decline. Therefore, tax revenues decline leading the government to increase tax rates. Consequently, capital accumulation further declines and gradually heads an economy into bankruptcy. Thus, Ricardo (1951) emphasised the concurrent reduction of taxes and public debts.

The main import of the classical economics approach to public debt emphasises the maintenance of a national budget that follows the recommendation that public expenditure should be met with income (taxation) and borrowing in national crises. According to the classicals, public borrowing is not desirable and should be contracted on occasions. The assumptions of the classical economists laid the foundations for the neoclassical approach to public policy.

### **2.2.2 Neoclassical Public Debt Theory**

The standard neoclassical perspective of economics is based on three thematic attributes; first, an individual's consumption is identified as the means to address a problem of intertemporal optimisation where lending and borrowing are allowed at the market rate of interest; second, individuals have limited lifespans where the lifespan of individual consumers are within the same generation or overlaps with successive generations; third, in all periods, there is the assumption of the market-clearing (Bernheim, 1989). Whereas the first attribute provides the assumptions of the neoclassical perspective, the second attribute explains the core difference between the neoclassical and Ricardian economic perspectives, and the third, providing the basic discrepancy between the neoclassical and the Keynesian economic perspective.

According to the neoclassical perspective, rising government deficits deplete private sector capital through rising interest rates (Modigliani, 1961). Most researchers have applied neoclassical models in understanding public debt on the bases of individuals'

behaviour toward government borrowing and spending (Bentour, 2021). Bentour (2021) further stated that government debt accumulation increases interest rates beyond the neutrality of debts and worsens capital accumulation and consumer utility and welfare in a neoclassical framework. Thus, in the neoclassical framework, the implications of public debt are focused on the long run and stable state of equilibrium.

Applying the tenets of neoclassicism, Diamond (1965) contended that a lasting surge in the ratio of domestic debts to national income deteriorates the capital-labour ratio. Consumers are averse to holding the original quantity of capital and bonds at the original interest rate. A surge in interest rates encourages additional savings and leads to a decline in investment till equilibrium is established in the capital market. Therefore, continuous public borrowing worsens the accumulation of capital by the private sector. However, Bernheim (1989) argued that Diamond's assertion emphasises on the effects of lasting changes in debts and ignores the implications of temporary changes.

Bentour (2021) asserted that the neoclassical perspective emphasises the long-run implications of government fiscal policies (borrowing, spending, and taxation) on individuals' and successive generations' saving and spending behaviour. The findings of Auerbach and Kotlikoff (1987) pertaining to a neoclassical economy indicated that temporary implications of budget deficits are marginal and probably obstinate (affecting savings in the short term). Inferences could be made from the results that holding public expenditure constant, temporary budgetary deficits indicate reductions in taxes. This indicates lesser marginal tax rates. Further, lesser capital income tax rates directly encourage savings by increasing the after-tax rate of return. Consequently, Bernheim (1989) opines that the neoclassical perspective on public debt demonstrates that temporary deficits have minimal or degrading impacts on economic indicators in the short term.

The neoclassical economists' postulate that rational and foresighted consumers who could access perfect capital markets will experience significant deterioration in accumulating capital due to permanent deficits, whereas they experience a harsh economic environment (in terms of interest rates, savings and consumption) when there are temporary deficits. Further, liquidity-constrained or short-sighted individuals could experience a decline in savings and increased interest rates in the short-term as

a result of temporary deficits, whereas that of permanent deficits remains qualitatively unaffected.

Studies on neoclassicalism share the thoughts of maintaining government debts at minimum levels in order to improve savings and boost capital formation (Phelps, 2022). The neoclassical economist shares the perspective that increasing public debt affects the capital stock and thereby having implications on the labour force, thus resulting in unemployment. To the neoclassical economist, a rising public debt leads to periods of stifling capital acquisition and productivity growth.

### **2.2.3 Keynesian Public Debt Theory**

Keynes opines that the inadequacy of aggregate demand causes economies to suffer from increasing unemployment rates perpetually. He further proposed that budgetary increments in government expenditure directly and perpetually increase demand, in the same manner as citizens benefit from tax reductions that increase their disposable income. The theorists again submitted that increased expenditure by the government eventually increases workers' and suppliers' demand because their incomes would increase. Thus, a reduction in taxes enables consumers to have more disposable income to demand for goods.

Theorists of the Keynesian public debt approach argue for the effective administration and utilisation of governments' expenditure and revenue to achieve and sustain full employment. The Keynesian theorists argue that addressing unemployment issues is fundamental to offsetting declining private investment with public investment by the government. Bernheim (1989) stated that the Keynesian and neoclassical perspectives differ in two basic routes. First, the Keynesian theorists emphasise the likelihood that some economic resources are unemployed. Second, there is the hypothesis that aggregate consumption is sensitive to variations in disposable income.

Keynesian economists support the assertion that the government accumulate debts to spend on providing public jobs. Consequently, according to Keynes, using budget deficits as an appropriate fiscal policy in an era of increasing unemployment rates is desirable. Thus, deficit spending leads to the creation of employment which increases individuals' purchasing power; otherwise, an economy annually balancing the budget without deficits may face challenges during recessions. In order to lay the foundations of the Keynesian theory, Keynes proposed a national income accounting theory of

aggregate demand and the multipliers (provision of finance from the government to increase public jobs will lead to more spending and consequently lead to the creation of more jobs) in the economy.

However, Keynes's proposition of remedying the unemployment situation with budget deficits contradicts the conventional assertion that running a budget deficit is not economically desirable (Begg et al., 2000). Iwuoha (2020) contended that the implications of fiscal policies on economies differ due to the embedded political orientation and objectives of such policies. Thus, as some fiscal policies target the largest economic classes, others may target small or minor economic classes. Keynes's theory emphasises the treatment of the economy as a whole and the utilisation of tax, deficits and spending in the management of the economy. These elements are useful tools to engineer full employment through managing aggregate demand. This is because governments limit spending in periods of economic recovery and expansion.

Brown-Collier and Collier (1995) also believed that the prime policy prescription by Keynes for achieving full employment and economic stabilisation is through deficit spending by the central government. Brown-Collier and Collier (1995) stated that while utilising deficit spending, the socialisation of investment is an effective policy by Keynes to encourage full employment. The socialisation of investment does not connote the control or influence of government over private investment. However, the public investment provides an avenue to add to support private investment. Public entities, whose main purpose is championing the public good with the motives of protecting the public interest, are in the right position to undertake social investment (Kregel, 1985). Keynes suggested that governments should be instrumental in managing the economy and ensuring inclusive socialisation of investment.

In a broader theoretical context, the demand-side determining the levels of economic activity is focal. As the inconvertible fiat currencies prevail, aggregate demand determined by public investment brings forth financing or financial resource constraints issues. Financial constraints would prevail where the suppliers of goods and services willing to be patronised by the government demand cash as the sole means of making payments.

#### **2.2.4 Classical Theory of Unemployment**

The scholarly works of Pigou (1933) and Solow (1956) laid the foundation for developing this theory. The theorists opined that the concept of demand and supply is inherent and fundamental to the labour market. The diminishing share of marginal product of labour induces the demand for labour. Thus, inferring that the demand curve is inversely related to real wages. Consequently, the quantity demanded of labour decreases as real wage rises and the opposite is also true. On the other hand, a labour's option to work at a given time or not determines the supply of labour. Thus, should workers increase the supply of working hours, real wage increases. In effect, real wage is positively related to the supply of working hours. Classical economists assume that markets work efficiently and restore market imbalances swiftly.

Besides, the real equilibrium wage and full employment are determined by the intersection of demand and supply of labour at a clearing point. Other than frictional unemployment, there is the presence of unemployment since workers continuously speculate higher wage rates than the wage rate at the equilibrium (Sweenzy, 1940). The insistence on wage rates higher than the equilibrium wage by workers causes other forms of unemployment other than frictional unemployment. Full employment does not connote the absence of unemployment. At the prevalent level of wage, frictional unemployment occurs. The changing phases of the labour markets, the pursuit of better jobs and the availability of information are the major determinants of frictional unemployment (Mouhammed, 2011). Full employment could be maintained if wages become flexible when declining (Jonung, 1989). However, the stickiness of wages when declining along the curve makes wages unable to be utilised to remedy unemployment.

According to Mouhammed (2011), the role of the government in addressing unemployment is vital. Mouhammed (2011) further indicated that the provision of cheaper loans to enterprises is essential to the survival and productivity of the firms to improve employment. The government could also provide a favourable economic environment and support inventions to promote private investment, which would reduce unemployment in the long term. Siddiqui (2019) argued that governments' initiative to address unemployment through innovative means should be financed through budgetary spending. However, technical unemployment increases as firms adopt technical changes. Thus, technological advancements increase the

unemployment rate. This causes unemployed labour to pursue new jobs, which would cause the wage rate to decline. Therefore, equilibrium is restored as employers find it appealing to employ more labour given the new low wage rate.

Nonetheless, as wages on the labour market are low, wage-earners who have the propensity to buy few products cause business operations not to expand. This lack of effective demand results in cyclical unemployment. Wicksel (as cited in Mouhammed, 2011) suggests that employers in the labour market deliberately increase the wage rate for wage-earners to demand more products to deal with cyclical unemployment. However, Mouhammed (2011) opines that such a course of action will result in a high cost of production, eventually leading to more employees becoming unemployed. Further, Mouhammed (2011) contributed that the government's investment in providing employment will help deal with cyclical unemployment. Otherwise, the labour market will force wage-earners to take lower wages to deal with unemployment.

Wage reduction is detrimental to the economy though it increases employment. Increasing wages is associated with rising labour productivity, whereas decreasing wages contributes to reducing the intensity of work and productivity. Besides, when wages decline, firms will not abandon technology to adopt labour-intensive production contemporaneously or within the short term. In contrast, when wages increase, firms utilize capital-intensive production methods, which increases productivity in the long term.

Nishiyama and Leube (1984) opined that the mismatch in the distribution of labour, employers' demand for labour and disparities across industries result in unemployment. The authors further submitted that this is a fundamental contradiction between the demand and supply of labour, generally determined by fiscal and monetary policies and the actions of trade unions. Fiscal and monetary policies usually lead to structural changes in the country, which misallocate labour and economic resources to other avenues. On the other hand, trade unions advocate for higher wages for their members relative to the prevalent wage on the market, therefore generating unemployment.

This theory implies that the actions of the labour market (demand and supply), producers or employers and the government influence the unemployment rate. The

government should correct the discrepancies in the supply and demand of labour resulting in unemployment. Governments' monetary policies and support for the private sector provide a solution to the unemployment gap.

### **2.2.5 Keynesian Theory of Unemployment**

The theoretical work of Keynes in the "General theory of employment, interest and money" publication in 1936 was considered as a launch of attack on the inadequacies of classical economics. Classical economists' theoretical postulations were sustained until the First World War when prevailing economic conditions revealed some inadequacies in the classical theories. While the Keynesian theoretical assumptions dissent from the assumptions of classical theorists, Keynes' propositions are founded on the classical theory. Consequently, Keynes' theory assumes that the classical assumptions are adequate, possibly in the long term (Keynes, 1936).

Besides, Keynes held the view that policymakers do not have the luxury of time to think in the long term. Thus, Keynes concentrated on aggregate demand and the short-term; the classical theorists concentrated on aggregate supply and the long-term economic implications. The occurrence of the Great Depression signalled the review of the assertions of the classical model. As the classical theorists held the assumption of the prevalence of flexible prices, Keynes held the possibility of price inflexibility or stickiness. Keynesian economists assume that sometimes the market sluggishly restores imbalances. Thus, at any time, the economy is unsteady and exposed to shocks that could disrupt the demand and supply for labour.

In effect, according to Keynes, unemployment is a result of the imbalances between demand and supply. Keynes argued that deficiencies in aggregate demand are the major determinants of the unemployment situation major economies experience. The theory assumes that the high unemployment levels result from the downward stickiness of wages on the labour market. From Keynes' perspective, wages sluggishly move down because wage-earners resist a reduction in wages by employers. Keynes' assumptions of unemployment diverge from the classical' that the disequilibrium prevalent in the labour market is the major determinant of unemployment.

The provision of excess capacity for the unemployed labour connotes that employment could increase without exerting upward pressure on wages. Thus,

workers will not be hesitant to work at the prevailing wage rate should there be the availability of work. In the view of the Keynesian theory, supply is created by demand; consequently, the demand for goods and services increases for household consumption. Thus, more labour needed for production is due to more quantities of goods or services needed to be produced by producers. However, households sometimes prioritise savings over consumption which may result in a decline in demand. Increasing employment levels do not translate into consumption growth because wage-earners improve savings over spending for consumption.

Furthermore, Keynes again argued against the classicalists' assumption of flexible interest rates and proposed that at non-market clearing rates, interest rates could get stuck. During depressions in the economy, should enterprises retrench the working force for machinery to be underutilised, a decrease in interest rates do not cause enterprises to invest in additional factories or pieces of machinery as proposed by the classical theorists. Also, households react to such harsh economic turmoil by cutting their spending and increasing savings. Commercial banks may not be willing to lend money to enterprises in this economic environment or these enterprises will not be willing to borrow for spending if interest rates are reduced to zero. Consequently, a reduction in interest rates does not increase the aggregate demand needed to employ the unemployed or bring back retrenched workers.

### **2.2.6 Institutional Theory**

The institutional theory fundamentally focuses on the formal and informal governance practices prevailing in societies (Yukhanaev et al., 2015). These governance practices build into an institutional framework which promotes sustainable development of an economy. The institutional theory asserts that firms are determined to achieve and ensure external legitimacy (Oh & Ryu, 2019). Thus, institutional systems are perceived to ensure that the actions of firms are desirable, required and appropriate to align to the beliefs, values and norms culturally perceived in the broad social system. In the lens of this theoretical perspective, desirable legislative elements are encouraged to check institutions to deliver their mandates in line of legitimate standards.

The institutional theory seeks to align theory with practice in examining the role of institutional set up and governance quality in the economic system (Yukhanaev et al.,

2015). Institutional theorists argue that organisations run in an uncertain, intricate and challenging environments. Consequently, in comprehending the environment, organisations acquire and learn what is deemed proper and essentially meaningful practices and behaviour which are acceptable (Francis et al., 2009). In effect, North (1990) articulating the institutional theory contended that stronger institutions boost economic activity by decreasing costs of production and transaction; however, weak institutions lead to a rise in production costs and economic uncertainty. Reduction in costs of operations and increases in economic activity implies that firms could increase employment operating and supported by infrastructure and facilities provided by the government.

