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INFORMAL ECONOMY, HUMAN DEVELOPMENT AND GOVERNANCE IN AFRICA

BY

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

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Supervisors' Declaration:

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the Institute of Development Technology Management.

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ABSTRACT

The informal economy phenomenon has been on the discussion table since the early 1970s. In recent years, however, the informal economy has come under attack. The main criticism is that a large informal economy worsens human development (health (longevity), education, and income), distorts governance frameworks, and thwarts efforts toward achieving inclusive growth. These concerns outweigh any advantages it offers as a safety net for the poor. Consequently, one of the targets of Sustainable Development Goals (SDG 8.3) is to promote the formalisation of the informal economy through the promotion of the decent work agenda.

Therefore, this study attempts to investigate the claims and counterclaims of the association between the informal economy, human development, and governance using panel data of 32 out of 54 African countries from 2000 to 2017. The study was conducted under the lenses of modernisation, institutional, structuralist and neoliberal theories. Four panel estimation regression models were estimated, including multiple imputation techniques, moderated hierarchical analysis, two-step system generalised method of moments (SGMM), and the pooled mean group (PMG). The study relied on data from the World Development Indicators and the Worldwide Governance Indicators from World Bank (2019).

Based on the regression analysis, the study found that:

1. Human development has a long-run negative causality impact on the size of the informal economy at the 1% significance level, ceteris paribus.
2. Governance also has a long-run negative causality impact on the Informal economy at the 1% significance level, ceteris paribus.
3. The interaction of human development and governance has a negative joint causality impact on the size of the informal economy at the 1% significance level, in the long run, ceteris paribus.

Therefore, human development and governance can be used as policy variables to reduce the size of the informal economy in Africa. By implication, health (longevity), education income (command over resources), and governance are instruments that can be used to minimise the size of the informal economy in Africa. In terms of policy and development practice implications, African countries can reduce the size of the informal economy by:

- Making the education system more inclusive, high-quality, and efficient,
- Making health care more accessible, of a higher quality and more efficient,
- Making income-generating opportunities (command over resources) more inclusive and sustainable,
- Institutionalising public participation in local and national governance,
- Formulating and delivering a formalisation strategy guided by recommendation, 2015 (No. 204) and based on the four pillars of decent work.

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CHAPTER ONE:

INTRODUCTION

1.0 Rationale for the Study

The informal economy phenomenon has been on the discussion table since it was first make known to the academic works by Keith Hart in his seminal work on Ghana in the early 1970s. Initially approached from a monodisciplinary perspective of anthropology (Hart, 1973a), studies on the informal economy have bourgeoned into a much broader multi-disciplinary approach to economics, sociology, politics and law (Enste, 2018; Polese et al., 2017a). In addition, studies on the informal economy have also broadened from country-specific scopes to regional scopes to cater for country-specific and regional differences (Polese et al., 2017; Prospects Group & Bank, 2019; Schneider & Buehn, 2017; Williams & Horodnic, 2016; International Labour Office., 2002).

The informal economy offers enormous opportunities for entrepreneurship development, employment, and income generation for the poor (International Labour Office., 2013; Medina & Schneider, 2019a). The informal economy employs about 75% of non-agricultural service and about 72% of total work in sub-Saharan Africa (International Labour Office., 2013). About 93% of new jobs and incomes created in Africa during the 1990s were informal (ibid).

Thus, scholars agree on two major points on the informal economy (Fedajev & Arsić, 2017). First, informality persists both in the Developed and Developing World with varying degrees of intensity based on their different levels of socio-economic development (International Labour Office., 2002a; Oviedo et al., 2017; Polese et al., 2017b; Schneider & Buehn, 2017a). Second, the informal economy is

not as fleeting as initially thought, and it may well be around for a very long time (Polese et al., 2017b).

Given that dealings in the informal economy are unobservable and not captured in national statistics, evidence of the informal transaction remained largely suppressed (Medina & Schneider, 2019a). Therefore, estimations of the size informal economy were obtained by following traces left by transactions conducted in the informal (unobservable) economy (Schneider & Buehn, 2017a; Kirchgässner, 2017).

Estimates from Medina & Schneider (2019a) and Schneider & Buehn (2017a) show that the informal economy's global size is considerably high, constituting about 32% of global GPD by 2015. Medina & Schneider (2019a) intimate that the informal economy's size within the OECD with generally high human development and good governance indices was below 18% of GDP by 2015. The lowest values of the informal economy were in Norway, Switzerland and Austria, with corresponding figures of 5.0%, 7.2% and 8.9% of GDP. East Asia was 21.2%, and the Middle East/ North Africa was 23.4% by the same period. Sub-Saharan African and Latin American/ Caribbean countries were the highest, with average values of 36.2% and 33.4 % of GDP. Sub-Saharan African states with the largest sizes of the informal economy are Zimbabwe (60.6%) and Nigeria (56.7%).

Rendering to the Human Development Report (UNDP, 2020), the most industrialised nations have a score of at least 0.80, measured a very high level of human growth by 2019. For example, the average HDI for the European Union was 0.895 points in 2019. Further, the HDR (2020) puts the average HDI score for East Asia in 2019 at 0.722 points. The average HDI score for South America was 0.763 points. On the other hand, Africa is the least-developed continent outside Antarctica, with an average score of 0.55. Thus, many African countries are mired in issues,

including poverty, low levels of education, health and execrable governance systems. Therefore, compared with other regions, Africa remains the bastion of the informal economy and the least developed.

Several theories have been used to clarify why the informal economy persists globally. For instance, the modernisation theory suggests that informality is a consequence of weak regional and country-specific economic growth (Harris & Todaro, 1970; Lewis, 1969; Rostow, 1960). The institutionalists posit that informality persists because of an asymmetry among formal and informal institutions (DiMaggio & Powell, 2000; Meyer & Rowan, 2012). The structuralists assume that excessive bureaucracy and burdensome red-tapism are causative factors of informality (Castells & Portes, 1989; Davis, 2006; Hudson, 2005; International Labour Office., 2002a). Finally, the neoliberalists blame it on burdensome taxation (de Soto, 1989, 2000; Levy, 2008; Maloney, 1999; Sauvy, 1984).

The informal economy, however, has not been without debate. The debate, in the 1970s, initially focused on the informal economic space as a safe haven of employment for the poor and vulnerable (International Labour Office., 2013; Hart, 1973) against its precarious nature as decent work deficits plague it and with worsening fiscal and institutional deficits (Hart, 1973a; International Labour Office., 2002a, 2013; Schneider & Buehn, 2017b). While the International Labour Office (2013) argued that the informal economy fostered popular participation in the economy, researchers such as Enste (2018) and Medina & Schneider (2019) argued that the informal economy undermined the effectiveness of state institutions and ultimately threatened economic growth as it operates beyond scrutiny.

By the mid-1990, the debate had shifted toward human development and governance as the main elements of the informal economy. For example, Sen

(1985;1999) opined that human development causes the spread of economic development more efficiently and equitably and reduces the informal economy's size. The modernisation theory supports this view (Rostow, 1960; Geertz, 1963; Gilbert, 1998; Lewis, 1954). Other scholars such as Katnić & Stonelake (2016) and Loayza (2016) postulated that improved human development reduces the informal economy and improves socio-economic development outcomes.

Awasthi & Engelschalk (2018) suggested the practical application of the six governance dimensions to stimulate economic development and reduces the informal economy's size. Based on the institutional theory, scholars such as Sahnoun & Abdennadher (2019), Ouédraogo (2017), and Friedman (2014a) also noted that the size of the informal economy is adversely and significantly influenced by political governance in a country.

According to Davis (2006), good governance and human development mutually reinforce each other and drive countries towards achieving their development goals (Beegle & Christiaensen, 2019). Yet, the relationship among human development, governance, and interaction in the informal economy is still largely ignored in academic literature (Awasthi & Engelschalk, 2018; Sen, 1985; 1999). This research efforts to fill the gap with respect to the informal economy and its relationship with human development and governance in Africa. Furthermore, such research will inform policymakers, administrators, and other critical interested parties on the suitable strategies to ease a transition to formality and make it more productive.

1.1 Statement of the Problem

The informal economy has become a widespread African issue that has to be clarified and addressed as African nations determine their development priorities. The main issue is that Africa's persistent growth in its informal sector has a negative impact

on making the best use of its resources, distorts capital accumulation, and has a negative impact on business productivity. In agreement, Dabla-Norris et al. (2008) and Loayza et al. (2009) assert that the rise of the informal economy may not only be a sign of a lack of growth but also be the main factor contributing to the underdevelopment of African nations. Growing informality indicates resource misallocation, which causes businesses to lose the advantages of operating lawfully, such as access to official finance institutions and involvement in global markets. Therefore, the rise of the informal sector could negatively impact the capacity of African nations to unlock their entrepreneurial potential and get access to formal domestic financial institutions and international markets.

Although considerable research on the causes and costs of informality has been done, primarily in Latin America (Benjamin & Mbaye, 2012; Ouédraogo, 2017), relatively few studies have thoroughly examined the drivers of the informal economy in Africa. Moreover, only a few studies have specifically investigated the relationship among human development and governance on the size of the informal economy. Moreover, these scant available studies are confined to studies in Latin America (Huynh & Nguyen, 2020; Huynh & Tran, 2021). Nevertheless, the evidence from these relatively few studies is nearly uniformly consistent in indicating that both human development and governance negatively impact the informal economy (Batrancea et al., 2018).

A widespread informal economy, the challenge of human development and governance in Africa, have surprisingly received scant attention in the research literature. As a result, a systematic analysis of this trilogy has remained uninvestigated. This has hindered the ability to establish general theoretical, policy and practice linkages between human development and governance on Africa's

informal economy (Benjamin & Mbaye, 2012; C. Elgin & Erturk, 2019; Ouédraogo, 2017; Tabak & Crichlow, 2000). The scarcity of information is regrettable because it is the sort of evidence that Africa requires to develop a trilogy that is beneficial to it. The study seeks to answer these nagging but legitimate linkages in Africa as it provides a fertile ground for such an investigation.

Also, since Africa's developmental trajectory and political environment are unique, could a study on the association among informal economy, human expansion and governance be regionally context-dependent and different from the rest of the world? Could the different results (causal factors), if any, be due to the model set-up? Or due to the sample dataset? Given the enormous controversies about the informal economy's size and the growing motivation to reduce it, this study considered the relationship among the informal economy, human development and governance in Africa. Such analysis will contribute to determining the key drivers of the informal economy in Africa and be of economic development relevance.

1.2 General Research Objective

The study's general objective was to determine the association among the informal economy, human development, and governance in Africa using panel data from 2000 to 2017.

1.3 Specific Research Objectives

The research objectives are as follows:

1. Describe the state of the informal economy, human development and governance in Africa.
2. Assess the connection between human expansion and the size of the informal economy in Africa.

3. Identify the connection between the extent of the informal economy and governance.
4. Analyse the effect of human development and governance on the size informal economy in Africa.

1.4 Research Questions

Based on the issues raised, this study sought to answer the following questions:

1. What is the state of the informal economy, human development and governance in Africa?
2. What is the relationship between human development and the informal economy in Africa?
3. What is the relationship between governance and the size informal economy in Africa?
4. What is the effect of the interaction between human development and governance on the size informal economy in Africa?

1.5 Research Hypotheses

The study sought to test the following Hypotheses:

Hypothesis 1: The informal economy in Africa is negatively affected by human development, ceteris paribus.

Hypothesis 2: The informal economy in Africa is negatively affected by governance, ceteris paribus.

Hypothesis 3: The size of the informal economy in Africa is negatively affected by the interaction between human development and governance, ceteris paribus.

1.6 Scope of the Study

Africa has 54 countries, nine territories and two independent states with limited or no recognition (Ibid). It is the second-most populous continent globally, and its population is equivalent to 16.72% of the total world population (Ibid). The population density in Africa is 45 per Km^2, and the total land area is 29,648,481 Km^2. Almost forty-four per cent (43.8 %) of the population is urban (590,000,000 people in 2019). In addition, Africa's population is the most youthful globally, with a median age of 19.7, compared to the worldwide median age of 30.4 (Ibid).

Most of the labour force in Africa is in the informal economy (Hart, 2008; International Labour Organisation, 2018). It is anticipated that as many as nine in ten rural and urban labours have informal jobs. About 93% of new incomes created in Africa during the 1990s were in the informal economy (International Labour Office, 2013). Although some activities in the informal economy in Africa provide reasonable livelihoods and incomes, nearly everyone engaged in informal activities face decent work deficits and remained stuck in poverty (Hart, 1973b; Hassan & Schneider, 1999). Africa is the bastion of informality and stuck in poverty as a region. In addition, Africa has the lowest levels of education and health and execrable governance systems (Human Development Data Center, 2020; Medina & Schneider (2019a).

1.7 Significance - Study's Contribution to Knowledge

The informal economy has been on the discussion table in Africa for at least four decades, and, therefore, it is appropriate to investigate its relationship with human development and governance. However, it is essential to note that only a few studies have investigated the relationship among informal economy, human development and governance as it has unfolded in Africa. This is vital because the extent and value of this relationship are dissimilar for the world's regions.

Subsequently, the informal economy's relationship with human development and governance might not be the same in all the regional economies.

Firstly, the study aims at contributing to the extant literature by fashioning a quantitative model that reflects the relationship between informal economy, human development and governance and using this model to investigate the causes of informal economies in Africa. Secondly, the relationship among the informal economy, human development and governance in Africa helps to reveal the trilogy outcomes' general theoretical and policy and practice linkages. In particular, the study provides insights on how human development and governance interact within modernisations, institutional, neoliberal and structuralist philosophies to influence the informal economy in Africa.

Thirdly, the study throws light on the informality, human development and governance relationships, not only as governments' responsibility but also for delivering services more efficiently and equitably for all citizens. The focus on human development and governance in Africa is vital because the well-being of the poor has a distinct consideration in policymakers' objective function.

1.8 Limitations of the Study

There are at least two limitations to this reading. These include (a) 32 African countries' inclusion in the regression analysis without regulatory for subregional blocs and country differences and (b) methodological issues.

a) Inclusion of 32 African Countries in the regression analysis without controlling for subregional blocs and country differences

The empirical indication cited for the study has been that which generally pertains to 32 countries in Africa. However, countries in Africa exhibit different socio-economic characteristics (Medina, Jonelis, & Cangul, 2017. Regression analysis, in theory, demands that observations come from a certain population (Sharma, 2017). In order to lessen the omitted variable bias brought on by geographic differences and other region-specific factors, countries with varied social and cultural traits demand that the regional blocs be controlled.

b) Methodological issues

The study uses panel data for its analysis. However, as noted by Baltagi (2005), there are several methodological boundaries of panel data which include:

1) Design and data gathering problems include coverage problems (incomplete account of the population of interest) and bounding and time-in-sample bias.
2) Discernment challenges include: (a) Self-selectivity, where all data is not observed, resulting in a truncated sample. (b) Nonresponse occurs at the initial wave of the panel due to refusal to participate.
3) Cross-sectional dependence is the absence of cross-country reliance in macro panels on nations or regions with long time series. Typically, this results in erroneous inference.

As Baltagi (2005) further points out, panel data offers numerous benefits worth their cost (see the section on using panel data under methodology for details).

Despite the above limitations, this researcher hopes that the literature review, the methodology adopted, including statistical tests such as multicollinearity,

endogeneity, model robustness checks, assessing the role of time effects to rectify structural breaks in the data, provides mitigation effects to the results of the thesis.

1.9 The organisation of the study

This thesis is organized in nine sections, as outlined below.

Chapter One provides the background and context of the thesis and the reading problem, objectives, questions, hypotheses, research design, and thesis structure.

Chapter Two is presented in three sections. Section one presents an empirical literature review on the informal economy, human development and governance. Section two presents four distinct yet related theoretical frameworks related to the study: modernisation, structuralist, neoliberal and institutional theories. Finally, the conceptual framework is captured in section three. The conceptual framework and empirical literature seek to clarify the interrelationships between the informal economy, human development, and governance.

Chapter Three offers the reading methodology and describes the setting of the research study. It also reviews the study philosophy, patterns, and the basis for selecting the positivism method. The justification for exploiting a panel data examination method for the study to examine the conceptual framework is discussed. Finally, the chapter presents a data analysis and processing outline and estimation issues.

Chapter Four presents the expressive statistics, dynamics among variables, the connection amid variables.

Chapter Five presents an analysis of the Effect of human development on the informal economy

Chapter Six presents the regression outcome of the analysis of the impact of governance on the informal economy.

Chapter Seven Six presents the regression results of the enquiry of the interaction of human growth and governance on the informal economy.

Chapter Eight examines the notion of the informal economy as a resource that needs improvement.

Based on the key findings, Chapter 9 offers a summary, conclusions, consequences, and policy recommendations. Finally, chapter nine outlines the limits of the study and offers suggestions for further research.

CHAPTER TWO:

LITERATURE REVIEW AND THEORETICAL FOUNDATION

2.0 Introduction

This chapter consists of three major interconnected sections. Section one offers a theoretical clarification of the "informal economy" (i.e., what are its causes and penalties? Why is it so insistent over time? What is its association with the formal economy?). In particular, the modernisation, structuralist (exclusion model) and the neoliberal (rational exit model) and institutional theories are considered in this section.

Section two reviews the definition (i.e., what is the "informal economy") and the empirical literature on the informal economy and measurement issues (i.e., "how" to estimate its size). It also examines human development and governance concepts to find the nexus among the informal economy, human growth and governance.

Finally, section three discusses the conceptual framework, which depicts the critical relationships between the informal economy and the theories considered for this study. The purpose is to facilitate an understanding between the informal economy and all the theories discussed. These are now briefly discussed.

Section One: Theoretical foundations of the informal economy

When analysing the informal economy, most studies adopt four competing theoretical explanations (Schneider & Buehn, 2018; Medina, Jonelis, & Cangul, 2017; Hart, 2008). These are the modernisation, structuralist, neoliberal and institutional theories. Brief backgrounds, propositions, strengths and weaknesses, and their relevance to the study are discussed.

2.1 Modernisation theory

The European Enlightenment worldview gave rise to the modernization idea, which maintains that the optimum road for growth is the transition from old and primitive cultures to more developed and contemporary ones (Regmi, 2018). Its philosophical roots can be found in the works of Adam Smith (1723–1790), David Ricardo (1792–1823), John Stuart Mill, and classical sociologists Emile Durkheim (1858–1917), Max Weber (1864–1920), and Talcott Parsons (1902–1979). (1806–1873). These theorists conceptualised development as meeting the basic needs of sufficient food, potable water and safe shelter for citizens (Regmi, 2018; Peet & Hartwick, 2015). There were many proponents of modernisation theory. However, the three most cited proponents of the modernisation theories are Rostow (1960), Lewis (1954) and Schumpeter (1943). These proponents felt that the rest of the world needed to adopt Western models of modernisation to develop. Each will now be discussed in detail.

2.2 Walt Whitman Rostow (1960): The five stages of development

Rostow (1960) is famously known for propounding the theory of staged development. Analysing how developed countries such as Britain, France and the US accomplish their feat, Rostow (1960) found that all developed societies had undergone five levels of development. These five levels are: (1) the traditional society; (2) the preconditions of take-off; (3) the take-off; (4) the push to maturity; and (5) the age of high mass consumption.

In traditional societies, according to Rostow (1960), the economy is conquered by surviving activities where output is disbursed by producers rather than traded. Rostow asserts that in the transitional stage, which is a precondition for take-off, increased speciality makes excess for trading. At this stage, incomes, savings and

investments grow, and businesspersons emerge. External trade, concentrating on primary products, also occurs, and informality begins to give way to formality. Rostow avers that industrialisation surges and entrepreneurs switch from the agricultural sector into manufacturing at the take-off stage. Rostow further avers that the economy diversifies into new areas and technological innovation at the maturity stage and provides a diverse range of investment opportunities. Informality then reduces further, and formality surges. Finally, Rostow highlights the importance of the high mass consumption stage, where durable consumer industries flourish. The service sector becomes increasingly dominant, and formalisation becomes dominant.

2.2.1 Arthur Lewis (1954): The dualistic model

Lewis (1954) first presented the dualistic model in his seminal work, "Economic Development with Unlimited Supplies of Labor". The dualistic model splits the economy into two sectors: (i) a capitalist sector, which is modern, formal and industrial (ii) a subsistence sector, which is non-modern, informal, traditional and agricultural. Lewis claims that the capitalist and technological modes of production, capital accumulation, and economic growth define the modern sector. Contrarily, pre-capitalist production methods, subsistence agriculture, and a lack of economic growth define the non-modern, traditional subsistence sector. According to the dualistic model, excess labor from the traditional agricultural sector is transferred to the modern industrial sector, whose expansion over time absorbs the surplus labor, fosters industrialization, and fosters long-term development.

As the capitalist sector grows, labor from the subsistence sector is drawn into the relationship between the two sectors, which is crucial. The output per worker increases as they move from the subsistence to the capitalist sectors as a result. Lewis' model assumes an economy with an excess of laborers and an unlimited supply of

unskilled labor for the capitalist sector. The chance of developing new industries and growing current ones at their current pay rate rises as a result. A sizable chunk of the limitless labor supply is drawn from a pool of people who are unemployed but hiding it because they work in petty trade, domestic services, and agriculture.

2.2.2 Joseph Schumpeter (1943): The adaptive capacity theory

It was Schumpeter who introduced the concept of adaptive or creative responses. The theory was later mainstreamed into environmental discussions (Watson, Zinyowera & Moss, 2014). According to Schumpeter (1943), adaptive change occurs when an economy reacts to change by increasing the workforce or expanding industry. A creative response is a reaction outside the range of existing practices. As aptly put by Watson et al. (2014, p. 118), Institutions, systems, people, and other species' ability to adapt to possible harm, seize opportunities, or react to outcomes is referred to as their "adaptive capacity".

The adaptive capacity theory shoulders that advancement made in science and technology, for the benefit of humans for the control of the physical environment, is needed for modernisation (Watson et al., 2014). Schumpeter & Backhaus (2003) observed that significant technological advances at enormous costs propelled the economic growth attained by developed countries. However, the 'latecomers' in the modernisation procedure, who are the least developed nations, will have the advantage of adopting the new technology for their benefit without accruing similar enormous costs. Therefore, according to the adaptive capacity principle, if unfledged states have to prosper, they must be unprotected to new technologies and allow their adaptive capacity to flourish (Schumpeter & Backhaus, 2003).

2.2.2.1 A summary of the strengths and weaknesses of the modernisation theory

As cited in Lorenz (2006, p.2), Wehler (1975) summarised the strengths of the modernisation theory as follows:

1. The most eminent theoretical tool for understanding the dynamic of the astonishing evolutionary course the globe has been going through since the Industrial and French Revolutions is embodied in modernization theories.
2. Modernization theories outline the liberal and democratic ideals that might serve as the normative cornerstone of a social critique as the normative components of the modernization notion.
3. By enabling the creation of testable hypotheses for the functional and causal explanation of events, modernization theories provide typologies for recognizing the similarities and contrasts in the historical processes of modernization..

Similarly, Lorenz (2006, p.2) summarised the weaknesses of the modernisation theory as follows:

1. Western and US civilization are viewed as the implicit paradigm for "modern" societies in modernization ideas.
2. Theories of modernization assume a unilinear logic of evolution from tradition to the modernity found in the US. They therefore assume a single, cohesive premodern heritage and the West's superiority over non-Western cultures.
3. Theories of modernization divide world history into periods of tradition and modernity, portraying history as an evolutionary transition from traditionalism to modernism (i.e., modernisation).

4. Modernization theories assume that an integrated system will develop uniformly without taking into account the unequal development brought on by the repressive structure of the current economic-political subsystems..
5. Theories of modernisation assume that social systems are in a state of equilibrium, which entails focusing on structures instead of processes.

2.2.3 Structuralist theory

In economic literature, the Economic Commission for Latin America and the Caribbean (ECLAC) is frequently mentioned as a proponent of structuralism (Missio & Oreiro, 2015). In the late 1950s, their work served as the foundation for this school of thinking. The word was initially used to describe the inflationary process in Latin America, according to Arndt (1985). However, Raal Prebisch created it in its original form. Prebisch proposed the idea of an international economic structure with a hegemonic industrial center and an agrarian-dependent periphery that are characterized by a unique and unequal growth process in his 1949 proclamation..

The origins of economic structuralism, however, is an extension of previous work in existing disciplines proposed by Levi-Strauss (anthropology), Godelier (sociology), Piaget (psychology), Foucault (philosophy) (Missio & Oreiro, 2015; Gibson, 2003; Jamenson, 1986). The French 'structuralist' school (Missio & Oreiro, 2015; Blankenburg, Palma & Tregenna, 2008; Furtado, 1964; 1968; 1974; 1980; 2000) and the German historic economics school (Missio & Oreiro, 2015; Love, 2005) are other previous works. The rest are the Marxist (Missio & Oreiro, 2015; Sunkel, 1989; Lustig, 1988), the Keynesian, post-Keynesian and neoclassical schools (Missio & Oreiro, 2015; Love, 1996; Lustig, 1988).

Thus, the term 'structuralism' has several senses in dissimilar scientific and cultural contexts. Blankenburg, Palma & Tregenna (2008) note that structuralism, as a theoretical construct, applies to empiricism and positivism with insights that span several disciplines. Blankenburg et al. (2008) further note that the guiding principle of structuralism is that each system is calculated as an organised set of inter-related elements and not as separated, individualistic atomistic elements. According to Blankenburg et al. (2008), the structure's relations are more important than its elements. Structuralism distances itself from methodological individualism (Missio & Oreiro, 2015). Thus, structuralism broadly aligns with methodological holism (Missio & Oreiro (2015).

Within this context, the whole is considered more than merely its parts, as the whole surpasses the sum of the parts (Missio & Oreiro, 2015; Durkheim, 1896). Besides, the whole is historically, cognitively and normatively more critical than and hierarchically superior to the individuals it contains (Missio & Oreiro, 2015; Furtado, 1980; 2000). Furthermore, it should be noted that structuralism admits that separate behaviour is a invention of social relations (Missio & Oreiro, 2015). Thus, structural analysis emphasises internal relations and interdependencies, thereby joining complete properties that cannot be abridged to their constitutive parts (Furtado, 1980; 2000).

2.2.3.1 Strengths and weaknesses of the structuralist theory

This idea has a serious flaw in that while industrial subcontracting is a major aspect of illegal activity in Latin American cities, it is just a minor aspect of illegal activity in emerging nations (Aeroe, 1992). What Capeechi refers to as the "subsistence" informal economy, in which economic actors are occupied by informal

ways of revenue creation, is a common aspect of informality throughout Africa (Capecchi, 1989).

2.2.4 The Neoliberal theory

The term neoliberalism was first used by the French economist (Gide, 1898) when he coined the term "néo-libéralisme" to define the economic principles of the Italian economist Maffeo Pantaleoni (1857-1924). For Pantaleoni, economics should provide a criterion to distinguish economic (non-state) from non-economic (state) behaviour. Thus, as pointed out by Vincent (2009), neoliberalism is the 20th-century renaissance of 19th-century thoughts related to laissez-faire economic liberalism (Gaspard, 2003) and free-market capitalism (Bloom, 2017) in which transactions between private parties (economic units) are devoid of any form of state (non-economic) interventions. It is mainly allied with the rules of economic liberalisation, counting privatisation and deregulation (Springer, Birch & MacLeavy 2016), globalisation and free trade (Boas, & Gans-Morse 2009), austerity and discounts in state expenditure (Hall & Lamont, 2013) to upsurge the role of the private segment in the economy and society.

Other neoliberal scholars included the classical liberal economist Milton Friedman, who later used the term in his 1951 essay "Neo-Liberalism and its Prospects" (Milton, 1951). In his 1951 essay, Friedman argued for a government permitted by law rather than by administrative order and enhanced scope for individual initiative. This, according to Friedman, would lead to the unparalleled efficiency of the impersonal price system and the coordination of individual economic units. The term, however, gained popularity at a colloquium organised by Walter Lippmann in Paris in 1938. At the Paris colloquium, the term "neoliberalism" was adopted to describe a set of economic beliefs that prioritise free enterprise,

competition and an impartial state (Jackson, 2010; Hartwich, 2009). Currently, neoliberalism connotes a set of market-oriented strategies that eliminate price controls, deregulate capital markets, lower trade barriers, and lessen the states' inspiration on the economy (Boas & Gans-Morse, 2009).

However, the phrase was made well-known starting in the middle of the 1970s by Milton Friedman, Margaret Thatcher, and Ronald Reagan, all of whom were political leaders. Neoliberalism encapsulates a set of concepts that emerged from the middle to the end of the 1970s, as stated by Jones, Parker, and Bos (2005, p. 100). Following their electoral triumphs in 1979 and 1981, they became infamously linked to the economic policies implemented by Margaret Thatcher in the United Kingdom and Ronald Reagan in the United States. The "neo" in neoliberalism denotes something novel, implying that it was a modernization of earlier theories of "liberal economics." Liberal economists claimed that the government shouldn't intervene in the market.

Neoliberal advocates therefore view free markets and free trade as the cornerstones of prosperity, the best framework for promoting individual liberties, job development, technological innovation, and cross-border cooperation that advance peace and prosperity on a global scale. They contend that government meddling in the functioning of free markets encourages waste, inefficiency, and stagnation. They object to government regulations on business, high taxes, and non-competitive public services. They support reducing the size of government and limiting its powers in order to safeguard private property, enact laws, and enforce them in order to promote international trade and strengthen the military.

Neoliberalism has its fair share of criticism in both left and right-wing politics (Timothy & Liam, 2017), with activists and academics criticising it (Dieter, Bernhard

& Gisela, 2006). Notable critics of neoliberalism include economists Joseph Stiglitz (Will, 2016), Sen (1999) and Jodi (2012). Opponents of Neoliberalism contend that it exacerbates rather than mitigates economic and social disparities as it favours the wealthy while it disadvantages the poor. *As* Jodi (2012, p. 123) noted, pursued via deregulation and privatisation policies, Neoliberalism has called for lowering taxes for the wealthy as well as lowering protections and benefits for the working class and poor, all while being supported by an ideology of private property, free markets, and free trade. These then cause inequality to rise exponentially.

2.2.4.1 Strengths and weaknesses of neoliberalism

Critics such Campbell, Martin & Rene (2001) and Hickel (2019) cite some of the ills of neoliberalism as reducing or removing safety nets, typically provided by governments, for the socially vulnerable and economically disadvantaged. More fundamentally, they contend that systemic forms of violence like persistent poverty, racism, and other types of discrimination are not taken into account by neoliberalism.

2.2.5 Institutional theory

This section briefly reviews the definition and characteristics of institutional theory and institutionalism, as well as the analyses of institutional theory's methodological considerations and limitations. Finally, it examines the informal economy through the lens of institutional theory.

2.2.5.1 Definition and characteristics of institutions

There isn't a single definition that is approved by all institutions. There are various ways to characterize institutions, according to Scott (1995). (Greenwood, Oliver, Sahlin, & Suddaby, 2008; Scott, 2001). For instance, according to the writers Baumol and Blinder (2008), Denzau and North (1994), Mathias et al. (2015), and

North (1990), institutions represent the game's rules and put out standards for what constitutes appropriate behavior. North (1997, p. 334) defines institutions as the humanly established limitations that shape human interaction. They consist of official controls (laws, rules, and constitutions), informal controls (customs, standards of conduct, and self-enacted codes of conduct), and the ways in which they are enforced.

Institutions are social structures that Scott (1995:33; 2001:48) emphasizes have reached a high level of resilience. They included culturally cognizant, normative, and regulative components that, when combined with related activities and resources, give social life stability and meaning. Different carriers, such as symbolic systems, relational systems, procedures, and artifacts, convey institutions. Institutions also operate at many degrees of impact, from global plans to regional interactions. Institutions therefore stand for stability but are open to both gradual and abrupt change processes. Lammers & Barbour (2006, p. 357) define institutions as "constellations of established practices guided by enduring, formalised, rational beliefs that transcend particular organisations and situations".

These definitions highlight a number of vital characteristics that scholars drew on to grow institutional theory. Firstly, organizations are persistent social phenomena that are persevered over time and space and are observable in any given period. Secondly, institutions create their unique social sense beyond stringent handy requisites (Selznick, 1949). Thirdly, organization are organised socially transversely and through organisations. Fourthly, institutions exhibit a wide variety of social phenomena, comprising "cultural-cognitive, normative, and regulative elements", as Scott (2001, p. 48) noted. Fifthly, and according to Greenwood et al. (2008, p. 5), In order to facilitate self-replicating social order, institutions frequently adopt routine,

repeated social behaviors that are supported by normative frameworks and cognitive understandings.

Sixth, drawing on Commons's (1934, p. 79) "working rules", organizations mirror a rational commitment that influences behaviours near certain ends. Conceivably, a valuable summation of these characteristics is that establishment are comprised of established patterns of communication and demeanor that exceed precise organisations.

2.2.5.2. Institutional theory: methodological considerations

Even while institutional theory does not promote any one strategy, the work of researching institutions requires a clearly defined methodological and empirical emphasis. Therefore, the following methodological considerations for research are summarized based on the theoretical components of the institutional theory addressed in this part:

1. First, through the lens of institutional theory, studies must adopt methods that span periods (Lammers & Garcia, 2017; Barley & Tolbert, 1997; DiMaggio & Powell, 1991). Thus, institutions cannot be captured adequately with single-point observations. Consequently, institutions lend themselves to time-series observations and analysis (Lammers & Garcia, 2017; Williams & Horodnic, 2016).
2. A second key feature of organization is that they exceed distinct organisations or elements. This characteristic requires scholars to observe populations, fields, industries, or inter-organisational relationships rather than single organisations (Lammers & Garcia, 2017; Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Scott, 2008; North, 1997).
3. Combining the first and second vital features of institutions, it can be deduced that institutional theory is a research tradition that embraces panel (data) analysis

(Lammers & Garcia, 2017; Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Scott, 2008; North, 1997).

4. Fourth, rather than emphasizing human interactions, the institutional viewpoint places more emphasis on rules, regulations, norms, and laws (Williams & Horodnic, 2016; Baumol & Blinder, 2008; Denzau and North, 1994; Mathias et al., 2015; North, 1990).

2.2.5.3. Limitations of the institutional approach

According to Lammers & Garcia (2017), institutional approaches are often criticised as theoretically imperialistic and claim to incorporate and explain everything about organisations. However, Lammers & Garcia also assert that certain types of cultural evolution may be represented by institutions in modern industrial and postindustrial cultures. As a result, it can be difficult to analytically distinguish between an organization's institutional environment and its external cultural environment.

For Peters (2000), critical empirical problems arise when an attempt is made to utilise institutionalism as an organising theory for political science. According to Peters, it is assumed, a priori, that organizations make sense as an explanatory variable. The challenges arise as an attempt is made to specify the characteristics of institutions and how they influence the dependent variables (Peters, 2000). Usually, specific attributes of institutions are difficult to measure, Peters (2000) further asserts.

2.3 Section Two: Informality, Human Development and Governance - Empirical considerations

2.3.1 Origins of the informal economy concept

The term "informal economy" is traceable to a session held at the Institute of Development Studies in Sussex in 1971 on Urban Unemployment in Africa (International Labour Office., 2002a). At that conference, Keith Hart presented his famous paper on the informal sector, based on his study in the low-income community of Nima in Accra. At the time, Hart characterised the informal economy as a set of economic activities organised by labour that ran side-by-side but outside the formal sector.

Later, the term was altered to "informal economy" to emphasize that informality is not a "sector" but rather a particular method of doing economic activity (Decent Work and the Informal Economy, 2002; International Labour Office., 2002a). It's interesting to note that the (Kenya mission) report acknowledged that the foreign "development specialists" in the mission did not come up with the concept of the "informal sector." Instead, it was derived from the work and personnel of the University of Nairobi's Institute of Development Studies, and ever since, it has been disregarded (El-Mekkaoui & Chaker, 2019).

A year after its introduction, the concept was incorporated in a significantly revised form into the International Labour Organisation's (ILO) report on Kenya. The Kenyan ILO report (Hart, 1973b) and the ensuing debate brought the informal economy's issue into the political arena. Since then, ILO and other international organisations have integrated it into the World Employment Programme's conceptual foundations (International Labour Office., 2002a; Prospects Group & Bank, 2019b). However, Hart's most vital (1973: 61) influence to literature contained of showing

that the economic events of the Nima grassroots workers were not a passive and subjugated "reserve army of urban unemployed and underemployed". Instead, they possessed "some autonomous capacity for generating growth in the incomes of the urban (and rural) poor."

Despite the fact that a lot of theoretical and practical information has been used over the past four decades to define the traits, causes, and effects of the phenomena, no single definition has been determined to be substantially accurate and widely accepted(Gërxhani, 2003; Kus, 2010; Medina & Schneider, 2019a; Schneider & Buehn, 2017a).

Thus, investigators attempting to amount the size of the shadow economy faced the first and most challenging task of defining it (Kaufmann et al., 2011; Kus, 2010; Medina & Schneider, 2019). However, some researchers have found a way of defining it by considering where causal elements lie. Suppose the perspective is to emphasise the suppression of economic activities. In that case, the informal economy is called "the shadow economy", "the underground economy", "the invisible, hidden, and submerged economy", and the "subterranean economy" (Feige, 1990; Gërxhani, 2003; Kus, 2010; Medina & Schneider, 2019a; Schneider & Buehn, 2017a; Tanzi, 1998b, 2006a). Suppose the perspective is to emphasise decent work deficits. In that case, it is described as "absence of, or limited opportunity for social dialogue and access to rights at work, irregular employment status, and unprotected workers" (International Labour Office., 2002a).