Inferences could be made from the institutional theory that the potential desirable effect of translating public debt into employment is hinged on institutional framework of economies. Favourable institutional framework augurs well for the effective utilisation of public debts. Thus, deepening institutional framework enhances economic growth. In effect, the discourse between public debt and the employment of SSA economies cannot be fully studied without considering the role played by institutional framework. Thus, drawing from the institutional theory, this study hypothesises that strong institutional indicators such as rule of law, regulatory quality, voice and accountability, control for corruption and political stability enhances the translation of public debt into creating employment.

## **2.3 Empirical Literature**

This section presents the review of relevant empirical works on public debt, unemployment and institutions. The discussions in this section have been divided into three sub-sections: the relationships between public debt and unemployment, public debt and institutions as well as institutions and unemployment.

### **2.3.1 Public Debt and Unemployment**

Extant studies on the relationship between public debt and unemployment in the SSA region and its economies have been available in either country-specific or panel studies. However, these studies have reached varied conclusions. These dissenting conclusions could be a result of the varied estimation tools applied and the regional and economic disparities (Siddiqa, 2021; Iwuoha, 2020; Igberi et al., 2016).

Fosu (2019) explained that public spending is an effective fiscal policy tool to engage in investing in the economy in order to improve employment. This connotes that the more the government spends, the unemployment rate reduces in conformity to the proposition of the Keynesian economists. Consequently, Fosu (2019) investigated the impact of government spending on unemployment in the SSA region by applying the fixed effects model. The findings revealed that government investment spending decreases the unemployment rate. However, the application of the fixed effects model makes the potency of the findings to be questioned given the heavy criticism of the model in literature. With similar findings, Onuoha and Agbede (2019) assessed the effect of public expenditure on the unemployment rate in selected African countries, majority from the SSA region. The authors applied the two-step system Generalized Method of Moments (GMM) estimator and revealed that government spending on infrastructure and education improves the unemployment situation in the SSA region. Nonetheless, increasing government expenditure without commensurate tax revenues results in financing budget deficits with debts. Although the estimation used by Onuoha and Agbede (2019) is supported by literature for panel studies, the relationship between public debt and unemployment in the SSA region seems yet to be established in literature.

In some strands of empirical works, public debt has been argued to improve the incidence of unemployment. This is because since SSA economies have issues in mobilising sufficient domestic revenues for developmental projects (Drummond et al., 2012), the governments' accumulation of public debt enables them to undertake social intervention and infrastructural projects that the hitherto insufficient domestic revenues mobilised could not undertake. In corroboration, Sam (2016) analysed the impact of the economic indicators on youth unemployment in Kenya from 1976 to 2012. The study revealed evidence emphasising the negative relationship between foreign direct investment and external debt on youth unemployment after applying the ARDL estimation technique. This finding indicated that economies could benefit from foreign inflows in terms of credit facilities and direct investments into the productive sectors by way of the creation of employment.

Public debt accumulation is effectively utilised when used to finance the productive sectors of the economy. Considering findings from another SSA economy, Nwokoye et al. (2016) examined the impact of external debt on unemployment through the

investment channel in Nigeria using the systems equation approach with annual time series data from 1980 to 2015. The study estimated the model using the indirect least squares method and revealed that foreign debts inversely and significantly affect unemployment through the channel of domestic investment. However, Igberi et al. (2016) found contrary results when examining the implication of rising public debt on unemployment in Nigeria. The paper employed the ARDL approach on a dataset spanning 1980 to 2015 and the documented findings indicated that, in the long run, a rising public debt stock is associated with the rising unemployment rate. Thus, it was concluded that public debt needs to be controlled because it does not minimise the unemployment rate in Nigeria.

Controlling public debts in order not to aggravate unemployment is consistent with the conclusion by Dalmar et al. (2017). Dalmar et al. (2017) investigating the determinants of unemployment in Somalia for the period 1995-2014 while applying the ordinary least squares (OLS) estimator, found that external debts positively impacted unemployment. That meant that increases in external debt also caused an increase in unemployment. Arriving at the same assertion that rising public debts need to be controlled in order not to aggravate unemployment, Ankomah (2019) provided another empirical evidence on the economy of Ghana in the SSA region. The study employed the ARDL technique to a dataset spanning from 1980 to 2016 and found that external debt accumulation increases Ghana's unemployment rate in both the short and long-run. Ankomah (2019) argued that credit facilities that the Ghanaian government contracts are not expended on avenues that generate and provide sustainable employment opportunities. On the other hand, Shuaibu et al. (2021) needed to ascertain the implication of disaggregated public debts on unemployment and measure the impact of public debt on inflation and unemployment in Nigeria from 1985 to 2020. Shuaibu et al. (2021) used the ARDL estimator and documented a cointegrating relationship between public debt and unemployment but the absence of a relationship between public debt and inflation. The findings indicated that the increase in public debt significantly causes more unemployment. Nonetheless, the implication of external debt on unemployment is more pronounced than that of domestic debt. They recommended that the government should reduce public debt and if need be, the government should resort to domestic credit facilities than external facilities when borrowing is needed to correct any budget deficit.

Fundamentally, a concluding caveat by Ankomah (2019) and Shuaibu et al. (2021) suggests that if borrowing cannot be controlled, respective governments should increase capital expenditures to desirable levels to create the needed employment avenues. Consequently, evidence from another SSA economy, Ethiopia, indicated that the government has rolled out several schemes to tackle the unemployment rate to the barest minimum (Sisay et al., 2020). Sisay et al. (2020) applied the ARDL approach to identify the macroeconomic variables that contributed to Ethiopia's unemployment trend from 1984 to 2018. The findings conveyed that external debt and the other macroeconomic variables were significant predictors of unemployment. External debt was observed to have a minimising effect on unemployment. This, Sisay et al. (2020) attributed to the Ethiopian government's dedication to minimising the unemployment situation.

Disaggregating debts into bilateral and multi-lateral debts to assess their implications on unemployment, Ozigbu (2020) investigated how these debts together with migrants' remittances and technical cooperation grants, facilitate addressing unemployment in Nigeria for the period 1980 to 2020. The paper applied the ARDL approach and found a cointegrating relationship among the variables. The findings revealed that bilateral debts, multi-lateral debts and technical cooperation grants have a significant negative relationship with the unemployment rate. Thus, these debts are used to promote employment such that external capital inflows close the resource gaps in the host nations. It was recommended that the government creates a macroeconomic environment that attracts external capital flows to promote fiscal sustainability and productive investments in high employment creation sectors. However, the results from these studies (Shuaibu et al., 2021; Ankomah, 2019; Dalmar et al., 2017; Nwokoye et al., 2016; Igberu et al., 2016) are contestable because they cannot be generalised to SSA region.

Evidence from some groups in SSA region suggests that public debt accumulation is not contributing much to employment. Folawewo and Adeboje (2017) applied the fixed and random effects models to empirically investigate the determinants of unemployment in the macroeconomy of the Economic Community of West African States (ECOWAS). A Hausman specification test selected the random effects as preferable, which revealed that external debts have a negative but insignificant effect on unemployment. Folawewo and Adeboje (2017) contended that foreign debts are

vital for accumulating capital and the insignificant impact could be a result of ECOWAS economies contracting debts to fund recurrent expenditures instead of productive-driven capital expenditures.

Similarly, Anyiga (2020) examined the impact of macroeconomic indicators on unemployment in the East African Community (EAC) from 2000 to 2018 using the random effects model after a Hausman test. The study found that external debt had a positive but insignificant effect on unemployment in the EAC economies. These results seem to affirm that some governments in the SSA economies do not prioritise investment in productive ventures that creates employment when using debts. This narrative does not augur well for SSA economies as financing such debts depend on the sustainability of projects undertaken with such debts. Though several studies argue that public debts contribute to economic growth, Ben-Salha and Mrabet (2019) contended that such economic growth could be jobless economic growth.

The work of Mukisa et al. (2020) corroborates the findings of Anyiga (2020) in the EAC region. Also, while focusing on the EAC sub-region of Africa, Mukisa et al. (2020) investigated the economic determinants of unemployment for the period 1996 to 2017. The paper applied the instrumental variable fixed effects regression to address the problem of endogeneity in the model potentially. The findings showed that external debt is negative but insignificantly associated with unemployment in the EAC region. It was interesting to note that unemployment could be tackled with sustainable economic growth and supply of credit facilities to the private sector with trade openness and gross national expenditure possible to aggravate the unemployment situation. Although these studies (Anyiga, 2020; Mukisa et al., 2020; Ben-Salha & Mrabet, 2019; Folawewo & Adeboje, 2017) have investigated economic groups within the SSA region, the results may not adequately reflect the reality for the entire SSA region.

Emerging evidence from other economic regions indicates that the relationship between public debt and unemployment needs to further be explored. Cahyadin and Ratwianingsih (2020) explored the interrelationships among public debt, unemployment and exchange rates from 1980 to 2017 in four Association of Southeast Asian Nations (ASEAN) economies. The authors applied the error correction model and found a cointegrating relationship between unemployment, public debts and exchange rates in two economies (Malaysia and Thailand). The study

revealed that external debts do not have a significant impact on unemployment. Thus, external debts in the ASEAN economies are not utilised for productive investments. Similarly, Siddiqa (2021) analysed the determinants of unemployment in 10 selected developing countries for the period 2000 to 2019. Using the GMM estimator, external debts and other predictors were found to have a positive and significant impact on unemployment. The study suggested that developing economies should focus on closing the deficit financing gaps. However, Cahyadin and Ratwianingsih (2020) and Siddiqa (2021) ignored the role of institutional quality in the relationship between public debt and unemployment.

Kokotovic (2016) investigated the factors influencing unemployment among six European Union member states and employed the ARDL estimation technique. The findings revealed that a rising public debt stock significantly worsens the total unemployment rate of Croatia and Spain. However, the results from the Czech Republic indicated that increasing public debt improves total employment, while insignificant results were recorded for the other economies in the long run. Lioti (2020) stated that youth unemployment forms the bulk of the unemployment rate in most economies. Consequently, Tomic (2018) explored the major factors that contributed to youth unemployment in 28-member states in Europe from 2002 to 2014 using the fixed effects estimation technique. The findings revealed that an increasing share of public debt to GDP is significantly associated with increases in the youth unemployment rate. The consistent and insignificant positive relationship between public debt stock and unemployment emerging in literature is not surprising. O'Reilly et al. (2015) indicated that policy recommendations and investments are decidedly reliant on the willingness of economic stakeholders to execute effectively.

With similar findings, Topal et al. (2018) analysed the relationship between public debt and unemployment, specifically youth unemployment, in five European economies. The study used the bootstrap panel Granger causality test on a dataset for the period 1990 to 2015 and the findings indicated causality between governments' debt and total unemployment in the economies, excluding Portugal. The study further concluded with the evidence that federal government debts increase unemployment in Turkey, Italy and Greece. Korol and Cherkas (2015) also found in their investigation that foreign debts are detrimental to unemployment in Greece. These studies (Topal et

al., 2018; Kokotovic, 2016; Korol & Cherkas, 2015), however, provided a case for few European economies.

By implication, findings thus far indicate that few economies successfully channel public debt into sustainable investment ventures in the host economies to contribute more to reducing unemployment. For instance, though insignificant, the Pakistani economy was to contract foreign debts for productive projects to contribute to employment (Maqbool et al., 2013). Upon exploring the economic determinants of unemployment in Pakistan, Maqbool et al. (2013) applied the ARDL model for a dataset from the period 1976 to 2012 and documented a statistically insignificant negative relationship between unemployment and external debt. Similarly, Iwuoha (2020) also examined whether borrowing leads to a reduction in unemployment in Nigeria using the vector error correction model (VECM) for the period 1981 to 2019. The findings showed that though increasing government debt reduces unemployment, the relationship is insignificant. Despite the results, Iwuoha (2020) emphasised that the government could still use borrowings for investments in infrastructure, but corruption needs to be checked because it hinders the prudent use of resources. This assertion by Iwuoha (2020) highlights the need for good governance in the administration of national debts.

Further, findings from Isaev and Masih (2017) argued that the private sector could fix unemployment situations with the facilitation of the government. Isaev and Masih (2017) applied the ARDL approach to quarterly time series data for the period 1988–2016 to analyse the relationship between unemployment, private sector share of foreign debt and trade openness in Australia. The findings revealed that the accumulation of private sector share of foreign debt is associated with reducing the unemployment rate in both the short and long-run in Australia. The authors contended that the government should influence the private sector's share of foreign debts by introducing stronger governance and ensuring creditors' monitoring power to help reduce unemployment.

### **2.3.2 Public Debt and Institutional Quality**

Uppal (2011) examined how political institutions and budgetary processes impact on fiscal policy. The results revealed that strong political institutions improve fiscal discipline. Strong political institutions and good governance were recommended as

the long-term solutions to instilling fiscal discipline. Mehmood et al. (2021) also investigated the relationship between institutional quality and public debt in Pakistan and corroborated that weak institutional quality causes an unfavorable economic condition which raises public debt. And that strong institutional quality improves transparency in the financial market thereby reducing public debt. Similarly, Safdar and Padda (2017) investigated the impact of institutional quality on budget deficit in Pakistan and also affirmed that poor quality of institutions increases budget deficit.

Nguyen et al. (2017) also investigated the impact of institutional quality on fiscal policy across Asia Pacific countries for the period 2002 to 2013. The results showed that higher institutional quality reduces government expenditure and the rate at which government tax revenue grows. They proposed the improvement of institutional quality as a pre-requisite for seeking funding from international originations. Further, Tarek and Ahmed (2017) with a panel of countries tested the hypothesis that poor governance leads to rising public debt. They also affirmed that the poorer the quality of governance, the higher the public debt to GDP ratio. They recommended that developing countries should improve the quality of governance to reduce public debt to GDP ratio. However, in the case of SSA economies, institutions are believed to be weak, thereby having dire implications on fiscal discipline. And the findings from these studies signal the need for SSA economies to strengthen their institutions.