2.3.2 Defining the informal economy

Despite this seeming terminological confusion, researchers such as (Feige, 1979), (Dreher & Schneider, 2010), and (Frey & Weck-Hanneman, 1984) used a common working definition that describes the informal economy. They characterised

the informal economy as encompassing all unregistered economic pursuits that would have contributed to officially planned (or observed) Gross National Product if observed. Smith (1994, p. 18) describes the casual economy as a "market-based production of services, and goods whether legal or illegal, that evades detection in the official estimates of GDP." Researchers, such as Del'Anno (2010b) and Feige (1990), used a broad definition, which considered the informal economy as economic pursuits and the earnings derived therefrom that circumvent state directive, taxation or observation. All these descriptions suggest that the casual economy is economic activities that are not captured in official statistics, thereby suppressing their tracing as evidence of transactions within the economic systems.

From Table 2.1, it is evident that an extensive description of the informal economy consists of unreported revenue from the making of legitimate goods and services, either from monetary or barter dealings.

Table 2.1: A Taxonomy of types of Informal Economic Activities

Type of Activity	Monetary transactions		Non-monetary transactions	
Illegal Activities	Trade in stolen items, producing and trafficking drugs, prostitution, gambling, smuggling, and other crimes.		Drug trades, the sale of stolen goods, smuggling, etc. drug cultivation or production for personal use. Theft for own use.	
	Tax Evasion	**Tax Avoidance**	**Tax Evasion**	**Tax Avoidance**
Legal Activities	Undisclosed earnings from self-employment, as well as unreported wages, salary, and assets from activities involving legal services and products	employee special offers and perks	Barter of legal services and goods	All do-it-yourself work and neighbour help

Source: The structure of the table is taken from Lippert & Walker (1997, p. 5) with additional remarks provided by Schneider & Buehn (2018, p. 2)

A statistical definition of the informal economy in terms of economic/production units was adopted by the 15th International Conference of Labour Statisticians (ICLS) in 1993. According to (International Labour Office., 2004, p. 7), the ICLS definition, the informal economy is broadly regarded as comprising of units that are producing goods or services with the key aim of creating employment and income. These small units often operate at the lowest level of the organization, where there is little to no separation between labor and capital as production-related components. Where labor contacts do exist, they are typically based on casual employment, societal ties, and kinship rather than formal contracts with guarantees.

Employment in the informal economy is distinguished from informal employment according to this concept. Unincorporated household enterprises are a subcategory of informal economy enterprises. The 15th ICLS resolution's definition of informal economy enterprises was based on three factors: ownership, ownership structure, and the type of accounts maintained.

Therefore, factors relating to the economic backdrop as well as the legal, regulatory, and policy frameworks are among the core causes of informality. Low levels of education, discrimination, poverty, and, as was already indicated, a lack of access to banking, real estate, and other commercial services and markets are examples of micro-level drivers that contribute to these issues. Additionally, the prevalence of the informal economy is a significant obstacle to employees' rights and fair working conditions. Additionally, it has a detrimental influence on businesses, tax revenues, the reach of the government, the stability of institutions, and fair competition.

A turning point in the ILO's comprehensive strategy to informality was the 2002 ILC resolution on Decent Work and the Informal Economy (International Labour Office., 2002a). It first clarified what was meant by "informal economy". It was described as all economic actions carried out by workers and economic entities that are not sufficiently protected by formal agreements, either in theory or in practice. This indicates that the activities of those people and businesses are either not covered by the law or take place outside of its official purview. Because the law discourages compliance because it is unsuitable, cumbersome, or involves large costs, it is not implemented or enforced where it is supposed to be.

However, this study uses Medina & Schneider's definition of the informal economy, which is as follows: (2019). For monetary, regulatory, and institutional considerations, Medina & Schneider

> (2019, p. 4) define the informal economy as all economic activity that are concealed from official authorities. Financial justifications include avoiding paying taxes and all social security contributions, regulatory justifications include dodging red tape or the weight of regulations, and institutional justifications include corruption laws, the caliber of political institutions, and a lack of strong rule of law.

Because it served as the foundation for calculating the size of the informal economy used in this study, Medina & Schneider's (2019b) definition of the informal economy was preferred. In addition, the definition emphasizes legitimate, profitable, and productive activities—activities that, if they were reported, would boost the country's gross domestic product. Table 2.2 provides a review of the numerous definitions of the informal economy:

Table 2.2 Tabular Representation of Definitions of the Informal Economy

S/N	Author(s) and Date	Explanation	Label/Approach to the definition	Context	Criteria/Emphasis
1	Hart (1971,1973)	the self-organized people's economic activity outside of organized labor to avoid restrictions from the government.	Definition of the informal sector from a business perspective	Context of a developing country	Rural-urban mobility is a cause of the dualism of the economy, or the distinction between the informal and formal economics.
2	ILO (1972)	"A way of doing things characterized by low barriers to entry, reliance on domestic resources, family business ownership, scaled-down operations, labor-intensive technologies, skills learned outside of the formal education system, and unregulated, competitive markets,"."	The informal sector defined from a commercial standpoint	Context of a developing country	The economy's duality where. The unorganized sector has little potential for growth and dynamism.
3	De Soto (1989; 2000)	A common response to excessive regulation by persecuted small business owners who operate illegally and are also the world's genuine capitalists.	Informal sector in an enterprise approach definition	Context of a developing country	Due to excessive regulation, entrepreneurs in the informal sector are inhibited in their ability to grow.

S/N	Author(s) and Date	Explanation	Label/Approach to the definition	Context	Criteria/Emphasis
4	(Portes & Sensenbrenner, 1993; Portes, 1994; Portes and Haller, 2005	"The production of legal goods using processes that are not wholly legal."	Informal economy/Both enterprise and labour approaches	Context of both developed and developing country	Enterprise characteristics and employment relationships are emphasised
5	ILO (2002b, p. 2)	"any and all economic actions taken by individuals or businesses that, in theory or in practice, are not covered by formal agreements or are only partially covered by them. This indicates that either the law does not apply to them and they are acting outside of its formal purview, or the law is not enforced or implemented when they are acting within its formal purview, or the law discourages compliance because it is unsuitable, cumbersome, or expensive.	informal economy/business and labor perspectives	Context of both developed and developing country	Informalisation of work
6	17th ICLS (2003)	the total number of employment held by households or businesses in the informal sector during a specific reference period	Informal economy/Labour approach	Universal application, but apply more to developed country contexts	Employment relationships and informalisation of work

S/N	Author(s) and Date	Explanation	Label/Approach to the definition	Context	Criteria/Emphasis
7	Webb, Ireland & Ketchen (2009; 2014)	"The informal economy reflects the manifestation of company and entrepreneurial activity aimed at exploiting or filling the gap left by the institutional environment," according to the author.	Informal economy within both enterprise and labour approaches	Context of both developed and developing country	Risk-taking alertness and ability to recognise opportunities outside formal institutions

Source: Joshua Adike (2018)

2.3.3 Recommendation, 2015 (No. 204) and the informal economy

a. Strong tripartite consensus and a nearly unanimous vote underpin Recommendation, 2015 (No. 204), which directs Member States of the ILO to pursue three goals: a. facilitate the transition of laborers and production units from the informal to the formal economy while upholding workers' fundamental rights and providing opportunities for income security, livelihoods, and entrepreneurship; b. encourage the creation, perpetuation, and sustainability of enterprises, and c. deter illegal labor.

b. Avoid having formal economy occupations become more informal.

2.3.3.1 The significance of Recommendation 204

Recommendation 2015 (No. 204) is the first worldwide norm to primarily focus on the casual economy, and it marks a significant turning point in the history of employment. An integrated strategy that spans a number of policy areas and involves institutional and civil society actors is necessary to promote decent work. It should aim to eliminate the unfavorable aspects of informality while preserving the informal economy's significant capacity for job and income creation. Additionally, it should support the defense and mainstreaming of employees and economic entities in the unofficial sector.

2.3.4 Measuring the informal economy

Reflecting the effort of gauging informality, the literature has advanced various estimation methods to capture its size. In this section, two major approaches, direct and indirect, have been widely used to estimate the size and growth of the informal economy (Medina & Schneider, 2019a; Schneider & Buehn, 2017a). These are now summarised.

2.3.4.1 Direct approaches to measuring the size of the informal economy

The most common direct methods for estimating the extent of the informal economy rely on voluntary response surveys and samples, as well as tax auditing and other methods of compliance. (Medina et al., 2016a; Medina & Schneider, 2019a; Schneider & Buehn, 2017a; Schneider & Enste, 2002). The key benefit of this approach is the thoroughness with which information regarding the informal economy's structure is gathered. However, the authors raised several concerns about this method, which have to do with the inherent flaws in all surveys. For instance, they suggested that the average precision and results depend primarily on the respondent's willingness to cooperate with forthright and truthful answers. It is, thus, intricate to precisely assess the size of the informal economy from a direct questionnaire as most interviewees hesitate to disclose fraudulent behaviour.

According to Medina & Schneider (2019a), face-to-face structured interviews are encouraged to minimise the number of respondents who are likely to respond dishonestly or decline to answer sensitive questions. The questionnaire is also structured into at least three parts: the first objective influences participant's views of the questions being discovered. The second enquires about the respondents' pursuits in the informal economy. The third comprises the usual socio-demographic items (Medina et al., 2016a; Medina & Schneider, 2018, 2019a). In contrast to other methods, the results of the informal economy estimates from survey methods are lower-bound estimates.

2.3.4.2 Measuring the size of the informal economy: Indirect approaches

Otherwise called "indicator" styles, indirect approaches are generally macroeconomic (Medina & Schneider, 2018, 2019a; Schneider & Buehn, 2017a). They exploit various macroeconomic indicators (such as Gross Domestic Product

(GDP), Consumer Price Index (CPI), Employment indicators and Producer Price Index (PPI)), which cover data on the growth of the informal economy (Medina & Schneider, 2019b). Linking these macroeconomic indicators to the description of the informal economy, they provide value-added figures.

Six potential indirect strategies were proposed by Schneider & Buehn (2017a), including the following: I the discrepancy between national expenditure and income statistics; (ii) the discrepancy between the officially reported and actual labor force; (iii) the "electricity consumption" approach of Kaufmann & Kaliberda (1997); (iv) the "monetary transaction approach" of (Feige, 1979); (v) the "currency demand" approach of Cagan (1958) and others; and (vi) the "Multiple Indicators, Multiple Causes" (MI(Medina et al., 2016b; Medina & Schneider, 2019b; Schneider et al., 2018; Schneider & Buehn, 2017a). These indirect approaches are summarised below:

1) The discrepancy between national income and expenditure statistics

This method is grounded on the differences among income and spending data (MacAfee, 1980; Medina & Schneider, 2019a; Yoo & Hyun, 1998). Under normal circumstances, the income data of GNP should be equal to the spending data of GNP (Medina & Schneider, 2019a). However, suppose informal firms and operators conceal their incomes for taxation but could not conceal their expenditure. In that case, the variation between national income and national spending could be considered as approximates of the size of the informal economy (MacAfee, 1980; Medina et al., 2016a; Medina & Schneider, 2019a; Schneider & Buehn, 2017b; Yoo & Hyun, 1998). This method presumes that all the elements of the outflow side are computed without error and are statistically not dependent on income factors Medina et al., 2016a; Schneider & Buehn, 2017a; Yoo & Hyun, 1998).

Sadly, this is not typically the case. Instead, all inaccuracies and omissions in the figures from the national accounts and the informal economy are reflected in the discrepancy. These estimates may therefore be imprecise and of dubious veracity. (Medina et al., 2016a; Schneider & Buehn, 2017a).

2) The discrepancy between official and actual labour force

If the total work force involvement is presumed to be constant, then a reduction in official labour force involvement can be understood as an increase in activities in the informal economy (Medina et al., 2016a; Medina & Schneider, 2019b). However, variation in the official labour force participation rate might have many other possible justifications, such as struggle finding a job, education and departure decisions (Medina et al., 2016a; Medina & Schneider, 2018; Schneider & Buehn, 2017a). Thus, these estimations denote weak pointers of the size of the informal economy (O'Neill, 1983; Schneider & Buehn, 2017a).

3) The electricity consumption approach

The assumption that there is a correlation between household electrical consumption and a country's GDP is taken advantage of by the electricity consumption approach to estimating the extent of a country's informal economy. When the informal sector uses resources like electricity to operate, for instance, this can be used as a proxy for unreported economic activity as electricity usage is typically well-known.

(Kaufmann & Kaliberda (1997 and Lackó (2000) suggested that electricity consumption is a good physical indicator of overall (official and unofficial) economic activity. The electricity consumption approach is, thus, subdivided into two methods: The Kaufmann & Kaliberda method and the Lackó method.

a) **The Kaufmann and Kaliberda method**

Electricity use is the safest tangible indicator of overall (formal and informal) economic activity, according to Kaufmann & Kaliberda (1997). They then suggest using the difference between the growth of electricity and the growth of official GDP as a proxy for the expansion of the informal economy, assuming that the ratio of electricity to the overall GDP elasticity is near to one. Although this strategy is simple and fun, it has numerous drawbacks. To start, not all activities in the informal economy require power. The informal economy is thus only partially represented. Second, the relationship between GDP and electricity could change dramatically over time and between different nations. (Johnson et al., 1999).

b) The Lackó method

Maria Lackó created the household electricity approach to calculate the quantum of the casual economy in a country. Lackó (2000) used regression analysis to establish the relationship between the country's household electricity consumption and Gross Domestic Product (GDP).

Lack's (2000) technique is also open to the ensuing criticism. Among others, these are listed below:

i. Not all activities in the informal sector require a lot of electricity, and alternative energy sources can be used.

ii. Informal economy pursuits do not occur only at the household level.

4) The Transaction approach

Using Fischer's quantitative idea of money, MV = PT, where M is money, V is velocity, p is price, and T is the total number of transactions, economist Edgar Feige (1979) created this strategy. The main premise is that the official gross national product (GNP) and transaction volume have a stable connection over time.

Consequently,

PT = k (official GDP + informal economy).

It is sufficient to derive the equation:

MV = k (official GDP + informal economy).

The supply of cash and formal GDP estimations are well-known, and cash velocity can also be measured. Consequently, if the size of the casual economy as a fraction to the formal economy is established for a target year, it can be estimated from the rest of the sample. Although this is hypothetically appealing, this approach has some drawbacks. For example, l's say: (i) the notion of k constant over time appears entirely personal; and (ii) other aspects like credit cards and cheques could impact the preferred quantity of cash and hence velocity (Cagan, 1958; Feige, 1979).

5) The currency demand approach

The first researcher to apply the currency demand approach to identify the link between currency demand and tax pressure as a contributing factor to the informal economy in the United States between 1919 and 1955 was Cagan (1958). Tanzi further enhanced the Cagan approach (1998, 2006). Tanzi calculated the size of the informal economy using a currency demand function for the United States from 1929 to 1980. Tanzi makes the assumption that unofficial (or covert) transactions are carried out using cash, obliterating any traces of transactions within the financial systems that could be seen by authorities. As a result, an expansion of the informal sector will result in a rise in the demand for money. The very first researcher to make use.

To separate the additional currency requests that result, a period's equation for currency demand is estimated. All likely predictors, including income, payment behaviors, and interest rates used as a cash substitute, are taken into account.

Additionally, factors that are thought to be important in driving people to work in the informal economy, such as direct and indirect taxes, governmental regulations, and national institutions, are taken into account in the calculations. This is one of the most popular methods because it has been employed in many nations throughout the world and has drawn criticism for a number of reasons

(Ahumada et al., 2006; Medina et al., 2016a; Medina & Schneider, 2019b; Schneider & Buehn, 2017a).

The most critically raised protests to this system are as follows:

a) This technique may undervalue the size of the casual economy since not all transactions are undertaken through cash transactions,

b) Growths in currency request may not just occur for the reason that informal activities have increased but also because of a slack in demand deposits and withdrawals,

c) It appears subjective to presume the same velocity of cash in both the formal and casual economies; and

d) Finally, the supposition that no informal economy exists in a reference year may not be accurate. However, easing this notion would also suggest an higher variation in the size of the informal economy.

6) Multiple Indicators, Multiple Causes (MIMIC) model

The psychometrics factor analysis literature is where the Multiple Indicators, Multiple Causes (MIMIC) paradigm first appeared (Breusch, 2005). In its initial use, Frey & Weck-Hanneman (1984) used the MIMIC to look at a pooled data set from 17 OECD nations in order to estimate the extent of the informal economy. By incorporating some lagged adjustment into a dynamic MIMIC (or DYMIMIC) model and applying the technique to the United States, Aigner Dennis et al. (1988) expanded on the concept. Giles (1999) makes additional adjustments to the methodology to incorporate advancements in time-series techniques, particularly unit roots and cointegration analysis, to estimate New Zealand's informal economy.

It is within this context that the MIMIC approach is appealing. The idea views the output (or income) of the informal economy as a latent or unobservable quantity or index with observable causes and effects but cannot be measured directly. As a result, the model may contain two different types of observed variables. These variables serve as both indicators and causal factors. These variables are connected by a single unobserved index. Data on causes and indicators are used to calculate the index's values, which are then predicted using the statistical model's estimated parameters. The resulting index is then used to measure the extent of the informal economy across time(Abdih & Medina, 2013; Medina et al., 2016a; Medina & Schneider, 2019a; Schneider & Buehn, 2017a; Vuletin, 2008).

It is generally acknowledged by the majority of researchers who compute the size of the casual economy utilizing the MIMIC version, with multiple unobservable variables, run into problems regardless of which method is used. Thus, in assessing the current destimates on the informal

economy different scholars, one should be mindful of the fat that there is no one best or frequently accepted scheme of anakysis.

Criticism of the MIMIC model

The three most crucial criticism of the MIMIC approach focuses on the sample used and the dependability of the comoutations (Buehn & Schneider, 2012; Dell'Anno, 2021; Helberger & Knepel, 1988; Medina et al., 2016a; Schneider & Buehn, 2017a). These are summarised below:

1. The most regular objection hovers around the meaning of the latent variable (Buehn & Schneider, 2012; Dell'Anno, 2021; Helberger & Knepel, 1988; Medina et al., 2016a; Schneider & Buehn, 2017a).This confirmatory rather than exploratory method makes it more probable to establish the validity of a certain model rather than identify a suitable one. As a result, other than those investigated, the stated model may also incorporate possible definitions or informal economic activity. Due to the practical constraints on data availability and theoretical presumptions underlying the choice of variables, this critique is still difficult to refute.
2. According to Helberger and Knepel (1988), estimations from MIMIC models produce unstable coefficients when the sample size is changed or an alternative model is specified. However, Del'Anno (2021) shows that as sample size grows, instability decreases asymptotically.
3. The benchmarking technique used to compute actual figures of shadow economic activities is also criticised (Breusch, 2005; Schneider & Buehn, 2017a). The supposed standardisation process, irrespective of which method is used, necessitates investigation and an evaluation of the standardised values in an

extensive scholarly debate. Regrettably, it is unclear which benchmarking technique is the most dependable at this research stage.

That said, this study relies mainly on the MIMIC approximations of the share of casual output by Medina & Schneider (2019a), which stands out in its time and country coverage. Thus, data on the size of the casual economy, spanning 2002 to 2017, were obtained from Medina & Schneider (2019a) and the World Development Indicators (WDI). The MIMIC approach was used to estimate the size of the informal economy as a per cent of GDP (Medina & Schneider, 2019a; Schneider & Buehn, 2017a).

2.3.5 Empirical Studies on the informal economy

An analysis of the empirical literature the casual economy can be broken down into three main groups: global, regional and country-specific. In addition, the regional studies may be subdivided into (i) Regional-Developed-Developing Countries and (ii) Regional-African studies. Each will now be discussed in detail.

2.3.5.1 Global panel Studies

The first discussion of global relevant empirical panel studies of the informal economy is on the study conducted by Hoinaru et al. (2020). The authors investigated how exploitation and the informal reduced influence economic and maintainable growth. The authors obtained extensive cross-country data from 185 countries between 2005 and 2015 on the casual economy and growth. Data for the informal economy was obtained from Medina & Schneider (2019a). Hoinaru et al. (2020) first estimated the model through the Pooled OLS method for the panel data. One of the most comprehensively used techniques is the pooled OLS method. The fixed-effects

model (FEM) and the random-effects model (REM) for panel data were then both estimated. The authors then performed F-tests, Breusch-Pagan tests, and Hausman tests.

Hoinaru et al. (2020) found that bribery and the informal economy are poverty-driven illnesses and highly illustrate low-income states. This finding by Hoinaru et al. (2020) supports the modernisation theory. The modernisation theory states that informality indicates widespread poverty (Harris & Todaro, 1970; Lewis, 1954). Thus, rising incomes are the factors that are needed to motivate firms to move into the formal economy, thereby reducing the size of the informal economy (Harris & Todaro, 1970; Lewis, 1954; Rothenberg et al., 2016).

Hoinaru et al. (2020) also found evidence that corruption can also be seen to avoid the law to achieve higher economic benefits. But the authors also discovered that corruption and the informal sector had a greater detrimental impact on economic and sustainable development in high-income nations than they do in low-income countries.

The study by Hoinaru et al. (2020) may have political ramifications for the institutions of government that are responsible for enacting the optimal laws to promote sustainable and economic growth. The authors discovered proof of the beneficial benefits of corruption and the shadow economy on the economic and sustainable growth of low-income countries. As a result, they suggested that corruption may be combated by methods that improve institutional quality and implement the necessary regulatory rules.

The second discussion of the informal economy's global relevant empirical panel studies is on the study conducted by (Fredström et al. (2021). Fredström et al. (2021)Using panel data from 60 countries, this study theoretically and empirically

investigates how the extent of the informal economy affects entrepreneurship productivity and how governance quality moderates that effect. For their estimation method, the authors predominantly use fixed-effects regression, which is resistant to time-invariant unobserved heterogeneity. This strategy maximizes usable data among applicable panel analysis approaches, but it depends on the tight exogeneity assumption for impartial identification (Wooldridge, 2010). All regressors are also one year lagged, and the independent and moderating factors are mean-centered.

To further boost robustness, Fredström et al. (2021) used a difference Generalized Method of Moments (GMM) estimator (Arellano & Bond, 1991). The GMM estimation method allows for lagged dependent variables and time-variant unobservables in addition to controlling for time-invariant unobserved heterogeneity (Acemoglu et al., 2009). The authors further examine the models by altering the internal instruments' time delays (Roodman, 2009). Instead of using the first differences transformation, they use the forward orthogonal deviations (FOD) transformation to increase data availability that is restricted by data gaps (Arellano & Bover, 1995).

Two-step standard error estimates are corrected using the finite sample method proposed by Windmeijer (2005). The lagged dependent variable is viewed as predetermined, the independent and moderator variables and their multiplicative interaction term are treated as endogenous, and the time dummies are treated as exogenous (Roodman, 2009). Additionally, they run similar fixed-effects estimates with and without control variables on the data available for GMM estimation. Finally, Fredström et al. (2021) carried out the model estimation in Stata SE/16 using the xtreg and xtabond2 commands (Roodman, 2009. P. 2).

According to Fredström et al. (2021), the extent of the informal sector is inversely related to the productivity of entrepreneurship. Furthermore, in a significant informal economy, government efforts to enhance governance quality may be ineffective. Their findings indicate that legislative changes to encourage formal entrepreneurship should be done carefully to prevent creating institutional inconsistency.

The third discussion of global relevant empirical panel studies of the informal economy is on the study conducted by Rug (2012). Rug (2012) analysed the informal economy's determinants by employing a comprehensible Structural Equation Ideal with a facts set of 11 latent variables with 58 indicators from 35 countries. Ruge's study found that the formal economy is closely associated with: According to Fredström et al. (2021), the extent of the informal sector is inversely related to the productivity of entrepreneurship. Furthermore, in a significant informal economy, government efforts to enhance governance quality may be ineffective. Their findings indicate that legislative changes to encourage formal entrepreneurship should be done carefully to prevent creating institutional inconsistency.

Higher wealth and development level is consistent with the dualist view, which notes its negative relationship with informality (Harris & Todaro, 1970; Lewis, 1954, 1969; Rothenberg et al., 2016). Better administrative systems, low taxes and social security payments support the neoliberal theory, which contends that businesses have more substantial motivations to operate in the formal economy as an option if taxes are low (De Soto, 1989, 2000; Feige, 1990; Medina & Schneider, 2019a; Ouédraogo, 2017; Tanzi, 1998b, 2006a). As per the view of the structuralist, burdensome labour market regulations prevent firms in the informal economy from becoming formal (Castells & Portes, 1989).

2.3.5.2 Regional-Developed-Developing Countries panel studies

In their article, Berger et al. (2018) studied fiscal decentralisation and inequality as the informal economy's driving forces through a panel data analysis for OECD countries. According to their analysis, decentralizing spending and taxes has little impact on the informal economy, but a decrease in income inequality lowers it. This result is consistent with the dualist view. The dualist view posits that the real cure for informality is socio-economic development and rising incomes (Harris & Todaro, 1970; Lewis, 1954, 1969; Packard, 2007; Rothenberg et al., 2016). Moreover, as noted by Berger et al. (2018), decentralisation is generally believed to increase government efficiency, indicating highly efficient public administrations.

Schneider (2010) estimated the size and development of 21 OECD countries' informal economies using the MIMIC approximation technique. Schneider (2010) found that federalism's public institution has no statistically significant effect on the informal economy. .On the one hand, incentive-oriented policy approaches are suggested to transform any informal economy value-added into formal value-added. On the other hand, it is critical to have public institutions which work efficiently to reduce asymmetry between formal institutions (government morality) and informal institutions (societal morality), thereby constraining citizens from working outside the formal space.

Ruge (2012) investigated the effect of the excellence of national civic governance on the size of the tracker (informal) economy of 35 OECD countries using the Structural Equation Model. He constructed three latent variables for his analysis: wealth and progress level, administrative system, and constitutional trust and values.

Three indicators—the human development index, GDP per capita, and Gini coefficient—were used to generate the latent variable for wealth and development

level. Ruge (2012) discovered a substantial negative correlation between the shadow economy and GDP of 0.89, suggesting that increasing a nation's overall income and level of development should lead to a decline in the informal economy. The latent variable for the administrative system was built with 14 indicators, primarily from surveys on the effectiveness of lawmaking, regulations, and administrative processes. Ruge (2012) discovered a high negative link between administrative system improvement and the shadow economy, which indicates that administrative system improvement is the most crucial and efficient strategy to reduce the shadow economy. In addition, 11 indicators, including surveys and indices about the constitutional trust and values, made up the hidden variable.

Baya (2018) researched the association among various pointers of public supervision and the informal economy in 11 Central and Eastern European economies during the 2003-2014 period using panel regression. His findings verified the theoretical expectations, suggesting that countries with a higher quality of public administration experience less size of the informal economy.

Furthermore, Baya (2018) found that the rule of law and voice and responsibility had a relatively higher contractionary influence on the size of the casual economy. In other words, freedom of expression and free media promote the official economy. On the other hand, the quality of legal infrastructure and the efficient functioning of the legal system is another essential factor that dissuades the economic units from entering the informal economy. Furthermore, improvements in political stability, regulatory quality, and corruption control contribute to decreasing the size of the casual economy.

In 18 chosen transition economies, Luong et al. (2020) looked into how the informal economy, economic growth, and the rule of law interacted. The authors

evaluate the influence of the rule of law and other factors on the size of the informal economy using annual data for 18 transition nations from 2002 to 2015 in these countries. The International Monetary Fund's (IMF) resources are used to classify the transition country group, which is then chosen based on data accessibility. The World Bank, the Worldwide Governance Indicators (WGI) project, and an IMF working paper provided the data for the study. The GMM approach was used in the study.

Luong et al. (2020) note that economic growth indicators have a negative and statistically significant impact on the informal economy, consistent with the dualist view (Harris & Todaro, 1970; Lewis, 1954, 1955, 1969). For the dualist, the real cure for informality is socio-economic development, poverty reduction, and rising education and incomes (Rothenberg et al., 2016; Harris & Todaro, 1970; Rostow. 1960; Lewis, 1959; 1954).

Luong et al. (2020) note further that the informal economy is adversely related to the value of the rule of law. This result supports the institutional theory of informality (Baumol & Blinder, 2008; DiMaggio & Powell, 2000; Meyer & Rowan, 2012; North, 1990; Scott, 2008). The informal economy is mostly absent when there is balance amid formal and informal establishments (Williams & Franic, 2016). Conversely, in the event of an asymmetry between informal and formal institutions, the informal economy grows (Baumol & Blinder, 2008; DiMaggio & Powell, 2000; Meyer & Rowan, 2012; North, 1990; Scott, 2008; Williams & Franic, 2016).

Loayza et al. (2009) investigated the informal economy's determinants and effects using an endogenous growth model on public services in Latin America. The author used economic data from the countries of Latin American countries in the early 1990s to test the model's inferences and offers approximations for the size of the informal economy in those countries.

According to Loayza's (1996) model, the effectiveness of governmental institutions has a negative impact on the extent of the informal economy. This outcome is in line with the informal economy viewpoint of institutional theorists. When a society's official institutions (government morals) and its informal institutions are inequitably balanced (societal morality), the informal economy grows (Meyer & Rowan, 2012; Siqueira et al., 2016)). Several studies (See Huynh & Nguyen, 2020; Kus, 2010; Medina & Schneider, 2019a) also demonstrate that poor institutional quality is a leading reason for the growth of the size of the informal economy.

Furthermore, the empirical results from Loayz (1996) specify that an expansion in the extent of the relaxed economy negatively affects economic growth in at least two ways. First, by dropping the accessibility of state services for everyone in the economy. Second, by rendering public services less efficient. These two observations are consistent with the view of modernisation theorists. Modernisation theorists see the informal economy as a residue of the formal economy, and growth in the official economy reduces the size of the informal economy (Harris & Todaro, 1970; Lewis, 1954, 1969; Regmi, 2018; Rostow, 1960).

Vuletin (2008) estimated the extent of the relaxed economy for 32 Latin American and Caribbean countries in 2008 using a structural equation model method. Among others,

Vuletin (2008) also found that the size of the casual economy varies considerably across states. For example, while in Paraguay and Nicaragua, the size of the informal economy is about 70 per cent of the total GDP, the size in economies like The Bahamas, Trinidad and Tobago, and Barbados are below 25 per cent of GDP. Two possible explanatory factors could be offered for this. The first could be because of the differences in economic growth. According to the modernisation theory,

varying economic growth levels negatively affect the informal economy(Lewis, 1954, 1955, 1969; Packard, 2007; Rostow, 1960). The second could be because of alterations in the value of public institutions in the affected countries (DiMaggio & Powell, 2000; Meyer & Rowan, 2012). Where countries have varying degrees of irregularity amid formal and informal organizations, levels of informality also vary (DiMaggio & Powell, 2000; Johnson et al., 1999; Kus, 2010; Lammers & Garcia, 2017; Meyer & Rowan, 2012; North, 1990; Schneider & Buehn, 2017a; Scott, 2005).

Vuletin (2008) further found that the causal factors of the informal economy also varied significantly among the states. For states such as Antigua and Barbuda and Trinidad and Tobago, the most critical factor was the tax burden. For countries like the Grenadines and Belize, the critical factor was the hard-to-regulate agricultural sector. In contrast, for economies like Paraguay and the Dominican Republic, the importance of labour inflexibilities seems crucial.

Sahnoun & Abdennadher's (2019) studied the effects and causal links between the informal economy and the unemployment rate using a panel data model for 38 developing and 40 developed countries over the 2000–2015 period. The authors estimated a dynamic panel data model within a simultaneous-equation framework implemented via the General Method of Moments (GMM) system estimator. Sahnoun & Abdennadher (2019) obtained the data for the dependent variable related to the informal economy's size from Medina & Schneider (2018) In addition, data for the independent variables were acquired from the Worldwide Governance Indicators (WGI) and the Heritage Foundation (HF) database.

According to Sahnoun & Abdennadher (2019), when institutions are strong and there are effective procedures in place to combat corruption, the influence of the unemployment rate in the informal economy is lessened. Numerous scholars,

including Medina & Schneider (2019a), Kus (2010) Johnson et al., have proposed that the causative factor in the growth of the informal economy is the caliber of public institutions (1999). These scholars contend that the informal sector and high-quality institutions have a considerable negative relationship.

Sahnoun & Abdennadher (2019) noted that the size of the informal economy is adversely and significantly affected by political stability and government efficiency. This assertion is supported by Medina & Schneider (2019a) and Ouédraogo (2017), who suggest that political influences and state efficiency are critical negative determinants of the size of the informal economy. However, the authors also note that only government effectiveness negatively affects the informal economy in developing states with high-quality establishemnts.

The authors realise that institutional quality relates effectively with the informal economy and the rate of unemployment. According to Sahnoun & Abdennadher (2019), the joblessness rate is connected with a weak informal economy in states with good institutional quality. On the contrary, the rate of unemployment strongly drives the informal economy in nations with low organizational value.

2.3.5.3 Regional Africa countries panel studies

This section briefly discusses one relevant comparative empirical panel study of Africa's informal economy. For this study, Ouédraogo (2017) used facts from 23 Sub-Saharan states to investigate the relationship between corruption, governance, and the size of the informal economy. First, Ouédraogo (2017) obtained data for the Informal Economy from Schneider et al. (2010). Second, data for governance and corruption was obtained from the International Country Risk Guide (ICRG, 2012). Third, data for unemployment, governance, and gross domestic product (GDP) were obtained from the International Labor Office, the Worldwide Governance Indicators

(WGI, 2015), and World development pointers (WDI, 2015), respectively. Finally, Ouédraogo (2017) estimated his empirical model using the stepwise regression method. The stepwise regression method estimations several models by presenting the variables and retaining the most significant and least correlated explanatory variables.

The findings show that significant influences on the growth of the informal economy include corruption, the quality of institutional frameworks, the effectiveness of governance, and unemployment rates. More specifically, Ouédraogo (2017) found that a high level of corruption and poor institutional settings facilitate an increase in the size of the informal economy. This finding is supported by Sahnoun & Abdennadher (2019), who noted that the poor quality of institutions with rampant corruption and high unemployment rates expands the informal economy.

2.3.5.4 Country-specific studies

A UNDP sponsored expert group study entitled " Informal Work: From Challenges to Solutions," the authors, Katnić & Stonelake (2016) presented a connection between human development and the informal economy. Katnić & Stonelake (2016) discussed the grounds and significances of the informal economy: numerous and high para-fiscal levies and taxes, weak institutions, and a low scale of human development.

From the perspective of human development, Katnić & Stonelake (2016) recommended a formalisation policy that fixated on the long-term measures that: (i) improve the business mileu and the quality of services of the public sector; (ii) create new and higher value jobs; (iii) formalise the economy; (iv) more efficient work of inspection bodies; and (iv) the promotion of equal rules for all to strengthen trust.

Based on the examination of the scope and features of the casual economy in Montenegro, Katnić & Stonelake (2016) proposed the following recommendations, among others, which he referred to as reforms and improvements:

1. An education system should be inclusive, high quality, and efficient.
2. A health care system that is more accessible, of higher quality, and more efficient.
3. A regulatory framework should be encouraging for formalisation.
4. Labour legislation should be more flexible.
5. A public sector must be more efficient and more "fair."
6. A tax policy that promotes the creation of new jobs and gradual formalisation.
7. Instead of directing on deterrence, it should be put on education and developing a culture of trust.

2.3.5.5 Key features of the empirical literature survey on the informal economy

The empirical works review identified some of the main features of the informal economy, which are now summarised. First, informality is present in the Global North and the Global South (Polese et al., 2017b; Schneider & Buehn, 2017a). However, it is lower in the Global North than in the South (Prospects Group & Bank, 2019c). Second, cross-country heterogeneity is pronounced in the Global South (Medina & Schneider, 2019a). Third, there are region-specific factors of the prevalence of the informal economy as well (Oviedo et al., 2017).

The empirical literature review also extensively analysed the reasons of the informal economy. There is some agreement among the various authors that (a) the rule of law, (b) regulatory value, (c) corruption, (d) quality of institutions and (e) the efficacy of enforcement efforts are critical causes of the informal economy (Kus,

2010; Ouédraogo, 2017; Medina & Schneider, 2019a; Huynh & Nguyen, 2020). Other determinants are (i) burdensome tax system, (ii) rigid labour markets, (iii) government expenditure, (iv) red tape, (iv) excessive labour, environment, and various other regulations (Gërxhani, 2003; Hudson, 2005; Ouédraogo, 2017); Huynh & Nguyen, 2020; Kus, 2010; Luong et al., 2020; Medina & Schneider, 2019a) and human development (Katnić & Stonelake, 2016).

Nevertheless, other social, demographic and macroeconomic features have been recognised as relevant determinants of and size of the informal economy in developing countries (Elgin et al., 2016a; Huynh & Nguyen, 2020; Ouédraogo, 2017). These causes include (a) low economic development, (b) unemployment, (c) a production structure heavily based on agriculture and other rural activities, (d) retirement, and (e) urbanisation (Elgin et al., 2016b; Huynh & Nguyen, 2020; Ouédraogo, 2017; Sahnoun & Abdennadher, 2019).

The various methods for their model estimation used by the different authors which are available for the study include (a) Pooled OLS technique, (b) Cointegration and Causality Method, (c) Generalised Method of Moments (GMM), (d) the Feasible Generalised Least Squares (FGLS), (e) the two-step Generalised Method of Moments (SGMM), (f) the Stepwise Regression Method, (g) the Structural Equation Model (SEM).

The various authors also conducted several tests. These include:

a. Cross-sectional dependence and homogeneity tests utilizing the LMadj test by Pesaran et al. and the CDLM1 test by Breusch & Pagan (1980). (2008) To determine whether there was cross-sectional dependence between the variables, Pesaran et al. (2008) were utilized.

b. Given the presence of cross-sectional dependence, a panel unit root test utilizing Pesaran's (2007) CIPS test was employed to determine if the series have a unit root or not.

c. The cointegration test developed by Westerlund and Edgerton (2007) was used to determine whether cross-sectional dependency existed.

d. Kóny's (2006) LM bootstrap Granger causality test was used to examine the causal interplay variables.

e. The hypothesis that the residuals from the estimations are first-order correlated (AR1) but not second-order correlated was tested using the Arellano and Bond (1991) tests (AR2).

Data for the various studies were obtained as follows:

i. The size of the informal economy was obtained from Medina & Schneider (2016).

ii. Socio-economic data for the independent variables were obtained from the (i) Heritage Foundation (HF), (ii) the World Development Indicators (WDI), (iii) the Worldwide Governance Indicators (WGI) and World development indicators (WDI, 2015), respectively.

2.3.6 Human Development Index (HDI)

This section discusses the origin and meaning of Human Development. It also summarises the contributions and insights of human development to the development discourse and, finally, discusses some of the criticisms levelled against it.

2.3.6.1 The origin of the human development concept

In 1990, the United Nations Development Programme (UNDP) launched its first annual Human Development Report (HDR) and introduced the concept of the

Human Development Index (HDI). The United Nations Development Programme (1990) depicted "human development" as an advancement to better human well-being and reported country-level data on various well-being indicators.

Human Development expresses Amartya Sen's "capabilities" style to comprehending human well-being and emphasises the import of ends, such as a decent ordinary of living, over means, akin to earnings per capita by Sen (Sen, 2000; sen A., 1985; sen A, 1999). Key capabilities are instrumentalised in human development by including proxies for three vital development ends: access to health, education, and goods. Vested by these and other capacities, persons are able to accomplish their preferred state of being (sen A., 1985; Sen, 1985). Another scholar whose work influenced the creation of the HDI is Nussbaum (Nussbaum, 2002; 2003; 2007; 2011). Nussbaum listed some core abilities, including bodily health, integrity, a sense of imagination and thought, and control over one's environment as critical capabilities needed for human development (Nussbaum, 2011). By developing those capabilities, individuals can decide on their development paths. Human development addresses the real freedom ordinary people choose (Sen, 1999). The following sections briefly define and review HDI's contributions and limitations.

2.3.6.2 Defining human development and human development index

The UNDP (1990, p. 10) defines Human Development as

> a process of enlarging people's choices. In principle, these choices can be infinite and change over time. But at all levels of development, the three essential ones are for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a

decent standard of living. If these essential choices are not available, many other opportunities remain inaccessible.

> The Human Development Index (HDI) is a measure of average success in three important areas of human development: living a long and healthy life, having access to education, and having a reasonable standard of living (UNDP, 1990. P. 10).

First, the life expectancy at birth is used to gauge how long and healthy a life is. Second, the mean years of education and predicted years of education for adults at least 25 years old as well as the anticipated years of education for youngsters are used to gauge knowledge. Last but not least, a respectable level of life is determined by Gross National Income (GNI) per capita expressed in US dollars in purchasing power parities (PPPs) (UNDP, 1990) First, the life expectancy at birth is used to gauge how long and healthy a life is. Second, the mean years of education and predicted years of education for adults at least 25 years old as well as the anticipated years of education for youngsters are used to gauge knowledge. Finally, the Gross National Income (GNI) per capita is a measure of a reasonable level of living.

According to the UNDP (1990), the HDI uses the logarithm of income to reflect the reducing significance of income with cumulative GNI. The values for the three HDI measurement indices are then combined into a composite index using a geometric mean. Refer to Technical notes for more details.

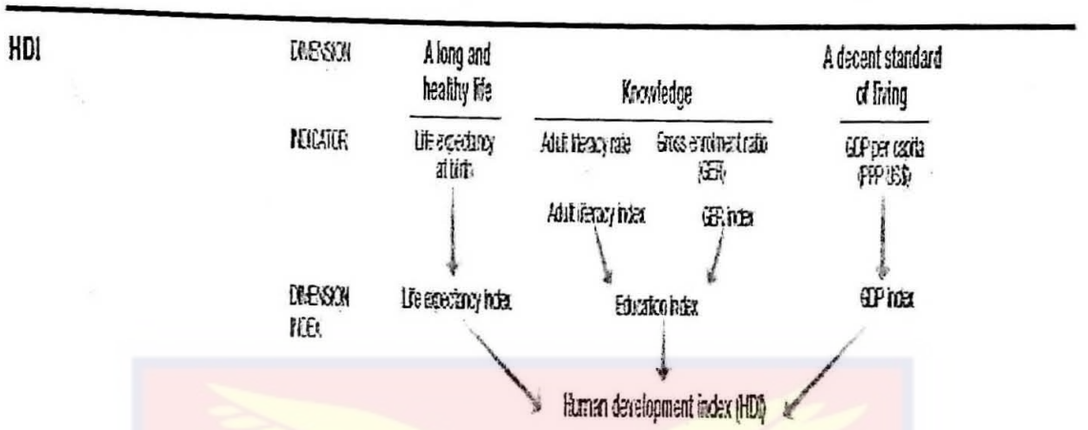

Figure 2.1: HDI Technical Notes

Source: United Nations Development Program, (2015). Technical Notes: Calculating the Human Development Indices—Graphical Presentation.

The equation for calculating the Human Development Index is:

$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

(UNDP, 2015).

Because the real economic advantage gained by an individual is expected to increase at a diminishing rate for a continuous increase in his income, all values for the Income Index are in natural logarithm form (Anand & Sen, 2000). The HDI establishes "goalposts," or minimum and maximum values, for each dimension. It then displays where each nation ranks in relation to these benchmarks. The HDI is given as a number between 0 and 1, according to United Nations Development Programme (1990). The classifications are extremely high (0.800 and above), high (0.700–0.799), medium (0.550–0.699), and low (0.550 and below). As a result, a country's HDI value increases with its level of human development.

2.3.7 Human Development Trends in Africa

The average Human Development Indices of the European Union, East Asia, and South America were 0.895, 0.722, and 0.763 points, respectively. The average HDI for Africa is 0.55. The three most developed African countries are Mauritius, Seychelles, and Algeria. These countries have HDI values of 0.804, 0.796, and 0.748, respectively. On the other hand, Chad (0.4) (Rasheed & Chole, 1994; Sasu D. D., 2021), the Central African Republic (0.397), and Niger (0.394) are among states in the region with the least index scores, indicating a low level of human development (Sasu, 2021).

In Particular, to achieve the required level of human development, countries must strive toward achieving SDG3, SDG 4.3, SDG 4.6, and SDG 8.5. SDG 4.3 postulates that by 2030, countries must ensure equal access to affordable quality technical, vocational and tertiary education, including university, for all women and men. Target 4.6 proposes that by 2030, Nations must make sure that every child and a sizable percentage of adults, men and women, are literate and numerate. According to SDG 3, by 2030, nations must guarantee healthy lives and advance wellbeing for all ages. In addition, SDG 8.5 states that by 2030, counties must attain full and productive employment, decent work for all men and women, as well as children and people with disabilities, and equitable compensation for work that is valued equally.

Observed by components (see Table 2.3), Norway had the best HDI value of 0.957 by 2019 and an 82.4-year-old life expectancy at birth (Medina & Schneider) (2019a). Additionally, the mean years of schooling (years) and predicted years of schooling (years) were both 18.1 and 12.9 respectively, and the gross national income (GNI) per capita (PPP $) of 66,494 (Medina & Schneider (2019a). Thus, by the standards provided in the components of human development, Norway is the highest

developed nation. Consequently, the size of the informal economy in Norway is small, which was 14.07% of GHD by 2015.

Table 2.3: Human Development Index (HDI) Ranking

Rank	Country	HDI value (2019)	Life expectancy at birth (years) SDG3	Expected years of schooling (years) SDG 4.3	Mean years of schooling (years) SDG 4.6	Gross national income (GNI) per capita (PPP $) SDG 8.5
1	Norway	0.957	82.4	18.1	12.9	66,494
2	Ireland	0.955	82.3	18.7	12.7	68,371
2	Switzerland	0.955	83.8	16.3	13.4	69,394
4	Hong Kong, China (SAR)	0.949	84.9	16.9	12.3	62,985
66	Mauritius	0.804	75	15.1	9.5	25,266
67	Seychelles	0.796	73.4	14.1	10	26,903
91	Algeria	0.748	76.9	14.6	8	11,174
138	Ghana	0.611	64.1	11.5	7.3	5,269
187	Chad	0.398	54.2	7.3	2.5	1,555
188	Central African Republic	0.397	53.3	7.6	4.3	993
189	Niger	0.394	62.4	6.5	2.1	1,201

(Human Development Data Center, 2020)

In contrast, Niger which was at the bottom of the HDI ranking, had a life expectancy at birth (years) of 62.4, expected years of schooling (years) of 6.5, mean years of schooling (years) of 2.1, and Gross national income (GNI) per capita (PPP $) of 1,201. From the data in Table 2.3, Africa has the lowest level of human development.

2.3.7.1 The human development index: contributions and some insights

The idea that growth should be conceived as increasing people's choices and attractive their competences is the fundamental principle upon which the UNDP launched the human growth report in 1990. The work of the maiden report was designed and led by the late Pakistani economist Mahbub-ul Haq and was motivated by and drew heavily from the competences approach developed by

Amartya Sen (Sen, 1985). As the late Mahbub ul Haq wrote in the first of those reports in 1990 (UNDP, 1990; p. 9):

> The true wealth of a country is its people. Creating a conducive environment for people to live long, healthy, and productive lives is development's fundamental goal. This could seem like a straightforward fact. However, it is sometimes overlooked in the rush to amass material possessions and financial wealth.

This goal was not novel. Thinkers from Aristotle have pronounced like positions (Hirai, 2017). However, the United Nations Growth Programme (1990) argued for renewed attention because of countries' imbalanced improvement in human growth in the 1980s, an era of economic predicament for several developing countries, especially in Latin America and Africa (Coe, 2019; Gumede, 2021). The HDI was considered a critical enlargement on conventional measures limited solely to income. Thus, while the HDI was an early pioneer in multidimensional measures, its traction has been continued.

The HDI's advantages—particularly its openness, clarity, and widespread appeal—have kept it at the forefront of the expanding field of alternatives to gross domestic product (GDP) in measuring wellbeing (Dervis & Klugman, 2011). Additionally, its rankings are significant for governments and have aided in bringing up important issues like where educational performance is falling short. As a result, the HDI has been accepted and used by numerous countries in their planning and allocation procedures.

2.3.7.2 Criticism of the Human Development Index (HDI)

Notwithstanding its influence on policy and academic circles, the HDI has been subject to extensive criticism from its start (Castells-Quintana et al., 2019; Dervis & Klugman, 2011). First, the criticism sometimes relates to the information seized by the HDI. The HDI is essentially redundant due to the high correlations between the HDI, its apparatuses, and simpler measures of income per capita (Permanyer, 2013). Second, nations could realise the same HDI via dissimilar permutations of life approximation and GNI per capita. This implies that a person's life expectancy has an economic value, which is not the case. Third, the HDI is claimed to be "conceptually weak and empirically unsound" (Srinivasan, 1994) as the choice of the composite variables, functional form, and redundancy are not robust enough (Klugman et al., 2011).

Fourth, the HDI correlates with more shared features in developed economies. Thus, a higher education in developed economies leads to higher GNI per capita (Ravallion, 2010). Fifth, the HDI also fails to consider features such as disparity, poverty, and gender disparity (Lind, 2019).

Despite its flaws, the human development index represents a process of enhancing and giving people more preferences and opportunities for empowerment, healthcare, and education while taking into account all preferences, including those for a physical environment and social, political, and economic freedom(Sen, 1999, 2000; sen A., 1985). As such, it is a better measure of a country's progress. Second, the HDI acts as a valuable tool for yearly evaluating the socio-economic status of nations and acts as a dependable indicator of the development of the nations (Dervis & Klugman, 2011). It, thus, provides a rough ability to make comparisons on the issue of economic welfare on an annual basis. Third, the HDI is a beneficial measure of

development because it includes economic and social indicators, which helps reduce any anomalies.

2.4 The concept of governance

This section looks at the meaning of governance and argues that it is firmly anchored on the new public governance doctrines. It further discusses why quantitative indicators are used to depict the incidence of the quality of public governance. Additionally, it examines one of the most widely cited institutions that produced governance indicators (Johnson et al., 1999) and suggests a way of meandering through the jungle of current governance indicators.

2.4.1 Theoretical work on governance

The academic literature on governance is varied and relatively disjointed (Jessop, 1995). Its theoretical roots are various and include development studies (Potter et al., 2008), institutional theory (Vandergert et al., 2016) and organisational studies (Varoutsa & Scapens, 2015). Others are political science and public administration (Oxborne & Gaebler, 1995), law, sociology, management and economics (Riaz & Rahman, 2016). However, its antecedents consist of work on corporatism, policy communities, and a range of economic analyses concerned with the evolution of economic systems.

There is a noticeable difference amid state and governance (Meehan, 2003; Riaz & Rahman, 2016), and in recent years, the language of public administration has developed from discussions about "government" to the concept of "governance" (Kamarck, 2003). Theoretical nuances on governance reflect the notice of the social science municipal in a shifting shape in governing styles.

2.4.2 Defining governance

From the perspective of public administration, the term "government" refers to the state's leading role in guiding the delivery of public goods (Rahman, 2016). "Government" is often depicted as an organisation that comprises a sole entity intended to address precise public anxieties and deliver public services (Milakovich & Gordon, 2013). On the other hand, the concept of "governance" is grounded in a collective action approach (for example, public, private, semi-public, and even religious) to problem resolution. The section for International Development (DFID), for example, defines governance as how organizations, schemes of the state and rules – the executive, legislature, judiciary and military-function at the state and local level and the manner in which the state interacts with civil society, the private sector and individual citizens (DFID 2001, p 11).

As Osborne & Gaebler (1992) posited, governance is about a 'reinvented' form of better managed state. The work of Osborne & Gaebler (1992) is about how a government makes sensible and practical use of a broader range of tools beyond the direct delivery of services to benefit its citizens. For Osborne & Gaebler (1992), governance is about the potential for contracting, franchising and new forms of regulation. Agreeing more or less with Osborne & Gaebler (1992), Rhodes (1996, p. 652–3) sees governance as a modification in the meaning of state, implying a new governing procedure. It also connotes an improved state of ordered rule; or the new system by which society is governed.

The World Bank (2007, p. 1) explains governance as:

> "the manner in which public officials and institutions acquire and exercise the authority to shape public policy and provide public goods and services".

Contrasting the concepts "government" and "governance", Kettl defines government as the structure and functions of public institutions and governance as the way of government gets its job done (Kettl, 2002). "Governance", thus, is what a "government" does.

Apart from the fact that most definitions agree on the importance of democratic accountability and a capable country functioning under the rule of law, it can also be seen as an instrument of public affairs management or a gauge of political outcomes. For instance, a rules-based pointer of bribery might measure whether or not a country has legislation that prohibits corruption or has an anti-corruption agency. On the other hand, an outcome-based indicator could evaluate whether or not the laws are imposed, or the anti-corruption agency is destabilised by political interference. A set of indicators that combines the pros and cons of rules-based indicators and outcome-based is the six World Governance Indicators (Medina & Schneider, 2018; Kaufmann et al., 2008).

2.4.3 Why the interest in governance indicators?

For several reasons, measuring governance is important. First, it is taken into account by donors and reformers when choosing future development initiatives and evaluating the effects of policies (Medina & Schneider, 2018; Kaufmann et al., 2009). Second, assessments of "excellent" governance influence the environment for investing. Third, it is generally known that assistance flows have a considerable effect on development in nations with strong governance metrics. Donors, Monitors, Private Interests, and Scholars are the four groupings of parties engaged in reviewing governance (Arndt, 2009; Kaufmann et al., 2009; Kaufmann, Kraay & Mastruzzi, 2005).

The World Bank, the International Monetary Fund, the European Bank for Reconstruction and Development, and the Asian Development Bank make up the donor group (Arndt, 2009; Kaufmann et al., 2008). Institutional or commercial interests in donor countries evaluate the state of governance in nations where they provide funding for economic development projects (ibid). Periodic reporting and auditing are required from donor nations to guarantee that monies are used as intended. The public expects such reporting to be open and transparent in order to hold the government responsible for its actions. Perhaps the biggest barrier to providing aid to the poor is corruption (Arndt, 2009; Kaufmann et al., 2008). The UN and non-governmental organizations (NGOs) that oversee and carry out humanitarian and economic development programs make up the Monitors group. The UN aims to enhance governance specifically through raising participation and accountability (Arndt, 2009; Kaufmann et al., 2008). Transnational corporations with an interest in foreign direct investment make up the Private Interests group. This group is worried about the danger associated with their assets (Arndt, 2009; Kaufmann et al., 2008). Last but not least, the Scholars group is made up of academics and think tank researchers interested in how governance affects political science and economics topics (Arndt, 2009; Kaufmann et al., 2008). Taking into account all four groups gives a more thorough view of the argument because each group adds different perspectives to it.

2.4.4 Sources of governance indicators

The World Bank Institute compiled data on the six Worldwide Governance Pointers (WGIs). The six Worldwide Governance Pointers owere originally authored initially by Kaufmann, Kraay & Zoido-Lobatón (2002). These aggregate indicators combine the viewpoints of several enterprises, citizens and expert survey respondents

from developed and developing nations. The WGI aggregate indicators and underpinning source data are available at www.govindicators.org. To render the data analogous across countries, each of the six combined WGI indices is produced by finding the averages of data from the principal databases that linked to the meaning of governance as unhurried.

The indicators are computed in three phases. First and foremost, specific queries from the principal databases are laid to each of the six aggregate indices. Secondly, the queries from the respective databases are calibrated to run from 0 to 1, with higher figures indicating superior results. The third step employs the Unobserved Workings Model (UCM) to construct a weighted average of the individual indicators for each source into a composite measure. The composite governance measures produced by the UCM are in units of the standard normal spreading, with a mean zero, a form one standard deviation, and running approximately from -2.5 to 2.5, with higher measures conforming to better governance.

Although WGI has substantial challenges in its approach, such as blending different databases and selecting random databases to mirror each indicator, it nonetheless presents a valuable picture a nation's attribute of governance (Kaufmann et al., 2007, 2010).

2.4.4.1 The purpose of the Worldwide Governance Indicators (WGIs)

According to Kauffman et al. (2002), the WGIs was produced to address four interrelated issues. The first was the seeming absence of robustness of cross-country governance evaluations from different data sources, as various sources often lead to different conclusions. The second was concerned with interpreting cross-country governance variations and their statistical and empirical significance. The third was

concerned with comparing governance outcomes from regional studies with wider cross-country studies. Finally, a fourth apprehension was producing a constructive, all-encompassing, integrated summary of indicators suitable for research and policy debates.

2.4.4.2 What the authors of the Worldwide Governance Indicators (WGIs) found

The authors defined governance as "the traditions and institutions by which authority in a country is exercised" Kauffman et al., 1999a, p. 1). They found that governance comprises three "dimensions", each "captured" by three specific aggregate indicators. The composite indicators are: "(a) the method by which governments are chosen, monitored, and changed; (b) the ability of the government to efficiently craft and execute sound policies; and (c) the respect of citizens and nations for the institutions that govern economic and social interactions among them". Kauffman et al. (2002; 1999a) further disaggregated composite governance indicators as follows:

(a) How governments are selected, monitored, and changed is disaggregated as:

1. Voice and Accountability (VA): The degree to which a nation's citizens are able to choose its leaders. Measures of the political process, civil liberties, political rights, and media independence are all included in the Voice and Accountability category.
2. Political Stability (PS): Perceptions of the chance that the current administration would be ousted or destabilized through potentially violent and unconstitutional means, such as terrorism and domestic violence.
3. (b) The following factors are broken down into how effectively a government can create and carry out solid policies:

4. Government Effectiveness (GE): Perceptions of public service delivery, bureaucratic quality, civil servant competency, independence of the public sector from political demands, credibility of the government, and adherence to programs.
5. Regulatory Quality (RQ): This gauges how frequently.

Control of Corruption (CC): Perceptions of corruption are defined as exercising public authority for personal gain, including petty and substantial corruption and state capture.

2.4.4.3 Concerns about the country coverage of the WGI indicators

The state reporting of the WGI indicators is extensive. It was 204 in 2004 and 213 in 2017. They are a handy initial glimpse of experts' observations of a nation's feature of governance. Yet, reserchers often overemphasise their illuminating and analytical power and use them for unsuited reasons. One primary justification for the widespread abuse of the WGIs is that reserchers the interrelated problems associated with the WGIs. These violate the critical notion of non-correlation of disturbances and the feeble theoretical basis. The rest are sample biases, disputable premium method, and the dearth of comparison over periods and across section. To rectify this anomaly, the WGI indicators may be treated for multicollinearity. Multicollinearity transpires when analyst variables (independent variables) in the regression model are more highly linked with other forecaster variables than with the dependent variable. (Barcelon, Dulay, Miguel, Rustia & Yu 2017). As a result, multicollinearity inflates the variances of the parameter estimates.

2.4.4.4 Finding a way through the jungle of governance indicators

There are many more of these governance indicators, and international investors, donor organizations, and development experts utilize them frequently. Numerous governance-indicator guides that offer helpful tips on how and where to acquire data on several of these indicators have emerged as a result of their profusion. These guides distinguish between perceptions-based governance indicators, comprising those rendered above, and indicators created from fair facts (Medina & Schneider, 2018; Kaufmann et al., 2009).

The difference between opinion-based and facts-based indicators is critical since facts-based indicators can be replicated and are more translucent for consumers than perception-based ones (Arndt, 2009). But assuming that fact-based governance metrics are more objective than perception-based indicators may be a mistake (Medina & Schneider, 2018; Kaufmann et al., 2009). Facts-based governance indicators are built with a large amount of subjective judgment since both the selection of the facts and the interpretation of how differences in those facts tend to affect the quality of governance (Arndt, 2009).

Nonetheless, international investors, donors, and decision-makers tend to depend predominantly on perception-based governance indicators (Arndt, 2009). This is because the data required to compute facts-based indicators are often not available in developing countries, (Arndt, 2009; Kaufmann et al., 2009).

2.4.4.5 Informal economy and the modernisation theory

According to Rostow (1960), the formal and informal economy represents two distinct economies, which are at different stages of development, which are (i) the outdated society, (ii) the conditions of take-off, (iii) the take-off, (iv) the drive to adulthood as well as (v) the stage of high mass consumptions. Thus, the formal and

informal economy coexist within a given country yet, are knotted together in the form of a complete band where the informal sub-economy is separately encapsulated within the formally accounted economy (Rostow, 1960; Geertz, 1963; Gilbert, 1998). Consequently, Rostow (1960) sees the informal economy as a remainder of traditional, pre-capitalist construction and existence living modes. To become formalised and more productive, the informal economy must complete all five stages of development (Rostow 1960).

The dualists model posits that the official and relaxed economies as separate and fundamentally occupy different economic spaces with unbalanced relations (Hart, 2008; Harris & Todaro, 1970; Lewis, 1954). Consequently, informality is widely depicted as a remainder of the formal mode of manufacture (Harris & Todaro, 1970; Lewis, 1954). Furthermore, it will disappear with innovation as informal work becomes united into the formal economy through bureaucratic institutions (Schumpeter & Backhaus, 2003; Inkeles & Smith, 1970; Lewis, 1954).

For the dualist, the real cure for informality is socio-economic development, poverty reduction, and rising education and incomes (Rothenberg et al., 2016; Packard, 2007; Harris & Todaro, 1970; Gilbert, 1998; Geertz, 1963; Lewis, 1959; 1954). Over time, workers in the informal economy will move into the official economy, reducing the adverse employment effects of the exit of firms and declining employment in the casual economy (Schumpeter & Backhaus, 2003; Inkeles & Smith, 1970; Rostow. 1960; Lewis, 1954).

Schumpeter & Backhaus (2003) noted that significant technological advances at enormous costs propelled the growth attained by formal firms. However, the informal firms, latecomers in the modernisation process, benefit from adopting these new technologies without accruing similar enormous costs. Therefore, according to

the adaptive capacity principle, if informal firms prosper, they must adopt new skills and allow their adaptive volume to embellishment.

2.4.4.6 Critiques of the modernisation theory as it relates to the informal economy

The modernisation theory has five main critiques (Regmi, 2018; Chakrabarti & Cullenberg, 2003; Chakrabarti et al., 2015; Szirmai, 2005; Wiarda, 2010; Youngman, 2000). Firstly, the opposition amid the notions of "modern" and "traditional" cannot be validated (Regmi, 2018). An assumption that is Eurocentric and "neglects the history of colonialism and the nature of capitalism penetration into pre-capitalist countries" is the idea that everything that is not contemporary may be classified as traditional and informal. (Youngman, 2000, p. 63). Secondly, the notion that the informal economy is a residue of the formal one and will disappear as formality increases is not precisely the case. In recent years, however, many studies by such authors as Medina & Schneider (2019) and De Soto (2001) have demonstrated that the informal sector is widespread, long-lasting, present alongside the formal economy, and is even expanding in many populations. Its portrayal as a remnant that is vanishing has been rejected as a result.

Thirdly, unlike the modernisation theory's assumptions, Western technological breakthroughs could not have benefited southern countries (Chakrabarti et al., 2015). That "all societies have common properties, carry out the same function, and have the same inputs and outputs" is not a given (Wiarda, 2010, p. 38). As a result, societies vary according to their varied social, economic, and political settings. For example, the developmental trajectory and political environment of Africa are unique. Besides, the size of the informal economy in Africa could be regionally context-dependent and different from the rest of the world. Therefore, nothing the West calls"

good" and "modern" needs to be accepted with the same value by people with different worldviews.

Fourth, everything that appears "odd" from a Western perspective is traditional and primordial, and modernization is not always a good thing (Huntington, 1971). Additionally, Western modernist interventions tended to destroy the shared values and experiences of third-world countries' informal economy workers (Regmi & Walter, 2017). Finally, Rostow's stages of economic growth cannot be regarded as a unilinear concept of development because there is no universally applicable set of fixed stages or routes for progress. These critiques notwithstanding, the modernisation theory is a good way of explaining how societies develop from a subsistence stage to a modern one.

2.4.4.7 Informal economy and the structuralist theory

The structuralist theory, also known as the exclusion model, was postulated by a group of researchers such as Moser (1978), Castells & Portes (1989) and De Soto (1989, 2000). The structuralist school of thought conjectured that the informal economy emerged as a direct by-product of a deregulated and survival-driven open world economy. Thus, the informal economy is regarded as an unfettered, low-paid and unsecured kind of survival-driven economy's self-employment segment (Hudson, 2005; ILO, 2002). As a result, entrepreneurs in the informal economy are relegated populations and excepted from the formal labour market (ILO, 2002; Amin et al., 2002; Castells & Portes, 1989; De Soto, 1989, 2000).

According to the structuralist view (exclusion model), onerous rules from the government keep a large pool of potential entrepreneurs away from the formal sector (De Soto, 1989, 2000). As a result, informal businesses might not have access to legitimate financing sources. This makes it more difficult for them to obtain financing

to grow their companies or export their goods lawfully, preventing them from accessing markets abroad (Amin et al., 2002; Castells & Portes, 1989; De Soto, 1989, 2000). Consequently, casual firms become an untapped and held-back pool of entrepreneurial energy, which can be released by eliminating barriers to entry, cutting red tape, and refining legal surroundings (De Soto, 1989, 2000). Accordingly, the appropriate policy response is to eliminate the barriers to entry by simplifying bureaucracy and drastically cutting the cost of registration to liberate the creative entrepreneurial energy embedded in informal firms to operate freely (Acemoglu & Robinson, 2012; Castells & Portes, 1989; De Soto, 1989, 2000).

As summarised by Kelmanson, Kirabaeva, Medina, Mircheva & Weiss (2019), the structuralist/exclusion features comprises:

a. Onerous and expensive regulations, comprising excessive entry costs and trade hurdles,
b. Nonexistence of prospects in the official sector, especially for particular demographics (e.g., young or old workers) or ethnic groups,
c. Low output,
d. Low skills and low human capital.

2.4.4.8 Informal economy and neoliberal theory

The neoliberal theory as it applies to the discussion of the casual economy, also known as the rational exit model, was introduced in the discourse of the informal economy by a group of neoliberal pundits such as Levy (2008), Maloney (2004), De Soto (1989, 2000) and Sauvy (1984). The neoliberal thought errands economic strategies that minimise the state's role and maximise the private business sector (Bloom, 2017; Springer et al., 2016; Boas et al., 2009; Milton, 1951). Thus, neoliberalism strives to assign regulator of the economy from the civic to the private

sector, supposing it will generate a more efficient state and improve a nation's economic health (Milton, 1951).

For example, De Soto (1989, 2000) asserts that the casual economy responds to excessive state regulations. He argues that the informal economy includes entrepreneurs who work casually and outside state bureaucracy to avoid formal registration costs, time, and effort. He goes on to say that as long as government processes are time-consuming and expensive due to bureaucratic red tape, businesses will continue to operate informally. De Soto (2000) contends that excessive government regulations impede free enterprise.

Consequently, according to the neoliberals, the appropriate policy response is to cut excessive state regulations to liberate the creative entrepreneurial energy embedded in informal firms to operate freely (Acemoglu & Robinson, 2012; Castells & Portes, 1989; De Soto, 1989, 2000).

Kelmanson et al. (2019) summarised the neoliberal/rational exit factors to include:

a) Oppressive and costly regulation, including high entry costs, trade barriers
b) Complicated and excessive taxation and poor tax administration,
c) Administrative obstacles, including unwarranted paperwork, corruption,
d) Low monitoring and enforcement,
e) Low benefits of being formally employed or formally registered,
f) Low quality of public goods and services (infrastructure, social protection),
g) Individual preference for self-employment.

2.4.4.9 Informal economy and the institutional theory

Institutions provide the standards for what behaviors are acceptable and are like "game rules" (Williams & Horodnic, 2016; Baumol & Blinder, 2008; Denzau and North, 1994; Mathias et al., 2015; North, 1990). All civilizations have both formal and informal institutions, which are the written laws and rules that outline the legal rules of the game (Williams & Horodnic, 2016; Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Scott, 2008; North, 1997). These unofficial institutions are the socially accepted rules that are developed, disseminated, and upheld outside of officially recognized channels. These rules are typically unwritten (Williams & Horodnic, 2016; Meyer & Rowan, 2012; DiMaggio & Powell, 2000). (Helmke & Levitsky, 2004, p. 727; North (1997; Scott) and others recommend what is referred to as "societal morality" (2008). A society's informal institutions' rules can either be "complementary" if they support formal institutions or "substitutive" if they conflict with those of the formal institutions (Williams & Horodnic, 2016; Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Baumol & Blinder, 2008; Scott, 2008; North, 1990).

The informal economy will largely not exist when formal and informal institutions are symmetrical (Williams & Horodnic, 2016). However, the informal economy will be larger when there is an imbalance between a society's formal institutions (government morality) and its informal institutions (societal morality), such as when there is little trust in the government. Because official and informal institutions don't align, the informal economy exists (Williams & Horodnic, 2016). The informal economy will be regarded as socially "legitimate" in terms of the informal institutions when there is institutional asymmetry, even when it is "illegal"

in terms of the formal regulations (Meyer & Rowan, 2012; Meyer & Rowan, 2006; Siqueira et al., 2016).

2.4.5 Integrating the theories of the informal economy: A cocktail of explanatory factors

The informal economy is a topic of much theoretical discussion because of its complexity, which suggests that no one theory can fully describe it. This diversity does not, however, imply that theories explaining the origins of the informal sector are inherently conflicting and different. According to Huang, Xue, and Wang (2020; Günther & Launov, 2012), it instead shows that these theories are complimentary in that each is true with regard to particular aspects of the informal sector. For instance, the modernization thesis effectively classifies street hawking as informal employment, which is typically the unemployed's method of surviving. The neoliberal paradigm, in contrast, offers more justification for the existence of unauthorized factories and workshops that are connected to formal economies. Williams and co-authors' empirical studies showed the necessity .

In conclusion, it is better to think of the informal economy as a concoction of several socio-economic forces operating within a particular setting. Given the contingent coupling of social, economic, and institutional dynamics in a particular geographical setting, various theoretical views can have varying explanatory value for the informal economy in various nations.

2.4.6 Human development and the informal economy

According to the modernisation theory, governments can use the concept of human development to formalise an economy (Rothenberg et al., 2016; Packard, 2007; Harris & Todaro, 1970; Gilbert, 1998; Geertz, 1963; Lewis, 1959; 1954). For

modernisation theorists, the real cure for informality is socio-economic development, rising levels of education, income, and wellbeing. Thus, improved human development reduces the informal economy (Katnić & Stonelake, 2016; Loayza, 2016). On the other hand, improved human development leads to enhanced development outcomes (Harris & Todaro, 1970; Gilbert, 1998; Geertz, 1963; Lewis, 1959; 1954).

Thus, to reduce the informal economy's size, Katnić & Stonelake (2016) proposed that counties ensure the following: (i) an education system should be inclusive, high quality and efficient, which is consistent with SDG 4.3; (ii) a health care system that is more accessible, of higher quality and more efficient; (iii) access to income which is also consistent with SDG 8.5 posits that by 2030, encourages equal pay for work of equal value.

By revisiting the structural development economic literature, or structuralism, researchers gain better insight into the issues and underlying reasons behind firms and business people operating informally. Undoubtedly, poverty is associated with the structural conditions of production beyond market consumption and exchange. From the structuralist point of view, the informal economy is a direct by-product of over-burdensome government regulations and a survival-driven open world economy. Unable to compete in an open world economy because of their low level of education, skill income and wellbeing, entrepreneurs in the informal economy become and remain marginalised and excluded from the formal labour market (Davis, 2006; Hudson, 2005; ILO, 2002; Amin et al., 2002; Castells & Portes, 1989; De Soto, 1989, 2000). This structural condition, thus, excludes or holds back a massive potential pool of entrepreneurs away from crossing the informality line into formality (De Soto, 1989, 2000). Therefore, whilst removing the structural barriers to entry by simplifying

bureaucracy to liberate the creative entrepreneurial energy embedded in informal firms to operate freely, improving access to education, income, and wellbeing is appropriate.

Thus, it is predicted that:

Hypothesis 1: The informal economy in Africa is negatively affected by human development.

2.4.7 Governance and the informal economy

According to the institutional theory, the casual economy exists because of the incongruence between legitimate formal and casual organizations (Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Scott, 2008; North, 1990). When there is oraganizational asymmetry, the casual economy, although "illegal" in terms of the formal rules, will be deemed socially "legitimate" in terms of the informal institutions (Meyer & Rowan, 2012; Meyer & Rowan, 2006; Siqueira et al., 2016).

Thus, an enhanced institutional environment conditioned by improved governance will expectedly reduce institutional asymmetry between formal and informal institutions, thereby reducing informality (Friedman, 2014b; Meyer & Rowan, 2012; Kus, 2010; Johnson et al., 1999). This study categorises governance into six dimensions: voice and accountability, political stability and lack of violence, regulatory quality, government effectiveness, the rule of law, and control of corruption (Medina & Schneider, 2018; Johnson et al., 1999).

In this study, it is argued that governments can use governance policy to reduce or eliminate institutional asymmetry between formal and informal institutions, thereby reducing informality (Friedman, 2014b; Meyer & Rowan, 2012; Meyer & Rowan, 2006; Johnson et al., 1999). In other words, it is hypothesised that:

Hypothesis 2: The informal economy in Africa is negatively affected by governance, ceteris paribus.

2.4.8 The interaction between human development*governance and the informal economy

The interacting term captures the view that socio-economic development based on modernization theory cannot be fully achieved unless the institutions in a country reach a balance spot where institutions and development practices mutually reinforce each other (Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Harris & Todaro, 1970; Rostow, 1960; Lewis, 1959; 1954). Without effective institutions, there will be chaos, and sustained socio-economic development will be impossible. On the other hand, the vigorous interaction of socio-economic development and the promotion of institutions could also slow down the growth of the casual economy.

From the structuralists point of view, over-burdensome state regulations eliminate, or hold back, a massive potential pool of entrepreneurs away from participating in the formal economy, thus keeping them informal (Acemoglu & Robinson, 2012; Castells & Portes, 1989; De Soto, 1989, 2000). Neoliberal pundits argue that the informal economy responds to excessive state regulations (De Soto, 1989, 2000). Thus, informal economy enterprises that operate informally and outside state bureaucracy and governance avoid formal registration costs, time, and effort.

Accordingly, the appropriate policy response is to improve governance effectiveness by removing the barriers to entry by simplifying bureaucracy and drastically cutting the cost of registration to liberate the creative entrepreneurial energy embedded in informal firms to operate freely (Acemoglu & Robinson, 2012; Castells & Portes, 1989; De Soto, 1989, 2000).

It is, therefore, postulated that:

Hypothesis 3: The size of the informal economy in Africa is negatively affected by the interaction between human development and governance.

2.5 Section Three: Conceptual framework

In contextualising the four theories used in the study would requires their integration into a conceptual framework. This is presented below in Figure 2.2.

The conceptual outline (figure 2.2) depicts the critical relationships between the informal economy and all the elements of the four theories discussed in the earlier piece. From the conceptual framework, the informal economy is impacted by human development, governance and the interaction between human development and governance through the lenses of modernisation, institutional and structuralist theories.