Javid et al. (2011) estimated the economic, political and institutional sources of budget deficits for selected Asian countries. They found that high corruption, poor quality institutions and conflicts increase budget deficits. Similarly, Grechyna (2012) investigated public debt and public corruption in a panel of 30 countries. The results affirmed that high public corruption through the rent-seeking activities of the government leads to excessive public debt.

The existing literature suggests a strong inverse relationship between public debt and institutional quality. This means fiscal discipline, reducing public corruption, promoting political stability and improving regularity quality among others ensure efficiency in government expenditure and reduce public borrowing. However, the empirical studies providing better insight into the relationship between public debt and institutional quality at the country and cross-country levels have focused on Asia. There is limited evidence at both the country and cross-country levels in Africa and particularly SSA.

### **2.3.3 Institutional Quality and Unemployment**

Studies have also focused on institutional obstacles and rigidities of economies that affect the labour market; thus, unemployment (Kilishi et al., 2021; Tomic, 2018; Bertola, 2014). Stronger governance, creditors' monitoring power and institutional capacity in private and public-owned enterprises encourage the inflow of funds to the productive sectors of economies (Hallak, 2013).

Kilishi et al. (2021) focused on establishing the relationship between economic institutions and total and gender unemployment in the SSA context spanning from 1995 to 2018 using the dynamic fixed effect estimator after a Hausman test. The authors measured aggregate economic institutions by the Heritage Economic Freedom index. The outcome of the study revealed that aggregate economic institution indicator minimises the forms of unemployment in the long run. It was recommended that the governments of SSA countries should strengthen their economic institutions to be able to fight unemployment.

Considering a similar study, investigating how the quality of government affects youth unemployment in a panel study of 45 European and Asian countries, Prachkovski (2016) found that the quality of governance has a pronounced effect on youth unemployment. Proxying quality of government with four governance indicators, it was revealed that the youth unemployment would improve should the quality of governance indicators improve. Nonetheless, although youth unemployment is rife, considering the effect of institutional quality on the general unemployment will help provide an overall recommendation to remedy the unemployment situation.

Cebula et al. (2015) investigated the role of economic freedom in minimising unemployment among Organisation for Economic Co-operation and Development (OECD) member states from 2003 to 2007 using the two-stage least squared estimator. The study revealed that higher levels of aggregate economic freedom led to lower levels of unemployment. The findings implied that economic freedom of institutions improves the unemployment situation of economies. However, the findings from these OECD economies provide evidence for economies with quality institutions that cannot be compare to that of SSA economies.

Similarly, Garrett and Rhine (2011) assessed the impact of economic freedom on employment growth among US member states. It was revealed that increasing levels of economic freedom contributes to increasing employment growth rates. This indicates that economic freedom prevailing in institutions can enhance employment. In the same direction, Feldmann (2007) found that economic freedom significantly lessened unemployment among females and the youth in 87 countries spanning from 1980 to 2003. Further, it was revealed that small government size and an effective legal system influence unemployment and have major impacts on reducing unemployment. Although Garrett and Rhine (2011) and Feldmann (2007) presented interesting findings, economic freedom does not provide a comprehensive measure for quality of institutions.

Djankov and Ramalho (2009) contended that labour legislations become meaningless in the absence of the rule of law in an economy. Likewise, Salami (2013) analysed the unemployment situation in Nigeria and concluded that corruption and government effectiveness dampen the inflow of foreign funds, which affects the creation of employment opportunities. When corruption is rife, government effectiveness is compromised leading to the ineffectiveness of labour regulations.

Panel evidence from South Asian countries provided by Shabbir et al. (2019) employed the World Governance Indicators as a proxy for governance and the short and long-run relationship between governance and unemployment were established. Shabbir et al. (2019) found that proper governance in institutions is significantly and inversely related to unemployment for both the short and long-run dynamics for the period 1994 to 2016. Therefore, good governance is needed to reduce unemployment sustainably.

The empirical works of some scholars have focused on the implication of labour market institutions on unemployment (Kilishi et al., 2021). Consistently, Dority and Fuess (2007) argued that the intensity of unemployment in these contemporary times is still associated with changes in labour market institutions as was prevailing in the 1980s. In effect, drawing a sample 26 from OECD membership of the high-income statuses, Marelli et al. (2013) investigated the impact of policies and institutions on unemployment from 1980 to 2009 using the fixed effects estimator. It was revealed that institutions and policies captured by economic freedom, labour market reforms and active labour market policies boost labour market performance and have a

minimising effect on unemployment. Moreover, examining the dynamic implications of minimum wage policies in the SSA, Borat et al. (2017) reported that implementing and increasing the minimum wage policies by labour market institutions have a weak impact on reducing unemployment in most SSA economies.

In terms of the indicators of institutional quality, Lim (2018) emphasised that corruption and unemployment are major economic issues governments face. Consequently, Bouzid (2016) investigated the dynamic relationship between corruption and unemployment and revealed that corrupt practices impede employment generation among a sample of 92 economies, covering the period 1985 to 2008. It was concluded that the lack of control of corrupt practices leads to the rife of such practices inducing the majority of the workforce to be rendered formally unemployed. A further revelation by Bouzid (2016) indicated that the lack of mechanisms that monitor and control corruption leads to the mass of available labor to either pay a price for or be left out from a formal job to the informal sector. Adjor and Kebalo (2018) used the panel vector autoregressive model (PVAR) to investigate the role of corruption on unemployment among a sample of nine Southern African Development Communities (SADC) for the period 2007 to 2016. Similar to the evidence provided by Nnaemeka (2021) on the role of corruption on unemployment, it was revealed that corruption causes and has a positive relationship with unemployment. Providing in-depth results, an impulse response test further indicated that unemployment directly responds to corruption in Nigeria for the period 1980 to 2018.

With high unemployment rate in Kenya, Onchari (2019) analysed the relationship between corruption and unemployment rate from 2000 to 2017. The author applied ARDL model and it was revealed that there is a long run and direct relationship between corruption and employment. Thus, the surge in corrupt practice leads to high levels of unemployment rates in the long run. On the other hand, Lacko (2004) investigated the implications of levels of corruption, tax systems and labour market institutions effect on unemployment, employment, self-employment and activities in the informal sector. Drawing a sample of 28 economies from the OECD member states and 18 transition economies for the period 1995 to 2000, Lacko (2004) applied various regression estimations to provide in-depth findings and discussion. The findings indicated that when there are high levels of corruption coupled with high

levels of tax rates, unemployment rates tend to be high with more labour exiting the formal labour market.

Government effectiveness connotes “capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies” (Kaufmann et al., 2010, p.4). Consequently, extant literature has investigated the components of government effectiveness and unemployment. Lesetedi (2018) examined the role of policy failure in addressing the high youth unemployment rate in Botswana. The author alluded that although the government has designed well intended social intervention programs and policies to address the unemployment rate, youth unemployment continued to increase. It was revealed that the unemployment policy formulation and implementation was not guided by research which resulted in the failure of the social policies and programmes. Thus, this could be the reality of most SSA economies.

In a similar fashion, Schwebel et al. (2019) analysed the implications of key policies encouraging employment in 13 SSA economies covering the period 1996 to 2016. The results indicated that SSA governments’ policies are formulated to encourage labour supply strategies instead of demand strategies which focus on eliminating firm development challenges and creating jobs. Again, the authors revealed that employment policies formulated by SSA governments barely focus on the constraints the unemployed encounter in assessing employment opportunities and their involvement in policy dialogues.

Examining the social protection challenges using selected economies in SSA, Chitonge (2012) outlined unemployment as a major theme in social protection policies. The author found that although there have been social protection initiatives to deal with social issues like unemployment, intensifying the initiatives is constrained by the absence of commitment from governments. In the same vein, with evidence from Zimbabwe, Maulani and Agwanda (2020) investigated the role of pro-employment policies on reducing unemployment and concluded that the government’s poor implementation of pro-employment economic policies contributes to the increasing unemployment rates.

Extant literature has documented significant bi-directional relationship between political stability and unemployment. Portions of the existing literature have investigated the effect of unemployment on political stability with the proposition that joblessness among the masses often risks political instability (Demeke, 2022; Azeng & Yogo, 2015). On the other hand, the other portions of literature investigating the effect of political instability on unemployment assumes the assertion that the likelihood of government being destabilised disrupts the implementation process of creating employment (Kamga et al., 2022; Subramaniam & Baharumshah, 2011).

Kamga et al. (2022) focused on the relationship between political instability and unemployment for 23 economies in the SSA region for the period 2000 to 2016. The panel data estimation technique was applied and it revealed that political instability increases unemployment rate through the avenues of human capital, government spending, foreign direct investment and domestic investment. Therefore, political instability was recommended to be resolved in checking unemployment. On the other hand, Milasaito and Micic (2022) explored the relationship between political stability and unemployment among selected countries in South America, Asia and Africa between the period 1996 and 2020. The authors revealed that political stability had no significant relationship with unemployment. However, Subramaniam and Baharumshah (2011) examined the determinants of unemployment in the Philippines and provided contrary findings. The authors applied the ARDL estimation technique on a dataset spanning 1974 to 2003 and documented a significant inverse relationship between governance stability and unemployment. Thus, the instability in governance with potential of destabilisation significantly contribute to the unemployment rates.

Some pieces of literature contend that in response to economic challenges, regulations made by policymakers have not been favorable for employment creation (Coglianese, 2013). In consideration of this, the bulk of literature has investigated the implication of regulatory quality on unemployment. Regulatory quality is well intended to enhance private sector development so as to support the creation of employment for the chunk of the unemployed (Kauffmann et al., 2010).

A study by Coglianese (2013) investigated the role of regulations in spurring employment in the United States of America (USA) and found that the regulations by policymakers do not significantly impact the levels of unemployment. Thus, the author recommended that U.S policymakers should not anticipate that their

regulations affect the unemployment levels in the economy. From Coglianesse (2013) findings, it could therefore be proposed that should regulations complement monetary resources employment creation could be boosted. On the contrary, Nazir et al. (2013) provided dissenting evidence to the findings of Coglianesse (2013). Nazir et al. (2013) applied the GMM estimation technique on a panel of six Asian developing economies from 1996 to 2011 and examined the relationship between regulatory quality and employment generation. It was found that there is positively strong and significant relationship between regulatory quality and employment creation. The authors asserted that improving the quality of regulations in an economy would enable governments to address the myriad forms of unemployment.

Further, Rafi (2017) provided another layer of evidence to the relationship between regulatory quality and unemployment rate. Rafi (2017) considered the implications of labor market regulations on the unemployment rate and analysed the phenomenon among OECD member countries for the period 2000 to 2012. Based on panel data, the author revealed that labour market regulations have significant downward implication on unemployment. It was revealed that the quality of the labour market regulation resulted in the generation of more employment opportunities. By inference, given the potential role of public debt in generating employment in the SSA context, deepening SSA's regulatory quality will further enhance the creation of employment.

According to Kaufmann et al. (2010, p.4), rule of law refers to the "extent to which agents have confidence in and abide by the rules of society and in particular the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence". Excerpts of the relationship between rule of law and unemployment have been articulated in the literature. For instance, Adams et al. (2019) analysed the economic significance of employment protection laws in relation to employment creation. Adams et al. (2019) used a sample of 117 economies with dataset covering 1970 to 2013 and found that the regard for employment protection laws is associated with a rise in participation of labour force and employment rates and likewise reduction in unemployment levels.

Also, Deakin et al. (2014) investigated the impact of labour laws on unemployment among six OECD member states from 1970 to 2010. They applied a dynamic panel data and it was revealed that, generally, worker-protective labour laws did not have any significant relationship with unemployment. In a similar fashion, evidence from

an empirical work by Sarkar and Deakin (2011) focused on the role of Indian labour laws on unemployment from 1970 to 2006 and the findings revealed that pro-worker labour legislation does not contribute to unemployment.

In the spirits of Kaufmann et al. (2010), voice and accountability deal with the degree to which citizens participate in elections, freedom of expression and association, and free media. Literature on voice and accountability and unemployment have been dense on the role free media play in addressing the unemployment situations in several economies. The bulk of literature has argued that free media has enhanced knowledge transfers on taking advantage of opportunities in the broad economic environment to help deal with the ventures that help check unemployment (Dutta et al., 2011; Hindle & Klyver, 2006).

The seminal work of Dutta et al. (2011) examined the role of free press in encouraging entrepreneurship. With dataset on 95 economies from 2000 to 2007, free press was found to nurture entrepreneurship. The authors explained that free media has enhanced the flow of information on creativity and innovation which encourages the generation of entrepreneurial ventures that help check unemployment. On same tangent, Hindle and Klyver (2007) explored the implication of media participation and coverage on entrepreneurship for the period 2000 to 2003. Investigating from 37 selected economies, the authors found that the more media reveal the intricacies of entrepreneurship, the more firms spring up. Fortunately, this helps to deal with unemployment in economies.

However, findings by Levie et al. (2010) seem to have questioned the direct role of media in generating entrepreneurial intentions and actions. Extracts of the findings show that the media do not significantly nurture entrepreneurial intentions and actions, rather, it conveys significant positive social norms and values that nurture the desire for entrepreneurship intention. In general, it was revealed that top enterprise campaigns and reality programmes provide essential avenues to the unemployed.

## **2.4 Conclusion**

This study is guided by the Keynesian public debt theory and complemented by the institutional theory. In view of that this chapter presented the theoretical, conceptual and empirical review of relevant literature. The Keynesian economics perspective of public debt and unemployment formed the fundamental theory of the study. The

conceptual framework captured concepts of unemployment, institutions and public debt. The various empirical studies that describe the link between unemployment, institutions and public debt were reviewed. The literature on public debt-unemployment relationship have panned out varied outcomes using different research methodologies. However, the reviewed literature suggests the existence of scanty literature on the public debt-unemployment nexus compared to the extensive literature on public debt-economic growth relationship. Most of the existing studies employed VAR, ARDL VECM and other models of estimation that are not appropriate for large panels as well as inefficient at controlling endogeneity. In addition, there is also the absence of literature on the moderating role of institutions in the debt-unemployment relationship. Therefore, this study will employ a dynamic panel model estimation strategy which efficiently controls for endogeneity, to assess the moderating role of institutional quality in the relationship in SSA.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter presented the framework and justification for the statistical procedures used to conduct the research. Specifically, this chapter is sectioned into the research design, research approach, data source and measurement, model specification and justification of statistical analysis procedure. The work of Saunders et al. (2019) provided guidance to the development of the research methodology of this study.