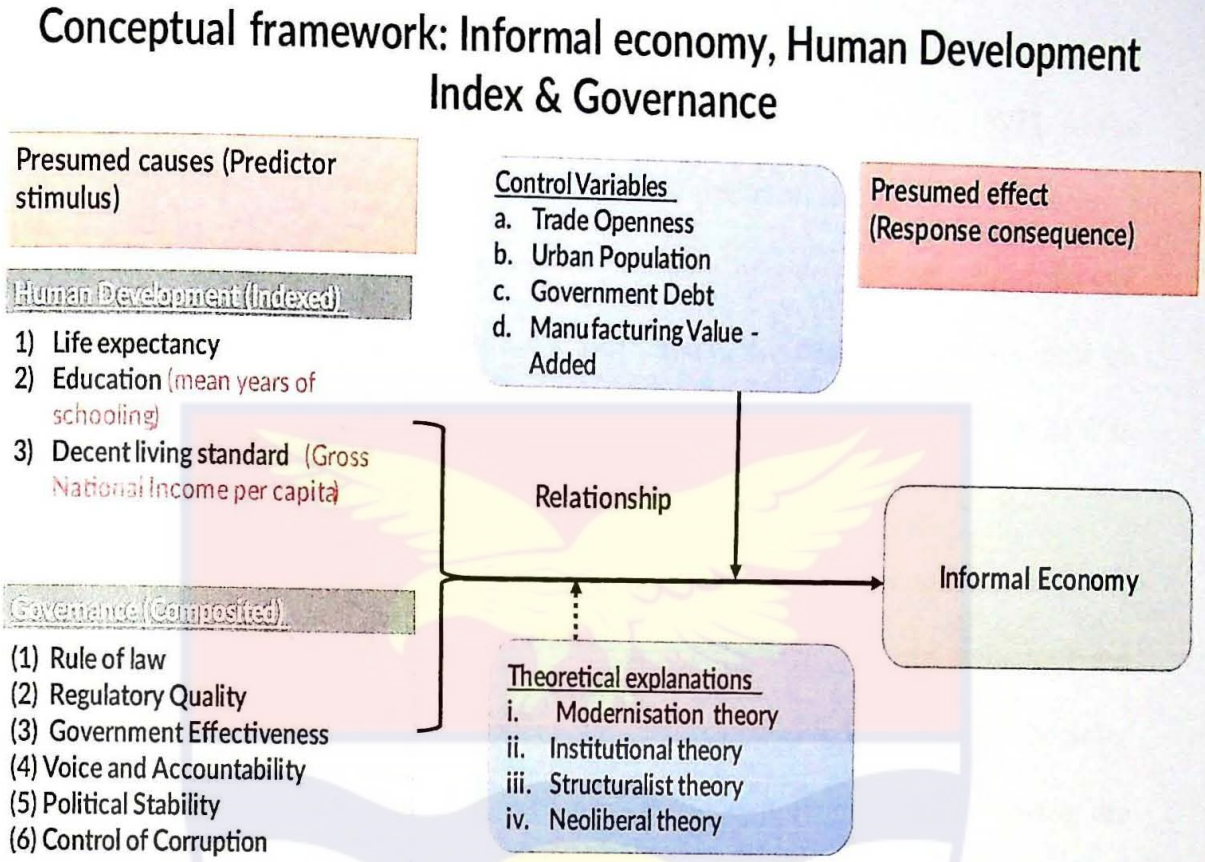

Figure 2.2: Conceptual Frame Work for the Informal Economy, Human Development and Governance

The modernisation theory, for instance, depicts the informal economy as activities outside the formal bureaucratic realm. It epitomises subsistence agricultural modes of production and embodies under-development (Rostow, 1960). Because informal labour is incorporated into the contemporary formal economy through bureaucracy, businesses and entrepreneurs engaged in the informal sector will vanish with modernity.

According to the literature on institutional theory, the informal economy results from an imbalance between a society's formal institutions (codified laws and regulations) and its informal institutions (norms, values, and beliefs of its citizens), which is why Meyer & Rowan (2012) and DiMaggio & Powell (2000) theorized that

the informal economy is a social phenomenon. Participation in the informal sector and the degree to which formal and informal institutions are out of alignment are strongly correlated (Williams & Horodnic, 2016; Scott, 2008; North, 1997). At the individual, population, and national levels, participation in the informal economy is more likely the more significant the asymmetry between formal and informal institutions. Where there is institutional asymmetry, the informal economy will be viewed as socially "legitimate" in terms of the informal institutions even while it is "illegal" in terms of the formal regulations (Meyer).

The structuralist theory posits that excessive bureaucracy and burdensome government regulations block and exclude many entrepreneurs from crossing from informality into formality (Davis, 2006; ILO, 2002; Castells & Portes, 1989; De Soto, 1989, 2000). As a policy response, structuralist theorists recommend removing the barriers to business entry, a cut red-tapism, and an improvement in the legal environment. These actions will then release the creative entrepreneurial potential embedded in informal firms into the formal economic space.

The neoliberal theorists postulate that individuals and enterprises rationally exit the formal economy when the outlays of formality are considered to be higher than the benefits (Bloom, 2017; Springer et al., 2016; Boas et al., 2009; Levy, 2008; Maloney, 2004; De Soto, 1989; 2000; Sauvy, 1984). Thus, arduous regulatory regimes, oppressive administrative procedures, and overwhelming financial requirements push some formal economy operators into the informal economy. As a remedy, removing the barriers to business entry, a cut red-tapism, and an improvement in the legal environment will keep formal firms still in the formal economic space (De Soto, 1989; 2000; Sauvy, 1984).

CHAPTER THREE:

METHODOLOGY

3.0 Introduction

The chapter examines the philosophical and theoretical concepts considered for the study. It outlines the research paradigms generally as well as the rationale for choosing the positivism paradigm for this study. The research design and a description of the data and their sources are also reviewed in this chapter. The dependent, the independent, as well as control variables, are discussed. The chapter also justifies why the panel data analysis approach was chosen for this study.

3.1 Research philosophy

According to Laughlin (1995), it is quite usual, when undertaking any research, to presume that philosophical and theoretical challenges will be logically and naturally resolved during the study. Therefore, Laughlin (1995) contended that it is advantageous to make considered choices before launching any research, even though this could happen by chance. The reason is that different philosophical assumptions would lead to different theoretical assumptions (Laughlin, 1995) and consequently to the type of design to be adopted for research (Musthafa, 2014; Creswell, 2009; Laughlin, 1995). These philosophical assumptions lead to different world views or paradigms of researching the social world (Collis & Hussey, 2014; Creswell, 2009; Bhattacherjee, 2012; Kuhn, 1962). These issues are dealt with below.

3.1.1 Research paradigms of researching the social world

Kuhn (1962) was the first to use the word "paradigm" to connote a researcher's 'worldview'. Collis & Hussey (2014, p. 41) succinctly define a reading standard as a

frame that models how investigation ought to be led on the basis of people's philosophies and assumptions concerning the world and the nature of knowledge.

Generally, reading paradigms are situated within two main but opposing philosophies (Collis & Hussey, 2014). These opposing philosophies are realism (or positivism) and idealism (or interpretivism) (Creswell, 2014; Collis & Hussey, 2014; Bhattacherjee, 2012). Positivism is grounded on the notion that an external reality exists independently of people's beliefs or understandings (Musthafa, 2014; Collis & Hussey, 2014; Keating & della Porta, 2010). Positivism is, thus, a deductive process that provides explanatory theories to social phenomena (Creswell, 2014; Musthafa, 2014; Collis & Hussey, 2014; Bhattacherjee, 2012; Keating & della Porta, 2010). In contrast, interpretivism claims that reality is profoundly mind-dependent, context-dependent, socially constructed, and subjective (Musthafa, 2014; Bhattacherjee, 2012). Thus, interpretive research, which is an inductive study to provides a deep insight into a social singularity within a specific context (Musthafa, 2014; Bhattacherjee, 2012; Keating & della Porta, 2010).

3.1.2 Philosophical assumptions for a research

As per Table 3.1, the positivists hold the ontological view that social reality is unitary, stable, concrete and material (Creswell, 2014; Bhattacherjee, 2012; Keating & della Porta, 2010). Thus, a researcher can objectively discover social reality or truth by using objective measurements in the same manner as in the physical world (Creswell, 2014; Musthafa, 2014; Collis & Hussey, 2014). Hence, once social reality or truth is discovered, it can be generalised to other situations (Ghura, 2019; Creswell, 2014).

In contrast, interpretivists believe that social realism is personal because it is socially made from multiple viewpoints (Ghura, 2019; Musthafa, 2014; Collis &

Hussey, 2014; Creswell, 2014; Bhattacherjee, 2012; Blaike, 2007). By implication, multiple realities and truth exist, shaped by context and the meaning people assign to them (Creswell, 2014; Bhattacherjee, 2012). Thus, social reality or truth cannot be generalised but could be compared with realities in similar contexts (Musthafa, 2014; Collis & Hussey, 2014).

According to Marsh & Furlong (2002), an epistemological assumption addresses what can be known about the world and how it can be known. In epistemological positivism, the research is done objectively. In this regard, the researcher stays far away from the research to avoid influencing the data collection (Ghura, 2019; Creswell, 2014; Bhattacherjee, 2012; Collis & Hussey, 2014; Blaike, 2007; Marsh & Furlong, 2002). In contrast, researchers who practice epistemological interpretivism get involved with social actors' research (Creswell, 2014; Bhattacherjee, 2012). The purpose is to have an "insider's view" with the intent of giving the social actors a voice to provide a thick description of the phenomena under investigation (Creswell, 2014; Collis & Hussey, 2014; Blaike, 2007; Marsh & Furlong, 2002; Garson, 2002). In this regard, the researcher's potential influence is acknowledged, avoided, or even embraced (Creswell, 2014; Collis & Hussey, 2014).

Table 3.1: Comparison between Positivism and Interpretivism

	Philosophical assumption	Positivism	Interpretivism
1	Ontological assumption (the nature of reality)	• Social reality is distinct from the researcher and is objective and solitary. • Only one reality exists.	• Social reality is socially produced and subjective. • Multiple realities exist.
2	Epistemological assumption (what constitutes valid knowledge)	• The researcher is removed from the phenomenon under study; knowledge is based on objective facts concerning observable and quantifiable occurrences.	• There are various realities and social reality is subjective and manufactured.
3	Axiological assumption (the role of values)	• The researcher is not influenced by the phenomena being investigated, and the findings are objective and value-free.	• Knowledge is derived via participant-subjective evidence, and interaction between the researcher and the phenomenon under study
4	Rhetorical assumption (the language of research)	• The researcher adopts a formal tone while writing, employs the passive voice, and embraces quantitative terminology.	• The researcher adopts an inductive methodology, investigates the subject within its context, and employs an emerging design where categories are discovered throughout the process. The researcher realizes that research is subjective and that the findings are value-laden and prejudiced.
5	Methodological assumption (the process of research)	• Generalizations produce predictions, explanations, and insights because the researcher uses a logical method, analyzes cause and effect, and uses a static design with predetermined categories. • • Through validity and reliability, results are accurate and dependable.	• To understand, patterns and hypotheses are established. • Verification ensures that findings are credible and correct

Source: Collis and Hussey (2014)

Within the positivism paradigm, variables in large samples are operationalised and precisely defined (Creswell, 2014; Collis & Hussey, 2014). On the other hand, the interpretivist approach studies small samples, probably over a more extended period (Ghura, 2019; Creswell, 2014; Collis & Hussey, 2014). In this regard, the researcher employs several methods to examine various viewpoints of the phenomena under study (Creswell 2014). The next segment takes a deeper look at the study paradigm considered for this study.

3.1.3 The rationale for choosing the positivism paradigm

The research assumptions partially govern selecting a suitable paradigm (Collis & Hussey, 2014; Creswell, 2014; Bhattacherjee, 2012; Laughlin, 1995; Burrell & Morgan, 1979; Kuhn, 1962). This, in turn, influences the dominant paradigm to be chosen and the nature of the research problem being investigated (Creswell, 2014; Bhattacherjee, 2012). Table 3.2 likens the main features of the two paradigms: positivism and interpretivism.

Table 3.2: Characteristics of the Two Main Paradigms

Positivism tends to:	**Interpretivism tends to:**
Utilises large samples	Utilises small samples
Situated within a natural location	Situated within an artificial location
Connected with the testing of hypothesis te	Related to the generation of theories
Generate exact, factual, mathematical data	Generate "rich", but subjective and qualitative data
Generate outcomes that have high consistency but low validity	Generate findings with low consistency but high validity
Permit results to be generalised from the sample to the population	Permit extrapolation of results from one setting to similar settings in other settings.

Source: Collis and Hussey (2014)

Following the arguments in the preceding segment, this study adopts the positivist philosophy. The study investigated the relationship between informal economy, human development and governance and the interaction between it and governance in the informal economy. It does this by framing many reading hypotheses tested empirically by employing positivist research tools (Ghura, 2019; Creswell, 2014; Collis & Hussey, 2014; Bhattacherjee, 2012).

Deductive reasoning is the main research methodology used in this thesis. Theoretical constructs were developed by the researcher, and causal links between study variables were examined (Ghura, 2019; Creswell, 2014; Collis & Hussey, 2014; Bhattacherjee, 2012). As a result, the quantitative methodology used in this thesis is adequate. The researcher also uses a panel tool to compile secondary data from other databases. This panel data analysis strengthens the validity and reliability of the study (Baltagi, 2005). It is therefore acceptable that this study uses a quantitative data gathering strategy and applies deductive techniques to respond to the research questions (Creswell, 2014; Bhattacherjee, 2012).

3.2 Research Design

The research paradigm, while being a philosophical framework, also governs how research is carried out (Creswell, 2014; Bhattacherjee, 2012). According to Creswell (2014), a research design is a comprehensive strategy for tying conceptual research issues to realistic and applicable empirical study. Such a plan identifies all the crucial variables, including the regressor and outcome variables, and the suitable quantitative methods (Ghura, 2019; Creswell, 2014; Collis & Hussey, 2014; Bhattacherjee, 2012).

3.2.1 Population and Sample

A population is a group of things, situations, or things that happen and that an investigator wants to generalize about. Formally speaking, it is the sum of the theoretically prescribed study elements (Saunders et al., 2016; Creswell, 2012). For instance, the current thesis examines how the informal sector in Africa is impacted by human development, governance, and the connection between the three. Consequently, the study's sample includes all of Africa's nations and includes information on governance, human development, and the informal economy.

A sample is a grouping of a segment or subset of the target population that has been carefully chosen to be a representative sample (Creswell, 2012). Sampling is a technique for choosing a smaller portion of a population to represent the entire population (Leedy & Omrod, 2015). There are two basic sampling techniques available. The two types of sampling techniques are probability and non-probability (Bryman & Bell, 2015). While in non-probability sampling the selection of units is based on the hypothesis of interest, with probability sampling each unit in the population has an equal chance of being chosen. The selection of nations was based on the fact that the thesis was based on trustworthy World Bank data on the informal sector, human development, and governance, among other crucial variables to conduct parametric analysis.

3.2.2 Methods of Data Collection

A study's data could come from either primary or secondary sources. For a particular study project, a researcher gathers and analyzes primary data (Creswell, 2012). However, secondary data is already available and has been produced by another person or organization for a different study or use (Creswell, 2012). Media, printed

journals, and books make up secondary data sources. For instance, the World Bank database's secondary (panel) data on Africa was used in this thesis.

3.2.3 Reliability and Validity

Consistency in the intended measurement of a variable or group of variables is ensured through reliability (Hair et el., 2014). According to Yin (2011), the researcher must record the methods and steps of the investigation in order to assure trustworthiness. Concerns over the reliability of research and its findings are crucial aspects of quality control. A properly executed study collects and interprets data in a way that is consistent with its findings.

Four tests were provided by Yin (1994) for the evaluation of research in regard to research design. These are (a) construct validity, which deals with finding the right operational measures for the concepts under study; (b) internal validity, which entails establishing causal links between concepts; (c) external validity, which handles issues of generalizability; and (d) reliability, which deals with issues of reproducibility. The four validity tests were all applied in the current study. The justification for selecting panel data for the study is explained in the next section.

3.3 Rationale for using panel data

Several reading that investigated the quantitative association between the informal economy's size and other variables used regression models as the primary method of analysis (Huynh & Nguyen, 2018; Elgin & Erturk, 2018; Ouedraogo, 2017; Kus, 2010). Embracing a similar approach in this thesis allows the researcher to contrast the results with prior studies. In addition, due to secondary data accessibility in recent years, readings involving the size of the informal economy have gradually used panel data (Luong et al., 2020; Ghura, 2019; Medina &

Schneider, 2019; Schneider & Buehn, 2018; Huynh & Nguyen, 2018; Elgin & Erturk, 2018; Ouedraogo, 2017; Dreher et al., 2008). In this study, piece data denotes to the pooling of explanations on a cross-section of states, among others, over several periods (Baltagi, 2005).

There are numerous benefits of employing panel facts above time series and cross-sectional research (Baltagi, 2005). First, panel data can control the risk of gaining biased results, unlike time series and cross-section data and offer more trustworthy and reliable estimates (Ghura, 2019; Mehmetoglu & Jakobsen, 2017). Secondly, piece data investigation can control for "unobserved explanatory variables" and avoid "omission of unobserved heterogeneity" (Baltagi, 2005; Mehmetoglu & Jakobsen, 2017). In contrast, cross-section readings and time-series reading cannot do this (Ibid).

Third, piece data examination pools cross-sectional countries with time series data to create a more considerable number of observations leading to more efficient coefficients and the minimisation of possible collinearity problems (Ghura, 2019; Baltagi, 2005). Fourth, panel data can be used to analyse the changes in the size of the informal economy, fiscal policies, and economic growth over time (dynamics of change) (Ghura, 2019; Mehmetoglu & Jakobsen, 2017; Baltagi, 2005). Therefore, they provide a more correct approximation of the effect of the sovereign variable (Mehmetoglu & Jakobsen, 2017; Baltagi, 2005; Gujarati, 2004). Finally, panel analysis also allows the researcher to observe whether the interaction between human development and governance would affect the size of the informal economy for a specified period (Ghura, 2019; Baltagi, 2005; Gujarati, 2004).

Though the use of panel data has several benefits, it is also fraught with some limitations that are worth considering (Ghura, 2019; Baltagi, 2005) (see Table 3.3)

Table 3.3: Pros and Cons of Using Panel Data

Pros	Cons
1. Handling distinct heterogeneity 2. supplying more relevant data, more adaptability, less collinearity between the variables, more degrees of freedom, and greater efficiency. 3. Skilled at deciphering the mechanics of adjustment 4. Capable of identifying impacts in cross-sectional or time-series data that are challenging to identify. 5. Unlike cross-section or time-series models, panel models enable the development and testing of complex behavioral models. 6. Time series for macro panel data are longer.	1. Design and data collection problems 2. Distortions of measurement errors 3. Short time-series measurement 4. Cross-section dependence

Source: Baltagi (2005)

3.4 Model specification: The relationship among informal economy, human development and governance and the interaction between human development and governance on the informal economy

Based on the modernisation theory (Harris & Todaro, 1970; Gilbert, 1998; Geertz, 1963; Rostow, 1960; Lewis, 1959; 1954), institutional (Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Scott, 2008; North, 1997) and structuralist (De Soto, 1989, 2000; Castells & Portes, 1989; Moser, 1978) theories, the relationship between informal economy, human development and governance and the interaction between human development and governance on the informal economy, is investigated by the following model:

$$(Inform\_Econ)_{it} = \alpha_0 + \alpha_1 HDI_{it} + \alpha_2 GOV_{it} + \alpha_3 HDI_{it} * GOV_{it} + Z_{it}\alpha_j + \varepsilon_{it} \quad \ldots (Eq.\ 1)$$

Where,

Inform_Econ = Size of the economy (%GDP)

t = time; i = country; α_0, α_1, α_2, α_3, α_j respective coefficients

ε = error term

HDI = Human Development Index regressor

GOV = Governance regressor

HDI*GOV = Interaction of Human Development Index and Governance

Z = A vector of control variables: Trade Openness, Debt, Urban Population and Manufacturing Value-added.

3.5 Estimation strategy: The relationship among informal economy, human development and governance and the interaction between human development and governance on the informal economy

The multiple imputations moderated hierarchically, and the two-step system GMM regression models were employed to estimation the model. The multiple imputation techniques address the issue of missing values in the readings dataset by replacing them. The strength of the multiple imputation techniques, among other methods, is that "it can reinstate observations and statistical power, and concurrently, decrease the likelihood of biased coefficients" (Mehmetoglu & Jakobsen, 2017, p. 342).

A weakened hierarchical regression scrutiny assesses the sturdiness of the explanatory variables' interface effects on this reading's outcome variable. Generally, linear models and observations are considered independent (Levy, 2012). Thus, any basic linear model that does not consider observational clusters would be

flawed from the outset. On the other hand, a hierarchical model allows researchers to consider these clusters' influences and their interactions. Furthermore, the moderated hierarchical regression analysis fits nested models by consecutively adding blocks of variables and then reporting contrast tests among the nested models.

When estimating linear dynamic panel-data models, the two-step Generalized Method of Moments (SGMM) takes into account heteroskedasticity, endogeneity, and autocorrelation (Huynh & Nguyen, 2019). The empirical model employs two different test kinds. The first is the Sargan test, which verifies the accuracy and parameters of the instrument. The second test, the Arellano and Bond test, looks at whether the estimations' residuals are first-order correlated (AR1) but not second-order correlated (AR2) (Arellano & Bond, 1991).

The over-identifying restriction must be rejected by the Sargan tests (with P values for all specifications), demonstrating the inadequacy of the instruments and the shoddy nature of the specifications. Additionally, the Arellano-Bond test results must demonstrate, at the 1% level of significance for all specifications, that neither the null hypothesis of no first-order serial correlation in the residuals (AR1) nor the null hypothesis of no second-order serial correlation in the residuals (AR2) is rejected.

3.6 Description of data sources

Multiple sources were used to compile state-level secondary data on the variables in the conceptual framework. First, data from the Worldwide Governance Indicators (WGI) project was used to determine the dependent variable, which was the size of the informal economy. Second, data for the independent variables were gathered from The Global Competitiveness Report and the World Development Indicators (WDI) (GCR). Below is a brief description of them.

3.6.1 World Government Indicators (WGI)

The Worldwide Governance Pointers (WGI) is an enquiry project formed by the World Bank to describe the value of governance in more than 200 states and territories. The indicators measure six governance dimensions: voice and liability, political steadiness and lack of violence, the rule of law, direction efficacy, regulatory value, and control of corruption.

3.6.2 Data and expected signs of all variables

The review of existing literature served as the basis for this section. Data limitations were the basis for choosing the 32 African nations. Based on data availability and the potential to reduce heterogeneity issues, choosing the 32 African countries was the best option. Table 3.4 provides descriptions of all variables' measurements, predicted indications, and sources.

Table 3.4: Data Measurements, Expected Signs and Sources of All Variables

Variables	Measurements	Expected Signs	Data Sources
Dependent variable:			
Inform_Econ	The informal economy's share of the GDP is calculated. The Multiple Indicators Multiple Causes (MIMIC) econometric approach is used to calculate it. As a result, an increase in this statistic also indicates that the country's informal sector is significantly larger.		Medina and Schneider (2018), World Development Indicators (WDI)
Explanatory and control variables			
HDI	The Human Development Index is a single number between 0 and 1.0 that is calculated as the geometric mean of normalized indices for three dimensions. Very high human development (0.8-1.0), high human development (0.7-0.79), medium human development (0.55-.70), and low human development (below 0.55) are the four categories of the HDI.	**Negative (-)**	WDI, WB
GOV	Governance The calculation uses the Unobserved Components Model (UCM) to create a composite measure by averaging the weighted individual indicators for each source. Higher values indicate stronger governance. The composite governance measures produced by the UCM are in units of the standard normal distribution, with mean zero, one standard deviation, and ranging from around -2.5 to 2.5.	**Negative (-)**	WDI, WB
Trade_Open	Trade openness (exports plus imports as a percentage of GDP)	**Negative (-)**	WDI, WB
Debt	Government debt as a per cent of GDP	**Positive (+)**	WDI, WB
Urban_Pop	Per cent urban population	**Negative (-)**	WDI, WB
Manu_Value	Value-added by the manufacturing sector as a percentage of GDP	**Negative (-)**	WDI, WB

Source: Derived by author, 2020

3.6.3 Dependent Variable

The reliant variable is the size of the informal economy obtained from Medina & Schneider (2018) and the World Development Pointers (WDI). This is described below.

3.6.3.1 The size of the informal economy

In this reading, Medina & Schneider (2018) estimates data on the casual economy's size, in which the MIMIC style is considered. Data on the size of the casual economy, spanning 2002 to 2017, were obtained from Medina & Schneider (2018) and the World Development Indicators (WDI). The MIMIC approach was used to approximation the size of the casual economy as a per cent of GDP (Medina & Schneider, 2019; Schneider & Buehn, 2018).

3.6.4 Independent Variables

3.6.4.1 Human Development Index

Three essential elements of human development are combined into a single index measure by the Human Development Index (HDI). These include a long, healthy life, knowledge access, and a livable standard of living. It is calculated as a single integer between 0 and 1.0 that represents the geometric mean of three-dimensional normalized indices. Very high human development (HDI = 0.8–1.0), high human development (HDI = 0.7–0.79), medium human development (HDI = 0.55–0.70), and poor human development (HDI = 0.55–0.70) are the four categories (below 0.55). World Development Indicators and the World Bank provided the data for the HDI (WDI).

3.6.4.2 Governance

Using the principal component analysis method and the six governance dimensions listed by the World Bank, the author created the composite indicator of governance (GOV). The dimensions include voice and accountability, political stability and the absence of violence, government efficacy, regulatory quality, the rule of law, and corruption control. The range of the composite governance measures is roughly from -2.5 to 2.5, with higher values indicating stronger governance. World Development Indicators and the World Bank provided the data for the HDI(WDI).

3.6.5 Control Variables (Z)

The choice of this study's control variables (Z) is not arbitrary. They are related to previous mechanisms suggested by the existing literature to account for the association among the size of the casual economy and socio-economic factors. The selected control variables (Z) are as follows:

a. Trade openness (Trade_Open) (Medina & Schneider, 2019; Schneider & Buehn, 2018; Hassan & Schneider, 2016),
b. Debt (Medina & Schneider, 2019; Schneider & Buehn, 2018; Hassan & Schneider, 2016),
c. Urban Population (Urban_Pop) - (Safa, 1986; Elgin & Oyvat, 2013),
d. Value added in the engineering sector as per cent of GDP (Manu_Value) – (Medina & Schneider, 2019; Schneider & Buehn, 2018; Hassan & Schneider, 2016).

Each of the selected control variables (Z) will now be discussed in detail.

3.6.5.1 Trade openness

The structuralist theory postulates that burdensome regulations and procedures induce a rise in the casual economy (ILO, 2002; Amin et al., 2002; Castells & Portes, 1989). For example, over-regulation of the labour market, including the international trade market, excludes individuals from participating in the official economy (Medina & Schneider, 2019a); (Friedman, 2014b); Davis, 2006; Hudson, 2005; ILO, 2002). The conclusion is that a heavily regulated burden causes the informal economy to grow (Medina & Schneider, 2019; Friedman et al., 2000; Davis, 2006; Hudson, 2005; ILO, 2002; Loayza, 1997). However, many researchers (such as Medina & Schneider, 2019; Schneider & Buehn, 2018; Hassan & Schneider, 2016; Bayar et al., 2019; Torgler & Schneider, 2007) found a adverse influence of trade openness on the size of the informal economy.

3.6.5.2 Public debt

The neoliberalists posit that burdensome taxation is associated with high levels of informality (Levy, 2008; Maloney, 2004; De Soto, 1989; 2000; Sauvy, 1984). Elgin & Uras (2013) tested the causal theory that advises that in societies with limited tax application, informality constrains the set of pledgeable fiscal policy alternatives, which increases public debt. Their study found a positive connection amid the casual economy and public debt. Loayza (1996), Ihrig & Moe (2004), and Amaral & Quintin (2006) also pointed out that high public indebtedness is associated with low government's fiscal pledgeability and larger tax rises, which triggers a higher number of managers switching from the official economy to the casual economy. Thus, a large informal economy size is associated with high public gratitude.

3.6.5.3 Urban Population

According to the modernisation theory, urbanisation is negatively impacted by the informal economy (Williams, 2008; Packard, 2007; Lewis, 1959; Rostow, 1960). Thus, the informal economy disappears as urbanisation improves. However, as Elgin & Oyvat (2013) argued, an inverted-U association is usually amid the urbanisation level and the informal economy's size. In their interpretation, Elgin & Oyvat (2013) noted that the size of the informal economy rises in the early phase of urbanisation due to many pull and push features. However, it tends to fall in the latter stage when these pull and push factors are summary due to rural dwellers getting wealthier (Elgin & Oyvat, 2013).

3.6.5.4 Value added in the manufacturing sector as per cent of GDP

Many authors, such as According to Medina & Schneider (2019), Schneider & Buehn (2018), and Hassan & Schneider (2016), posit that the larger the agricultural area, the more promises to work in the informal economy, ceteris paribus.

3.7 Data processing and diagnostic tests

Panel data on informal economy, human development and governance in Africa in the period 2000-2017 were obtained by this researcher from The International Country Risk Guide (ICRG), World Development Pointers (WDI) and The Global Competitiveness Report (GCR). The data was edited, coded, cleaned (make data hygienic) and made suitable for panel data regression analysis using STATA version 15 software package.

Before answering the research questions for the study, it was necessary to ensure that the regression model is correctly specified and contains the Predictors that are pertinent, with all essential transformations and interaction terms included. that the

model has no missing, unnecessary, or additional predictors. In this regard, the following issues were considered:

a. Model specification and estimation issues,

b. Interaction variable analysis,

c. Check for the absence of multicollinearity,

d. Stationary test,

e. The choice between the mean group (MG) and pooled mean group (PMG) as to which is a better estimator,

f. Endogeneity test,

g. Heteroscedasticity

h. Autocorrelation

i. Missing values and data imputations

j. Regression analysis

k. Model robustness checks

These are now discussed.

3.8 Model Specification and Estimation Issues

Due to the study's dataset's focus on 32 African countries, which represent a sizable cross-sectional unit with a variety of characteristics (including governance, cultural values, religions, and social norms, among others), panel data heterogeneity problems may arise (Wooldridge, 2012). Therefore, it was essential to address these heterogeneity issues when defining the econometric model.

The Lagrange multiplier (LM) test was used to the econometric model after running a REM. This test, created by Breusch & Pagan in 1980 and further developed by Baltagi and Li in 1990, is used as a guide to determine whether to use the REM or the OLS in unbalanced panels. The null hypothesis test result was rejected. This

proposed that the variance of the fixed effects that were not observed was equal to zero. The outcome so indicated that pooled OLS is not the best model. The results of the F test of effect heterogeneity following FEM execution supported this assertion. The constant terms are the same across the countries because the null hypothesis was rejected, which suggests that the pooled OLS.

Researchers can detect and choose between the REM and FEM using the Hausman (1978) test. The null hypothesis, which stated that there was no significant difference between the coefficients estimated by the REM and those determined by the FEM (Wooldridge, 2012), was disproved (the p-value was 0.0000). Particularly, the FEM is considerably more suitable for the investigation while the REM is inconsistent. In order to control unobserved heterogeneity across nations and time periods, this thesis used the FEM. This thesis proposed a general model for the investigation of the hypotheses that is described below based on previous findings. This suggested that a better match for the data was provided by a FEM.

3.9 Interaction analysis

The study looked at how governance and the human development index interact to affect the informal economy. First, the most widely used method for evaluating the effects of statistical interaction on the regression model is the product-term approach, commonly known as the moderation effect (Ghura, 2019). This method states that when a third variable, known as the moderator, influences the link between the independent variables (in this example, governance and the human development index), a dependent variable, and an interaction/moderation consequence results (the size of the informal economy). Second, the regression model's component aspects of human development, governance, and control variables are all simultaneously applied

along with the interacting variable, a result of the human development index and governance (trade openness, debt, urban population, and manufacturing value-added).

3.10 Absence of multicollinearity

According to the multicollinearity assumption, no two explanatory variables in the same model will ever have a perfect correlation. Very low standard errors might result from using variables that measure the same phenomenon, leading to unclear coefficients and inaccurate estimations (Ghura, 2019; Mehmetoglu & Jakobsen, 2017). Additionally, it is typically challenging to assess the relative relevance of each explanatory variable since the variables steal each other's explanatory power. In order for the regression model to identify the explanatory variables that have a significant impact on the dependent variable, multicollinearity must be absent. Excluding one of the highly correlated explanatory variables is the reliable solution to the multicollinearity problem (Ghura, 2019; Mehmetoglu & Jakobsen, 2017).

Gujarati (2004) proposed a general guideline in this regard, stating that all correlation coefficients should be below (0.8). The estimated correlation matrix (Table 3.5) did not reveal any significant association between the independent variables in the absence of the interaction variable, Human Development Index* Governance (HDIGOV). The Human Development Index* Governance (HDIGOV) and Governance (GOV) did, however, exhibit quite high correlations following the addition of the interaction variable. Consequently, the computation of the variance inflation factors was used to test the multicollinearity problem (VIFs). The tolerance value (1/VIF) should not be less than 0.2, and the VIF should be less than 5.

Table 3.5: Results of VIF Analysis for The Independent Variables

VIF without interacting variable			VIF with interacting variable		
Variable	VIF	1/VIF (Tolerance)	Variable	VIF	1/VIF (Tolerance)
Human Development Index (HDI)	2.91	0.34	Human Development Index* Governance (HDIGOV)	34.92	0.03
Urban Population (Urban_Pop)	2.23	0.45	Governance (GOV)	34.01	0.03
Governance (GOV)	1.67	0.60	Human Development Index (HDI)	2.99	0.34
Trade Openness (Trade_Open)	1.33	0.75	Urban Population (Urban_Pop)	2.26	0.44
Manufacturing Value-added (Manu_Value)	1.1	0.91	Trade Openness (Trade Open)	1.36	0.74
Debt	1.04	0.96	Manufacturing Value-added (Manu_Value)	1.11	0.9
Mean VIF	1.71	0.59	Debt	1.06	0.94
			Mean VIF	11.1	0.09
Rule of thumb: VIF < 5					

Source: Own calculation (2021)

The findings (Table 3.5) demonstrate that multicollinearity won't be an issue in this study because the highly correlated variables (HDIGOV) alone were all below the threshold of 5 (the mean VIF is 1.71), and the tolerance value (1/VIF) was not below 0.2 (tolerance is 0.59). (source). Multicollinearity will provide a challenge with the addition of the interaction variable (HDIGOV), but, as the highly correlated variables HDIGOV and GOV were above the threshold of 5 (the mean VIF is 11.1) and the tolerance value (1/VIF) was below 0.2. (tolerance is 0.09).

This study recalls how to interpret the coefficients without the moderation effect of the new product term in order to have a better knowledge of how the results from the moderation effect model with a product term should be interpreted (Ghura, 2019; Mehmetoglu & Jakobsen, 2017). While some research (De Clercq et al., 2010a; Turro et al., 2014) examined the moderation hypotheses by indicating the direct and indirect effect in the hypotheses, other studies examined the moderation hypotheses directly without mentioning the notion of a direct effect (Ghura, 2019; Valliere & Peterson, 2009). Since the direct effects hypotheses of the interacting variable (HDIGOV) on the informal economy wereThis study is more focused on the interaction effect, which has been discussed in the literature and is described in Chapter 1. As a result, this study adopted the latter strategy by developing multiple models to test the hypotheses, as will be discussed in the following section.

3.11 Stationarity test

The concept of stationarity is crucial to panel data analysis. A time or panel series' statistical characteristics (or the method used to create it) must be stationary in order to be considered stationary. For instance, first-order stationarity in a series or panel denotes the absence of time-dependent change in the mean (or average). Other statistics, like variance, can, however, vary. The mean, variance, and autocovariance of a panel with second-order stationarity (or weak stationarity) are constant throughout time.

The stationarity of the data series is verified using a panel unit root test (Pesaran, 2012). This test is crucial because time-series data frequently exhibit non-stationarity, and performing regression on such data series without checking could result in misleading regression (Im, Pesaran & Shin, 2003). As a result, the study uses the Im-Pesaran-Shin (2003) panel unit root test to determine if the panel data series is

stationary. Table 3.6, for instance, demonstrates that none of the variables are stationary at level. The variables in the sample, however, are all stationary at the first difference. This gives a level of confidence that the panel is not integrated of order two (2).

Table 3.6: Stationary Test

No.	Variable	Type of Test	Level	t-Statistic	P-Value	First Difference	Remark
1	Informal Economy	Im-Pesaran-Shin	Non-stationary	-9.1076	0.0000	Stationary	Series have a constant mean, variance and an autocovariance that do not change with time
2	Human Development Index	Im-Pesaran-Shin	Non-stationary	-1.4047	0.0401	Stationary	Series have a constant mean, variance and an autocovariance that do not change with time
3	Governance	Im-Pesaran-Shin	Non-stationary	-6.3327	0.0000	Stationary	Series have a constant mean, variance and an autocovariance that do not change with time
4	Trade Openness	Im-Pesaran-Shin	Non-stationary	-10.6755	0.0000	Stationary	Series have a constant mean, variance and an autocovariance that do not change with time
5	Debt	Im-Pesaran-Shin	Non-stationary	-2.5111	0.0060	Stationary	Series have a constant mean, variance and an autocovariance that do not change with time
6	Urban Population	Im-Pesaran-Shin	Non-stationary	-3.7349	0.0001	Stationary	Series have a constant mean, variance and an autocovariance that dos not change with time
7	Manufacturing Value-added	Im-Pesaran-Shin	Non-stationary	- 9.6943	0.0000	Stationary	Series have a constant mean, variance and an autocovariance that do not change with time

Source: Own calculation (2021)

3.12 Choosing between the mean group (MG) and pooled mean group (PMG) estimators

The Hausman (1978) test was performed to evaluate whether the mean group (MG) or the pooled mean group (PMG) was a much more consistent and efficient estimator as well as evaluate if a statistical model corresponds to the data. The null hypothesis of homogeneity compares the mean group (MG) and pooled mean group (PMG) estimators. Decision: Reject the null hypothesis if the probability value (P-value) < 0.05.

Table 3.7: Hausman (1978) Test

Coefficients				
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	mg	pmg	Difference	S.E.
HDI	-128.9297	-45.72455	-83.2051	487.7746
GOV	-28.65996	0.368805	-29.0288	107.0151
HDIGOV	59.4001	-4.14094	63.54104	206.2429
b = consistent under Ho and Ha; obtained from xtpmg				
B = inconsistent under Ha, efficient under Ho; obtained from xtpmg				
Test: Ho: difference in coefficients not systematic				
chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 0.17				
Prob>chi2 = 0.9821				

Source: Own calculation (2021)

From Table 3.7, it can be seen that the null hypothesis (Ho): the mean group (MG) is more consistent and efficient than pooled mean group (PMG). The P-value = 0.982, thus, rejecting the null and accepting the alternative hypothesis (Ha). Consequently, the PMG is accepted as a more consistent & efficient estimator for the model. This also indicates that the statistical model corresponds to the data.

3.13 Endogeneity test

As was previously mentioned, environmental conditions as determined by human development and governance have an impact on the growth of the informal economy. However, when human development, governance, and interaction elements are combined in one model, reverse causality is a real risk (Oviedo, Thomas & Karakurum-zdemir, 2009). According to Oviedo et al. (2009), the potential for reverse-causality of the informal economy is not fully resolved in any cross-country studies. Therefore, policy interventions to reduce the size of the informal economy could be counterproductive because of endogeneity problems. Furthermore, time-varying factors (Arellano & Bover, 1995; Blundell & Bond, 1998; Arellano & Bond, 1991) may simultaneously affect the size of the informal economy, human development and governance, which may lead to omitted variable bias imposition on regression results.

Consideration of the panel unit root test and panel cointegration using Windmeijer's (2005) system general method of moment (SGMM) estimator with the two-step finite-sample correction is one way to deal with potential endogeneity of the independent variables, reverse causality, simultaneity bias, and omitted variables. The two-step SGMM is a better estimator, even though the use of GMM estimation can mitigate the endogeneity bias and regulate the fixed effects model (FEM), time effects, and several endogenous factors. Additionally, if the series is close to unit root processes and has weak instrument variables, the typical dynamic GMM coefficients are skewed for small samples (Windmeijer, 2005).

Lagged values of institutional factors can be used as a solution to the potential endogeneity problems and reverse causality as the time series of the panel data for the study are quite modest. In this regard, the size of the informal economy, human

development, and governance with their lags (first and second) were instrumented, and the instrumental variable (IV) regressions of a model (containing the interaction term) were conducted. The Durbin-Wu-Hausman endogeneity test was utilized in accordance with Roman et al. (2018) to determine whether IV and OLS estimates are sufficiently close. At the significance level of 5%, the test did not reject the null, which claimed that the variables were exogenous. Additionally, the control variables were lagged by one month to provide more reliable results, which.

The findings of the Hausman test showed that the informal economy's present values could not be influenced by the independent variables' earlier values (human development and governance). Endogeneity was therefore not a concern in the analysis of the study. Therefore, even while governance and human development may have an impact on the scale of the informal economy, these changes are unlikely to happen right away. By adjusting for country FEM and utilizing lags, confidence in the endogeneity's impartial conclusions is strengthened. (2005) Windmeijer.

3.14 Heteroscedasticity test

A panel data analysis presents a variety of statistical difficulties. The issue of groupwise heteroskedasticity is one of these prevalent issues (Baum, 2001, p. 101). The error method may be homoscedastic inside cross-sectional units, according to Baum (2001, p. 101). (i.e., countries). But its variance could vary across units (i.e., non-constant variance). Baum (2001) suggested using the FEM to perform the modified Wald test for "groupwise heteroskedasticity." The alternative hypothesis (Ha) proposes non-constant variance while the null hypothesis (Ho) presupposes constant variance.

Test for heteroskedasticity using the Breusch-Pagan/Cook-Weisberg formula

Ho: Persistent variation

variables: informal economy (Inform Econ) fitted values

chi2(1) = 69.81

Probability > chi2 = 0.0000

The results of the test indicated that the errors are heteroscedastic, rejecting the null hypothesis.

Drawing a plot of the standardised residuals against the fitted residuals further proved the data's heteroscedasticity (see Figures 3.1 to 3.6). The dispersion of the residuals varies across the range of the independent variable in each of the six graphs. The method for coping with heterogeneity is covered in the following section.

Homoscedastic scatterplot of standardised residuals

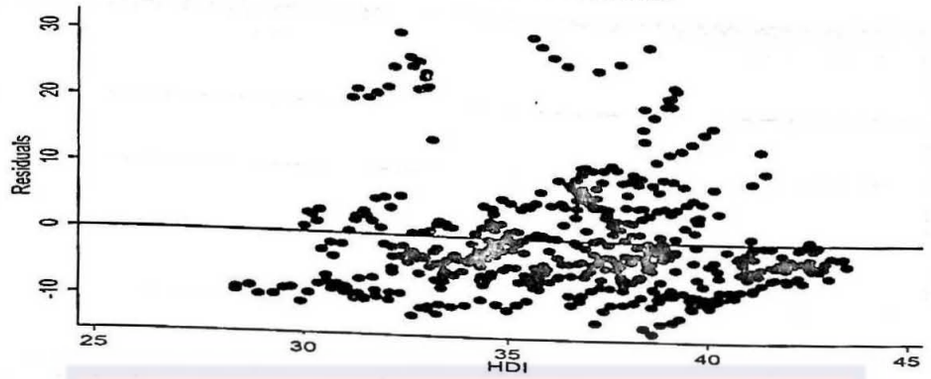

Figure 3.1: Humoscedastic Scatterplot Of Standardised Residuals Aginst Predicted Values Of Human Development Index (HDI)

Source: Own extraction, 2021

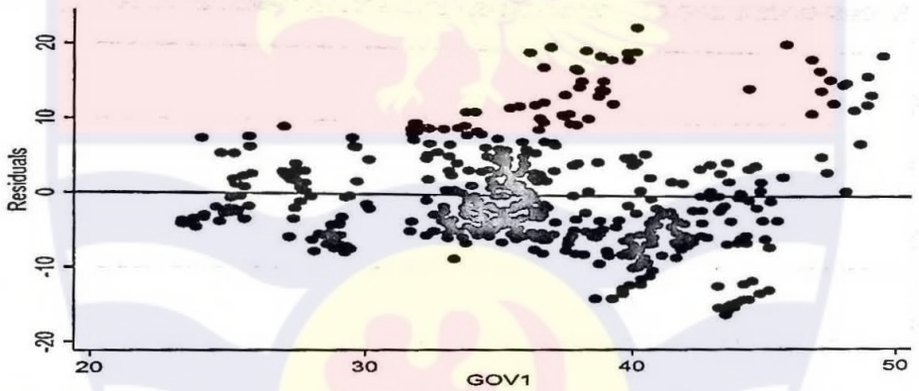

Figure 3.2: Homoscedastic Scatterplot Of Standardised Residuals Against Predicted Values Of Governance

Source: Own extraction, 2021

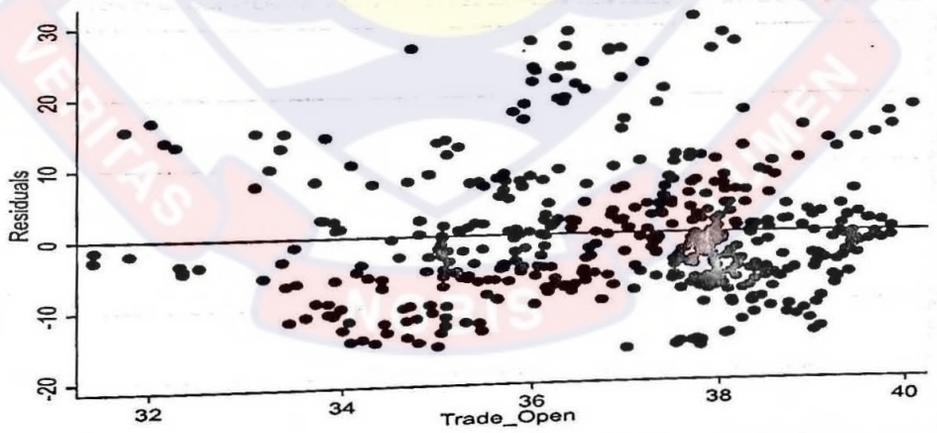

Figure 3.3: Homoscedastic Scatterplot of Standardised Residuals Against Predicted Values of Trade Openness

Source: Own extraction, 2021

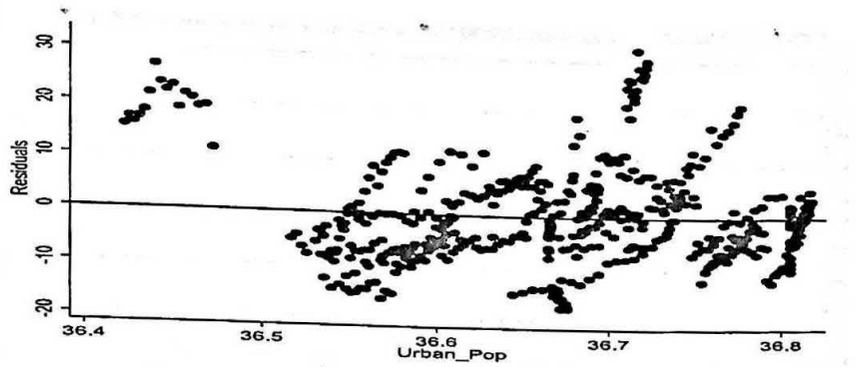

Figure 3.4: Homoscedasstic Scatterplot of Standardised Residuals Against Predicted Values of Urban Population

Source: Own extraction, 2021

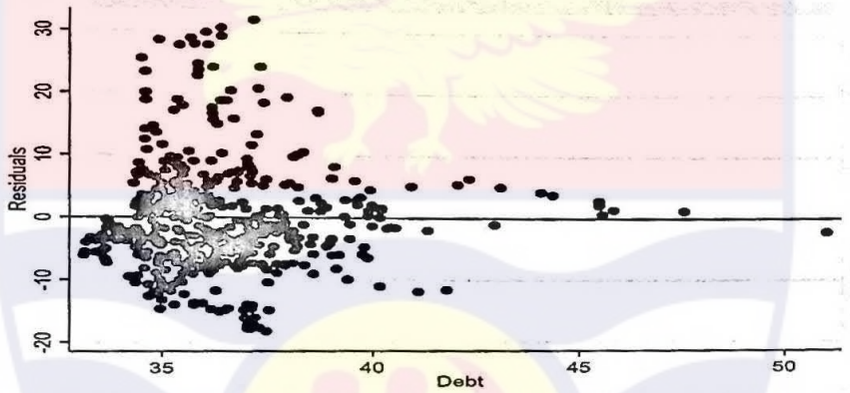

Figure 3 5: Homoscedastic Scatterplot of Standardise Residuals Against Predicted Values of Debt

Source: Own extraction, 2021

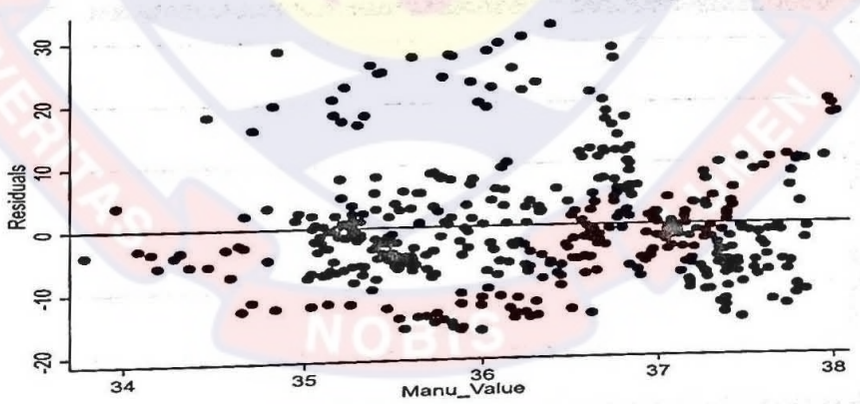

Figure 3 6: Homoscedastic Scatterplot of Standardised Residuals Against Predicted Values of Manufacturing Value-Addition

Source: Own extraction, 2021

3.15 Autocorrelation test

In panel data models, it is typically assumed that the error terms are uncorrelated over time and across cross-sections (i.e., countries). In this context, the serial correlation (also known as autocorrelation) in the idiosyncratic errors was examined using the Wooldridge (2002) test (Source). The null hypothesis that there is no first-order autocorrelation, or H0: no first-order autocorrelation, is tested with the Wooldridge test for autocorrelation in panel data.

The Wooldridge test for autocorrelation in panel data returns the following results:

H0: no first-order autocorrelation

F(1, 19) = 15.351

Prob > F = 0.0009

The null hypothesis, according to which there is first-order autocorrelation in the error terms, is accepted. Therefore, it can be said that the error terms exhibit first-order autocorrelation.

Overall, the study's findings show that the error structure was cross-sectionally dependent, autocorrelated, heteroscedastic, and correlated among the panels. Due to heteroskedasticity and the general types of cross-sectional and temporal dependency, Driscoll & Kraay's (1998) standard errors of the coefficients predicted by the within-group regression were employed in this investigation.

The null hypothesis, according to which there is no first-order autocorrelation in the error terms, was disproved.

Additionally, the possibility of contemporaneous association was looked into. Consequently, the cross-section dependence Pesaran (2004) test. Therefore, it was determined that there is no contemporaneous association, and the null hypothesis was

rejected. Therefore, it is inferred that when two countries are included in the panel dataset, the impact of shocks in one country may affect the other.

3.16 Missing values and data imputations

Panel data's quality typically declines when there are many missing values. The "Observations" column in Table 3.8 illustrates the issue of missing data in the dataset. The most typical method for handling missing values is listwise deletion. In this case, if even a single value of a variable is absent, the entire record is excluded from analysis. Although this method reduces the number of observations utilized in a model and reduces the statistical power of any test, it introduces bias into the estimates if the data are not missing at random (Ghura, 2019; Park, 2011). For information on data imputations and missing values, see Table 3.8.

Table 3.8: Missing Values and Data Imputations

Variable	Complete (Observations)	Incomplete	Imputed	Total
Inform_Econ	480	160	160	640
HDI	640	0	0	640
GOV	450	190	190	640
HDIGOV	450	190	190	640
Trade_Open	614	26	26	640
Debt	600	40	40	640
Urban_Pop	640	0	0	640
Manu_Value	578	62	62	640

(Complete +Iincomplete = Total; Imputed is the minimum across m of the number of filled-in observations)

Source: *Own calculation (2021)*

The multiple imputation technique was applied to deal with absent values in the reading's dataset to replace the missing data, as shown in Table 3.8 above. Its strength lies in the fact that it was able to restore observations and statistical power

and also diminish the possibility of biased coefficients (Mehmetoglu & Jakobsen, 2017).

3.17 Moderated hierarchical analysis

This section begins with a moderated tiered scrutiny to assess the strength of the interaction effects of the instructive variables on the outcome variable in this study. Generally, linear models and observations are considered independent (Levy, 2012). Thus, any basic linear model that does not consider observational clusters would be flawed from the outset. On the other hand, a hierarchical model allows researchers to view these clusters' influences and interactions. Furthermore, the moderated hierarchical regression analysis fits nested models by successively adding blocks of variables and then reporting contrast tests between the nested models.

This technique was applied in many research to reduce the likelihood of multicollinearity (De Clercq et al., 2010a, b). In this study, multicollinearity is a problem, especially with the interaction term. However, compared to models in which the interaction term is included in the comprehensive model, it is anticipated that separate regression equations will give consistency in the signs of the interaction term (De Clercq et al., 2010b).

3.18 Model Robustness Checks

3.18.1 Moderated hierarchical analysis

In this work, the robustness of the interaction effects of the explanatory variables on the outcome variable was evaluated using a moderated hierarchical regression analysis. Tables 3.9 and 3.10 show the regression and blocked nested findings of the moderated hierarchical analysis.

Table 3.9: Moderated Hierarchical Regression

VARIABLES	Inform_Econ	Inform_Econ
HDI	-14.527**	-14.527**
	(5.703)	(5.784)
GOV	-2.265***	-2.265**
	(0.202)	(0.916)
HDIGOV		0.000
		(1.59)
Trade_Open	-0.056***	-0.056***
	(0.014)	(0.015)
Debt	0.044***	0.044***
	(0.012)	(0.012)
Urban_Pop	0.142***	0.142***
	-0.032	(0.032)
Manu_Value	-0.242***	-0.242***
	(0.083)	(0.084)
Constant	42.746***	42.746***
	(2.349)	(2.398)
Observations	381	381
R-squared	0.473	0.473
Prob.(F-statistic) Prob > F = 0.0000		
Notes_Titles		
Standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		
Prob.(F-statistic) Prob > F = 0.0000		

Source: Own calculation (2021)

From Table 3.10: the HDI predictor yielded a model that accounted for a statistically significant (F-test: 0.000) variation of 0.1246. Second, the addition, the GOV predictor caused a change from an r-square value from 0.1246 to 0.4078. Thus, the GOV predictor yielded a model that accounted for a statistically significant value of 28.32% of the variation in the size of the informal economy that is statistically significant.

Table 3.10: Blocked Nested Moderated Hierarchical Results

Variable	Block	F	Block df	Residual df	Pr > F	R-squared	Change R-squared
HDI	1	53.96	1	379	0.000	0.1246	
GOV	2	180.74	1	378	0.000	0.4078	0.2832
HDIGOV	3	0.19	1	377	0.6665	0.4081	0.0003
Trade_Open	4	2.93	1	376	0.0877	0.4127	0.0046
Debt	5	11.87	1	375	0.0006	0.4307	0.018
Urban_Pop	6	20.92	1	374	0.000	0.4608	0.0302
Manu_Value	7	8.32	1	373	0.0041	0.4726	0.0118

Source: Own calculation (2021)

Third, the addition of the HDIGOV predictor yielded a model that accounted for a non-statistically significant (F-test: 0.6665) r-squared of 0.4081, reflecting a 0.3% variation in the size of the informal economy. Fourth, the additional predictor of Trade_Open yielded a model that accounted for a statistically significant (F-test: 0.0877) r-squared of 0.4127, reflecting a 0.46% variation in the size of the informal economy. Fifth, the Debt predictor yielded a model that accounted for a statistically significant (F-test: 0.0006) value of r-squared of 0.4307, reflecting a 0.18% variation in the size of the informal economy. Sixth, the Urban_Pop predictor yielded a model that accounted for a statistically significant (F-test: 0.000) value of r-squared of 0.4608, reflecting a 3.02% variation in the size of the informal economy. Finally, the Manu_Value predictor yielded a model that accounted for a statistically significant (F-test: 0.0041) r-squared of 0.4726, reflecting a 1.18% variation in the size of the informal economy.

3.19 Data Analysis

The Data Analysis Matrix (Framework of Analysis) establishes a method of data analysis used by researchers (see Table 3.11). It consists of four phases, which are (a) descriptive, (b) diagnostic, (c) predictive and (d) prescriptive.

Table 3.11: Data Analysis Matrix (Framework of Analysis

Specific Objectives	Phase Of Analysis	Framework Of Analysis	Techniques Of Analysis
1. Define the informal economy	Descriptive	Descriptive framework	Descriptive statistics
2. Determinants	Diagnostic	Correlation	• Correlation coefficients • Regression analysis
3. Impact of human development and governance on the size of the informal economy in Africa	Predictive	Conceptual framework	Regression analysis
4. Synthesis	Prescriptive	Synthesis framework	System improvement

Source: Micah (nd)

The phases are now explained.

a) Descriptive Analysis Phase - What happened?

The baseline and data analysis start in the descriptive analysis phase. It answers the fundamental question, "what happened?". This analysis phase assesses past events and identifies specific patterns within the data. The visualisations usually used for descriptive analysis include pie charts, bar charts, tables, line graphs, and scatter plots. The descriptive analysis phase of the study is reported in chapter five (5) of this thesis document.

b) Diagnostic Analysis (Determinants) Phase - Why did it happen?

This phase of the analysis identifies the determinants of the study. The diagnostic analysis inspects data or content to response the query, "Why did it happen?". It is characterised by techniques such as correlation coefficients and regression analysis. The diagnostic study (determinants) phase is reported in sections six (6) and seven (7) of this thesis document.

c) Predictive Analysis Phase

This phase answers the question, what is likely to ensue? Once a study efficiently identifies what happened and why it ensued, it moves up to the next tier in analysis, the predictive phase. The predictive analysis phase involves predictive modelling, regression analysis, impact analysis and forecasting techniques. This thesis document reports the predictive analysis phase in chapters seven (7) and nine (9).

d) Prescriptive Analysis (Synthesis) Phase - What should be done?

The ultimate and most advanced level of analysis is the prescriptive or synthesis phase. This phase synthesises data to answer the query "What should be done?". This type of analysis leads to system improvement. The prescriptive analysis (synthesis) phase is reported in chapter eight (8).

3.20 The informal economy system improvement framework

Figure 3.7 presents the informal economy system improvement framework. The informal economy system improvement framework is designed to help stakeholders redesign existing socio-economic and business processes to develop strategies and action plans to improve its performance.

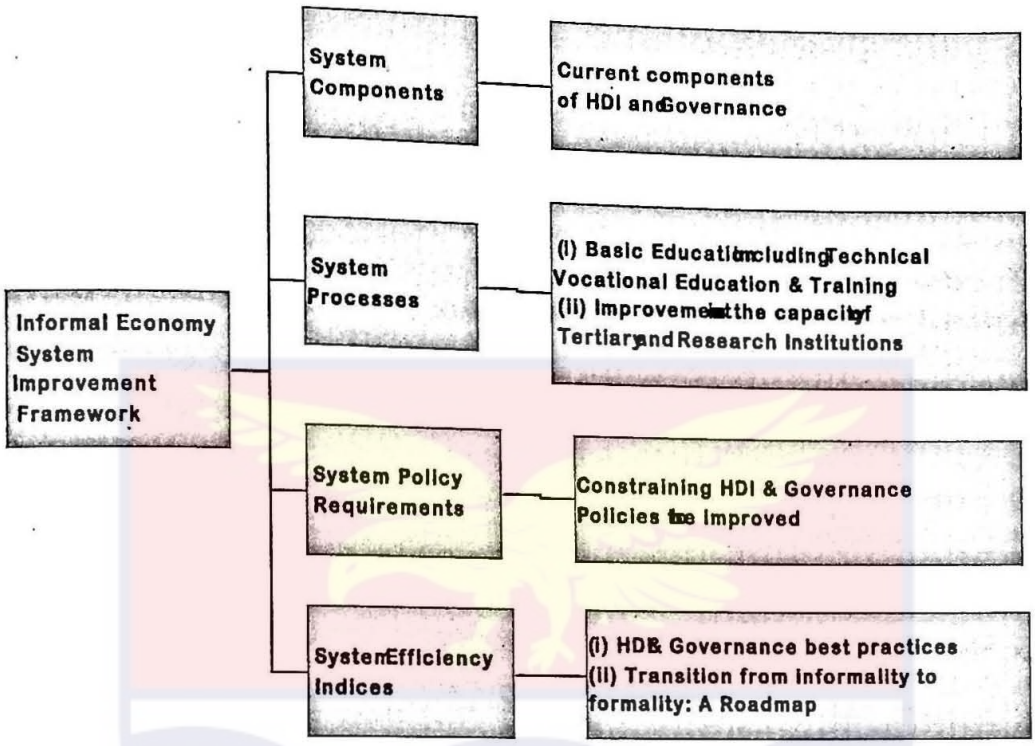

Figure 3.7: The Informal Economy System Improvement Framework

In this study, the informal economy system improvement framework consists of four parts: system component, system improvement process, system improvement requirements, and system efficiency programmes. These are now briefly explained.

i.The informal economy system component

The informal economy system components are the variables determined by this study to impact the informal economy. These are human development and governance. The human development index is further dimensioned into:

- Life expectancy (health),
- Education and
- A decent standard of living (income).

Governance consists of:

- Political and democratic governance, and
- Economic governance.

Political and democratic governance are further dimensioned into (i) voice and accountability and (ii) political stability and the absence of violence.

Economic governance depicts governments' capabilities and the respect citizens and states give the institutions.

Governments capabilities (effectiveness dimension) comprise:

- Government effectiveness, and
- Regulatory quality.

The respect citizens and states give the institutions addresses:

- The rule of law, and
- Control of corruption.

ii.System Processes

The System Processes are the series of actions or steps taken to acquire human development and governance competencies. These include the basic training and institutions required to develop human development and governance competencies.

iii.System requirements

System requirements are a high-level description of a solution's potential high-level design for delivering the socioeconomic and commercial circumstances. The solution can function as intended, but it won't offer any actual value until it satisfies certain socioeconomic and corporate conditions. System requirements are practically met when constraining human development, and governance policies are removed or improved.

iv.System efficiency

Having effective, efficient systems in place allows stakeholders to achieve more with less and enables operations to scale upEfficiency also entails using less superfluous resources, such as processes, personal time, and energy, to produce a given product. The prescriptive analysis (synthesis) phase is reported in chapter eight (8).

CHAPTER FOUR:
THE INFORMAL ECONOMY, HUMAN DEVELOPMENT AND GOVERNANCE IN AFRICA: A DESCRIPTIVE ANALYSIS

4.0 Introduction

This chapter sought to answer the question, **"What is the state of the informal economy in Africa?"**. First, it summarises and describes the state of variables included in the baseline model for 2000-20017. It then depicts the connexion between the casual economy and the regressors. These are now discussed.

4.1 Summary Statistics and dynamics among variables

Table 4.1 summarises the statistics and dynamics among variables included in this chapter. Across the 32 African countries covered in the sample for the years 2000-2017, the normal value of the independent variable, the size of the casual economy, was 36.669% as a percentage of GDP. It ranged from a minimum of 19.230% to a maximum of 69.080%, with a standard deviation of 9.428.

The two independent variables considered were human expansion and governance. The average value of human expansion was 0.528, and it ranged from a minimum of 0.283 to a maximum value of 0.801 with a standard deviation of 0.117. Thus, on average, Africa's human development can be considered medium (0.528) and ranges from a low of 0.238 to a high of 0.801 (HDR, 1990). On the other hand, governance had an average value of 0.0, a standard deviation of 2.274, a minimum value of -5.132, and a maximum of 5.184.

Table 4.1: Summary Statistics and Dynamics among Variables

	Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Dependent						
	Informal Economy	480	36.669	9.428	19.230	69.080
Independent						
	Human Development Index	640	0.528	0.117	0.283	0.801
	Governance	450	0	2.274	-5.132	5.184
Control						
	Trade Openness	614	77.037	35.056	16.670	225.020
	Debt	600	55.032	35.315	0.490	260.96
	Urban Population	640	43.193	16.925	14.61	89.740
	Manufacturing Value-added	578	11.325	5.008	2.540	40.060

Source: Own calculation (2021)

The study considered four control variables in the analysis. These are trade openness, Debt, urban population and manufacturing value-added. The average value of trade openness was 77.037% of GDP and a standard deviance of 35.056%. The tiniest and extreme values were 16.670% and 225.020%, respectively. The average Value of Debt was 55.032% of GDP. It ranged from a least value of 0.49% to a extreme of 260.960%, with a standard deviation of 0.117%. The rate of the urban population had an average value of 43.193%, a standard deviation of 16.925%, a least value of 14.610% and a extreme value of 89.740%. Finally, the average value of manufacturing value-added was 11.325%, ranging from a least value of 2.540% to a extreme of 40.060%, with a standard deviation of 5.008%.

4.2 The State of the Informal Economy in Africa

Figure 4.1 illustrates the state of the casual economy in Africa as a percentage of GDP by Subregion. Using the International Conference of Labour Statisticians – ICLS (2002) definition, the figures depict the portion of all economic activities not captured in national statistics because they are part of the non-observed economy (NOE). Also, based on the legal and behavioural economics of non-compliant behaviours, the informal economy is an economic entity working outside the official reach of the law (ILO, 2014).

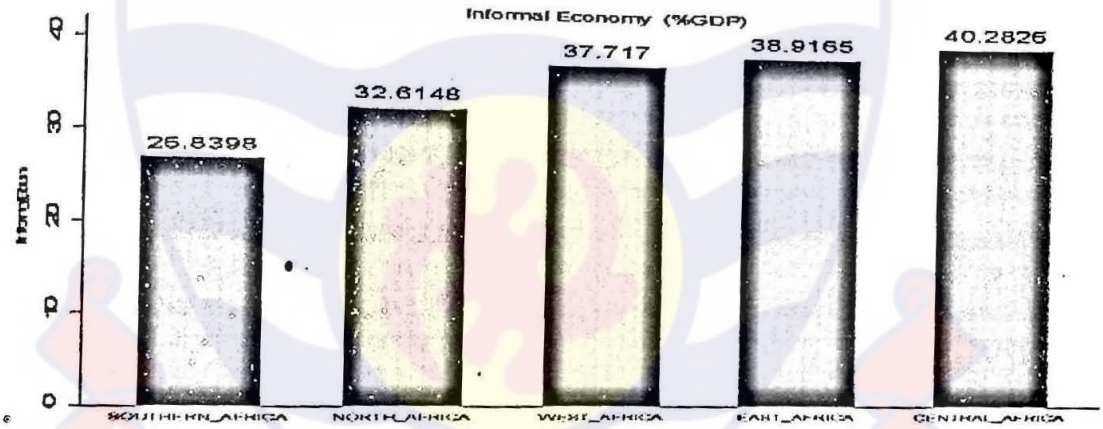

Figure 4.1: The State of Informal Economy by Subregion

Source: Own extraction, 2021

With a value of 40.28%, Central Africa has the greatest informal economy (businesses not included in state statistics and/or operating outside the reach of the law). East Africa (38.92%), West Africa (37.71%), North Africa (32.61%), and Southern Africa (26.84%) are all in declining order after that.

4.3 The State of Human Development in Africa

Values for the human development index are shown by African subregion in Figure 4.2. Amartya Sen's "capabilities" perspective on understanding human well-being is illustrated in Figure 4.2. Sen (Sen A., 1985; Sen A., 2000; Sen A., 1999).

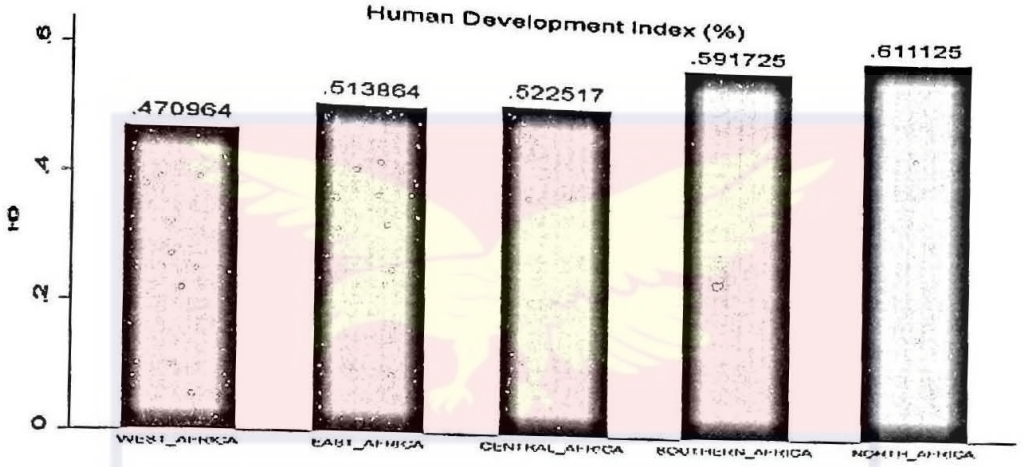

Figure 4.2: The State of Human Development Index by Subregion

Source: Own extraction, 2021

It emphasizes the four key indices of human well-being—life expectancy for health, projected mean number of years in school for education, and gross national income per capita for standard of living—as measures of wellbeing. Figure 4.2 shows that, with a human development index of 0.611, North Africa has the highest level of well-being indicators worldwide. Following that, in descending order, are Southern Africa (0.592), Central Africa (0.523), East Africa (0.514), and West Africa (0.471). In West Africa, the least human well-being indicators are found.

4.4 The State of Governance in Africa

Figure 4.3 illustrates governance. The administration, legislature, judiciary, and military are only a few of the state's institutions, regulations, and procedures

that operate both nationally and locally. Governance also refers to how the state interacts with its population, civil society, and the commercial sector (DFID, 2001).

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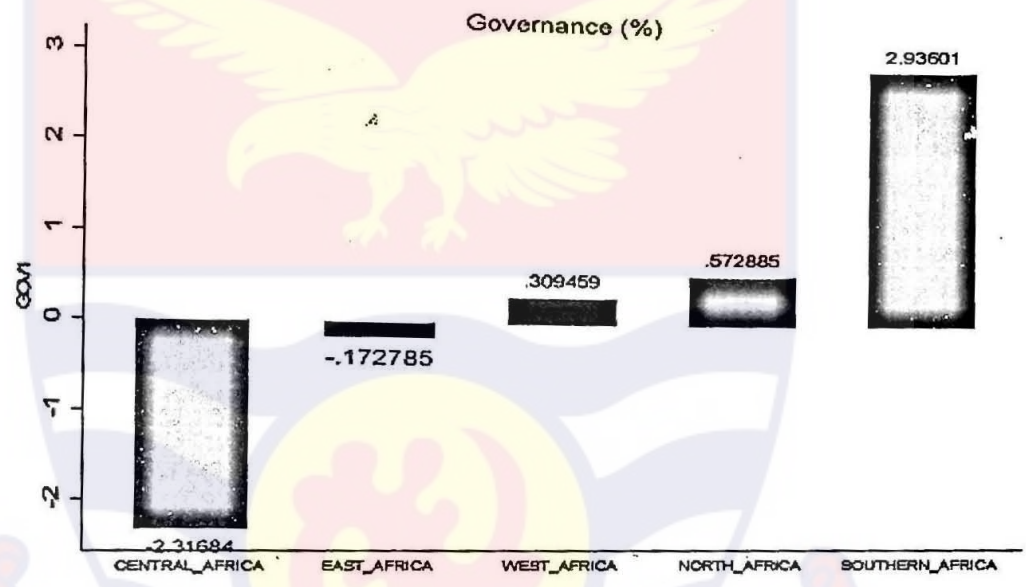

Figure 4.3: The State of Governance by Subregion

Source: Own extraction, 2021

Figure 4.3 shows that Southern Africa (2.936) has the finest system of government. Inferentially, Southern Africa has the best state structures in terms of central and local government operations, as well as for individual citizens, civil society, and the commercial sector. After Southern Africa, North Africa (0.573) and West Africa come in a distant second and third (0.309). Following with negative values of -0.173 and -2.317, respectively, are East Africa and Central Africa.

As a result, Southern Africa, which possesses the greatest system of government, has the ability to lessen or do away with institutional inequity between

formal and informal institutions (Friedman, 2014b; Meyer & Rowan, 2012; Meyer & Rowan, 2006; Johnson et al., 1999). Contrarily, Central Africa, where governance is at its poorest, has the least ability to lessen or do away with institutional inequity between formal and informal institutions (Friedman, 2014b; Meyer & Rowan, 2012; Meyer & Rowan, 2006; Johnson et al., 1999).

4.5 The State of Trade Openness in Africa

The total of imports and exports normalized by GDP is known as trade openness. This is seen in Chart 4.4. Access to goods and services, efficient resource allocation, and increased total factor productivity due to the diffusion of technology and knowledge are all benefits of trade openness for the economy (Barro & Sala-i-Martin, 1997).

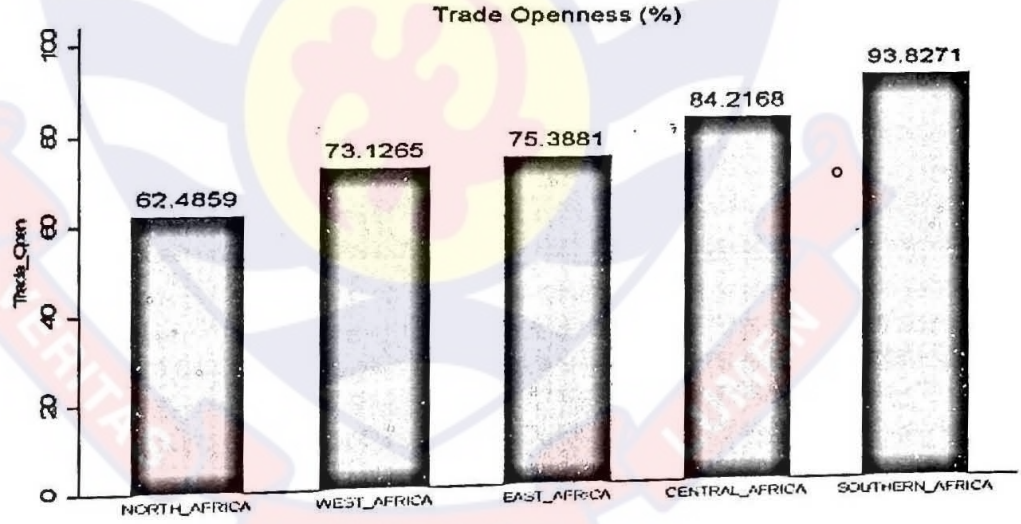

Figure 4.4: The State of Trade Openness by Subregion

Source: Own extraction, 2021

Southern Africa (93.827%) is the most open subregion for trade, followed by Central Africa (84.217%). East Africa (75.388%), West Africa (73.127%) and North Africa (62.486%) follow in that order, respectively.