#### **3.1 Research Paradigm and Design**

Research paradigms represent the philosophical assumption that guides scientific research (Saunders et al., 2012). Fundamentally, there are three main research paradigms: positivism, interpretivism and pragmatism. Research paradigm provides the philosophical linkage to the research design, methods and approach. Thus, choice of the research paradigm depends on how the researcher relates to the research problem (Saunders et al., 2012).

The philosophical stance of this study conformed to positivism. According to Saunders et al. (2012), advocates of the positivism contend that the positivist perspective to research inquiry entails investigating into an observable social issue to arrive at findings that make law-like generalizations as carried out by scientists of the physical and natural fields. Observable social issues imply that these social issues are objectively perceived by the researcher which could be quantified and measured. This study employed quantifiable and measurable variables which provided more meaningful facts after statistical analyses.

This study examined the relationship between public debt and unemployment and the intermediating role of institutions. The variables of interest were observed as objective social realities. The positivist research paradigm enabled the researcher to separate himself from the research for objective findings to be arrived at and conclusions drawn.

According to Saunders et al. (2012), research design is the overall strategy or framework chosen by the researcher to address the research inquiries a study intends to meet. This study adopted a strategy that integrated the various parts of the research

in a comprehensible and logical manner. Consequently, this helped to address the research objectives and questions effectively. Creswell (2017) stated that the research design is the blueprint for gathering, measuring, analysing and making meaning out of data. Thus, the research design helped in the use of a set of methods and procedures to address the research problem.

Saunders et al. (2012) proposed various research designs available for studies. These include;

- Descriptive research design: these are research designs that aim to determine and describe some issues under investigation to provide a vivid picture of the problem. Descriptive research usually complements the other research designs.
- Explanatory studies: these studies are conducted to investigate the cause-and-effect relationships between variables. Studies with an explanatory research design explain the linkage between the variables under study.
- Exploratory research designs: these are studies that aim to explore a social phenomenon or an issue in order to gain insights into a problem of interest. These studies aid in the understanding of a problem and provide clarity to the issues under study.
- Evaluative research designs: these research designs aim to appraise the extent to which elements of a structure work. These researches are interested to evaluate the efficiency, effectiveness or efficacy of a process, work system, initiative or strategy.
- Combined research designs: these research designs utilise two or more of the research designs to address challenging issues which need multiple approaches to observing social realities. Combined research designs are essentially combined to achieve the various purpose of the study.

This study utilised the explanatory research design. The main purpose of the study was to investigate the relationship between public debt and unemployment as well as the role of institutions in this relationship in the SSA. Thus, the explanatory research design was used to guide the investigation of the effect of public debt on unemployment as well as the moderating role of institutions. According to Saunders et al. (2012), in investigating the cause-and-effect relationships between variables, the

explanatory research design aids in explaining the statistical linkage between the variables of interest.

### **3.2 Research Approach**

Literature identifies three major types of research methods, which include the quantitative, qualitative and mixed research methods (Saunders et al., 2012; Creswell & Creswell, 2017). According to Creswell and Creswell (2017), the quantitative research method provides a plan to inquire into a research problem by testing hypotheses, assumptions, or questions while using measurable or numerical variables which are analysed by applying statistical procedures. Quantitative research methods are useful in measuring the relationships among variables, enabling the researcher to define such relationships objectively. Quantitative research methods make use of quantitative data, measured as nominal, categorical, ratio and interval data and statistical analytical procedures to make meaning from the data.

Qualitative method research explores the subjective understanding of a research problem in its social context (Creswell & Creswell, 2017). Qualitative research method is grounded on the premise that researchers should attach themselves to the social phenomenon under study to understand the research problem. Qualitative research methods employ qualitative data, such as texts, symbols, images, etc. and qualitative data collection techniques such as interviews and focused group discussions.

On the other hand, mixed methods research combines or integrates quantitative and qualitative research designs. It involves utilising, analysing, and integrating quantitative and qualitative research methods in single research. Choosing the mixed methods research provides the merits of using both qualitative and quantitative data to enhance understanding the research phenomenon. Thus, the merits of the former research design offsets the demerits of the latter research design and otherwise.

It is worthy to note that the selection of research methods or designs does not make one superior to the other designs, but the suitability of the design to address the research problem matters (Saunders et al., 2012). Consequently, considering the problem and purpose of the current research, the quantitative research method remained applicable. The quantitative methods research was useful to the study because the study used quantitative data to establish the effect of the public debt and

institutional framework on unemployment in the SSA. All variables used for the study were collected in a quantitative form.

### 3.3 Model Specification

Given the research objectives proposed by the study, three models were constructed to address the research hypotheses.

**Model 1:** This model addressed the research objective one. The regression model for the study was adapted from the seminal works of Bouzid (2016), Folawewo and Adeboje (2017) and Kilishi et al. (2021) who applied the Okun's law and Philips' curve in investigating the determinants of unemployment. These studies explained that an economy's output and inflation are theoretical predictors of unemployment. This study, however, augmented the model with public debt as an independent variable as well as other control variables due to a growing literature providing empirical justification for these variables. Applying the models of the aforementioned seminal works, the relationship between public debt and unemployment was examined. Consequently, equation 1 represented an empirical model for research objective one.

$$UNE_{it} = \beta_1 UNE_{it-1} + \beta_2 PUD_{it} + \sum_{j=5}^n \beta_j Z_{it} + \mu_{it} \quad \dots Eqn1$$

UNE and PD denotes unemployment rate and public debt, respectively. Where,  $i = 1, \dots, N$  and  $t = 1, \dots, T$ ; thus, it is economy  $i$  in time  $t$ .  $\beta_{1,,j}$  are coefficients of the model. According to Bouzid (2016), the persistent effect of unemployment should be captured in unemployment. Thus,  $UNE_{it-1}$  represents the unemployment rate at time  $t - 1$  for economy  $i$  which allowed unemployment to be modelled as a dynamic process; therefore, capturing the persistent effect of unemployment.  $Z_{it}$  represents four control variables; GDP growth, population, inflation rate and foreign direct investment.  $\mu_{it}$  is zero mean scalars and decomposed into  $\mu_{it} = \varepsilon_i + \omega_{it}$ .  $\varepsilon_i$  is the economy-specific fixed-effect which captured the persistent country characteristics.  $\omega_{it}$  captured all the other white noise in the model specified. The logarithms of all the variables are taken except foreign direct investment. A priori expectations were  $\beta_2 < 0$ ,  $\beta_3 < 0$ ,  $\beta_4 > 0$ ,  $\beta_5 < 0$  and  $\beta_6 < 0$  respectively. There are several empirical works that

justified these control variables as predictors of unemployment (see e.g., Kotovic, 2016; Kilishi et al., 2021; Anyiga, 2020; Fosu, 2019; Folawewo & Adeboje, 2017).

**Model 2:** This model addressed the research objective two. Model 2 included institutional framework indicator to determine its effect on public debt.

$$PUD_{it} = \beta_1 PUD_{it-1} + \beta_2 INSTQ_{it} + \sum_{j=5}^n \beta_j Z_{it} + \mu_{it} \quad \dots Eqn2$$

This model examined the relationship between institutional quality and public debt as such public debt was the dependent variable. The independent variable of interest was institutional quality, denoted as INSTQ, and the control variables,  $Z_{it}$ , were GDP growth, population, inflation rate and foreign direct investment. The logarithms of all the variables are taken except institutional quality and foreign direct investment. A priori expectations were  $\beta_2 < 0$ ,  $\beta_3 < 0$ ,  $\beta_4 > 0$ ,  $\beta_5 > 0$  and  $\beta_6 < 0$  respectively.

**Model 3:** addressed research objective three which examined the moderating role of institutional framework on the relationship between public debt and unemployment. To achieve this objective, institutional framework was interacted with public debt to establish the complementary effect of the variables on unemployment. The complementary effect gives an indication that better institutions enhance the effect of public debt on reducing unemployment. Model 3 is presented as:

$$UNE_{it} = \beta_1 UNE_{it-1} + \beta_2 PUD_{it} + \beta_3 INSTQ_{it} + \beta_4 (PUD * INSTQ)_{it} + \sum_{j=5}^n \beta_j Z_{it} + \mu_{it} \quad \dots Eqn3$$

Model 3 is the modification of Model 1 with the introduction of institutional quality and the interaction term PUD\*INSTQ; thus, public debt interacting with institutions. The control variables,  $Z_{it}$ , were GDP growth, population, inflation rate and foreign direct investment. The logarithms of all the variables are taken except institutional quality and foreign direct investment. A priori expectations were  $\beta_2 < 0$ ,  $\beta_3 < 0$ ,  $\beta_4 < 0$ ,  $\beta_5 < 0$ ,  $\beta_6 > 0$ ,  $\beta_7 < 0$  and  $\beta_8 < 0$  respectively. There is moderation when the effect of an independent variable on the dependent variable changes with the level of a third variable (Edwards & Lambert, 2007; Hayes & Rockwood, 2017). Hence, the interaction term, PUD\*INSTQ, captured the moderating role of institutional quality on the effect of public debt on unemployment.

### 3.4 Estimation Strategy

This research used a balanced panel dataset of 36 SSA economies. A panel dataset comprises a group of cross-sectional elements or units (countries) that have been observed over a period of time (Hill et al., 2011). In applying a panel dataset, unobserved country-specific differences (heterogeneity) can be estimated. This connotes the units, individuals or countries whose data are observed should be consistent throughout the dataset to account for such heterogeneity. Thus, in analysing a panel dataset, a researcher cannot effectively and efficiently afford to provide individual regression equations to model for each respective individual unit. Therefore, from the econometric perspective there are static estimators (pooled, fixed and random effects models) and dynamic models.

The System Generalised Method of Moments (GMM) panel estimation technique is a dynamic model proposed for instances where there is small time dimension and a large population in the panel and when fixed individual effects are not observed. The GMM also assumes a linear functional relationship and where the regressors are not strictly exogenous. It utilises instrumental variables (lag of dependent variable) to deal with endogeneity. This estimator also makes use of the dynamic dependent variable. Thus, depending on its own past realisation. The baseline model for the GMM is specified in the form;

$$y_{it} = \delta y_{it-1} + \alpha x_{it} + (\varepsilon_i + \omega_{it}) \quad \dots Eqn4$$

The main focus of using the dynamic panel GMM is the use of  $y_{it-1}$  which represents the previous value of the dependent variable. Thus, the past realisation of its own values. Arellano and Bond (1991) propounded the novel GMM panel estimation technique, also known as the difference GMM. The econometric work of Arellano and Bond (1991) analysed a panel dataset using equations with first-difference of the regressors and the levels of the lagged values of time-varying variables as instruments for the equations in differences. This estimation approach is efficient at controlling for country-fixed effects and endogeneity bias (Roodman, 2009). Using equation 4 as the original equation, the Difference GMM could be specified in equation 5.

$$\Delta y_{it} = \delta \Delta y_{it-1} + \alpha \Delta x_{it} + \Delta \omega_{it} \quad \dots Eqn5$$

The first differenced lagged regressand is instrumented with its past values and changes in the regressand is assumed to be represented by equation 5. Fundamentally, the Difference GMM corrects issues of endogeneity by transforming the regressors by way of differencing to remove fixed effects in the process, because it does not vary with time. However, the problem of endogeneity still remains. This is because:

$$\Delta\varphi_{it} = \Delta\varepsilon_i + \Delta\omega_{it} \quad \dots Eqn6$$

Further:

$$\varphi_{it} - \varphi_{it-1} = (\varepsilon_i - \varepsilon_i) + (\omega_{it} - \omega_{it-1}) = \omega_{it} - \omega_{it-1} \quad \dots Eqn7$$

Endogeneity remains because there is correlation between  $y_{it-1}$  (eqn.5) and the composition of the error term,  $\omega_{it}$  (eqn.5) as indicated by  $\omega_{it-1}$  (eqn.7).

However, Arellano and Bover (1995) contended that when applying the difference GMM, the consistency of the regressors could lead to the likelihood of the estimator to provide bias and inefficient estimates in finite samples. This assertion by Arellano and Bover (1995) remains essential to the completion of this study. According to Acemoglu and Robinson (2008) this is because the institutional framework of an economy is consistent or remains unchanged when established. Consequently, the System GMM was introduced since the lagged difference of the regressors in difference GMM were not robust instruments for the equation in first differences.

Fundamentally, the System GMM corrects issues of endogeneity through the introduction of instruments to improve efficiency and transforming the instruments to make them uncorrelated with the fixed effects. Therefore, the System GMM estimation complements the levels equations with the regressors' first difference while also utilising the regressors' lagged differences as complementary instruments for the levels equation. Miletkov and Wintoki (2012) argued that with the System GMM, the exogenous elements of the endogenous regressors are extracted to solve reverse causality issues. Thus, restating equation 4;

$$y_{it} = \delta y_{it-1} + \alpha x_{it} + (\varepsilon_i + \omega_{it}) \quad \dots Eqn8$$

The System GMM assumes that equation 8 is a random walk and y is a persistent variable where one equation is determined in levels with first differences as

instruments. Further a second equation is determined in first differenced form with levels as instruments.

The GMM has two forms, which includes, one-step GMM and two-step GMM estimators. The one-step GMM is a first-difference transformation process whereas the two-step GMM is a second-order transformation process. However, the one-step GMM has various limitations (Ullah et al., 2018). The first-difference transformation could lead to loss of many observations due to a variable's past values being subtracted from its current value (Roodman, 2009). Arellano and Bover (1995) suggested the use of the two-step GMM to avoid data loss due to first-difference observation. The two-step GMM, using a second-order transformation, employ forward orthogonal deviations where the means of all future available observations are subtracted from their current values (Ullah et al., 2018).

Consequently, this study applied the two-step System GMM technique due to the efficiency and robustness of its estimates. However, the weakness of using the System GMM as the tool for estimation is that since the estimation tool employs lags of the regressand and regressors as instruments, there are issues of the possibility of the creation of several instruments. According to Roodman (2009) this weakness of the System GMM is possible when the dimension of the time series is relatively smaller than the cross-sectional dimension. Roodman (2009) recommended that to address this weakness there should be the restriction of the moment conditions to fewer lags of the regressors. Thus, this recommendation was applied by maintaining only one lag so as to limit the moment conditions.