4.6 The State of Government Debt in Africa

Figure 4.5 shows the government debt as a percentage of GDP. It gauges the nation's public debt to gross domestic product ratio (GDP). The risk of default increases with this percentage, making it less likely that a country will repay its debt and increasing the possibility of a financial panic in both domestic and global markets. High debt limits the government's capacity to make financial commitments, which leads to more people moving from the formal economy to the unofficial one (Rauch, 1991; Loayza, 1996).

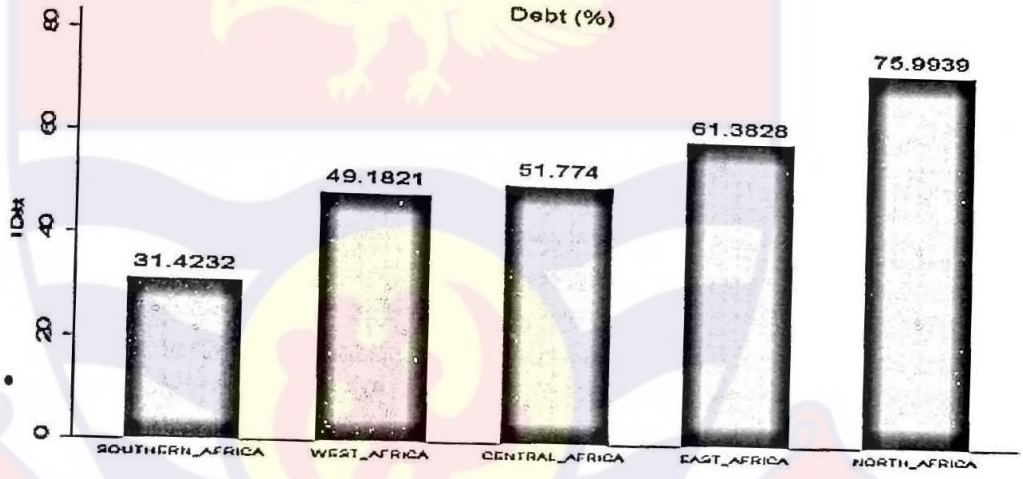

Figure 4.5: The State of Government Debt by Subregion

Source: Own extraction, 2021

The greatest fiscal pledgeability restrictions on the government are found in North Africa, where the debt to GDP ratio is 75.994%. In that order, West Africa (49.142%), East Africa (61.383%), Central Africa (51.774%), and Southern Africa (31.423%). The least fiscal pledgeability of any African nation is found in Southern Africa. Inferentially, the rate of agents leaving the formal economy and entering the unofficial one is lowest in Southern Africa and greatest in North Africa.

4.7 The State of Urban Population in Africa

Figure 4.6 shows the proportion of each subregion's urban population to the overall population. Chart 5.6 shows that with an urban population of 60.130%, Central Africa has the greatest urbanization rate.

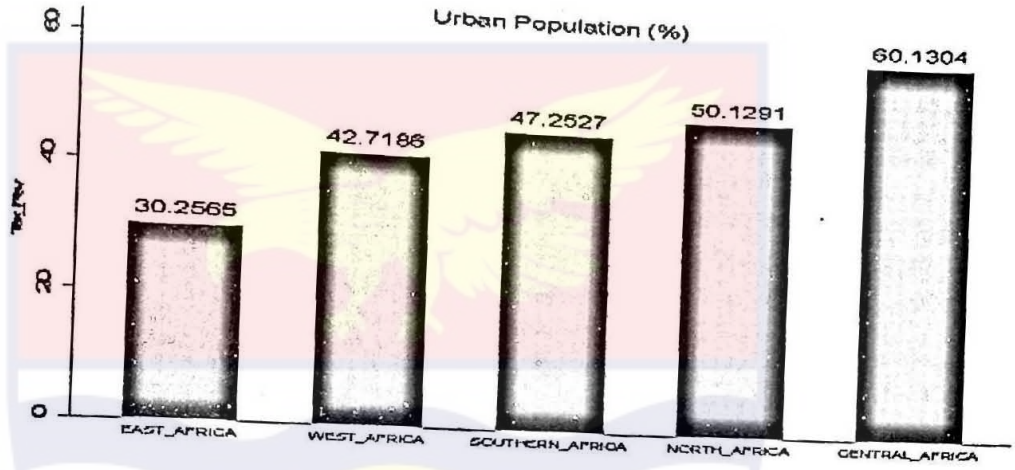

Figure 4.6: The State of Urban Population by Subregion

Source: Own extraction, 2021

This is followed by North Africa, Southern Africa, West Africa and East Africa with 50.129%, 47.253%, 42.719% and 30.257%, respectively.

4.8 The State of Value Added by the Manufacturing Sector in Africa

Manufacturing has both backward (like mining or building) and forward (like transportation, wholesale, retail trade, and business services) effects on the other sectors of the economy, according to Harris & Todaro (1970) and Rostow (1960). As a result, the growing demand for manufacturing supports the development of links for employment, investment, and innovation both in the past and in the present. Moreover, in developed countries, where manufacturing drives productivity, growth, innovation, and trade, production transitions from conventional and informal modes

to formalized ones (Harris & Todaro, 1970; Rostow, 1960; Lewis, 1954). As a result, higher levels of formality are typically correlated with higher levels of value added by the manufacturing sector as a percentage of GDP.

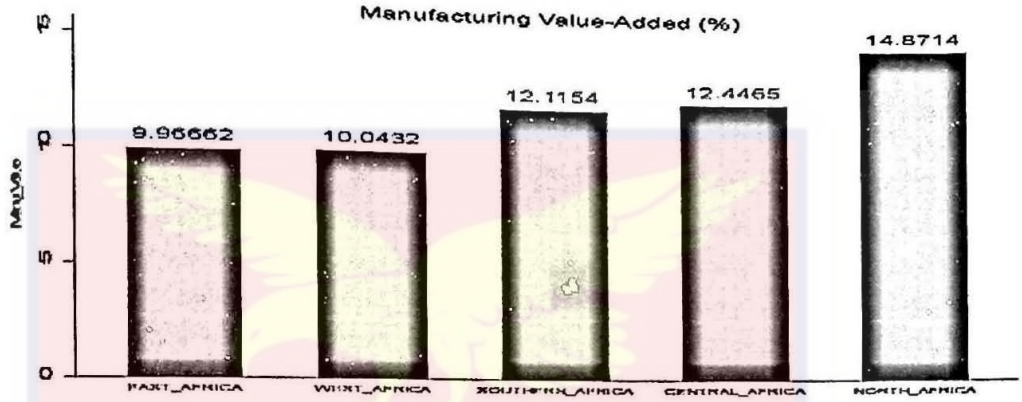

Figure 4.7: The State of Value Added by the Manufacturing Sector by Subregion

Source: Own extraction, 2021

According to Figure 4.7, the manufacturing sector's value added as a percentage of GDP is highest in North Africa, at 14.871%. South Africa (12.115%) and Central Africa (12.447%) are next. East Africa (9.967%) and West Africa (10.043%) make up the remainder. As a result, it is likely that the economies of North Africa have higher rates of job creation, investment, innovation, and formality.

4.9 The Informal Economy and Human Development in Africa

Figure 4.8 shows a scatter plot of Africa's informal economy and human development in Africa.

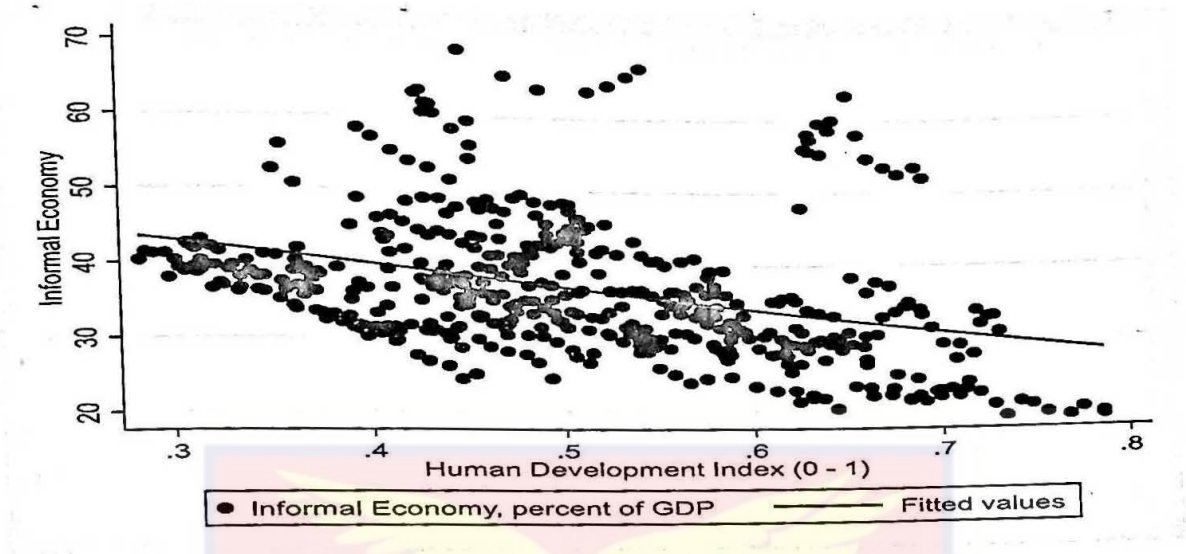

Figure 4.8: The Informal Economy and Human Development in Africa

Source: Own extraction, 2021

In Africa, there is an inverse relationship between the informal economy and human development, as seen in Figure 4.8. As a result, increased human development in Africa decreases the informal economy (Katni & Stonelake, 2016; Loayza, 2016), which improves development results (Harris & Todaro, 1970; Gilbert, 1998; Geertz, 1963; Lewis, 1959; 1954).

4.10 The informal economy and governance in Africa

A scatter plot of Africa's informal economy and governance is depicted in Figure 4.9. It shows a negative correlation between the informal economy and governance.

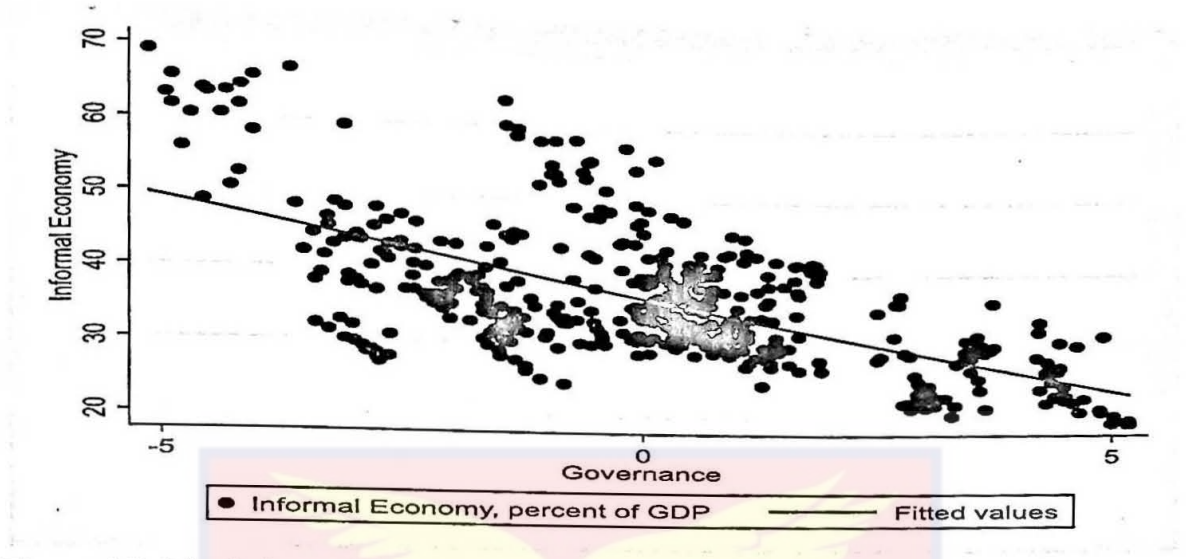

Figure 4.9: The Informal Economy and Governance in Africa

Source: Own extraction, 2021

Therefore, a better composite measure of governance (voice and accountability, political stability, lack of violence, effectiveness of the government, regulatory quality, the rule of law, and control of corruption) results in a decrease in informality in Africa (Friedman, 2014b; Meyer & Rowan, 2012; Meyer & Rowan, 2006; Johnson et al., 1999).

4.11 The informal economy and Trade Openness in Africa

Figure 4.10 shows a scatter plot of Africa's informal economy and trade openness in Africa.

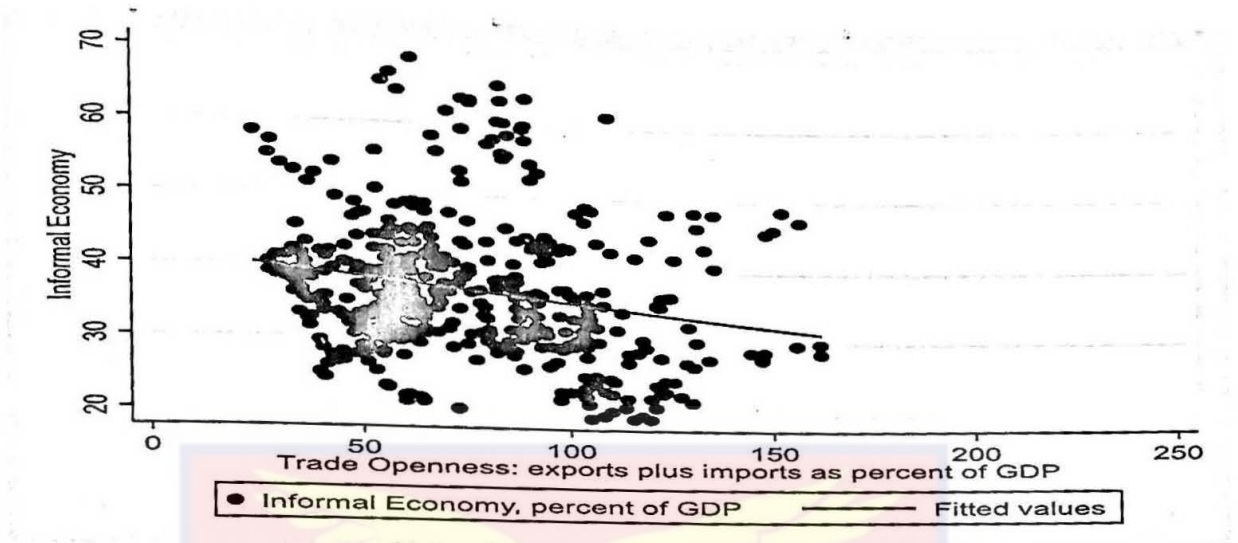

Figure 4.10: The Informal Economy and Trade Openness

Source: Own extraction, 2021

Thus, improved trade openness in Africa reduces the informal economy (ILO, 2002; Amin et al., 2002; Castells & Portes, 1989).

4.12 The informal economy and government Debt in Africa

Figure 4.11 shows a positive scatter plot of Africa's informal economy and government Debt.

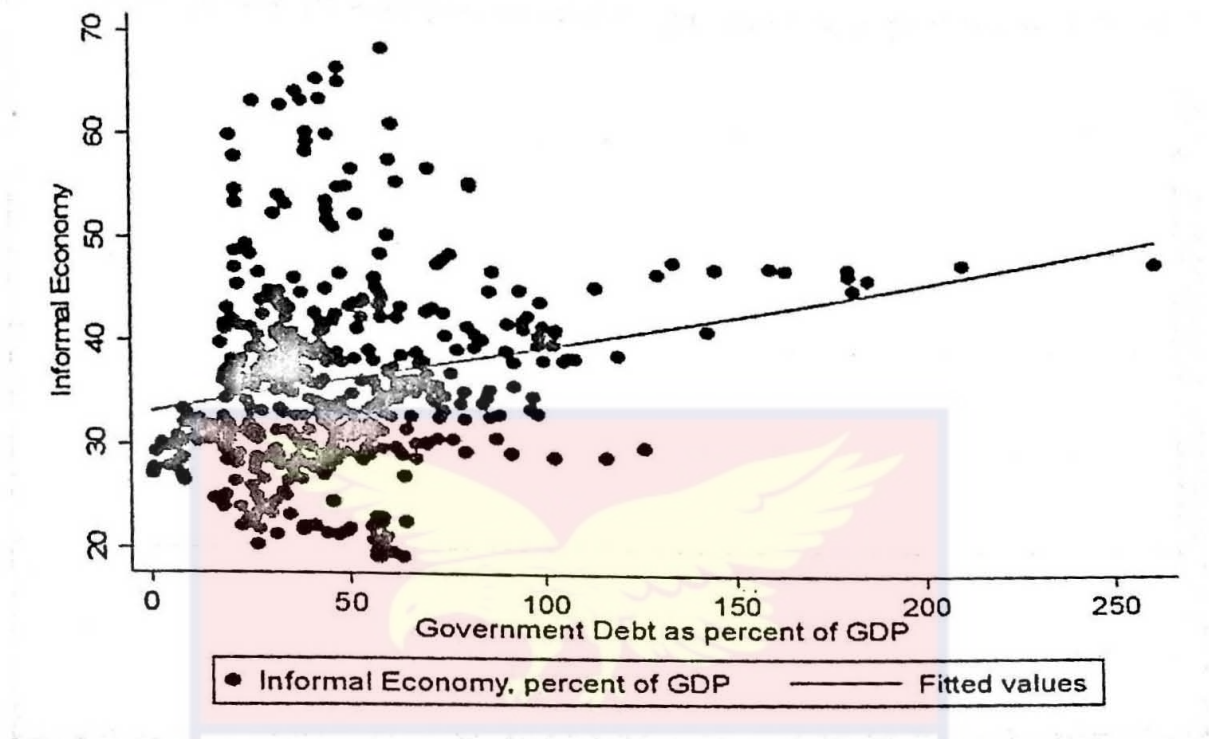

Figure 4.11: The Informal Economy and Government Debt

Source: Own extraction, 2021

High Debt constrains the government's fiscal pledgeability, which triggers more agents to switch from the formal economy to the informal economy. By implication, Africa's high Debt contributes to its high informality.

4.13 The informal economy and Urban Population

By inspection, Figure 4.12 shows a marginal negative correlation between the informal economy and the Urban Population in Africa.

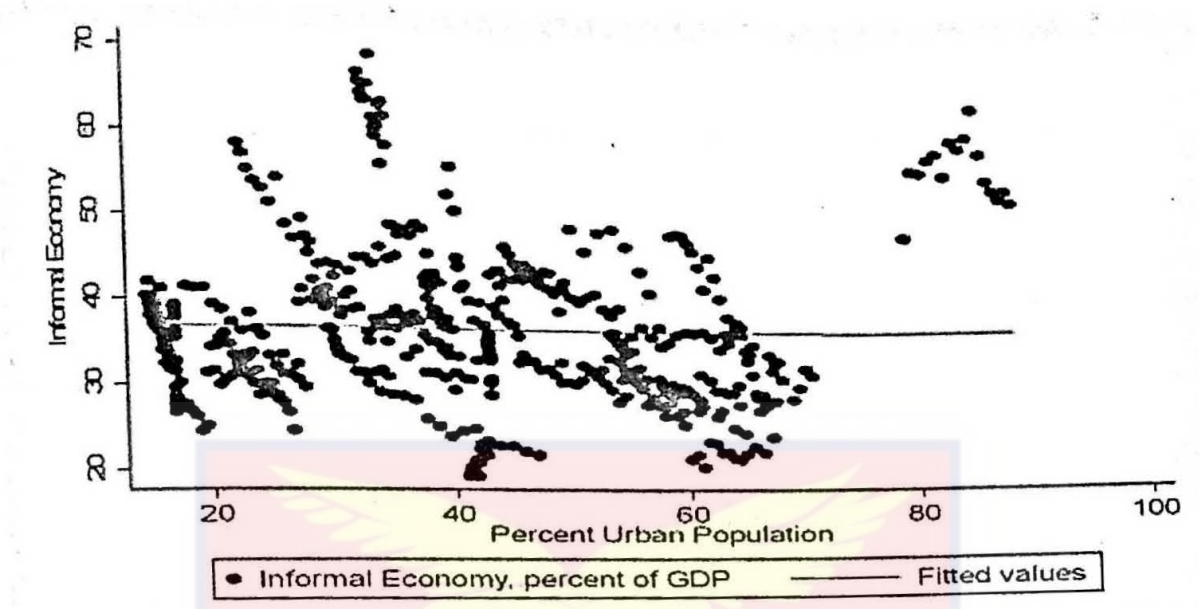

Figure 4.12: The Informal Economy and Urban Population

Source: Own extraction, 2021

As urbanization advances, the informal economy in Africa gradually vanishes. Entrepreneurs gradually transition from the unorganized agriculture sector to industrial and contemporary production methods in urban settings during this period (La Porta and Shleifer, 2008, 2014; Williams, 2008; Packard, 2007; Parsons, 1966, 1971; Geertz, 1963; Gilbert, 1998; Lewis, 1959; Rostow, 1960).

4.14 The informal economy and Value Added by the Manufacturing

Figure 4.13 shows a marginal negative correlation between the informal economy and the value added by manufacturing in Africa.

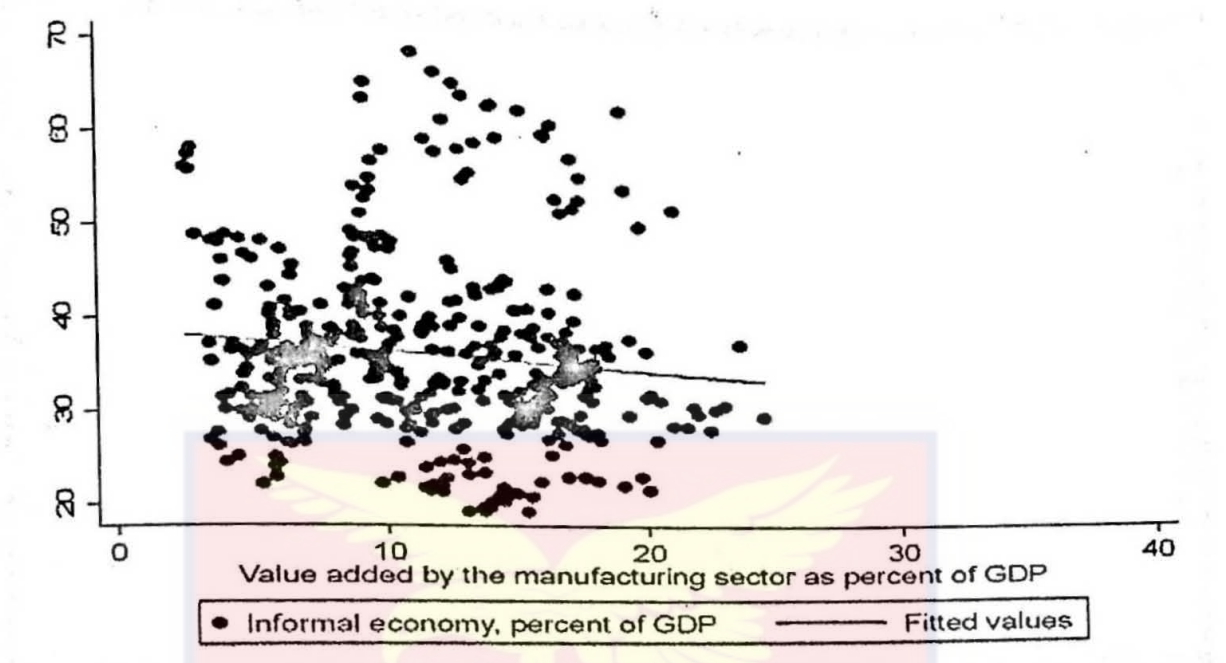

Figure 4.13: The Informal Economy and Value Added by the Manufacturing Sector

Source: Own extraction, 2021

This is because manufacturing's added value encourages the transition of production from informal and traditional modes to formalized forms (Harris & Todaro, 1970; Rostow, 1960; Lewis, 1954). As a result, the manufacturing sector's fairly high value added as a percentage of GDP is linked to moderately high levels of formality.

4.15 The Correlation among Variables

The correlation coefficients for the variables utilized in this investigation are listed in the correlation matrix (Table 4.2). The correlation matrix shows the degree and direction of any association between variables, even though it does not show causal relationships between these variables. This makes it a useful estimate for hypothesis testing. Additionally, it enables the examination of potential multicollinearity issues in the data. The correlation matrix of the study's variables is shown in Table 4.2.

Table 4.2: Correlation Matrix of the Variables Used in Study

Variables	1	2	3	4	5	6	7
(1) Informal Economy	1						
(2) Human Development Index	-0.353	1					
(3) Governance	-0.638	0.504	1				
(4) Trade Openness	-0.156	0.372	0.123	1			
(5) Debt	0.196	-0.02	-0.117	0.087	1		
(6) Urban Population	0.024	0.65	0.072	0.44	-0.02	1	
(7) Manufacturing Value-added	-0.081	0.135	-0.053	-0.138	-0.074	0.055	1

Source: Own calculations, 2021

A linear link between and among variables, particularly the regressor variables, is indicated by a correlation statistic of 0.80 or above. Therefore, it is always crucial to eliminate variables with correlation statistics of 0.80 or higher. The correlation statistics between the variables are less than 0.80, demonstrating that none of the regressors are even somewhat dependent on one another. So, it is likely that this model will pass the multicollinearity test.

CHAPTER FIVE

HUMAN DEVELOPMENT AND THE INFORMAL ECONOMY IN AFRICA

5.0 Introduction

This chapter analyses the first research hypothesis stated thus:

Hypothesis 1: The informal economy in Africa is negatively affected by human development, ceteris paribus.

The chapter discusses hypothesis 1 by considering the panel regression results based on the multiple imputations of data, pooled mean group (PMG), causality inferences and the two-step system generalised method of moments (SGMM) models. The preceding theoretical and empirical literature described in Chapters 2 and 3 is then used to interpret and discuss the models. In Chapters 7, 8, and 9, recommendations for changing policy can be made based on a synthesis of the findings with theoretical and empirical literature. Additionally, it makes it easier to assess how well the various econometric models understand the informal sector in Africa.

5.1 Effect of human development on the informal economy

Table 5.1 depicts This chapter analyses the relationship between human development (HDI) and the informal economy (Inform_Econ) based on the Multiple imputation data. Model 1.1 shows human development (HDI) and the informal economy (Inform_Econ).

5.1.1 Multiple imputation data: Focus on the relationship between human development and the informal economy

Table 5.1: Model with Multiple Imputation Data: Focus on the Relationship between Human Development and the Informal Economy

Variable		Model 1.1	Model 1.2
Dependent Variable	Inform_Econ	Coef.	Coef.
Independent Variables			
	HDI	-14.8264***	-13.7381***
		(3.04)	(2.82)
	GOV	-2.06141***	-0.64168
		(11.29)	(0.83)
	HDIGOV		-2.57916*
			(1.91)
Control Variables			
	Urban_Pop	0.138843***	0.135385
		(.92)	(4.78)
	Trade_Open	-0.0513***	-0.04898
		(3.56)	(3.35)
	Debt	0.046835***	0.050673
		-4.38	(4.74)
	Manu_Value	-0.17274**	-0.17092
		-1.96	(1.98)
	Constant	41.71094***	41.23728
			(19.56)
	*** $p<.01$, ** $p<.05$, * $p<.1$		
	Prob > F =	0.000	0.000
	Countries	32	32
	Number of obs	640	640
	R-squared	0.459008	0.4634928
	Adjusted R-squared	0.45388	0.4575505

Source: Own calculation (2021)

Model 1.2 shows the moderating influence of human development and governance (HDI*GOV) of human development on the size of the informal economy.

Controlling for trade openness, debt, urban population and manufacturing value-addition, the results (Table 5.1) showed that, for African emerging economies, human development (HDI) has a significant adverse impact on the informal economy (Inform_Econ). In this respect, the relationship between the human development index and the informal economy was significant at a 1% meaning level with a coefficient of -14.8264. Model 1.1 explains 45.9% of the total variation in the size of the informal economy.

Opposite to Model 1.1, the fallouts found in Model 1.2 (see Table 5.1) showed that the coefficient of HDI reduces marginally to -13.7381 at a 1% significance level, with the introduction of the interaction term, human development*governance. In this regard, model 1.2 explains 46.3% of the total variation in the size of the informal economy.

5.1.2 Inferring causality between human development and the informal economy

According to Engle and Granger .(1987), if nonstationary variables are cointegrated, a vector in the first difference will be incorrectly described since the first difference's long-run information has been eliminated. By utilizing the vector error correction model, this flaw is eliminated (VECM). The VECM can also distinguish between long-run and short-run connections in the series, in contrast to the conventional Granger causality test. The Wald test is used to diagnose the short-run dynamics.

The significance of the error correction (ec) term for joint causality or the long-run coefficients for long-run causality is used in this study to infer or determine the causality. The combinations of the error correction term long and short-run coefficients indicate strong causality, while the short-run coefficients indicate short-

run causality (Engle & Granger, 1987; Pesaran et al., 1997). If the variables are cointegrated, a vector error correction model is applied. The augmented Granger causality test is the name of this technique. With this method, the VAR system gains the error correcting term (ECT). The long-term association and long-term causation between the variables are shown by the significance t-statistic on the ECT parameter. The use of the vector error correction model to infer causation is therefore justified by the absence of a unit root problem following the initial difference.

Table 5.2: Inferring Causality between Human Development and the Informal Economy

	Variables	Model 1.3: Causality without interacting variable	Model 1.4: Causality with interacting variable
Long run causality (ec)	HDI	-38.567***	-45.725***
		(3.61)	(3.254)
	GOV	-0.975***	0.369
		(0.22)	(0.592)
	HDIGOV		-4.141***
			(1.184)
Joint causality (ec)	ec	-0.449***	-0.565***
		(0.082)	(0.109)
Short run causality (SR)	D.HDI	-25.942	-53.015
		(36.711)	(49.77)
	D.GOV	-1.602***	14.768
		(0.396)	(10.019)
	D.HDIGOV		-28.643
			(19.475)
	Constant	24.237***	32.805***
		(4.399)	(6.035)
	Observations	390	390
	Notes_Titles		
	Standard errors in parentheses		
	*** p<0.01, ** p<0.05, * p<0.1		

Source: Own calculations (2022)

Recall that the pooled mean group (PMG) was determined to be a much more consistent and efficient estimator for the model than the mean group (MG). Recall also that one of the assumptions of the pooled mean group estimator is that the long-run coefficients are the same across all the groups that make up the panel. The Inform_Econ is the dependent variable with a difference operator. The regressor variables in the first bracket, HDI and GOV, generate short-run coefficients.

From Model 1.3, the coefficient of HDI is -38.567 at a 1% significance level. Thus, without the interaction variable HDIGOV, it can be said that, in long-run coefficients, HDI has a negative causal impact on the Inform_Econ at the 1% significant level. Similarly, HDI has a negative joint causality impact on the Inform_Econ at the 1% significant level in the long run with a long-rum convergence to equilibrium at the speed of 44.9%.

With the introduction of the interaction term, human development*governance, in Model 1.4, the coefficient of HDI increases to -45.725 at a 1% significance level, and the causal impact of governance becomes insignificant. Thus, from model 1.4 (with the interacting variable HDIGOV), it can be said that HDI has a negative causal impact on the Inform_Econ at the 1% significant level in the long run.

5.1.3 Assessing the role of time effects: Focus on the relationship between human development and the informal economy in Africa

The dataset for this study covers a period from which Africa was recovering from the devastating effects of civil wars, governance and related human development challenges. Though these crises occurred in the 1980s and 1990s, their debilitating effects became apparent between 2000 and 2010. Besides, the outbreak

of the international economic and fiscal crisis in 2007, with significances for Africa starting in 2008 and 2009, strongly prejudiced many of the nations covered in the study's sample.

It was, therefore, necessary to control for the time properties of the estimates in the study's models. As Ghura (2019) and Roman et al. (2018) suggested, distinct time dummies were included for each year in the study period. In all, 16-year dummies were introduced, covering a period of 2000-2015. The results are combined with the two-step system GMM for analysis. The results are summarised in Table 5.3.

5.1.4 The two-step system generalised method of moments (SGMM) result: Focus on the relationship between human development and the informal economy

The empirical results and associated test statistics for equation (1) (the model equation) are provided in Table 5.4 for the two-step system generalised method of seconds (SGMM), with three specifications. The two-step SGMM) estimators are designed for panels with short run time dimensions (T), and by default, they generate instrument sets whose number grows quadratically in T. The specification (model 1.5) estimates the impacts of human expansion and governance on the casual economy. In addition, the interaction terms amid human development and governance are added to the specification (model 1.6). All the models include control variables.

Table 5.3: Two-Step SGMM Result: Focus on the Relationship between Human Development and the Informal Economy

VARIABLES	Model 1.5	Model 1.6
L.lnInform_Econ	0.281	-0.035
	(0.492)	(0.464)
lnHDI	-1.12	-2.163
	(1.519)	(2.518)
lnGOV	0.032	-0.445*
	(0.079)	(0.223)
lnHDIGOV		-0.631*
		(0.352)
lnTrade_Open	-0.131*	-0.115
	(0.074)	(0.139)
lnDebt	-0.014	0.088
	(0.09)	(0.115)
lnUrban_Pop	1.544	2.321
	(1.704)	(2.37)
lnManu_Value	-0.08	-0.222
	(0.098)	(0.261)
Y_3	0.122	0.079
	(0.165)	(0.195)
Y_4	0.112	0.068
	(0.154)	(0.178)
Y_5	0.096	0.058
	(0.142)	(0.163)
Y_6	0.102	0.068
	(0.127)	(0.143)
Y_7	0.055	0.065
	(0.116)	(0.137)
Y_8	0.041	0.054
	(0.093)	(0.109)
Y_9	0.024	0.043
	(0.069)	(0.09)
Y_10	0.046	0.044
	(0.034)	(0.066)
Y_11	-0.005	-0.004
	(0.04)	(0.057)
Y_12	0.015	0.01
	(0.013)	(0.023)
Y_14	0.00	0.001
	(0.017)	(0.029)
Y_15	-0.026	-0.025
	(0.028)	(0.049)
Y_16	-0.026	-0.04
	(0.055)	(0.086)

Observations	335	335
Year Dummies	Yes	Yes
Number of groups/instruments	29/29	29/29
AR(1)	0.892	0.950
AR(2)	0.836	0.845
Hansen	0.671	0.845

Notes: *** p<0.01, ** p<0.05, * p<0.1

t-statistics (in parentheses) are based on White heteroscedacity-consistent Standard errors

P-value are reported for AR(2) and Hansen Statistics

Source: Own calculation (2021)

Table 5.3 shows the connexion among the output (informal economy) and explanatory variables of regressors (human development, governance, trade openness, debt, urban population and manufacturing value-added). The two-step system GMM is made up of 335 observations, 29 groups and 29 instruments. The model employed year dummies and two classes of instruments. The first instrument was for the orthogonal equation, the first difference equation, and the second was for the level equation.

The Arellano-Bond tests were run after SGMM estimate (Arellano & Bond, 1991). The null hypothesis that there is no first-order serial correlation in the residuals (AR1) is refuted by the Arellano-Bond test results. On the other hand, for all specifications, the null hypothesis that there is no second-order serial correlation in the residuals (AR2) is not accepted. Furthermore, all the variables, both the dependent and explanatory variables, were reported in logs. Thus, the interpretation would be one of elasticity.

Table 5.3, Model 1.3, shows that a 1% change in the log of trade directness is linked with a 0.1317% decrease in the log of the size of the informal economy in

the short run at the 10% significant level on the average, ceteris paribus. Hence, trade openness and the informal economy are elastic in the short run. All the other variables, namely, urban population, debt and manufacturing value-added, were not significant under the two-step system generalised method of moments (SGMM) estimation.

5.2 Evaluating Hypothesis 1: The informal economy in Africa is negatively affected by human development.

The first hypothesis that the size of the informal economy in Africa is negatively affected by human development is affirmed.

This result is supported by Loayza (1999), who noted that improved income and education level negatively affects the size of the casual economy, contingent on the quality of government institutions. The outcome is also supported by Ruge (2010), who analysed the informal economy's determinants by employing a coherent Structural Equation Model with a data set of 11 latent variables with 58 indicators from 35 states. Ruge's study found that the formal economy is closely associated with: a higher wealth and development level, a better administrative system, and less cumbersome labour market regulations.

The notion of improved incomes and higher wealth and development level is consistent with the modernisation theory, which asserts that the real cure for informality is socio-economic development, poverty reduction, rising education and incomes (Rothenberg et al., 2016; Packard, 2007; Schumpeter & Backhaus, 2003; Harris & Todaro, 1970; Gilbert, 1998; Geertz, 1963; Rostow, 1960; Lewis, 1959; 1954). The findings are also consistent with Amartya Sen's "capabilities" approach to comprehending human wellbeing, which is instrumentalised to include proxies for three vital development ends: access to health, education, and goods (Sen, 1985; Sen, 1999; Sen, 2009). As the late Mahbub ul Haq wrote in the first of those reports in 1990 (UNDP, 1990), when people are focused on the real wealth of a nation, living

in an enabling environment, they enjoy long, healthy and creative lives. Moreover, such individuals decide on their own development paths to real freedom (Sen, 1999) and, thus, development.

Therefore, ensuring the three human development indicators for its populace by vastly improving long and healthy life, access to information and quality education, and an acceptable standard of living is a surefire approach to lower the size of the informal economy. The markers of human growth and citizens' levels of education are related. Therefore, in order to extend life expectancy at birth, the health sector must be improved. This can be done by improving educational institutions (so that more qualified physicians, nurses, and allied scientists are produced), hospitals, and research facilities. Second, fund schools and make sure that every child attends school for the entire number of years to enhance the education sector.

CHAPTER SIX:

GOVERNANCE AND THE INFORMAL ECONOMY IN AFRICA

6.0 Introduction

This chapter analyses the second research hypothesis stated thus:

Hypothesis 2: The size of the informal economy in Africa is negatively affected by governance.

The chapter analyses the connexion amid governance (GOV) and the casual economy (Inform_Econ) based on the results depicted in Table 6.1. Chapter five discussed the relationship amid human expansion (HDI) and the informal economy (Inform_Econ). Finally, chapter seven discusses the moderating effect of human development and governance (HDI*GOV) on the size of the informal economy.

6.1 Impact of governance on the informal economy

In Table 6.1, Model 1.1 depicts the association amid governance and the casual economy. In contrast, Model 1.2 displays the controlling inspiration of human development and governance (HDI*GOV) on the size of the informal economy. In this way, Hypothesis 2 is tested by probing the important variance in the model fit when systematic from Model 1.1 to Model 1.2. See Table 6.1.

6.1.1 Multiple imputation data: Focus on the Relationship Between Governance and the Informal Economy

Table 6.1: Model with multiple imputation data: Focus on the relationship between governance and the informal economy

Variable		Model 1.1	Model 1.2
Dependent Variable			
	Inform_Econ	Coef.	Coef.
Independent Variables			
	HDI	-14.8264***	-13.7381***
		(3.04)	(2.82)
	GOV	-2.06141***	-0.64168
		(11.29)	(0.83)
	HDIGOV		-2.57916*
			(1.91)
Control Variables			
	Urban_Pop	0.138843***	0.135385
		(.92)	(4.78)
	Trade_Open	-0.0513***	-0.04898
		(3.56)	(3.35)
	Debt	0.046835***	0.050673
		-4.38	(4.74)
	Manu_Value	-0.17274**	-0.17092
		-1.96	(1.98)
	Constant	41.71094***	41.23728
			(19.56)
	*** $p<.01$, ** $p<.05$, * $p<.1$		
	Prob > F =	0.000	0.000
	Countries	32	32
	Number of obs	640	640
	R-squared	0.459008	0.4634928
	Adjusted R-squared	0.45388	0.4575505

Source: Own calculation (2021)

From Model 1.1, the coefficient of GOV -2.06141 at a 1% significance level. By implication, human development (HDI) is (-14.8264/-2.06141) 7.2 times stronger for reducing the size of the informal economy than governance. Model 1.1 explains

45.9% of the total variation in the size of the informal economy. With the introduction of the interaction term, human development*governance, in From Model 1.2, the impact of governance becomes insignificant.

6.1.2 Inferring causality between governance and the informal economy

Causality is inferred or determined by the significance of the error correction (ec) term for joint causality or the long-run coefficients for long-run causality (Engle & Granger, 1987; Pesaran et al., 1997).

Table 6.2: Inferring Causality between Governance and the Informal Economy

	Variables	Model 1.3: Causality without interacting variable	Model 1.4: Causality with interacting variable
Long run causality (ec)	HDI	-38.567***	-45.725***
		(3.61)	(3.254)
	GOV	-0.975***	0.369
		(0.22)	(0.592)
	HDIGOV		-4.141***
			(1.184)
Joint causality (ec)	ec	-0.449***	-0.565***
		(0.082)	(0.109)
Short run causality (SR)	D.HDI	-25.942	-53.015
		(36.711)	(49.77)
	D.GOV	-1.602***	14.768
		(0.396)	(10.019)
	D.HDIGOV		-28.643
			(19.475)
	Constant	24.237***	32.805***
		(4.399)	(6.035)
	Observations	390	390
	Notes_Titles		
	Standard errors in parentheses		
	*** p<0.01, ** p<0.05, * p<0.1		

Source: Own calculations

From Model 1.1, the coefficient of GOV is -0.975 at a 1% significance level. This means that GOV also negatively affects the Inform_Econ at the 1% significant level in the long run (Table 6.2). Therefore, governance (GOV) negatively impacts the Inform_Econ at the 1% significant level in the short run.

With the introduction of the interaction term, human development*governance in Model 1.4, the causal impact of governance (GOV) on the informal economy is not significant in both the short and long run.

6.1.3 The two-step system generalised method of moments (SGMM): Focus on the relationship between governance and the informal economy

Recall that the Arellano-Bond checks display that the null hypothesis of no first-order serial correlation in the residuals (AR1) is disallowed. On the contrary, the null hypothesis of no second-order serial correlation in the residuals (AR2) is not disallowed at a 5% implication level for all specifications. Moreover, all the variables, both the dependent and explanatory variables, were reported in logs. Again, the interpretation would be one of elasticity.

Table 6.3: Two-Step SGMM Result: Focusing on the Relationship between Governance and the Informal Economy

VARIABLES	Model 1.5	Model 1.6
L.lnInform_Econ	0.281	-0.035
	(0.492)	(0.464)
lnHDI	-1.12	-2.163
	(1.519)	(2.518)
lnGOV	0.032	-0.445*
	(0.079)	(0.223)
lnHDIGOV		-0.631*
		(0.352)
lnTrade_Open	-0.131*	-0.115
	(0.074)	(0.139)
lnDebt	-0.014	0.088
	(0.09)	(0.115)
lnUrban_Pop	1.544	2.321
	(1.704)	(2.37)

lnManu_Value	-0.08	-0.222
	(0.098)	(0.261)
Y_3	0.122	0.079
	(0.165)	(0.195)
Y_4	0.112	0.068
	(0.154)	(0.178)
Y_5	0.096	0.058
	(0.142)	(0.163)
Y_6	0.102	0.068
	(0.127)	(0.143)
Y_7	0.055	0.065
	(0.116)	(0.137)
Y_8	0.041	0.054
	(0.093)	(0.109)
Y_9	0.024	0.043
	(0.069)	(0.09)
Y_10	0.046	0.044
	(0.034)	(0.066)
Y_11	-0.005	-0.004
	(0.04)	(0.057)
Y_12	0.015	0.01
	(0.013)	(0.023)
Y_14	0.00	0.001
	(0.017)	(0.029)
Y_15	-0.026	-0.025
	(0.028)	(0.049)
Y_16	-0.026	-0.04
	(0.055)	(0.086)
Observations	335	335
Year Dummies	Yes	Yes
Number of groups/instruments	29/29	29/29
AR(1)	0.892	0.950
AR(2)	0.836	0.845
Hansen	0.671	0.845

Notes: *** p<0.01, ** p<0.05, * p<0.1

t-statistics (in parentheses) are based on White heteroscedacity-consistent Standard errors

P-value are reported for AR(2) and Hansen Statistics

Source: Own calculation (2021)

Table 6.3 Model 1.6 shows that a 1% change in the log of governance is connected with a 0.445% reduction in the log of the size of the informal economy in the short run at the 10% significant level on the average ceteris paribus. All the other variables, namely, urban population, debt and manufacturing value-added, were not significant under the two-step system generalised method of moments (SGMM) estimation.

6.2 Evaluating hypothesis 2: The informal economy in Africa is negatively impacted by governance.

The second hypothesis that the size of the informal economy in Africa is negatively affected by governance is also affirmed.

Many authors support this institutional-dependent result (see Luong et al., 2020; Huynh & Nguyen, 2018; Ouedraogo, 2017; Kus, 2010; Loayza, 1999) who note that (a) the rule of law, (b) regulatory quality (c) corruption, (d) quality of institutions and (e) the efficacy of enforcement efforts voice and accountability, political stability and lack of violence/terrorism, are critical to reducing the size of the informal economy.

According to institutional theory, all societies are governed by both formal and informal institutions. The formal organisations are the codified laws and guidelines that define the legal rules of the game and informal establishments (Williams & Horodnic, 2016; Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Scott, 2008; North, 1997). The informal organizations are the socially shared rules, usually spoken, that are created, communicated and required external of officially authorized rules as the six dimensions of governance: voice and accountability, the rule of law, regulatory quality, political steadiness and absence of violence/terrorism, government efficacy, and control of corruption (Williams & Horodnic, 2016; Meyer & Rowan, 2012; DiMaggio & Powell, 2000).

The norms, values and beliefs of a society's casual establishments can be either "complementary" if they reinforce formal establishments or "substitutive" if their rules are incompatible with those of the formal establishments (Williams & Horodnic, 2016; Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Baumol & Blinder, 2008; Scott, 2008; North, 1990).

From the results in Modes 1.1, 1.3 and 1.6, the size and direction of governance indicators show the asymmetry and incompatibility between formal and informal establishments. Therefore, a sure way to reduce the informal economy's size is to reduce or even eliminate asymmetry and incompatibility between formal and informal institutions. This can be accomplished, among other things, by strengthening the enforcement of the six formal pillars of governance: participation and accountability, political stability and the absence of terrorism or acts of violence, effectiveness of the executive branch, regulatory soundness, the rule of law, and corruption prevention(Siqueira et al., 2016; Meyer & Rowan, 2012; Meyer & Rowan, 2006; Scott, 2008; North, 1990).

However, as the Structuralist cautioned, applying these institutional mandates should not be burdensome and overly complicated. (Castells & Portes, 1989; De Soto, 1989, 2000). Accordingly, the appropriate policy response is for the states to show accountability, ensure stability and remove the barriers to entry by simplifying bureaucracy (government effectiveness). Additionally, drastically cutting the registration cost and timeliness (regulatory quality and control of corruption) will liberate the creative entrepreneurial energy embedded in informal firms to operate freely under a just legal system (Acemoglu & Robinson, 2012; Castells & Portes, 1989; De Soto, 1989, 2000).

CHAPTER SEVEN:

THE EFFECT OF HUMAN DEVELOPMENT AND GOVERNANCE ON THE INFORMAL ECONOMY IN AFRICA

7.0 Introduction

This chapter analyses the research hypothesis stated thus:

Hypothesis 3: The size of the informal economy in Africa is negatively affected by the interaction between human development and governance.

In Table 7.1, Model 1.1 depicts the connexion amid governance and the casual economy. In contrast, Model 1.2 shows the controlling impact of human development and governance (HDI*GOV) on the size of the informal economy. In this way, By comparing the considerable difference in model fit between Model 1.1 and Model 1.2, Hypothesis 2 is put to the test. 1.2. See Table 7.1.

7.1 Multiple imputation data: Focus on the relationship between the interaction of human development and governance on the informal economy

Table 7.1: Model with Multiple Imputation Data: Focus on the Relationship between the Interaction of Human Development and Governance on the Informal Economy

Dependent Variable	Variable	Model 1.1	Model 1.2
	Inform_Econ	Coef.	Coef.
Independent Variables			
	HDI	-14.8264***	-13.7381***
		(3.04)	(2.82)
	GOV	-2.06141***	-0.64168
		(11.29)	(0.83)
	HDIGOV		-2.57916*
			(1.91)
Control Variables			
	Urban_Pop	0.138843***	0.135385
		(.92)	(4.78)
	Trade_Open	-0.0513***	-0.04898
		(3.56)	(3.35)
	Debt	0.046835***	0.050673
		-4.38	(4.74)
	Manu_Value	-0.17274**	-0.17092
		-1.96	(1.98)
	Constant	41.71094***	41.23728
			(19.56)
	*** $p<.01$, ** $p<.05$, * $p<.1$		
	Prob > F =	0.000	0.000
	Countries	32	32
	Number of obs	640	640
	R-squared	0.459008	0.4634928
	Adjusted R-squared	0.45388	0.4575505

Source: Own calculation (2021)

Model 1.2 assessed the moderating effect of human development*governance term (HDIGOV) on the informal economy in Africa. The results (Table 6.1) indicates the interaction term coefficient, human development*governance term

(HDIGOV), was -2.57916 and had the expected sign (negative), it had a lower significant level of 5% on the size informal economy compared.

7.1.1 Inferring causality between governance and the informal economy: Focus on the interaction of human development and governance on the informal economy

Causality is inferred or determined by looking at the significance of the error correction (ec) term for joint causality or the long-run coefficients for long-run causality (Engle & Granger, 1987; Pesaran et al., 1997).

Table 7.2: Inferring Causality the interaction of Human Development and Governance on the Informal Economy

	Variables	Model 1.3: Causality without interacting variable	Model 1.4: Causality with interacting variable
Long run causality (ec)	HDI	-38.567***	-45.725***
		(3.61)	(3.254)
	GOV	-0.975***	0.369
		(0.22)	(0.592)
	HDIGOV		-4.141***
			(1.184)
Joint causality (ec)	ec	-0.449***	-0.565***
		(0.082)	(0.109)
Short run causality (SR)	D.HDI	-25.942	-53.015
		(36.711)	(49.77)
	D.GOV	-1.602***	14.768
		(0.396)	(10.019)
	D.HDIGOV		-28.643
			(19.475)
	Constant	24.237***	32.805***
		(4.399)	(6.035)
	Observations	390	390
	Notes_Titles		
	Standard errors in parentheses		
	*** p<0.01, ** p<0.05, * p<0.1		

Source: Own calculations

From model 1.4, the coefficient of the interacting variable HDIGOV is -4.141 at a 1% significant level. Thus, it can be said the interacting variable HDIGOV has a long run negative causal impact on the size informal economy at the 1% significant level as expected.

7.1.2 The two-step system generalised method of moments (SGMM): Focus on the interaction of human development and governance on the informal economy

Recall that Arellano-Bond tests display that the null hypothesis is of no first-order serial correlation in the residuals (AR1) is disallowed. In contrast, the null hypothesis of no second-order serial correlation in the residuals (AR2) is not disallowed at a 5% implication level for all specifications. Moreover, all the variables, both the dependent and explanatory variables, were reported in logs. Thus, the interpretation would be one of elasticity.

Table 7.3: Two-Step SGMM Result: Focus on the Interaction of Human Development and Governance on the Informal Economy

VARIABLES	Model 1.5	Model 1.6
L.lnInform_Econ	0.281	-0.035
	(0.492)	(0.464)
lnHDI	-1.12	-2.163
	(1.519)	(2.518)
lnGOV	0.032	-0.445*
	(0.079)	(0.223)
lnHDIGOV		-0.631*
		(0.352)
lnTrade_Open	-0.131*	-0.115
	(0.074)	(0.139)
lnDebt	-0.014	0.088
	(0.09)	(0.115)
lnUrban_Pop	1.544	2.321
	(1.704)	(2.37)
lnManu_Value	-0.08	-0.222
	(0.098)	(0.261)
Y_3	0.122	0.079
	(0.165)	(0.195)
Y_4	0.112	0.068
	(0.154)	(0.178)

Y_5	0.096	
Y_6	(0.142)	0.058
Y_7	0.102	(0.163)
Y_8	(0.127)	0.068
Y_9	0.055	(0.143)
Y_10	(0.116)	0.065
Y_11	0.041	(0.137)
Y_12	(0.093)	0.054
Y_14	0.024	(0.109)
Y_15	(0.069)	0.043
Y_16	0.046	(0.09)
	(0.034)	0.044
	-0.005	(0.066)
	(0.04)	-0.004
	0.015	(0.057)
	(0.013)	0.01
	0.00	(0.023)
	(0.017)	0.001
	-0.026	(0.029)
	(0.028)	-0.025
	-0.026	(0.049)
	(0.055)	-0.04
		(0.086)
Observations	335	335
Year Dummies	Yes	Yes
Number of groups/instruments	29/29	29/29
AR(1)	0.892	0.950
AR(2)	0.836	0.845
Hansen	0.671	0.845

Notes: *** p<0.01, ** p<0.05, * p<0.1

t-statistics (in parentheses) are based on White heteroscedacity-consistent Standard errors

P-value are reported for AR(2) and Hansen Statistics

Source: Own calculation (2021)

Model 1.6 assessed the moderating effect of the (log of human development*governance) on the log of the informal economy using the two-step scheme generalised method of instants (SGMM). The results indicate that the interaction of human development and governance (log of human

development*governance) negatively impacts the log of the informal economy. It can further be surmised from Table 6.4 that a 1% change in log (human development*governance) is allied with a 0.631% decline in the log of the size of the casual economy at the 10% significant level on the average ceteris paribus. All the other variables, namely, human development index, urban population, debt and manufacturing value-added, were not significant under the two-step system generalised method of moments (SGMM) estimation.

7.2 Evaluating hypothesis 3: The size of the informal economy in Africa is negatively impacted by the interaction between human development and governance.

7.3 The third hypothesis, which posited that the size of the informal economy in Africa is negatively affected by the interaction between human development and governance in Africa, is affirmed for Models 1.2, 1.4 and 1.6.

The interacting term captures the essence of both modernisation and institutional theories. Whereas modernisation theory (see Harris & Todaro, 1970; Rostow, 1960; Lewis, 1959; 1954) emphasises social and economic change, institutional theory (see Meyer & Rowan, 2012; DiMaggio & Powell, 2000) focuses on the factors that reduce institutional asymmetry that might promote socio-economic development. The interacting term captures the view that socio-economic development cannot be achieved unless the institutions in a country reach a balance spot where institutions and development practices mutually reinforce each other. Without effective institutions, there will be chaos, and sustained socio-economic development will be impossible. However, the vigorous interaction of socio-

economic development and the promotion of institutions could also slow down the growth of the informal economy.

In this light, the Structuralists advocate for simplifying bureaucratic structures and red-tapism (Acemoglu & Robinson, 2012; Castells & Portes, 1989; De Soto, 1989, 2000). In the structuralist theory (exclusion model), over-burdensome state regulations eliminate, or hold back, a massive potential pool of entrepreneurs away from participating in the formal economy (De Soto, 1989, 2000). Thus, informal firms may be incapable to admission formal fiscal sources. This undermines their ability to protected loans to increase their businesses or legally export their products, thus, refuting them entree to external markets (Amin et al., 2002; Castells & Portes, 1989; De Soto, 1989, 2000). Consequently, informal firms become an untapped and held-back pool of commercial energy, which can easily be unconfined by eliminating barriers to entry, cutting red tape, and civilising legal milieus (De Soto, 1989, 2000). Accordingly, the appropriate policy response is to improve governance effectiveness by removing the barriers to entry by simplifying bureaucracy and drastically cutting the cost of registration to liberate the creative entrepreneurial energy embedded in informal firms to operate freely (Acemoglu & Robinson, 2012; Castells & Portes, 1989; De Soto, 1989, 2000).

7.4 Effects of control variables on the informal economy

The effects of control variables on the informal economy are now briefly discussed:

7.4.1 Trade openness and informal economy

As depicted in Table 5.3, Model 1.1 included the effects of control variables such as trade directness. The results indicate that the coefficient of trade openness for African economies is -0.0513 and is significant at the 1% level. It can also be seen from

Model 1.5 (Table 5.3) that a 1% change in the log of trade openness is allied with a 0.1317% decline in the log of the size of the informal economy in the short run at 10%. By implication, trade openness has a long-run negative causal impact on the size casual economy at the 10% significant level as expected.

Table 6.4, Model 1.5, shows that a 1% change in the log of trade openness is associated with a 0.1317% decrease in the log of the size of the informal economy in the short run at the 10% significant level on the average, ceteris paribus. Hence, trade openness and the informal economy exhibit an elastic relationship in the short run.

The informal economy's size and trade openness were analyzed by Blanton et al. (2018), who found evidence to indicate a negative link. In a panel of 145 nations, the aforementioned authors demonstrate specifically how trade openness decreases the growth of the informal economy. When Bayar & Ztürk (2019) examined data spanning the years 2000 to 2015, they discovered a similar negative link between trade openness and the informal economy for transition economies inside the European Union. Similar conclusions were reached by Berdiev et al. (2018) for a panel of 100 nations covering the years 2000 to 2015.

Whereas modernisation theorists aver that as trade openness occurs, entrepreneurs switch from informal production to formal production (Harris & Todaro, 1970; Gilbert, 1998; Geertz, 1963; Rostow, 1960; Lewis, 1959; 1954). However, the negative impact of trade openness on the informal economy is conditional on the quality of institutions, especially as it relates to control of corruption, government effectiveness and the rule of law (Friedman, 2014; Ruge, 2012; Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Scott, 2008; North, 1990.

7.4.2 Debt and informal economy

In Model 1.1, the Debt coefficient is reported as 0.046835 at a 1% significance level. Thus, a large casual economy size is allied with high public appreciation. This condition is supported by neoliberalists who posit that burdensome taxation is related to high levels of informality (Levy, 2008; Maloney, 2004; De Soto, 1989; 2000). Empiriccally, Elgin & Uras (2013) found a positive connexion amid the casual economy and public debt, confirming the results. Loayza (1996), Ihrig & Moe (2004), and Amaral & Quintin (2006) also pointed out that high public indebtedness is associated with low government fiscal pledgeability and larger tax rises, which triggers a higher number of agents switching from the formal economy to the informal economy.

7.4.3 Urban population and informal economy

Model 1.1 assessed the controlling impact of the urban population on the informal economy. Urban Population (Urban_Pop) coefficient is 0.138843 at a 1% significance level. According to the modernisation theory, urbanisation is negatively impacted by the informal economy (Williams, 2008; Packard, 2007; Lewis, 1959; Rostow, 1960). Thus, the informal economy disappears as urbanisation improves. However, the relationship between the urban population and the informal economy remains undecided. Indeed, Tolger & Schneider (2007) have shown that the urban population growth rate has an optimistic connexion with the casual economy insofar as the active population's concentration in urban areas has an incentive to engage in more underground activities.

However, as Elgin & Oyvat (2013) argued, an inverted-U connexion is usually among the urbanisation level and the informal economy's size. In their interpretation, Elgin & Oyvat (2013) noted that the size of the informal family rises in the early phase of urbanisation due to many pull and push features. However, it tends to fall in the

latter stage when these pull and push factors are summary due to rural dwellers getting wealthier (Elgin & Oyvat, 2013).

7.4.4 Manufacturing value-added and informal economy

Finally, Model 1.1 also assessed the controlling impact of manufacturing value-addition on the informal economy. The fallouts specify that the coefficient of manufacturing value-added is -0.17274 and is significant at the 5% level. This shows a negative relationship between manufacturing value-added and the informal economy. Modernisation theorists support this relationship.

Modernisation theorists aver that as mass consumption surges, entrepreneurs switch from the agricultural sector into manufacturing at the take-off stage (Harris & Todaro, 1970; Gilbert, 1998; Geertz, 1963; Rostow, 1960; Lewis, 1959; 1954). Modernisation theorists further aver that the economy diversifies into new areas and technological innovation at the drive to maturity stage and provides a diverse range of investment opportunities. Informality then reduces further, and formalisation becomes dominant.

A Summary of the Data Analysis Matrix (Statistical Tests) is presented in Table 7.4.

Table 7.4: A Summary of Data Analysis Matrix (Statistical Tests) included in Study

No.	Objectives	Framework and techniques of analysis (Tests)	Null hypothesis (if applicable)	Result
1	All correlation coefficients should be lower than 0.8 to rule out highly connected variables.	Correlation		Correlation between regressors is not a concern
2	To indicate the central point around which all the data coalesce/gather	Descriptive statistics to determine central tendencies measures (mean, standard mode deviation)		
3	to determine whether multicollinearity exists. The result should be less than the cutoff of 5.	Variance inflation factors (VIFs)		VIF scores for HDI and Governance are not of any concern. However, the interacting variable HDI*Governance) is a concern
4	choosing between random-effects regressions and simple ordinary least squares (OLS)	Breusch and Pagan's Lagrange multiplier (LM) test for random effects (1980)	Unobserved fixed effects have zero variance.	Therefore, OLS is not the best model because it was rejected.
5	a. deciding between fixed (within-group) and random impacts b. Choose between a mean group and a pool mean group model	The Hausman (1978)test	a. The mean group (MG) is more consistent and efficient than pooled mean group (PMG)	a. Rejected, making the fixed effect model a better fit b. Reject the null and accept the alternative hypothesis. Consequently, the PMG is accepted as a more

No.	Objectives	Framework and techniques of analysis (Tests)	Null hypothesis (if applicable)	Result
				consistent & efficient estimator for the model
6	To address the potential problems with endogeneity and reverse-causality	Endogeneity testing using the Durbin-Wu-Hausman method	The variables are exogenous	Not rejected, so reverse causality is not a concern
7	Groupwise heteroscedasticity is a condition to test whether or not they differ across units.	The fixed-effects regression model modified Wald test for groupwise heteroscedasticity	The residuals' variation has nothing to do with group identity.	Rejected, so there is heteroscedasticity
8	a. To verify whether a standard assumption in panel-data models is that the error terms are not correlated, both in time and across cross sections (entities). b. To test for serial correlation in the idiosyncratic errors	Wooldridge (2002) test for serial correlation in linear panel-data models	There is no first-order autocorrelation	Rejected, so there is serial correlation/autocorrelation
9	To check for the existence of cross-section dependence	Test of Pesaran (2004)	There is no contemporaneous correlation.	Rejected, so there is cross-section dependence
10	To offer more robust coefficients estimated by the within-group regression	Driscoll and Kraay's (1998) standard errors		

No.	Objectives	Framework and techniques of analysis (Tests)	Null hypothesis (if applicable)	Result
11	to reduce the likelihood of multicollinearity and to maintain the consistency of the interaction terms' signs compared to those in models where the interaction terms are present throughout the whole model	Moderated hierarchical regression analysis		The signs of the interaction terms were consistent with the full model
12	To verify whether or not there is time-specific events that affect both outcome and explanatory variables at the country level	distinct time dummies for each year during the course of our investigation.		The estimates of interest are unaffected by the addition of time effects.

Source: Devised by the author (2021)

CHAPTER EIGHT:
TOWARDS A PRODUCTIVE INFORMAL ECONOMY IN AFRICA

8.0 Introduction

The chapter examines the notion of the informal economy as a resource that needs improvement to make it more productive. It considers the informal economy system improvement framework and proposes a transitioning road map towards formality.

8.1 The informal economy as a notion that should not be abolished

The International labour organisation (2002) urges governments not to abolish the informal economy. Instead, it should be considered a resource that needs improvement to make it more productive by transitioning it to formality. Therefore, one of the United Nations' targets of Sustainable Development Goal (SDG 8.3) is to promote the informal economy's formalisation through a decent work agenda. Therefore, the neoliberalists' suggestion that the informal sector may act as a breeding ground for new businesses and a chance to pick up skills on the job could come to pass (ILO, 2002; Castells & Portes, 1989; De Soto, 1989, 2000).

Moreover, the transition of informal firms into the formal economic space reduces the asymmetry between a society's formal foundations and with its easy institutions of its citizens, thus improving governance (Meyer & Rowan, 2012; DiMaggio & Powell, 2000; Scott, 2008; North, 1997). As a result, as informal work is absorbed into the formal economy through bureaucracy, businesses and entrepreneurs engaged in the informal sector would vanish with modernity(Rostow, 1960; Geertz, 1963; Gilbert, 1998; Lewis, 1959).

8.2 The informal economy system improvement framework

Recall the informal economy system improvement framework in section 3.1. The informal economy system improvement framework consists of four parts: system component, system improvement process, system improvement requirements, and system efficiency programmes. The informal economy system improvement framework is now briefly discussed

1. The informal economy system components

From the study, the informal economy system components are human development and governance. Human development is further dimensioned into life expectancy (health), education and a decent standard of living (income). Voice and accountability are key components of good governance, as are political stability, the lack of violence, government efficacy, regulatory quality, the rule of law, and corruption prevention.

2. The informal economy system processes

The System Processes are the series of actions or steps taken to acquire to improve human development and governance competencies. These include the basic training and institutions required to develop human development and governance competencies. Typical processes are (i) Basic Education including Technical Vocational Education and Training (TVET) (ii) Improvement in the capacity of Tertiary and Research Institutions.

3. System requirements

System requirements describe the high-level designs that deliver the socio-economic and business conditions. System requirements are practically met when constraining human development, and governance policies are removed or improved.

System requirements for the human development index include the following:

Type of life expectancy (health) constraints to be removed and opportunities to be improved: Make health care more available, of a higher quality, and more efficient

i. Realize universal health coverage for all Africans, including financial risk mitigation, access to high-quality critical healthcare services, and inexpensive, effective, and vital medicines and vaccines (Sustainable Development Goal 3),

ii. Increase health financing and support for the health workforce,

iii. Encourage the development of vaccines and drugs and the provision of affordable access to necessary drugs and vaccines in accordance with the Doha Declaration on the TRIPS.

iv. Infrastructure:

i. Improve the percentage of households with potable water supply,

ii. Improve the percentage of households with access to toilets,

iii. Improve the percentage of electrified villages.

Knowledgeable (Education) constraints to be removed and opportunities to be improved: Make the education system more inclusive, high-quality and efficient

a. 100% completely free, equitable and quality kindergarten, primary school, junior high school and senior high school enrolment rates for all girls and boys,

b. Trained teachers (100 %) for kindergarten, primary school, junior high school and senior high school,

c. Financing education,

d. Support academic and research institutions to develop a high level of human capacities,

e. Increase the number of incubation facilities for recent junior high or senior high school graduates who want to launch and manage their own firms in order to expand TVET capacity-building activities. The following services, among others, could be offered by the incubation centers: Mentoring, fundamental business registration procedures and their meaning, fundamental bookkeeping, networking activities and internet connection, market information access, regulatory compliance, and where and how to obtain start-up and operating capital are just a few of the topics covered.

Type of income (livelihood) constraints to be removed and opportunities to be improved: Make income-generating opportunities (command over resources) more inclusive and sustainable

a. Percentage of households with incomes below 50% of median income ("relative poverty"),

b. National social protection programs cover 100% of the eligible population.

System requirements for governance include the following: Institutionalise public participation in local and national governance

Comparing national distributions by sex, age, people with disabilities, and population groups, at least 40% of jobs in national and local institutions, such as the legislatures, the public service, and the courts,

4. **System efficiency**

One way of achieving system efficiency is developing and implementing a roadmap to transition from informality to formality.

8.3 Making the informal economy productive: A transitioning road map from informality to formality

It is no longer acceptable to see the informal sector as a transient and fleeting phenomena. It will last for a very long time. The informal sector shouldn't be disregarded given its significance and contribution to economic progress. Based on recommendation, 2015 (No. 204), governments should make it more productive by developing policies that eliminates decent work deficits, it is described as "absence of, or limited opportunity for social dialogue and access to rights at work, irregular employment status, and unprotected workers" (ILO, 2002b). Furthermore, governments must work with stakeholders to remove barriers to enterprise growth and propose a formalisation roadmap/action plan toward formalisation. Thus, country-specific strategies for formalising the informal economy should be developed and implemented over the medium and long term. These can be achieved by:

1. Creating a supportive environment that is conducive and enabling to transition from informality to formality,
2. Implementing indirect policy measures to induce behavioural change, and

3. Implementing direct policy measures to enforce compliance.

These are now briefly discussed.

8.3.1 Supportive Policy Environment

Creating a supportive policy environment conducive, favourable, and enabling formalisation is essential. Such policy-supportive settings should improve macroeconomic stability by:

a. implementing effective monetary and fiscal policies as fundamental economic prerequisites to ensure growth as well as price and exchange rate stability to preserve the purchasing power of wages,

b. facilitating job creation rather than reducing it.

8.3.2 Indirect policy measures

Indirect policy measures use soft factors such as personnel and cultural controls to transition from informality to formality. Indirect measures, therefore, seek a voluntary commitment to compliant behaviour rather than forcing citizens to comply using threats and coercive means. The personnel and cultural controls are explained briefly below:

i. i. Personnel controls capitalize on workers' own propensities to drive themselves to success (Merchant & van der Stede, 2007).

ii. To achieve results, cultural controls build on shared customs, norms, ideologies, values, attitudes, and modes of conduct. The rationale is to shape societal identity and achieve a good fit between individual self-identity and societal identity (Merchant & van der Stede, 2007; Simons, 1994).

8.3.3 Direct policy measures

Direct policy measures are employed to alter the behaviour of institutions and individuals by using processes and standardisation to enforce compliance. This can be accomplished by offering incentives and using deterrent measures. These are now briefly explained:

a. Incentives or inducing measures

i. Incentives or inducing measures ('carrots') encourage and reward compliant (or 'desirable') behaviour.

ii. Incentives or inducing measures discourage people from entering into the informal economy space in the first place and encourage those already there to transition to the formal economy, as proposed by the Structuralist.

iii. Such measures create favourable conditions that allow a transition to formality. These include simplifying compliance processes and providing support and advice on growing a business and becoming formal.

b. Deterrent measures (dissuasive sanctions)

i. Deterrent measures (dissuasive sanctions) seek to detect and correct non-compliant behaviour.

ii. The deterrent measures should seek desired behavioural changes by using 'sticks' to correct non-compliant behaviour and to transition from informality to formality.

8.4 The strategic objective for the transition

The overall strategic objective should focus on coordination and collaboration issues on the formalisation of the informal economy and creating conditions for achieving the goals through the implementation of the action plan and actual deliverables. In addition, the strategies should aim to create a network of experts from

selected relevant institutions responsible for specific activities or coordination and supporting roles. A generic roadmap that translates the formalisation vision into action is proposed as follows:

8.5 The Roadmap: Translating the formalisation vision into action

Translating the formalisation vision into action guided by recommendation, 2015 (No. 204) and based on the four pillars of decent work. The four pillars are (a) rights at work, (b) employment creation and enterprise development, (c) social protection and (d) social dialogue.

Table 8.1: Formalisation Roadmap

Strategic Objective	Action to take	Applicable variable	Applicable theory
Support Systems (Strengthening The Potential To Create New Employment Opportunities)			
1) 1) Encourage opportunities for all Africans to engage in inclusive, egalitarian, high-quality education and to pursue lifelong learning	• Improve equal access to high-quality pre-primary education; Make primary and secondary education free; Make technical, vocational, and further education affordable • • · Expand the population of those with the necessary abilities for financial success • • • Get rid of all forms of prejudice in the classroom • • encourage reading and numeracy worldwide	Human development	Modernisation theory
2) Promote healthy lives and promote well-being	• • Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all; • Reduce the maternal mortality ratio to less than 70 per 100 000 live births; • Decrease the preventable deaths of newborns and children under five years of age; and • Reduce the avoidable deaths of infants and young children. • • • Significantly increase health spending and the hiring, nurturing, educating, and retaining of African health professionals.	Human development	Modernisation theory

Strategic Objective	Action to take	Applicable variable	Applicable theory
	• Support research and development of vaccines and medicines for the communicable and non-communicable diseases		
3) Promote good governance	• Deepen governance and accountability • Improve the rule of law and access to justice • Reduce corruption • Establish special development zones for informal economy operators	Governance	Institutional theory
4) Improve macroeconomic stability	• Implement effective monetary policies (by central banks) and fiscal policy (primarily by the Ministries of Finance) • Implement effective and efficient fiscal policies as fundamental economic prerequisites to ensure price and exchange rate stability to preserve the purchasing power of wages	Human development	• Modernisation theory • Neoliberal theory
5) Create a conducive environment for employment generation	• Incorporate employment generation indicators in macroeconomic policy • Mainstream national employment policy into local economic development strategies	Human development	Modernisation theory
6) Create a conducive environment to make apprenticeships more attractive to employers	• Promote youth entrepreneurship through the activities of employers' organisations (intensive private sector development) • Grant tax incentives to enterprises employing young people in less developed districts and/or in priority economic sectors/occupations	Human development	• Modernisation theory • Neoliberal theory
7) Promote financial literacy and education in targeted informal economy Trade Associations	• Establish a broad stakeholder forum and consensus to drive financial literacy and education in Africa sustainably	Human development	Modernisation theory

Strategic Objective	Action to take	Applicable variable	Applicable theory
	• Ensure coordination and consistency of financial literacy and education content • Engage resource sector players to support financial literacy and education programmes		
8) Promote Inclusive Insurance for informal economy workers	• Introduce a comprehensive and enabling regulatory framework for micro-insurance • Create awareness of insurance among informal economy workers • Develop inclusive insurance products among Trade Associations	Human development	Modernisation theory
9) Promote consumer protection in targeted Trade Associations	• Introduce and implement a regulatory framework for financial consumer protection • Create public awareness of consumers' rights under the Financial Consumer Protection Framework for the informal economy • Strengthen complaints handling mechanisms	• Human development • Governance	• Modernisation theory • Institutional theory
10) Promote the digitisation of financial Services among informal economy workers	• Establish a holistic and fully enabling long-term financial digitisation regulatory framework • Innovatively use identification data for financial inclusion • Increase financial access points in rural areas • Achieve broad interoperability across the payment system	• Human development • Governance	• Modernisation theory • Neoliberal theory • Institutional theory
11) Promote the integration of financial inclusion in the planning and implementation processes at district levels.	• Identify flagship (key priority) activities that qualify for government support • Engage government to support flagship activities (key priority)	• Human development • Governance	• Modernisation theory • Neoliberal theory • Institutional theory

Strategic Objective	Action to take	Applicable variable	Applicable theory
Indirect Controls (Change Citizens' Values, Norms And Beliefs)			
12) Create public awareness about rights at work	• Organise educational workshops and seminars for targeted informal economy workers on rights at work • Organise educational workshops and seminars for various targeted informal economy workers and their associations on their rights at work	Human development	• Modernisation theory • Structuralist theory • Institutional theory
13) Create public awareness about business registration, pensions, occupational safety and health and rights at work among Junior and Senior High Schools	• Organise national competition on business registration, pensions, occupational safety and health and rights at work among Junior and Senior High Schools	• Human development • Governance	• Modernisation theory • Neoliberal theory • Institutional theory
Reforming Institutions And Regulations (Indirect Controls)			
14) Reform and Strengthen the capacity of regulatory institutions to promote decent work in the informal economy	• Strengthen the capacity of Employment and Labour Organs of the state and its Agencies to monitor and evaluate the country-specific employment policy and accompanying action plans • Broaden the knowledge base of social partners on the four pillars of decent work Reform the labour inspection system to take action on informal employment, especially of youth	• Human development • Governance	• Modernisation theory • Neoliberal theory • Institutional theory • Structuralist theory
Strengthen Data Collection And Monitoring Capacity (Indirect Controls)			
15) Identify informal economy enterprises using the National Identification System	• Complete and implement a comprehensive national identification system	• Governance	• Institutional theory • Structuralist theory
16) Track the extent of informal enterprises and employment over determined periods	• Conduct Informal Employment Survey and census within determined periods	• Human development • Governance	• Modernisation theory • Neoliberal theory

Strategic Objective	Action to take	Applicable variable	Applicable theory
	• Disseminate Informal Employment Survey And Census Reports with relevant institutions and the public		• Institutional theory • Structuralist theory
17) Estimate the contribution of the informal economy to GDP (National and across sectors)	• Estimate the size of the informal economy to GDP and across sectors	• Human development	• Modernisation theory
Direct control (Increase deterrence/compliance)			
18) Strengthen pension enforcement	• Group informal economy according to structure and operation and set challenging targets for pension coverage in the short, medium and long term	• Human development • Governance	• Modernisation theory • Institutional theory • Structuralist theory
19) Broaden access to Occupational Safety and Health Services (OSH)	• Adopt the Occupational Health Services (OHS) approach and integrate it into informal economy enterprises/associations operations • Develop strategies to ensure that worker training in occupational hazards and safe work practices are available to informal economy workers • Develop, endorse and implement occupational safety and health action plan	• Human development • Governance	• Modernisation theory • Institutional theory • Structuralist theory
20) Promote rights at work and social dialogue	• Eliminate forced labour at the workplace within the informal economy	• Human development • Governance	• Modernisation theory • Institutional theory
Direct control (Providing incentives)			

Strategic Objective	Action to take	Applicable variable	Applicable theory
21) Incentivise, encourage and reward increased voluntary business registration and licensing	• Simplify business registration forms for the informal economy workers • Reduce time and cost in doing business to licensing and permits	• Human development • Governance	• Modernisation theory • Institutional theory • Structuralist theory
22) Incentivise, boost and reward increased voluntary pension compliance	• Mount educational events targeted government and civil society organisations towards a consensus for creating a 'zero pillar social pension scheme' targeting citizens, particularly those in the informal economy. • Provide friendly and straightforward forms/procedures for pension contribution payment and reporting	• Human development • Governance	• Modernisation theory • Neoliberal theory • Institutional theory • Structuralist theory
23) Incentivise and encourage compliance to occupational safety and health issues	• Institute Annual Occupational Safety and Health Awards • Promote occupational safety and health awareness consciousness education in Junior and Senior High Schools	Human development	Modernisation theory

Source: Devised by the author (2021)

CHAPTER NINE:
SUMMARY, CONCLUSION AND POLICY IMPLICATIONS

9.0 Introduction

An overview of the earlier chapters of this thesis is provided in this chapter. It first emphasizes how human development affects governance, the informal economy, and the interactive term (human development*governance), as well as how this study adds to theory and practice. On the basis of the research's key findings, policy recommendations are then put forth. Finally, it highlights the study's shortcomings and makes some suggestions for future research to expand our understanding of the unofficial economy. These are now presented.