### **3.5 Pre-Estimation and Post-Estimation Tests**

The study conducted correlation analysis and variance inflation factor as the main pre-estimation tests useful for estimating the System GMM. The correlation matrix analysis and variance inflation factor were conducted to determine the level of association among the variables under investigation. This was required to detect and address any issues of multi-collinearity among the variables. Brooks (2014) suggests that to address issues of multi-collinearity with two variables strongly correlated, one variable could be dropped from the model. Peterson et al. (2017) proposed that the dropping of variables according to multi-collinearity should be guided by theoretical relevance of the two variables in the model. One variable could replace the other since

they may have the same trend. Thus, the test for the possibility of multicollinearity among the variables in the same model was useful.

The post-estimation tests focused on the GMM estimation diagnostics. The Arellano-Bond and Sagan tests provide useful techniques to check the model for robustness before inferences could be made. To ensure that models gave a best linear and unbiased estimator (BLUE), the specified models were checked for autocorrelation using the Arellano-Bond test. The Arellano-Bond test specifies the absence of autocorrelation when the AR(2) process fails to reject the null hypothesis of no autocorrelation. Further, the Sagan test for over identifying restrictions was conducted. The null hypothesis of the Sagan test indicates no overidentifying restrictions. Finally, the parameters were jointly tested to determine whether they are equal to zero using the Wald test. Failure to reject the null hypothesis provides support for the choice of the instruments.

### **3.6 Data and Measurement of Variables**

Secondary data for countries in the SSA region was sourced from the World Bank and IMF data bases. The worsening risk of debt distress (Atingi-Ego et al., 2021) and the rising youthful population (Hino & Ranis, 2014) of the region makes it suitable for this study. However, due to the unavailability of data for some SSA countries, a panel data of 36 out of the 48 countries for the period 1996 to 2020 was used. The selected countries included in the study are listed on Appendix B.

The unemployment rate (UNE) is measured as the proportion of the total labour force who are not engaged in any form of meaningful work, yet they are readily available and actively looking for work. The unemployment rate variable functions as a dependent variable in Model 1 and Model 3 in this study. Several pieces of research have investigated the determinants of unemployment which include public debt, institutions, economic growth, inflation, FDI, labour productivity, population, and among others (Kilishi et al., 2021; Anyiga, 2020; Fosu, 2019; Folawewo & Adebaje, 2017).

Public debt (PUD) in the context of this study is proxied by the central government's external debt. Public borrowing is useful to generate social intervention and unemployment programs. Public debt carries the potential for accumulating sufficient capital, stabilising the macroeconomy and hedging against adverse shocks (Folawewo

& Adebaje, 2017). Other evidence suggests that public debt increases the total unemployment rate (Siddiqa, 2021; Kokotovic, 2016). This is because as taxes are increased to settle debts, investment is constrained. Consequently, when public borrowing is used to finance recurrent expenditure other than capital expenditure, then its impact in improving unemployment would not be seen.

Institutional Quality (INSTQ) captures the governance and administrative practices that enhance the standard of living of the general public. The World Bank's WGI provide six indicators which serves as a proxy for institutional framework. These indicators include control for corruption, government effectiveness, political stability and the absence of violence, regulatory quality, the rule of law and voice and accountability. The estimates of the six components of institutional quality are measured on a scale of -2.5 (weak) and 2.5 (strong). Following Abotsi and Iyavarakul (2015), these estimates were transformed from their original scale to a new scale ranging from 0 to 100 using the formula:  $y = (x + 2.5) * 20$ . This allowed for easy computation and interpretation of results. The transformed variables are 'y' and 'x' are the values of the original scale. This means the higher a country is on the scale, the better its performance on the indicator. That is, the higher the score, the stronger the institutional quality and the lower the score, the weaker the institutional quality.

Literature suggests that better institutions augur well for the economy to create employment opportunities (Kilishi et al., 2021; Prachkovski, 2016; Garrett & Rhine, 2010). Therefore, this study proposed that better institutional framework would help translate public borrowings into reducing unemployment. Better institutional structure serves as incentives for the investor or producer to invest or expand production.

Gross domestic product (GDP) is the sustained increase in a country's economic growth overtime. The GDP growth was measured by the annual proportion of GDP based on constant market prices. Anyiga (2020) stated that sustained GDP growth improves employment especially that the labour and capital are majorly utilised in the production process of the economy. Existing studies have confirmed a negative impact of GDP growth on unemployment; thus, output growth reduces unemployment (Siddiqa, 2020; Mukisa et al., 2020; Folawewo & Adebaje, 2017; Kokotovic, 2016). These findings are in conformity with the Okun's (1962) hypothesis that when there is an increase an economy's output, the unemployment rate is reduced. Folawewo and Adebaje (2017) concluded that when GDP growth does not contribute much to

unemployment, there is a jobless growth. Growth in the economy does not commensurate growth in employment.

Inflation (INF) is the persistent rise in the prices of goods and services within a given time period. Inflation was measured by the rate of change in consumer price index. The sustained rise in the prices of goods and services soar the cost of living of individuals which re-channels resources from investment to consumption; thereby, resulting in unemployment. On the other hand, with usual inflation led by demand-pull inflation, other things being equal, when aggregate demand outstrips aggregate supply, employers employ more labour to boost supply; thereby, the unemployment rate declines. Kilishi et al. (2021) and Siddiqa (2021) found a significant inverse relationship between inflation and unemployment.

According to World Development Indicators, foreign direct investment (FDI) - net inflows - are investments to obtain a sustainable managerial interest in an established firm in the recipient economy. Foreign direct investment is measured as the net inflows of foreign investment into host economies. Accumulating enormous financial resources for development-driven initiatives such as employment is a challenge for most economies. Literature suggests that FDI-inflows contribute to addressing unemployment sources. FDI inflows generate employment opportunities in the host economies. Empirical literature has found a significant and negative relationship between FDI-inflows and unemployment (Anyiga, 2020; Fosu, 2019; Folawewo & Adeboje, 2017). Thus, more inflows of FDI suppresses unemployment growth. On the other hand, other studies argue that the nature of FDI inflows determine whether unemployment will reduce (Bayar & Sasmaz, 2017). When the nature of FDI inflow is characterised by mergers and acquisitions or is technology-led, labour may be displaced.

Population (POP) in this study captured all residents irrespective of citizenship or legal status. A growing population increases the dependency of the unproductive on the economically productive individuals leading to increased consumption instead of investment that generates the needed employment. A rising population results in growth in the labour force. Some studies found a positive significant relationship between population and unemployment (Anyiga, 2020; Siddiqa, 2021; Fosu, 2019; Folawewo & Adeboje, 2017). Rapid growth in population leads to increased supply of labour force that could potentially outpace employment creation. Although, an

increasing population could benefit an economy, such gains are not recorded from the large pool of labour force in the SSA (Fosu, 2019).

### **3.7 Conclusion**

This chapter addressed the research methodology of the study. The quantitative research design was employed as the datasets were specifically quantitative and were analysed quantitatively. The quantitative research design informed the positivist research paradigm used in the study. The choice of the System GMM proved statistically useful to capture the dynamic relationship among the variables of the study. The study used secondary data from the World Development Indicators, World Governance Indicators, and the International Monetary Fund (IMF). 36 out of the 48 SSA economies with data spanning from 1996 to 2020 were used for the study. The large number of countries and the wide time span used have improved the accuracy and reliability of the results, and allowed for easy generalisation of the findings.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.0 Introduction

This chapter presents the descriptive statistics on the dataset which comprised the unemployment, public debt, GDP, population, inflation, FDI and institutional quality indicators or variables reflecting the SSA region. Afterward, the pairwise correlation matrix that helped to check for multicollinearity among the variables is also presented. Following that are the main results from the two-step GMM estimation and finally, the model diagnostics.

#### 4.1 Descriptive Statistics

The descriptive statistics reflects the statistics of 36 countries from the total of 48 SSA countries used in the study. The remaining SSA countries were not included due to the unavailability of complete data on the variables needed for the estimation. The selected SSA economies included in the study are listed on appendix A. The descriptive statistics captured were the number of observations (Obs.), mean, standard deviation (Std. Dev.), minimum (Min.) and maximum (Max.). These descriptive statistics spanned from 1996 to 2020.

**Table 4.1 Descriptive Statistics of Variables**

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
UNE (percentage)	900	8.351	7.862	0.32	37.94
PUD (USD 000,000)	900	8,891	18,840	200	190,000
GDP (USD per capita)	900	1,704.628	1,922.937	248.866	10,643.8
POP (units)	900	21,156,415	30,037,865	395,533	210,000,000
INF (CPI)	900	104.044	131.879	0.03	3364.82
FDI (percentage)	900	3.705	7.526	-11.199	103.337
INSTQ (units)	900	37.802	12.076	10.327	67.598
COC (units)	900	37.673	12.232	15.541	74.335
GOV (units)	900	35.158	11.901	12.302	71.133
POL (units)	900	38.474	17.915	3.266	74.385
REQ (units)	900	38.274	11.268	4.049	72.545
RUL (units)	900	37.268	12.847	7.400	71.523
VAC (units)	900	38.967	14.164	12.826	70.143

**Source: Author's computation**

From Table 4.1, the unemployment rate in SSA was within the ranges of 0.32 percent to 37.94 percent. Despite the wide range of public debt hovering between approximately USD 200 million and USD 190 billion, unemployment remained averagely at 8.35 percent. Drawing on the overall institutional quality descriptive statistic, it had an average of 37.8 within the ranges from 10.33 to 67.60. Institutional quality with its components has low averages indicating that institutional quality in all fronts is weak among SSA economies.

Consequently, the institutional framework in the SSA is weak, thus improving them may deepen the needful relationship between public debt and unemployment. The averages for control of corruption and government effectiveness were approximately 37.67 and 35.16, within the ranges of 15.54 to 74.34 and 12.302 to 71.13, respectively. Political stability and regulatory quality had approximate averages of 38.47 and 38.27, also within the ranges of 3.27 to 74.39 and 4.05 to 72.55, respectively. Finally, the averages for rule of law and voice and accountability fell within the respective ranges of 7.4 to 71.52 and 12.83 to 70.14. Although voice and accountability indicated a score lower than 50, it is observed to be relatively stronger compared to the other indicators.

The GDP per capita variable indicated an average of USD 1,704.63. This GDP per capita is low compared to other regions. This is because SSA hosts most of the low-income countries in the world. The population in SSA ranges between 0.3 million and 0.2 billion. Also, the inflationary rate falls between 0.03 to 3,365 in SSA while average FDI flows is approximately 3.71 percent of GDP.

**Table 4.2 Correlation Analyses of Variables**

	UNE	PUD	GDP	POP	INF	FDI	INSTQ	COC	GOV	POL	REQ	RUL	VAC
UNE	1.000												
PUD	0.246*	1.000											
GDP	0.533*	0.331*	1.000										
POP	-0.165*	0.439*	-0.055*	1.000									
INF	0.057*	0.126*	0.029*	0.113*	1.000								
FDI	-0.007*	-0.095*	-0.041*	-0.101*	-0.012	1.000							
INSTQ	0.326*	0.078*	0.496*	-0.237*	-0.070*	-0.067*	1.000						
COC	0.371*	0.029*	0.404*	-0.220*	-0.073*	-0.042*	0.900*	1.000					
GOV	0.325*	0.182*	0.536*	-0.106*	-0.083*	-0.110*	0.925*	0.855*	1.000				
POL	0.321*	-0.065*	0.417*	-0.417*	-0.073*	-0.019	0.865*	0.699*	0.693*	1.000			
REQ	0.257*	0.134*	0.519*	-0.152*	-0.091*	-0.142*	0.909*	0.783*	0.896*	0.706*	1.000		
RUL	0.316*	0.055*	0.467*	-0.187*	-0.010	-0.066*	0.964*	0.875*	0.896*	0.804*	0.867*	1.000	
VAC	0.180*	0.147*	0.374*	-0.115*	-0.050*	-0.019	0.869*	0.721*	0.750*	0.684*	0.748*	0.810*	1.000

Source: Author's computation. \* denotes the existence of correlation at 5% significance level.

According to Brooks (2014), one of the implicit assumptions to using regression models is that the regressors should not be highly correlated to avoid multicollinearity. Should there be no relationship between the regressors, the orthogonality of the variables is assured. Thus, when the regressors are orthogonal to each other, the inclusion or exclusion of a regressor from the model would not affect the potency of the model. Brooks (2014) contends that measuring multicollinearity is difficult but analysing the correlation matrix for highly correlated regressors is a sufficient condition.

Table 4.2 shows the correlation coefficients among unemployment, public debt, institutional quality, economic growth, population, inflation and FDI. On the other hand, the indicators of the overall institutional quality variable are highly correlated among themselves. However, only one of the indicators will enter the empirical model at a time.

#### **4.2 Effect of Public Debt on Unemployment in SSA**

This sub-section reports and discusses the results from the analysis of the data that examined the impact of public debt on unemployment in SSA. From the two-step GMM analyses, Table 4.3 details the estimation of the effect of public debt on unemployment in the SSA.

From Table 4.3, the results connote that at 1 percent level of significance, debt has a positive and significant effect on unemployment of the selected SSA countries. Theoretically, from the two-step GMM specification, the one period lag of unemployment in the model is expected to be significant. Subsequently, the results show that a 1 percent increase in public debt increases the unemployment rate by approximately 0.201 percent. Consequently, this leads to the rejection of the null hypothesis that there is no significant effect of public debt on unemployment. This implies that the more SSA governments borrow; the debts being accrued are not translated to creating employment thereby increasing the unemployment rate. This could be due to the channeling of debts to support consumption instead for employment-driven investments. Consequently, the debts contracted by SSA governments do not address the unemployment problem. In light of a rising population, the poor utilisation of more debts for employment-driven investment leads to more joblessness.