9.1 Summary of results

The research generated three key results: description of data analysis techniques, descriptive and inferential results on the impact of human development on the informal economy, the impact of governance on the informal economy, and the interaction term (human development*governance) on the informal economy. These are now presented below:

9.1.1 The state of the informal economy in Africa

i. The informal economy's average size was 36.679% as a percentage of GDP. It ranged from a minimum of 19.230% to a maximum of 69.080%, with a standard deviation of 9.428.

ii. The average value of the human development index was 0.528, and it ranged from a minimum of 0.283 to a maximum value of 0.801 with a standard deviation of 0.117.

iii. Governance had an average value of 0.0, a standard deviation of 2.274, a minimum value of -5.132 and a maximum of 5.184.

iv. The average value of trade openness was 77.037% of GDP and a standard deviation of 35.056%. The minimum and maximum values were 16.670% and 225.020%, respectively.

v. The average value of debt was 55.032% of GDP. It ranged from a minimum value of 0.49% to a maximum of 260.960%, with a standard deviation of 0.117%.

vi. The rate of the urban population had an average value of 43.193%, a standard deviation of 16.925%, a minimum value of 14.610% and a maximum value of 89.740%.

vii. Finally, the average value of manufacturing value-added was 11.325%, and it ranged from a minimum value of 2.540% to a maximum of 40.060%, with a standard deviation of 5.001%.

viii. The scatter plots demonstrated a clear negative association between human development and governance and the size of the informal economy.

9.1.2 Human development and the informal economy in Africa

The first hypothesis that the size of the informal economy in Africa is negatively affected by human development is affirmed. These are now presented below:

i. A one (1) percentage increase in human development reduced the size of the informal economy by almost 15 (14.826) percentage points at a p-value of One (1%).

ii. With the introduction of the moderating effect of human development*governance, a one (1) percentage increase in human

development reduced the size of the informal economy by almost 14 (13.738) percentage points at a p-value of one (1%).

iii. The moderating coefficient of human development*governance was marginally negatively significant at a p-value of 10%.

iv. The multiple imputation data models explained about 46 per cent of the total variation in the size of the informal economy.

v. Human development has a long-run negative causality impact on the size of the informal economy at the 1% significant level, ceteris paribus.

vi. Human development and governance have a negative joint causality impact on the size of the informal economy at the 1% significant level in the long run with a long-rum convergence to equilibrium at the speed of 44.9%, ceteris paribus.

vii. Both human development and interacting variable human development*governance have a negative causal impact on the size of the informal economy at the 1% significant level ceteris paribus.

9.1.3 Governance and the size of the informal economy in Africa

The second hypothesis that the size of the informal economy in Africa is negatively affected by governance is also affirmed. It can be inferred from the two-step system generalised method of moments (SGMM), and the pooled mean group (PMG) estimator for inferring causality that:

i. A one per cent (1%) change in the log of governance is associated with a 0.445% decrease in the log of the size of the informal economy in the short run at the 10% significant level. Thus, the log of governance has a short-run negative causality impact on the Informal economy on the average ceteris paribus.

ii. Without the interaction variable (human development*governance), it can be inferred that in the long-run, governance has a negative causality impact on the informal economy at the 1% significant level, ceteris paribus.

iii. Human development (HDI) is much more likely to cause a reduction in the size of the informal economy than governance by almost forty (39.55) times in the long run at the 1% significant level, ceteris paribus.

iv. Human development (HDI) and governance (GOV) has a negative joint causality impact on the informal economy at the 1% significant level in the long run with a long-rum convergence to equilibrium at the speed of 44.9%, ceteris paribus.

v. All the variables (human development, governance and human development*governance) have a negative joint causality impact on the Informal economy at the 1% significant level in the long run with a long-rum convergence to equilibrium at the speed of 56.5%.

9.1.4 The interaction term (human development*governance) and the size of the informal economy in Africa

The third hypothesis that the interaction between human development and governance is negatively affected by the size informal economy in Africa is also affirmed.

i. It can be inferred from the multiple imputation model that the moderating coefficient of human development*governance was marginally negatively significant at a p-value of 10%.

ii. The interaction of human development and governance (log of human development*governance) negatively impacts the log of the informal economy.

iii. A 1% change in log(human development*governance) is associated with a 0.631% decrease in the log of the size of the informal economy in the short run, respectively, at the 10% significant level on the average ceteris paribus.

9.2 Toward a productive informal economy in Africa

1. **Making health care more accessible, of a higher quality and more efficient can be achieved by:**
   i. Reducing neonatal mortality to at least as low as 12 per 1,000 live births and under-5 to at least as low as 25 per 1,000 live births (Sustainable Development Goal 3),
   ii. Reducing maternal mortality ratio to less than 70 per 100,000 live births (Sustainable Development Goal 3),
   iii. Achieving universal health coverage, including financial risk protection, access to quality essential healthcare services, and safe, effective, quality and affordable essential medicines and vaccines for all Africans (Sustainable Development Goal 3),
   iv. Increasing health financing and support for the health workforce,
   v. Supporting the research and development of vaccines and medicines and providing access to affordable essential medicines and vaccines per the Doha Declaration on the TRIPS.
   vi. Improve the percentage of households with potable water supply.
   vii. Improve the percentage of households with access to toilets.
   viii. Improve the percentage of electrified villages.

2. **Making the education system more inclusive, high-quality and efficient**

African countries should work towards these metrics in education:

i. 100% completely free, equitable and quality kindergarten, primary school, junior high school and senior high school enrolment rates for all girls and boys,

ii. Trained teachers (100 %) for kindergarten, primary school, junior high school and senior high school,

iii. Textbooks-pupil ratio at the rate of 100%,

iv. 100% completion rates for kindergarten, primary school, junior high school and senior high school,

v. Proficiency in core subjects (100 %),

vi. Teachers with technical, vocational education and training qualifications (100 %),

vii. 75% tertiary enrolment rate,

viii. Financing education,

ix. Support academic and research institutions to develop a high level of human capacities,

x. Increase the number of incubation facilities for recent junior high or senior high school graduates who want to launch and manage their own firms in order to expand TVET capacity-building activities. The following services, among others, could be offered by the incubation centers: Mentoring, fundamental business registration procedures and their meaning, fundamental bookkeeping, networking activities and internet connection, market information access, regulatory compliance, and where and how to obtain start-up and operating capital are just a few of the topics covered.

3. **Making income-generating opportunities (command over resources) more inclusive and sustainable**

African countries should work towards these metrics in income (GNI):

i. Percentage of households with incomes below 50% of median income ("relative poverty").

ii. National social protection programs cover 100% of the eligible population.

4. **Institutionalising public participation in local and national governance**

i. African nations should strive for the following governance metrics:

ii. i. Compared to national distributions, by sex, age, people with disabilities, and population groups, 75% of the population believes decision-making is inclusive and responsive by sex, age, disability, and population group for at least 40% of positions in national and local institutions, including I the legislatures; (ii) the public service; and (iii) the judiciary.

5. **Formulating and delivering a formalisation strategy guided by recommendation, 2015 (No. 204) and based on the four pillars of decent work.**

9.3 Conclusion

1. Based on the analysis, it is concluded that human development and governance negatively impact the size of the informal economy in Africa.
2. The results indicate that regions and countries with higher human development for their citizenry have smaller sizes of the informal economy.

3. Also, regions and countries with higher institutional quality, which are the six dimensions of governance, have smaller sizes of the informal economy.
4. The main findings from the study indicate that governments can utilise human development and governance to reduce the informal economy, provided that trade openness, debt, urban population and manufacturing value-added are controlled. However, since the impact of human development on the informal economy is stronger than that of governance on the informal economy, as found in this study, governments should prioritise human development rather than governance when they aim to reduce the size of the informal economy.

9.4 Policy implications and for development practice

Each African country should:

1. Make the education system more inclusive, high-quality and efficient,
2. Make health care more accessible, of a higher quality and more efficient,
3. Institutionalise public participation in local and national governance,

9.5 Recommendations for further research

The following recommendations are made for further studies:

1. The focus of this study was primarily on Africa. However, future studies would benefit future studies to investigate the relationship between informal economy, human development, and governance on different continents.
2. Although the study's findings are robust, there is a need to explore the relationship further using micro-level datasets.
3. Given the limitation of the aggregated data, future studies must focus on using microenterprise data disaggregated by sex, age, education and other

demographic characteristics to investigate the relationship between informal economy, human development and governance.

4. Formulating and delivering a formalisation strategy guided by recommendation, 2015 (No. 204) and based on the four pillars of decent work will be helpful.

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APPENDIX

List of African countries considered for the thesis

ID	Country	ContinentCode	Sub Reg	CodeID	Codenum	Year
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2000
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2001
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2002
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2003
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2004
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2005
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2006
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2007
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2008
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2009
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2010
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2011
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2012
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2013
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2014
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2015
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2016
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2017
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2018
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2019
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2000
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2001
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2002
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2003
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2004
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2005
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2006
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2007
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2008
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2009
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2010
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2011
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2012
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2013
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2014
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2015
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2016
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2017
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2018
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2019
2	Botswana	AF	WEST_AFRICA	BFA	2	2000
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2001
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2002
3	Burkina Faso	AF				

APPENDIX

List of African countries considered for the thesis

ID	Country	ContinentCode	Sub_Reg	CodeID	Codenum	Year
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2000
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2001
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2002
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2003
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2004
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2005
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2006
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2007
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2008
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2009
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2010
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2011
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2012
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2013
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2014
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2015
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2016
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2017
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2018
1	Angola	AF	CENTRAL_AFRICA	AGO	1	2019
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2000
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2001
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2002
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2003
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2004
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2005
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2006
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2007
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2008
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2009
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2010
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2011
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2012
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2013
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2014
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2015
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2016
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2017
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2018
2	Botswana	AF	SOUTHERN_AFRICA	BWA	3	2019
2	Botswana	AF	WEST_AFRICA	BFA	2	2000
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2001
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2002
3	Burkina Faso	AF				

3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2003
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2004
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2005
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2006
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2007
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2008
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2009
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2010
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2011
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2012
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2013
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2014
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2015
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2016
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2017
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2018
3	Burkina Faso	AF	WEST_AFRICA	BFA	2	2019
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2000
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2001
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2002
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2003
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2004
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2005
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2006
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2007
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2008
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2009
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2010
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2011
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2012
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2013
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2014
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2015
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2016
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2017
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2018
4	Cameroon	AF	CENTRAL_AFRICA	CMR	6	2019
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2000
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2001
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2002
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2003
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2004
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2005
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2006
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2007
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2008
5	Cape Verde	AF				

5	Cape Verde	AF	WEST_AFRICA	CPV	8	2009
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2010
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2011
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2012
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2013
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2014
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2015
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2016
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2017
5	Cape Verde	AF	WEST_AFRICA	CPV	8	2018
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2000
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2001
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2002
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2003
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2004
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2005
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2006
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2007
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2008
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2009
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2010
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2011
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2012
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2013
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2014
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2015
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2016
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2017

6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2018
6	Central African Republic	AF	CENTRAL_AFRICA	CAF	4	2019
7	Egypt	AF	NORTH_AFRICA	EGY	9	2000
7	Egypt	AF	NORTH_AFRICA	EGY	9	2001
7	Egypt	AF	NORTH_AFRICA	EGY	9	2002
7	Egypt	AF	NORTH_AFRICA	EGY	9	2003
7	Egypt	AF	NORTH_AFRICA	EGY	9	2004
7	Egypt	AF	NORTH_AFRICA	EGY	9	2005
7	Egypt	AF	NORTH_AFRICA	EGY	9	2006
7	Egypt	AF	NORTH_AFRICA	EGY	9	2007
7	Egypt	AF	NORTH_AFRICA	EGY	9	2008
7	Egypt	AF	NORTH_AFRICA	EGY	9	2009
7	Egypt	AF	NORTH_AFRICA	EGY	9	2010
7	Egypt	AF	NORTH_AFRICA	EGY	9	2011
7	Egypt	AF	NORTH_AFRICA	EGY	9	2012
7	Egypt	AF	NORTH_AFRICA	EGY	9	2013
7	Egypt	AF	NORTH_AFRICA	EGY	9	2014
7	Egypt	AF	NORTH_AFRICA	EGY	9	2015
7	Egypt	AF	NORTH_AFRICA	EGY	9	2016
7	Egypt	AF	NORTH_AFRICA	EGY	9	2017
7	Egypt	AF	NORTH_AFRICA	EGY	9	2018
7	Egypt	AF	NORTH_AFRICA	EGY	9	2019
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2000
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2001
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2002
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2003
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2004
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2005
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2006
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2007
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2008
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2009
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2010
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2011

8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2012
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2013
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2014
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2015
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2016
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2017
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2018
8	Equatorial Guinea	AF	CENTRAL_AFRICA	GNQ	13	2019
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2000
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2001
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2002
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2003
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2004
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2005
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2006
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2007
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2008
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2009
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2010
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2011
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2012
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2013
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2014
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2015
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2016
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2017
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2018
9	Ethiopia	AF	EAST_AFRICA	ETH	10	2019
9	Ethiopia	AF	CENTRAL_AFRICA	GAB	11	2000
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2001
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2002
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2003
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2004
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2005
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2006
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2007
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2008
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2009
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2010
10	Gabon	AF				

10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2011
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2012
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2013
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2014
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2015
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2016
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2017
10	Gabon	AF	CENTRAL_AFRICA	GAB	11	2018
11	Ghana	AF	WEST_AFRICA	GHA	12	2000
11	Ghana	AF	WEST_AFRICA	GHA	12	2001
11	Ghana	AF	WEST_AFRICA	GHA	12	2002
11	Ghana	AF	WEST_AFRICA	GHA	12	2003
11	Ghana	AF	WEST_AFRICA	GHA	12	2004
11	Ghana	AF	WEST_AFRICA	GHA	12	2005
11	Ghana	AF	WEST_AFRICA	GHA	12	2006
11	Ghana	AF	WEST_AFRICA	GHA	12	2007
11	Ghana	AF	WEST_AFRICA	GHA	12	2008
11	Ghana	AF	WEST_AFRICA	GHA	12	2009
11	Ghana	AF	WEST_AFRICA	GHA	12	2010
11	Ghana	AF	WEST_AFRICA	GHA	12	2011
11	Ghana	AF	WEST_AFRICA	GHA	12	2012
11	Ghana	AF	WEST_AFRICA	GHA	12	2013
11	Ghana	AF	WEST_AFRICA	GHA	12	2014
11	Ghana	AF	WEST_AFRICA	GHA	12	2015
11	Ghana	AF	WEST_AFRICA	GHA	12	2016
11	Ghana	AF	WEST_AFRICA	GHA	12	2017
11	Ghana	AF	WEST_AFRICA	GHA	12	2018
11	Ghana	AF	WEST_AFRICA	GHA	12	2019
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2000
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2001
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2002
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2003
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2004
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2005
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2006
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2007
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2008
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2009
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2010
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2011
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2012
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2013
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2014
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2015
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2016
12	Ivory Coast	AF				

12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2017
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2018
12	Ivory Coast	AF	WEST_AFRICA	CIV	5	2019
13	Kenya	AF	EAST_AFRICA	KEN	14	2000
13	Kenya	AF	EAST_AFRICA	KEN	14	2001
13	Kenya	AF	EAST_AFRICA	KEN	14	2002
13	Kenya	AF	EAST_AFRICA	KEN	14	2003
13	Kenya	AF	EAST_AFRICA	KEN	14	2004
13	Kenya	AF	EAST_AFRICA	KEN	14	2005
13	Kenya	AF	EAST_AFRICA	KEN	14	2006
13	Kenya	AF	EAST_AFRICA	KEN	14	2007
13	Kenya	AF	EAST_AFRICA	KEN	14	2008
13	Kenya	AF	EAST_AFRICA	KEN	14	2009
13	Kenya	AF	EAST_AFRICA	KEN	14	2010
13	Kenya	AF	EAST_AFRICA	KEN	14	2011
13	Kenya	AF	EAST_AFRICA	KEN	14	2012
13	Kenya	AF	EAST_AFRICA	KEN	14	2013
13	Kenya	AF	EAST_AFRICA	KEN	14	2014
13	Kenya	AF	EAST_AFRICA	KEN	14	2015
13	Kenya	AF	EAST_AFRICA	KEN	14	2016
13	Kenya	AF	EAST_AFRICA	KEN	14	2017
13	Kenya	AF	EAST_AFRICA	KEN	14	2018
13	Kenya	AF	EAST_AFRICA	KEN	14	2019
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2000
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2001
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2002
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2003
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2004
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2005
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2006
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2007
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2008
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2009
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2010
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2011
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2012
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2013
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2014
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2015
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2016
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2017
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2018
14	Lesotho	AF	SOUTHERN_AFRICA	LSO	15	2019
14	Lesotho	AF	EAST_AFRICA	MDG	17	2000
15	Madagascar	AF	EAST_AFRICA	MDG	17	2001
15	Madagascar	AF	EAST_AFRICA	MDG	17	2002
15	Madagascar	AF				

15	Madagascar	AF	EAST_AFRICA	MDG	17	2003
15	Madagascar	AF	EAST_AFRICA	MDG	17	2004
15	Madagascar	AF	EAST_AFRICA	MDG	17	2005
15	Madagascar	AF	EAST_AFRICA	MDG	17	2006
15	Madagascar	AF	EAST_AFRICA	MDG	17	2007
15	Madagascar	AF	EAST_AFRICA	MDG	17	2008
15	Madagascar	AF	EAST_AFRICA	MDG	17	2009
15	Madagascar	AF	EAST_AFRICA	MDG	17	2010
15	Madagascar	AF	EAST_AFRICA	MDG	17	2011
15	Madagascar	AF	EAST_AFRICA	MDG	17	2012
15	Madagascar	AF	EAST_AFRICA	MDG	17	2013
15	Madagascar	AF	EAST_AFRICA	MDG	17	2014
15	Madagascar	AF	EAST_AFRICA	MDG	17	2015
15	Madagascar	AF	EAST_AFRICA	MDG	17	2016
15	Madagascar	AF	EAST_AFRICA	MDG	17	2017
15	Madagascar	AF	EAST_AFRICA	MDG	17	2018
15	Madagascar	AF	EAST_AFRICA	MDG	17	2019
16	Malawi	AF	EAST_AFRICA	MWI	21	2000
16	Malawi	AF	EAST_AFRICA	MWI	21	2001
16	Malawi	AF	EAST_AFRICA	MWI	21	2002
16	Malawi	AF	EAST_AFRICA	MWI	21	2003
16	Malawi	AF	EAST_AFRICA	MWI	21	2004
16	Malawi	AF	EAST_AFRICA	MWI	21	2005
16	Malawi	AF	EAST_AFRICA	MWI	21	2006
16	Malawi	AF	EAST_AFRICA	MWI	21	2007
16	Malawi	AF	EAST_AFRICA	MWI	21	2008
16	Malawi	AF	EAST_AFRICA	MWI	21	2009
16	Malawi	AF	EAST_AFRICA	MWI	21	2010
16	Malawi	AF	EAST_AFRICA	MWI	21	2011
16	Malawi	AF	EAST_AFRICA	MWI	21	2012
16	Malawi	AF	EAST_AFRICA	MWI	21	2013
16	Malawi	AF	EAST_AFRICA	MWI	21	2014
16	Malawi	AF	EAST_AFRICA	MWI	21	2015
16	Malawi	AF	EAST_AFRICA	MWI	21	2016
16	Malawi	AF	EAST_AFRICA	MWI	21	2017
16	Malawi	AF	EAST_AFRICA	MWI	21	2018
16	Malawi	AF	EAST_AFRICA	MWI	21	2019
16	Malawi	AF	EAST_AFRICA	MWI	21	2019
17	Mali	AF	WEST_AFRICA	MLI	18	2000
17	Mali	AF	WEST_AFRICA	MLI	18	2001
17	Mali	AF	WEST_AFRICA	MLI	18	2002
17	Mali	AF	WEST_AFRICA	MLI	18	2003
17	Mali	AF	WEST_AFRICA	MLI	18	2004
17	Mali	AF	WEST_AFRICA	MLI	18	2005
17	Mali	AF	WEST_AFRICA	MLI	18	2006
17	Mali	AF	WEST_AFRICA	MLI	18	2007
17	Mali	AF	WEST_AFRICA	MLI	18	2008
17	Mali	AF	WEST_AFRICA	MLI	18	2008

17	Mali	AF	WEST_AFRICA	MLI	18	2009
17	Mali	AF	WEST_AFRICA	MLI	18	2010
17	Mali	AF	WEST_AFRICA	MLI	18	2011
17	Mali	AF	WEST_AFRICA	MLI	18	2012
17	Mali	AF	WEST_AFRICA	MLI	18	2013
17	Mali	AF	WEST_AFRICA	MLI	18	2014
17	Mali	AF	WEST_AFRICA	MLI	18	2015
17	Mali	AF	WEST_AFRICA	MLI	18	2016
17	Mali	AF	WEST_AFRICA	MLI	18	2017
17	Mali	AF	WEST_AFRICA	MLI	18	2018
18	Mauritius	AF	EAST_AFRICA	MUS	20	2000
18	Mauritius	AF	EAST_AFRICA	MUS	20	2001
18	Mauritius	AF	EAST_AFRICA	MUS	20	2002
18	Mauritius	AF	EAST_AFRICA	MUS	20	2003
18	Mauritius	AF	EAST_AFRICA	MUS	20	2004
18	Mauritius	AF	EAST_AFRICA	MUS	20	2005
18	Mauritius	AF	EAST_AFRICA	MUS	20	2006
18	Mauritius	AF	EAST_AFRICA	MUS	20	2007
18	Mauritius	AF	EAST_AFRICA	MUS	20	2008
18	Mauritius	AF	EAST_AFRICA	MUS	20	2009
18	Mauritius	AF	EAST_AFRICA	MUS	20	2010
18	Mauritius	AF	EAST_AFRICA	MUS	20	2011
18	Mauritius	AF	EAST_AFRICA	MUS	20	2012
18	Mauritius	AF	EAST_AFRICA	MUS	20	2013
18	Mauritius	AF	EAST_AFRICA	MUS	20	2014
18	Mauritius	AF	EAST_AFRICA	MUS	20	2015
18	Mauritius	AF	EAST_AFRICA	MUS	20	2016
18	Mauritius	AF	EAST_AFRICA	MUS	20	2017
18	Mauritius	AF	EAST_AFRICA	MUS	20	2018
18	Mauritius	AF	EAST_AFRICA	MUS	20	2019
19	Morocco	AF	NORTH_AFRICA	MAR	16	2000
19	Morocco	AF	NORTH_AFRICA	MAR	16	2001
19	Morocco	AF	NORTH_AFRICA	MAR	16	2002
19	Morocco	AF	NORTH_AFRICA	MAR	16	2003
19	Morocco	AF	NORTH_AFRICA	MAR	16	2004
19	Morocco	AF	NORTH_AFRICA	MAR	16	2005
19	Morocco	AF	NORTH_AFRICA	MAR	16	2006
19	Morocco	AF	NORTH_AFRICA	MAR	16	2007
19	Morocco	AF	NORTH_AFRICA	MAR	16	2008
19	Morocco	AF	NORTH_AFRICA	MAR	16	2009
19	Morocco	AF	NORTH_AFRICA	MAR	16	2010
19	Morocco	AF	NORTH_AFRICA	MAR	16	2011
19	Morocco	AF	NORTH_AFRICA	MAR	16	2012
19	Morocco	AF	NORTH_AFRICA	MAR	16	2013
19	Morocco	AF	NORTH_AFRICA	MAR	16	2014
19	Morocco	AF				

19	Morocco	AF	NORTH_AFRICA	MAR	16	2015
19	Morocco	AF	NORTH_AFRICA	MAR	16	2016
19	Morocco	AF	NORTH_AFRICA	MAR	16	2017
19	Morocco	AF	NORTH_AFRICA	MAR	16	2018
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2000
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2001
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2002
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2003
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2004
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2005
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2006
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2007
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20	Mozambique	AF	EAST_AFRICA	MOZ	19	2009
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2010
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2011
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2012
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2013
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2014
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2015
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2016
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2017
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2018
20	Mozambique	AF	EAST_AFRICA	MOZ	19	2019
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2000
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2001
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2002
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2003
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2004
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2005
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2006
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2007
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2008
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2009
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2010
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2011
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2012
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2013
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2014
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2015
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2016
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2017
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2018
21	Namibia	AF	SOUTHERN_AFRICA	NAM	22	2019

22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2000
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2001
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2002
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2003
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2004
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2005
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2006
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2007
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2008
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2009
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2010
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2011
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2012
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2013
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2014
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2015
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2016
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2017
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2018
22	Republic of the Congo	AF	CENTRAL_AFRICA	COG	7	2019
23	Rwanda	AF	EAST_AFRICA	RWA	23	2000
23	Rwanda	AF	EAST_AFRICA	RWA	23	2001
23	Rwanda	AF	EAST_AFRICA	RWA	23	2002
23	Rwanda	AF	EAST_AFRICA	RWA	23	2003
23	Rwanda	AF	EAST_AFRICA	RWA	23	2004
23	Rwanda	AF	EAST_AFRICA	RWA	23	2005
23	Rwanda	AF	EAST_AFRICA	RWA	23	2006
23	Rwanda	AF	EAST_AFRICA	RWA	23	2007
23	Rwanda	AF	EAST_AFRICA	RWA	23	2008
23	Rwanda	AF	EAST_AFRICA	RWA	23	2009

23	Rwanda	AF	EAST_AFRICA	RWA	23	2009
23	Rwanda	AF	EAST_AFRICA	RWA	23	2010
23	Rwanda	AF	EAST_AFRICA	RWA	23	2011
23	Rwanda	AF	EAST_AFRICA	RWA	23	2012
23	Rwanda	AF	EAST_AFRICA	RWA	23	2013
23	Rwanda	AF	EAST_AFRICA	RWA	23	2014
23	Rwanda	AF	EAST_AFRICA	RWA	23	2015
23	Rwanda	AF	EAST_AFRICA	RWA	23	2016
23	Rwanda	AF	EAST_AFRICA	RWA	23	2017
23	Rwanda	AF	EAST_AFRICA	RWA	23	2018
24	Senegal	AF	WEST_AFRICA	SEN	25	2000
24	Senegal	AF	WEST_AFRICA	SEN	25	2001
24	Senegal	AF	WEST_AFRICA	SEN	25	2002
24	Senegal	AF	WEST_AFRICA	SEN	25	2003
24	Senegal	AF	WEST_AFRICA	SEN	25	2004
24	Senegal	AF	WEST_AFRICA	SEN	25	2005
24	Senegal	AF	WEST_AFRICA	SEN	25	2006
24	Senegal	AF	WEST_AFRICA	SEN	25	2007
24	Senegal	AF	WEST_AFRICA	SEN	25	2008
24	Senegal	AF	WEST_AFRICA	SEN	25	2009
24	Senegal	AF	WEST_AFRICA	SEN	25	2010
24	Senegal	AF	WEST_AFRICA	SEN	25	2011
24	Senegal	AF	WEST_AFRICA	SEN	25	2012
24	Senegal	AF	WEST_AFRICA	SEN	25	2013
24	Senegal	AF	WEST_AFRICA	SEN	25	2014
24	Senegal	AF	WEST_AFRICA	SEN	25	2015
24	Senegal	AF	WEST_AFRICA	SEN	25	2016
24	Senegal	AF	WEST_AFRICA	SEN	25	2017
24	Senegal	AF	WEST_AFRICA	SEN	25	2018
24	Senegal	AF	WEST_AFRICA	SEN	25	2019
25	Seychelles	AF	EAST_AFRICA	SYC	26	2000
25	Seychelles	AF	EAST_AFRICA	SYC	26	2001
25	Seychelles	AF	EAST_AFRICA	SYC	26	2002
25	Seychelles	AF	EAST_AFRICA	SYC	26	2003
25	Seychelles	AF	EAST_AFRICA	SYC	26	2004
25	Seychelles	AF	EAST_AFRICA	SYC	26	2005
25	Seychelles	AF	EAST_AFRICA	SYC	26	2006
25	Seychelles	AF	EAST_AFRICA	SYC	26	2007
25	Seychelles	AF	EAST_AFRICA	SYC	26	2008
25	Seychelles	AF	EAST_AFRICA	SYC	26	2009
25	Seychelles	AF	EAST_AFRICA	SYC	26	2010
25	Seychelles	AF	EAST_AFRICA	SYC	26	2011
25	Seychelles	AF	EAST_AFRICA	SYC	26	2012
25	Seychelles	AF	EAST_AFRICA	SYC	26	2013
25	Seychelles	AF	EAST_AFRICA	SYC	26	2014
25	Seychelles	AF	EAST_AFRICA			

25	Seychelles	AF	EAST_AFRICA	SYC	26	2015
25	Seychelles	AF	EAST_AFRICA	SYC	26	2016
25	Seychelles	AF	EAST_AFRICA	SYC	26	2017
25	Seychelles	AF	EAST_AFRICA	SYC	26	2018
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2000
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2001
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2002
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2003
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2004
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2005
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2006
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2007
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26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2009
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2010
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2011
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2012
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26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2017
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2018
26	South Africa	AF	SOUTHERN_AFRICA	ZAF	30	2019
27	Sudan	AF	NORTH_AFRICA	SDN	24	2000
27	Sudan	AF	NORTH_AFRICA	SDN	24	2001
27	Sudan	AF	NORTH_AFRICA	SDN	24	2002
27	Sudan	AF	NORTH_AFRICA	SDN	24	2003
27	Sudan	AF	NORTH_AFRICA	SDN	24	2004
27	Sudan	AF	NORTH_AFRICA	SDN	24	2005
27	Sudan	AF	NORTH_AFRICA	SDN	24	2006
27	Sudan	AF	NORTH_AFRICA	SDN	24	2007
27	Sudan	AF	NORTH_AFRICA	SDN	24	2008
27	Sudan	AF	NORTH_AFRICA	SDN	24	2009
27	Sudan	AF	NORTH_AFRICA	SDN	24	2010
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27	Sudan	AF	NORTH_AFRICA	SDN	24	2012
27	Sudan	AF	NORTH_AFRICA	SDN	24	2013
27	Sudan	AF	NORTH_AFRICA	SDN	24	2014
27	Sudan	AF	NORTH_AFRICA	SDN	24	2015
27	Sudan	AF	NORTH_AFRICA	SDN	24	2016
27	Sudan	AF	NORTH_AFRICA	SDN	24	2017
27	Sudan	AF	NORTH_AFRICA	SDN	24	2018
27	Sudan	AF	NORTH_AFRICA	SDN	24	2019
27	Sudan	AF	EAST_AFRICA	TZA	29	2000
28	Tanzania	AF				

28	Tanzania	AF	EAST_AFRICA	TZA	29	2001
28	Tanzania	AF	EAST_AFRICA	TZA	29	2002
28	Tanzania	AF	EAST_AFRICA	TZA	29	2003
28	Tanzania	AF	EAST_AFRICA	TZA	29	2004
28	Tanzania	AF	EAST_AFRICA	TZA	29	2005
28	Tanzania	AF	EAST_AFRICA	TZA	29	2006
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28	Tanzania	AF	EAST_AFRICA	TZA	29	2013
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28	Tanzania	AF	EAST_AFRICA	TZA	29	2018
28	Tanzania	AF	EAST_AFRICA	TZA	29	2019
29	Togo	AF	WEST_AFRICA	TGO	27	2000
29	Togo	AF	WEST_AFRICA	TGO	27	2001
29	Togo	AF	WEST_AFRICA	TGO	27	2002
29	Togo	AF	WEST_AFRICA	TGO	27	2003
29	Togo	AF	WEST_AFRICA	TGO	27	2004
29	Togo	AF	WEST_AFRICA	TGO	27	2005
29	Togo	AF	WEST_AFRICA	TGO	27	2006
29	Togo	AF	WEST_AFRICA	TGO	27	2007
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29	Togo	AF	WEST_AFRICA	TGO	27	2009
29	Togo	AF	WEST_AFRICA	TGO	27	2010
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29	Togo	AF	WEST_AFRICA	TGO	27	2012
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29	Togo	AF	WEST_AFRICA	TGO	27	2018
29	Togo	AF	WEST_AFRICA	TGO	27	2019
30	Tunisia	AF	NORTH_AFRICA	TUN	28	2000
30	Tunisia	AF	NORTH_AFRICA	TUN	28	2001
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30	Tunisia	AF	NORTH_AFRICA	TUN	28	2006
30	Tunisia	AF				

30	Tunisia	AF	NORTH_AFRICA	TUN	28	2007
30	Tunisia	AF	NORTH_AFRICA	TUN	28	2008
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30	Tunisia	AF	NORTH_AFRICA	TUN	28	2017
30	Tunisia	AF	NORTH_AFRICA	TUN	28	2018
30	Tunisia	AF	NORTH_AFRICA	TUN	28	2019
31	Zambia	AF	EAST_AFRICA	ZMB	31	2000
31	Zambia	AF	EAST_AFRICA	ZMB	31	2001
31	Zambia	AF	EAST_AFRICA	ZMB	31	2002
31	Zambia	AF	EAST_AFRICA	ZMB	31	2003
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31	Zambia	AF	EAST_AFRICA	ZMB	31	2006
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31	Zambia	AF	EAST_AFRICA	ZMB	31	2008
31	Zambia	AF	EAST_AFRICA	ZMB	31	2009
31	Zambia	AF	EAST_AFRICA	ZMB	31	2010
31	Zambia	AF	EAST_AFRICA	ZMB	31	2011
31	Zambia	AF	EAST_AFRICA	ZMB	31	2012
31	Zambia	AF	EAST_AFRICA	ZMB	31	2013
31	Zambia	AF	EAST_AFRICA	ZMB	31	2014
31	Zambia	AF	EAST_AFRICA	ZMB	31	2015
31	Zambia	AF	EAST_AFRICA	ZMB	31	2016
31	Zambia	AF	EAST_AFRICA	ZMB	31	2017
31	Zambia	AF	EAST_AFRICA	ZMB	31	2018
31	Zambia	AF	EAST_AFRICA	ZMB	31	2019
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2000
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2001
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2002
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2003
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2004
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2005
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2006
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32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2008
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2009
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2010
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2011
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2012

32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2013
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2014
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2015
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2016
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2017
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2018
32	Zimbabwe	AF	EAST_AFRICA	ZWE	32	2019