**Table 4.3 Effect of Public Debt on Unemployment**

	<b>Estimate</b>
InUNE L1	1.153*** (0.021)
InPUD	0.201*** (0.009)
InGDP	-0.082 (0.038)
InPOP	0.177** (0.084)
InINF	-0.154*** (0.039)
FDI	0.010*** (0.002)
CONSTANT	-6.275*** (0.607)
No. of Groups	36
No. of Observations	864
No. of Instruments	32
F-Statistic	6009.09***
AR (2)	0.180
Sargan	0.934
Hansen	0.228

**Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05**

The findings of this study conform to the empirical findings of other studies on country-specific studies in the SSA region. The result is in line with the findings of Igberi et al. (2016), who found that a rising public debt stock is associated with the rising unemployment rate in Nigeria. Igberi et al. (2016) argued that public debt needs to be controlled because it does not minimize the unemployment rate. Further, the findings of Dalmar et al. (2017) took the same position by arriving at the conclusion that rising public debts need to be controlled in order not to aggravate unemployment in Somalia. Ankomah's (2019) findings provide support that external debt accumulation increases unemployment rate in Ghana. These studies revealed that governments after contracting debts do not spend on avenues that generate and provide sustainable employment opportunities or borrow for consumption or interest payments of accrued debts (Dalmar et al., 2017; Igberi et al., 2016; Ankomah, 2019).

Nonetheless, although Anyiga (2020) found a positive relationship between external debt and unemployment, there was an insignificant effect in the East African

Community (EAC) sub-region of Africa. Yet, Mukisa et al. (2020) also found that external debt is negative but again insignificantly associated with unemployment in the EAC region. This draws to the attention that perhaps, governments in the Sub-Saharan African economies do not prioritise investment in productive ventures that creates employment when they borrow. Though other literature argues the instrumental role of public debts in economic growth in the SSA, it could be contended that such growth could be jobless economic growth (Ben-Salha & Mrabet, 2019).

In contrast, the finding is also not consistent with that of other scholars' findings. For instance, Nwokoye et al. (2016) provided contrary evidence that external debt is inversely and significantly related to unemployment and more so when external debts are used for domestic investment in Nigeria. In another vein, Folawewo and Adeboje (2017) documented a negative but insignificant impact of external debt on unemployment among ECOWAS member states. The insignificance of debts in reducing unemployment rates in economies was explained by Iwuoha (2020). Iwuoha (2020) contributed that governments do not use borrowings for investments in infrastructure, but corruption takes a chunk of the effective utilisation of debts which prevents the prudent use of the resources. This assertion by Iwuoha highlights the need for good governance in the administration of national debts. In effect, as corruption is usually not rife among the private sector, Isaev and Masih's (2017) finding provide contrary results with this study's findings, by reporting that external debt significantly reduces the unemployment rate when the foreign debt is private sector led in Australia.

Extensive to other non-SSA or African economies in the form of panel studies, this study shares similar outcomes with other works such as Korol and Cherkas (2015) who reported that foreign debts are detrimental to unemployment in Greece. Further, Topal et al. (2018) also analysing the relationship between public debt and unemployment, specifically youth unemployment, in five economies, found that federal government debt increases the unemployment rates in Turkey, Italy and Greece. In the same fashion, Kokotovic (2016), investigating the factors influencing unemployment among six European Union member states, found that a rising public debt stock significantly worsens the total unemployment rate of Croatia and Spain. However, the results from only the Czech Republic indicated that increasing public

debt improves total employment whereas insignificant results were recorded for the other economies in the long run.

Other studies focusing on European member states in the likes of Tomic (2018) and O'Reilly et al. (2015) shares the same findings that rising public debts are not recommended as fiscal policy tools for minimising the unemployment rates. Equally recommending that developing economies should focus on closing the deficit financing gaps, Siddiqa (2021) found that public debts positively and significantly affect the unemployment levels among a panel of developing economies. This notwithstanding, Maqbool et al. (2013) also found that external debt is not significantly related to unemployment in Pakistan.

From the foregoing discussion, inferences and references, this empirical investigation rejects the null hypothesis that there is no significant effect of public debt on unemployment of SSA countries for the timespan and econometric techniques applied in this study. Thus, there is a significant but positive effect of public debt on unemployment of SSA countries.

From the control variables, economic growth, measured with the GDP per capita, has a significantly negative effect on unemployment rate among SSA economies. This denotes that when SSA economies grow favourably with its population, the unemployment rate reduces. Existing studies have confirmed a negative impact of economic growth on unemployment; thus, output growth reduces unemployment (Siddiqa, 2021; Mukisa et al., 2020; Folawewo & Adeboje, 2017; Kokotovic, 2016). These findings are in conformity with the Okun's (1962) hypothesis, which indicates that when there is increase in economies' output the unemployment rate is reduced.

Population measured as all residents irrespective of citizenship or legal status, has significantly positive effect on unemployment rate among SSA economies. This implies that a rising population renders a major proportion of the population jobless; thereby increasing the unemployment rate. Similarly, some studies have found a positive and significant relationship between population and unemployment (Anyiga, 2020; Siddiqa, 2021; Fosu, 2019; Folawewo & Adeboje, 2017). Thus, rapid growth in population leads to increased supply of labour force that could potentially outpace employment creation. Fosu (2019) reiterated that an increasing population could

benefit an economy. However, in the context of the SSA region, such gains are not recorded from the large pool of labour force.

Evidence from this study also shows that inflation has significant negative effect on unemployment rate among SSA member states. Therefore, rising levels of inflation result in lower unemployment levels. With inflation usually led by demand-pull inflation, other things being equal, when aggregate demand outstrips aggregate supply, employers employ more labour to boost supply; thereby, the unemployment rate declines. Studies affirming this finding suggest that low inflationary economic environment is not favourable for the creation of employment (Kilishi et al., 2021; Siddiqa, 2021). However, other studies depart from the finding of this study by arguing that the sustained rise in the prices of goods and services soar the cost of living of individuals which re-channels resources from investment to consumption; thereby, resulting in unemployment (Vermeulen, 2015). These studies, generally, found a positive relationship between inflation and unemployment (Vermeulen, 2015).

Disapproving the prior expectation, FDI inflows have a positive and significant relationship with unemployment. The positive relationship between FDI inflows and unemployment signals that the nature of FDI-inflows to the SSA region are relatively high in investments that consists of mergers and acquisitions. This finding is consistent with that of Bayar and Sasmaz (2017), who found that FDI inflows in the form of brownfield investments that is highly characterised by mergers and acquisitions do not reduce unemployment levels. Again, it could be argued that FDI inflows leading to the introduction of sophisticated technologies to enhance production in a domestic economy will lead to technology displacing labour.

Consequently, as these investments are often huge capital outlays, any displacement or redundancy of labour created by technology would result in increasing levels of unemployment in host economies. However, other empirical literature shares contrary findings to the positive relationship between FDI-inflows and unemployment (Anyiga, 2020; Fosu, 2019; Folawewo & Adeboje, 2017). This indicates that as though FDI inflows could be instrumental in tackling unemployment in the SSA region, the nature of FDI inflows leads to the crowding out of employment.

### 4.3 Relationship between Public Debt and Institutional Quality in SSA

This sub-section reports and discusses the results from the analysis of the data that determined the relationship between public debt and institutional quality. Table 4.4 details the estimation of the relationship between public debt and institutional quality in the SSA region.

**Table 4.4 Relationship between Public Debt and Institutional Quality**

	<b>Estimate</b>
InPUD L1	0.692*** (0.204)
INSTQ	-0.024*** (0.008)
InGDP	-1.546*** (0.062)
InPOP	1.801*** (0.800)
InINF	-0.092** (0.034)
FDI	-0.008** (0.003)
CONSTANT	-9.671 (2.293)
No. of Groups	36
No of Observations	864
No. of Instruments	26
F-Statistics	4270.55***
AR (2)	0.156
Sargan	0.838
Hansen	0.117

**Standard errors in parentheses; \*\*\* P<0.001, \*\* p<0.05**

From Table 4, the results show that at 1 percent level of significance, institutional quality has a negative and significant effect on public debt of the selected SSA countries. Subsequently, the result shows that a unit increase in institutional quality leads to approximately 2.4 percent reduction in public debt accumulation. In effect, this leads to the rejection of the null hypothesis that there is no significant relationship between public debt accumulation and institutional framework in the SSA. This implies that when SSA economies build stronger institutions, the accumulation of public debt declines. Thus, quality institutions with accountable and transparent

governance system enhances creditors' monitoring power which ensures that credit facilities are effectively utilised.

The finding of this study that poor institutional quality increases public debt is consistent with the findings of Mehmood et al. (2021), Safdar and Padda (2017) and Uppal (2011). Thus, strong institutional quality and good governance promote favourable economic conditions and transparent financial market that reduce public debt accumulation. Nguyen et al. (2017) and Tarek and Ahmed (2017) also affirmed that strong institutional quality reduces government expenditure, the rate of tax revenue growth and the public debt to GDP ratio. From inference, weak institutional structures allow corruption which contributes to the accumulation of public debts. In the light of this, Javid et al. (2011) and Grechyna (2012) evidenced that public corruption is a major determining factor to the economy's public debt.

Considering the control variables, economic growth has a significantly negative effect on public debt accumulation of SSA economies. This implies that when there is economic growth in the SSA region, the public debt size reduces. Thus, as an economy performs well, the economy can sustain its spending, debt and interest financing.

Population has a significantly positive effect on public debt accumulation in SSA. This indicates that when the population increases, SSA governments contract more debt to sustain the economy. Governments tend to spend more on social and infrastructural budgetary items to ensure that high populations do not lead to high incidence of poverty.

Further, inflation has significantly negative effect on public debt among SSA member states. This denotes that when inflation rises public debt declines. Surges in the prices of goods and services weaken governments' borrowing. This is because higher inflationary levels reduce the real value of debts which leads to debt repricing; thereby influencing creditors not further lend (Berkovich et al., 2021).

Inflows of foreign direct investment is revealed to have a negative and significant effect on public debt accumulation. This implies that the lower the inflows of FDI, the higher the acquisition of foreign debts. Thus, when FDI-inflows to the economy reduce, governments are pushed to undertake more capital projects or investments to grow the economy from debts.

#### **4.4 Role of Institutional Quality in Public Debt and Unemployment Relationship**

This sub-section presents and discusses the findings from the analyses of the data that assessed the moderating effect of institutional quality. Table 4.5 presents the estimation of the role of institutional quality in the relationship between public debt and unemployment in the SSA region. The table comprises seven models indicating the role of total institutional quality and the sub-indicators in the relationship between public debt and unemployment in the SSA region.

**Table 4.5 Role of Institutional Quality in Public Debt-Unemployment Relationship**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>	<b>Model 7</b>
InUNE L1	0.681*** (0.063)	0.811*** (0.053)	0.800*** (0.033)	0.663*** (0.109)	0.853*** (0.055)	0.874*** (0.065)	0.768*** (0.053)
InPUD	0.619*** (0.037)	0.503*** (0.030)	0.336*** (0.074)	0.662*** (0.060)	0.552*** (0.034)	0.393*** (0.037)	0.249*** (0.076)
InGDP	-0.089 (0.056)	-0.147** (0.065)	-0.375*** (0.076)	0.070 (0.070)	0.040 (0.064)	0.008 (0.060)	-0.206*** (0.052)
InPOP	0.284*** (0.014)	0.225*** (0.014)	0.122*** (0.038)	0.273*** (0.023)	0.243*** (0.014)	0.165*** (0.018)	0.088*** (0.036)
InINF	0.116*** (0.019)	0.071*** (0.013)	0.106*** (0.019)	0.100*** (0.021)	0.064*** (0.015)	0.089*** (0.012)	0.101*** (0.013)
FDI	0.002* (0.001)	-0.001 (0.001)	0.001 (0.001)	0.010*** (0.002)	0.001 (0.001)	-0.005*** (0.001)	-0.001 (0.001)
INSTQ	-0.216*** (0.029)						
InterINSTQ	-0.014*** (0.001)						
COC		-0.161*** (0.028)					
InterCOC		-0.011*** (0.001)					
GOV			-0.201*** (0.025)				
InterGOV			-0.006*** (0.002)				
POL				-0.244*** (0.201)			
InterPOL				-0.013***			

REQ				(0.001)			
InterREQ					-0.110***		
					(0.021)		
RUL							
InterRUL					-0.011***		
					(0.001)		
VAC							
InterVAC						-0.135***	
						(0.022)	
						-0.008***	
						(0.001)	
CONSTANT	-8.952	-7.016***	-1.095	-9.836***	-9.158***	-6.105***	-0.159***
	(1.042)	(0.875)	(1.928)	(1.499)	(0.974)	(0.957)	(0.036)
No of groups	36	36	36	36	36	36	36
No of observations	864	864	864	864	864	864	864
No of instruments	33	33	33	33	33	33	33
F-statistic	1077.11***	2428.11***	460.83***	853.72***	7482.78***	7296.57***	1913.03***
AR (2)	0.195	0.167	0.200	0.178	0.160	0.132	0.153
Sargan	0.943	0.721	0.784	0.998	0.709	0.778	0.810
Hansen	0.182	0.177	0.314	0.329	0.109	0.135	0.269

Standard errors in parentheses; \*\*\* P<0.001, \*\* p<0.05

From Table 4.5, considering the various models, at 1 percent level of significance, the effect of public debt on unemployment is significantly positive and with the magnitude varying from 0.249 to 0.662. Thus, at 1 percent level of significance, a percentage increase in public debt, increases the unemployment rate by approximately between 0.249 to 0.662 percent in the SSA region. These results still reject the null hypothesis that there is no significant effect of public debt on unemployment. Therefore, it affirmed that rising public debt accumulation results in SSA governments not translating it to job creation thereby increasing the unemployment rate. It could be deduced that SSA governments do not tackle the unemployment problem by contracting debts; thus, contributing to the increasing joblessness. These findings affirm literature of the positive and significant effect of public debt on unemployment (Ankomah, 2019; Dalmar et al., 2017; Igberi et al., 2016).

Further, in Model 1, total institutional quality has a significant and negative effect on unemployment at 1 percent level of significance. Therefore, a unit increases in the total institutional quality results in approximately 21.6 percent reduction in the unemployment rate in the SSA region. In effect, it connotes that when the SSA region builds stronger institutions, unemployment reduces significantly. The result is in line with the findings of Kilishi et al. (2021) who upon establishing the relationship between economic institutions and total and gender unemployment in the SSA context, revealed that aggregate economic institution indicator minimises the unemployment rate.

The marginal effect of public debt on unemployment is given by  $PUD + \text{Interaction term} * INSTQ$  average; and provided as  $0.619 + (-0.014) * (37.81)$  which is approximately 0.090. Therefore, the marginal effect of public debt on unemployment is 0.090 compared to public debt's coefficient of 0.201 in Table 4.3. This implies that without the role of institutional quality there is a larger adverse effect of public debt on unemployment. Given the role of institutional quality in Model 1 of Table 4.5, public debt contributes at reducing unemployment for employment to spur. This demonstrates that although SSA governments borrow to create employment, a large chunk of the borrowed sums is lost to weak institutional structures. Thus, in the presence of stronger institutions debts marginally contribute much to create employment.

The results again reveal that developing quality institutions serves as a moderator of the relationship between public debt and unemployment. It was evident that institutional quality as a moderator between public debt and unemployment had a negative and significant coefficient of 0.014. Thus, the complementary effect of public debt and institutional quality on unemployment is a 0.014 percent decline in unemployment rate. In light of the respective positive and negative effect of public debt and institutional quality on unemployment, the strengthening of institutions when complemented with debt acquisition reduces unemployment in the SSA region. Likewise, weak institutional framework impedes the translation of debts into employment creation.

Consequently, this leads to the rejection of the null hypothesis of there is no moderating effect of institutional quality in the relationship between public debt and unemployment. Proper governance or stronger institutions provide the right atmosphere and avenue for governments in the SSA region to make use of debts to generate the needed employment. Support is found from existing literature affirming the role of institutional quality in tackling the unemployment menace (Shabbir et al., 2019; Prachkovski, 2016). Fundamentally, the results imply that the various institutional framework indicators contribute to improving the unemployment situation in the SSA context.

Scholarly support to this finding is demonstrated in the empirical work of Prachkovski (2016). Proxying quality of government with four World Governance Indicators, Prachkovski (2016) further argued that youth unemployment constitutes the largest share of the total unemployed labour. Thus, unemployment would improve should the quality of governance proxies improve. Further, the works of Shabbir et al. (2019) also affirmed that governance quality is significantly and inversely related to unemployment. This indicates that in the light of quality governance or institutions, unemployment is sustainably controlled. Proper governance and institutions have direct relationship with the unemployment situation in various economies. Therefore, SSA economies will make heads way with the rising levels of the unemployment rate should proper institutional structures be put in place. Marelli et al. (2013) also agreed that policies and institutions have profound and significant effect on unemployment.

Further, Kilishi et al. (2021) attested that institutional policies inherent in the labour market have implications for the unemployment dynamics. On the same tangent,

Dority and Fuess (2007) argued that the unemployment dynamics in these contemporary times are related to institutional structures that affect the labour market. Institutional frameworks that do not take into consideration proper labour legislations create rigidities in the labour market (Djankov & Ramalho, 2009). Thus, the governments in SSA should strengthen good governance so as to promote organised labour market institutions that help to reduce unemployment.

Other scholars likening economic freedom to the nature of quality institutions also provide solid arguments for the need of better institutions in an economy (Garett & Rhine, 2011; Feldmann, 2007). For instance, Garett and Rhine (2011) share the same proposition that should there be proper governance practices, unemployment will become subdued. They found that the protection of private property, private markets and less-restrictive labour market policies have greater impact on employment creation.

The results in Table 4.5, Model 2, show the role of control of corruption in the relationship between public debt and unemployment. From the results, control of corruption has an inverse and significant effect on unemployment at 1 percent level of significance. This indicates that when corruption is controlled unemployment reduces. Thus, a unit increase in corruption control estimate results in approximately 16.1 percent reduction in the unemployment rate in the SSA region. This result is plausible because corruption robs economies of financial resources which result in fewer resources for employment creation; hence, the inverse relationship between control of corruption and unemployment. As corruption becomes rife unemployment tends to spur.

The interaction term of control of corruption and public debt on unemployment is significant and negative at 1 percent level of significance. From the results, a unit increase in the complementary effect of control of corruption and public debt on unemployment results in approximately 0.011 percent reduction in unemployment in SSA. Thus, the marginal effect of control of corruption on unemployment is also given by  $PUD + \text{Interaction term} * INSTQ\_average$  and provided as  $0.503 + (-0.011) * (37.67)$  which is approximately 0.089 compared to public debt's coefficient of 0.201 in Table 4.3. In view of this, control of corruption complements public debt to reduce unemployment. This means that when corruption is not controlled, the use of public borrowing to generate employment is impeded. As mentioned earlier, the

absence of corruption control robs the amount borrowed and prevents the effective utilisation of the borrowed resource to generate employment.

This result agrees with the empirical work of Bouzid (2016) who found that corrupt practices impede employment generation. Bouzid (2016) argued that corruption causes the diversion of resources from most productive sectors of the economy. In effect, the corruption control will cause public borrowings to be channelled to the intended productive investments. Similarly, the result is consistent with Adjor and Kebalo (2018) who also found that reducing corruption in its various forms by economic policymakers and implementors improves the employment rate among SADC countries. This implies that the role of controlling corruption is essential to utilising the economies' workforce.

The findings of Lacko (2004) also provide interesting support to this study. Control of corruption coupled with public debt acquisition contribute to reducing unemployment. On the other hand, Lacko (2004) revealed that raising tax rates in light of high levels of corruption result in increasing rates of unemployment. Albeit the role of mobilising domestic taxes to create employment, the acquisition of public debt to finance the budget is also a useful tool to create employment. However, in all economic situations, there should be the control for corruption. By further affirmation, Onchari (2019) and Nnemeka (2021) provide evidence to support the finding of this study that control of corruption is a necessary precursor to reduce unemployment.

The results in Table 4.5, Model 3, indicate the role of government effectiveness in the relationship between public debt and unemployment. From the results, government effectiveness has an inverse and significant effect on unemployment at 1 percent level of significance. This implies that the effectiveness of governance of SSA governments reduces unemployment rate. In effect, a unit increase in the effectiveness of SSA governments' estimate results in approximately 20.1 percent reduction in the unemployment rate in the SSA region. This result is conceivable because government effectiveness in the formulation and commitment to implementing policies intended for addressing the rising unemployment rate is crucial.

At 1 percent level of significance, the interaction term of government effectiveness and public debt on unemployment is significantly negative. From the results, a unit increase in the complementary effect of government effectiveness and public debt on

unemployment leads to approximately 0.006 percent reduction of unemployment in the SSA region. The marginal effect of government effectiveness on unemployment is approximately 0.125 compared to public debt's coefficient of 0.201 in Table 4.3. In consideration of this, government effectiveness complements public debt to address the high levels of unemployment. This implies that in the acquisition of public debt for intended social intervention projects that address unemployment, government effectiveness in terms of commitment in implementing projects is essential in reducing unemployment. Consequently, the lack of government effectiveness towards reducing unemployment in view of acquiring debts does not augur well to tackling the situation.

This finding is consistent with that of Lesetedi (2018) who revealed that the lack of government effectiveness in terms of formulation and implementation of policies, impedes the success of social policies that intends to address unemployment. The finding of Schwebel et al. (2019) shares the same revelations of this study. Schwebel et al. (2019) found that the effectiveness of government in formulating informed employment policies is crucial to dealing with the unemployment problem. Thus, government effectiveness becomes a precondition for public borrowings to translate to reducing unemployment.

Further, specific evidence aligning to the findings from this study in the SSA context by Maulani and Agwanda (2020) and Chitonge (2012) suggested that government effectiveness, in terms of commitment, to reducing unemployment is lacking. Hence, the reason unemployment in the SSA region is high. In effect, should SSA governments remain committed to the policies, projects and programmes intended to curb unemployment with acquired public debts, the unemployment situation will be minimised. Therefore, the role of government effectiveness in the relationship between public debt and unemployment is empirically valid.

The results in Table 4.5, Model 4, indicate the role of political stability in the relationship between public debt and unemployment. From the results, political stability has an inverse and significant effect on unemployment at 1 percent level of significance. Thus, this connotes that if governance is stable in the SSA region, unemployment rates will reduce. Particularly, a unit increase in political stability in the governance of SSA economies, there will be approximately 24.4 percent reduction in the unemployment rate. This is to say that political stability ensures the perpetual

operation of the government to effectively implement targeted policies that deal with unemployment.

Considering the moderator, at 1 percent level of significance, the interaction term of political stability and unemployment is significantly negative. Thus, a unit increase in the complementary effect of political stability and public debt on unemployment leads to approximately 0.013 percent reduction of unemployment in the SSA region. In effect, the marginal effect of political stability on unemployment is approximately 0.158 compared to public debt's coefficient of 0.201 in Table 4.3. In view of this, political stability complements public debt to tackle the rises in the unemployment rates. Consequently, in financing the budget through deficits for well-intended employment generation, ensuring stability in governance is key to reducing unemployment.

The findings of this study corroborate with the findings of Subramaniam and Baharumshah (2011), who shares the assertion that stability in governance contribute significantly in reducing unemployment rate. On the other hand, Milasaite and Micic (2022) shared an opposing finding which indicated that political stability has no significant relationship with unemployment. However, Milasaite and Micic (2022) found that although political stability does not directly influence unemployment, it does so through other macroeconomic indicators. Reconciling the work of Milasaite and Micic (2022) with the evidence presented in this study, political stability will impede unemployment should external lenders perceive the governance of SSA economies as unstable.

Table 4.5, Model 5, demonstrates the moderating role of regulatory quality in the relationship between public debt and unemployment. From the estimation output, regulatory quality has a significantly negative effect on unemployment at a significance level of 1 percent. By implication, a unit increase in the regulatory quality estimate leads to approximately 11 percent decline in the unemployment rate in the SSA region. Thus, the strengthening of regulatory quality in the SSA region have beneficial implication on reducing unemployment. From the evidence, when the government is able to formulate and implement sound policies, employment creation is enhanced. The inability of governments to formulate and implement sound policies discourage lenders and investors from undertaking ventures that contribute to reducing unemployment.

Further, the moderation of regulatory quality and public debt on unemployment is significant and negative at 1 percent level. This denotes that a unit increase in the complementary effect of regulatory quality and public debt leads to approximately 0.011 percent decrease in unemployment in the SSA region. Hence, the marginal effect of regulatory quality on unemployment is approximately 0.101 compared to public debt's coefficient of 0.201 in Table 4.3. In light of this, regulatory quality significantly complements public debt to suppress unemployment. This means that when debts are contracted by SSA economies and not guided by sound formulated and implemented policies, public debts become harmful to reducing unemployment.

However, the findings of Coglianesse (2013) differ with this finding in the manner that, Coglianesse (2013) did not find any significant effect of policymakers' regulations on reducing unemployment. This indicated that the policymakers' regulations when complemented with acquiring debts to generate employment, makes those regulations useful as proposed by this study. In support for the findings of this study, Nazir et al. (2013) shared that there is positive and significant relationship between regulatory quality and employment creation. Therefore, it is highlighted that improving the quality of regulations in an economy would enable the governments to address the myriad forms of unemployment using debts. Thus, borrowing funds without sound formulated employment polices makes the implementation flawed to achieve high employment levels.

The estimation output of Table 4.5, Model 6, presents the moderating role of rule of law in the relationship between public debt and unemployment. From the output, rule of law has a significantly negative effect on unemployment at 1 percent level of significance. Specifically, a unit increase in the rule of law estimate leads to approximately 13.5 percent decline in the unemployment rate in the SSA region. This implies that the when SSA economies give prominence to rule of law, unemployment is controlled. This result is considered plausible because without the prominence of rule of law, investors and lenders may find it risky to invest resources for employment creation in the SSA economy.

In addition, the interaction term of rule of law and public debt on unemployment is significantly negative at the significance level of 1 percent. It could be inferred from the results that a unit increase in the complementary effect of rule of law and public debt leads to approximately 0.008 percent decline in unemployment in the SSA

region. Thus, the marginal effect of rule of law on unemployment is approximately 0.095 compared to public debt's coefficient of 0.201 in Table 4.3.

Considerably, rule of law and public debt complement each other to tackle unemployment. This indicates that when policy implementers abide by policies intended to protect and create employment using debt, the needed results will be achieved. It is worthy to contend that rule of law enhances the utilisation of financial resources leading to employment creation. Therefore, an economic atmosphere where rule of law prevails, securing debts to generate employment is essential. The findings of this study concur with Adams et al. (2018) who found that there is a significant relationship between employment protection laws and unemployment. However, the findings of Deakin et al. (2014) that examined the effect of labour laws on employment, revealed no significant effect of labour laws on unemployment.

The role of voice and accountability in the relationship between public debt and unemployment could be observed in Table 4.5, Model 7. From the results, at 1 percent level of significance, voice and accountability has a negative and significant effect on unemployment. In effect, a unit increase in the voice and accountability estimate leads to approximately 15.9 percent reduction in the unemployment rate in the SSA region. This implies that the championing of voice and accountability by ways like free press or media will help address the unemployment situation of SSA governments.

Again, at the 1 percent level of significance, the moderator in terms of voice and accountability and public debt on unemployment is significantly negative. Thus, the estimation indicates that a unit increase in the complementary effect of voice and accountability and public debt on unemployment leads to approximately 0.005 percent reduction of unemployment in the SSA region. Thus, the marginal effect of voice and accountability on unemployment is approximately 0.054 compared to public debt's coefficient of 0.201 in Table 4.3. Therefore, voice and accountability also complement public debt to address the high levels of unemployment in the SSA region. This result implies that in the acquisition of public debt for intended social intervention projects that address unemployment, voice and accountability in terms of free press and media puts the government on its toes to use public debt effectively to essentially reduce unemployment.

The seminal work of Dutta et al. (2011) lend support to the findings of this study that free press has positive relationship with the creation of employment. Free media enhances the flow of information on creativity and innovation which encourages the generation of entrepreneurial ventures that help check unemployment. The work of Levie et al. (2010), however, part-ways with the findings of this study after the author revealed that free press does not necessarily contribute to employment. This finding emphasises the role of debts complemented by free media to generate the needed employment. Free press coverage on useful programmes that could help tackle unemployment would enhance policy direction to use debts to generate the needed employment.

#### **4.5 Diagnostics of System GMM Estimations**

In first differences, the null hypothesis for the estimation test for AR(1) process is mostly rejected and particularly the null hypothesis for the test for AR (2) in first differences should fail to be rejected (Mileva, 2007). However, there is no strict adherence to the AR(1) process unlike the AR(2) process. Given the various estimations, at 5 percent level of significance, the probability values of the AR(2) indicated no rejection of null hypotheses of no autocorrelation process and as such the moment conditions are appropriately specified. Therefore, there is no autocorrelation in the various estimations presented. Again, the number of groups is greater than the number of instruments in all the estimations, indicating that there are no issues of instrument proliferation. Further, from the Sargan and Hansen tests for over identifying restrictions, the probability values signalled no rejection of the null hypothesis that the instruments as a group are exogenous. Thus, the instruments employed for all the estimations are valid. Consequently, the insignificance of the Sargan test demonstrates that the instruments utilised in the two-step GMM estimations have the right exclusion restrictions.

##### **4.5.1 Robustness Checks**

Sensitivity analysis is done to determine the robustness of the estimated system GMM results. Consequently, the test for the robustness of the results is checked by dropping the two largest economies in SSA (i.e., Nigeria and South Africa) from the group and the models re-estimated. The main findings of the study are valid and robust if the findings of the re-estimated models are consistent with the findings of the main

model. The results of the re-estimated models are reported in Table 4.6. From the results, public debt is positive and statistically significant at the 1 percent level across all the models. The institutional quality variable and the interaction term are also negative and statistically significant at the 1 percent level across all the models. With the control variables, population and inflation have remained positive and statistically significant across all the models. The results of GDP and FDI are largely consistent with the results in Table 4.5. The model diagnostics also shows the absence of autocorrelation and use of the valid instruments. Therefore, the results of the robustness test show that all the models were well specified. As such the results from this study can be relied upon to make useful inferences.

**Table 4.6 Robustness Checks**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>	<b>Model 7</b>
InUNE L1	0.675*** (0.036)	0.561*** (0.062)	0.658*** (0.072)	0.731*** (0.099)	0.824*** (0.061)	0.756*** (0.046)	0.630*** (0.056)
InPUD	0.492*** (0.042)	0.160*** (0.047)	0.833*** (0.070)	0.601*** (0.039)	0.611*** (0.029)	0.508*** (0.030)	0.413*** (0.070)
InGDP	-0.076 (0.053)	-0.169** (0.064)	0.011 (0.066)	-0.002 (0.068)	-0.056 (0.062)	-0.001 (0.053)	-0.111 (0.071)
InPOP	0.210*** (0.016)	0.040** (0.019)	0.387*** (0.030)	0.240*** (0.015)	0.286*** (0.012)	0.207*** (0.016)	0.180*** (0.032)
InINF	0.100*** (0.015)	0.074*** (0.014)	0.082*** (0.020)	0.068*** (0.013)	0.082*** (0.017)	0.105*** (0.016)	0.092*** (0.013)
FDI	0.002*** (0.001)	0.003** (0.001)	-0.004*** (0.001)	0.009*** (0.001)	0.002*** (0.001)	-0.001 (0.001)	0.005*** (0.001)
INSTQ	-0.271*** (0.030)						
InterINSTQ	-0.011*** (0.001)						
COC		-0.281*** (0.046)					
InterCOC		-0.003*** (0.001)					
GOV			-0.247*** (0.043)				
InterGOV			-0.018*** (0.001)				
POL				-0.227*** (0.040)			
InterPOL				-0.011***			

REQ				(0.001)			
InterREQ					-0.174***		
					(0.025)		
RUL					-0.013***		
InterRUL					(0.001)		
VAC						-0.220***	
InterVAC						(0.033)	
						-0.010***	
						(0.001)	
CONSTANT	-5.063***	3.315***	-13.729***	-9.152***	-9.996***	-6.967***	-0.265***
	(1.067)	(1.139)	(1.838)	(1.061)	(1.055)	(0.893)	(0.025)
No. of groups	34	34	34	34	34	34	34
No of observations	816	816	816	816	816	816	816
No. of instruments	33	33	33	33	33	33	33
F-statistic	29045.97***	1180.09***	12634.66***	2165.42***	16024.28***	22971.63***	3604.77***
AR(2)	0.202	0.178	0.234	0.210	0.167	0.138	0.160
Sargan	0.908	0.881	0.990	0.925	0.743	0.907	0.971
Hansen	0.214	0.243	0.243	0.206	0.194	0.196	0.234

Standard errors are in parenthesis; \*\*\* p<0.001, \*\* p<0.05, \* p<0.1

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.0 Introduction

This study is an empirical investigation of the role of institutional quality in the relationship between public debt and unemployment in the Sub-Saharan Africa region. This chapter summarises the findings and presents the conclusions and recommendations.

#### 5.1 Summary

Economies in the SSA region have been battling with issues of high unemployment rates. The future projections of unemployment in the SSA indicate a surge. This economic challenge has become a menace setting back the economic development of SSA countries. Existing knowledge has approached the unemployment issue from several perspectives. However, in light of SSA rising public debt acquisition levels, the translation of such debts into employment creation is a course worthy of investigation. In view of this, SSA's weak institutional structures have potency to impede the translation of public debt acquisition to employment generation.

Therefore, this study argued that the continuous public debt acquisition without stronger or deepening of institutional quality would render unemployment rates high. This is because the acquisition of debts in view of tackling unemployment by way of investing in social intervention initiatives or programmes without the complementary support of institutional quality structures, in terms of control for corruption, government effectiveness, regulatory quality, rule of law, and voice and accountability may reduce the success of such initiatives.

The research objectives were to establish the relationship between public debt and unemployment, determine the relationship between institutions and public debt and finally investigate the moderating role of institutional quality in the relationship between public debt and unemployment.

Drawing from the relevant theories, the relationship among public debt, institutional quality and unemployment was explained. The relationship among the variables was conceptualised and put into perspective for the study. Further, extant literature on the relationship between public debt and unemployment were reviewed. Although other

seminal works focused on country-specific studies, panel studies focusing on the relationship between public debt and unemployment in the SSA context were lacking. Thus, an empirical gap needed to be filled supported with the role of quality institutions in moderating and strengthening the relationship.

The study adopted the positivist research paradigm, informing the quantitative research approach selected. Consequently, the explanatory research design was chosen to establish the cause-effect relationship between the variables. The study covered 36 out of the total of 48 SSA economies. The study applied the system GMM methodology in constructing the various models needed to address the specific objectives of the study. In analysing the data, the two-step system GMM was applied after the test for multicollinearity. Post estimation diagnostics were undertaken to affirm the validity and robustness of the estimations and findings.

In view of the first research objective, determining the effect of public debt on unemployment, it was found that public debt had a positive and significant effect on unemployment in the SSA region. Thus, public debt acquisition is not contributing to reducing, but rather worsening the unemployment situation in the SSA region. Therefore, the null hypothesis of the study that there is no significant effect of public debt on unemployment was rejected.

With respect to the research objective two, analysing the relationship between public debt and institutional quality, it was revealed that institutional quality had a negative and significant effect on public debt accumulation. Thus, the deepening of institutional quality leads to a reduction in public debt accumulation in the SSA region. In effect, the null hypothesis of the study that there is no significant relationship between public debt accumulation and institutional quality was rejected.

With regards to the research objective three which analysed the moderating role of institutional quality in the relationship between public debt and unemployment, it was revealed that institutional quality serves as a good moderator due to its significant and inverse relationship with unemployment. Specifically, institutional quality reduces the negative effect of public debt on unemployment in SSA. Accordingly, the null hypothesis of the study that there is no significant moderating role of institutional quality on the relationship between public debt and unemployment was also rejected.

Finally, the control variables employed, including economic growth, population, inflation and FDI had significant relationships with unemployment. The control variables indicated various levels and nature of relationship with unemployment.

## **5.2 Conclusions**

The prime aim of this study was to analyse the relationship between public debt and unemployment with respect to the role of institutional quality in the SSA region. In consideration of the key findings of the study, conclusions could be drawn.

Firstly, in relation to public debt having a positive relationship with unemployment, it could be concluded that the rising public debt contracted by SSA governments are not channelled at reducing unemployment. Thus, employment creation is not prioritised in the utilisation of debts by SSA governments. Left with public debt alone, unemployment will become rife.

With respect to institutional quality having a negative effect on public debt, the conclusion that when SSA governments strengthen their institutions, sizeable debts would no longer be needed to support their budgets.

Finally, based on the moderating role of institutional quality on the relationship between public debt and unemployment, the study concludes that for SSA governments to effectively use debts to create employment, stronger institutions will be needed. Stronger institutions in terms of control of corruption, government effectiveness, regulatory quality, rule of law, and voice and accountability are needed to enhance the contributory effect of translating public debt into employment. Thus, the accumulation of debts without strong institutions, unemployment will become rife.

## **5.3 Recommendations**

Considering the conclusions drawn, important recommendations could be offered to SSA economies.

1. It is recommended that although public debt provide support to annual budgets, SSA economies should not necessarily and out of convenience acquire debts for their activities. This is because debt alone does not account for employment generation. Therefore, SSA governments should invest debts in the agricultural and industrial sectors where sustainable jobs can be created.

2. SSA economies should build stronger institutions in order not to squander debts. This is because where there are no stronger institutions, the debts that are acquired may be lost to corruption, government ineffectiveness and other factors which would require more debt to repay. SSA governments should deepen the institutional structures of the central banks, finance ministries and their allied institutions to ensure the effective and efficient management of public debt.
3. Finally, it is recommended that the institutions and agencies charged with implementing economic policies and creating employment are deepened and strengthened to ensure efficient use of public debt. SSA governments should set policies that control corruption, enhance government effectiveness, promote regulatory quality, protect rule of law, ensure political stability, and champion voice and accountability to catalyse the translation of debts into employment. Civil societies and interest groups should call on the governments to adopt these initiatives.

#### **5.4 Further Research Considerations**

Future studies could explore the role of other governance indicators like economic freedom on the relationship between public debt and employment creation. Also, the implication of institutions and public debt for youth and gendered unemployment in the SSA could be explored to address the issues of unemployment from all fronts. Further, studies can explore possible asymmetries and threshold analyses in the relationship between public debt and unemployment in the SSA. Finally, future studies can also explore the exclusive implications of domestic and foreign debts on unemployment in the SSA context.

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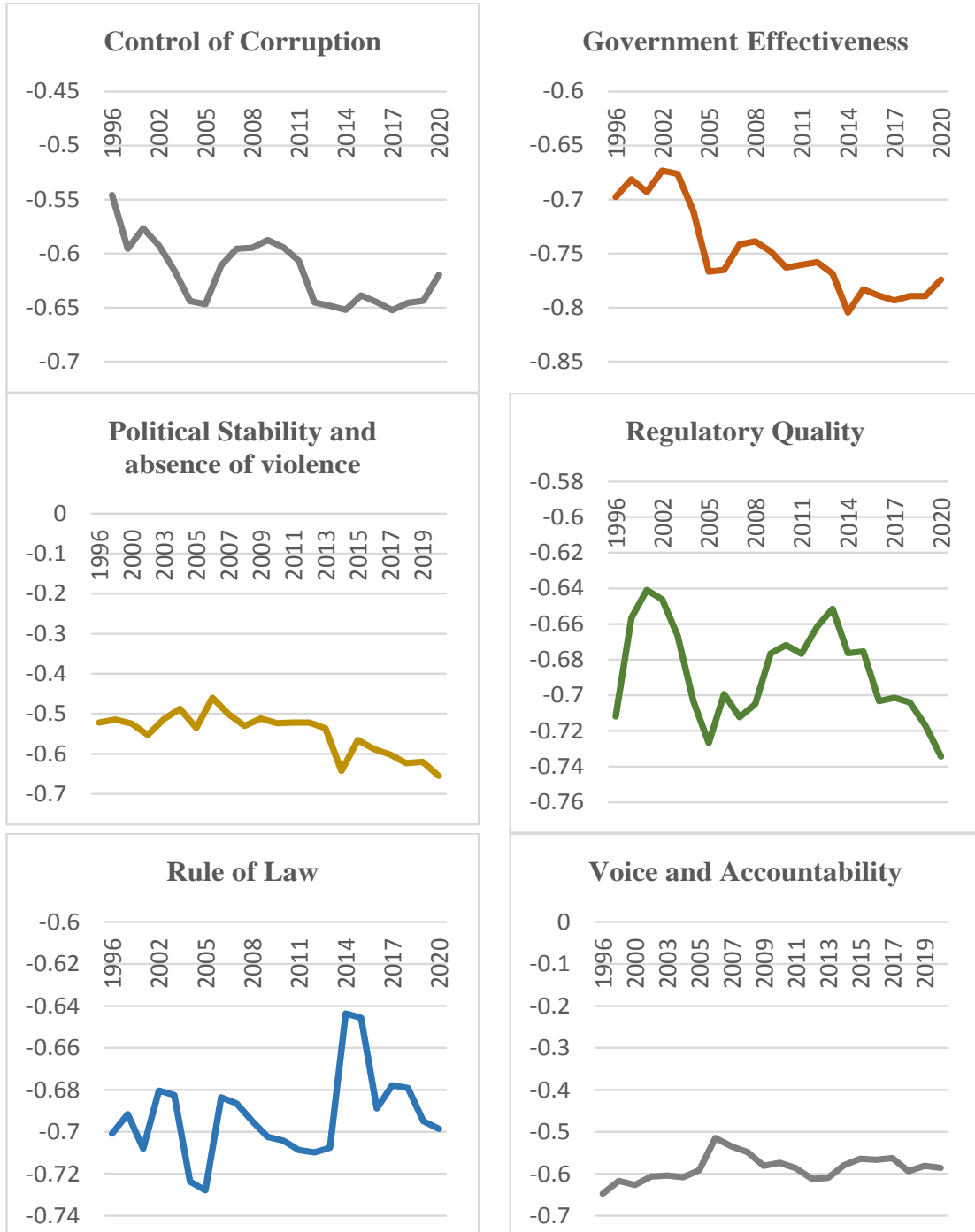
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## APPENDICES

### Appendix A

Trends in Institutional Quality Indicators in SSA.



Source: World Bank

## **Appendix B**

### **List of the 36 countries included in the study.**

Angola	Eswatini	Mauritania
Benin	Ethiopia	Mauritius
Botswana	Gabon	Niger
Burkina Faso	Gambia	Nigeria
Burundi	Ghana	Rwanda
Cabo Verde	Guinea-Bissau	Senegal
Cameroon	Kenya	South Africa
Central African Republic	Lesotho	Sudan
Chad	Liberia	Tanzania
Congo Democratic Republic	Madagascar	Togo
Congo Republic	Malawi	Uganda
Cote d'Ivoire	Mali	Zambia