UNIVERSITY OF GHANA

THE IMPACT OF INCOME INEQUALITY ON ECONOMIC GROWTH IN SUB-SAHARAN AFRICA

BY

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DECLARATION

I, Emmanuel Brehini, declare that this thesis is my own work and has not been documented for presentation in this or other universities. All references in this work have duly been acknowledged. I take the sole responsibility for any shortcomings in this work.

14 January 2022

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CERTIFICATION

We hereby certify that the thesis was supervised following procedures laid down by the University of Ghana.

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DEDICATION

I dedicate this research work to all who supported accomplishing this work and my family and loved ones.

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My greatest thanks go to Jehovah by whose grace I have completed this work. I am most grateful, Lord. My gratitude also goes to Professor Anthony Q.Q. Aboagye and Dr Emmanuel Sarpong_Kumankoma for their earnest guidance, patience, and immense contribution throughout the learning process.

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LIST OF ABREVIATIONS/ACRONYMS

GMM	Generalized Method of Moment
SSA	Sub-Saharan Africa
GCIP	Global Consumption and Income Project
WDI	World Development Indicators

ABSTRACT

The main focus of this research is to examine the impact of income inequality on the economic growth using the Palma ratio and Gini index. The scope of the study is Sub-Sahara African countries. The two-step System Generalized Method of Moment (GMM) estimator was used in analyzing secondary panel data of 47 SSA countries spanning from 2000-2018. The Palma ratio and Gini coefficient were used as a measure for income inequality. After measuring the effect of unequal access to finance, unequal access to the labour market, and unequal access to education on income inequality, the outcome of the study revealed that, unequal access to finance had a positive and significant effect on the income inequality, unequal access to the labour market had a positive and significant effect on income inequality and unequal access to education also had a positive effect on income inequality. Also, the study found that government expenditure and fertility rate had significant and mitigating effect on income inequality. Population growth rate had negative and significant effect on income inequality. In measuring the effect of income inequality on economic growth, the result revealed that, income inequality had a negative and significant effect on economic growth. Furthermore, unequal access to finance, unequal access to the labour market, and unequal access to education negatively and significantly affected economic growth. Government expenditure and fertility rate had negative and significant effect on economic growth. The study recommends that much attention be given to unequal access to finance, labour market, and education because of their association with income inequality and economic growth. They tend to increase income distribution disparities and lower the economic growth of Sub-Saharan African countries.

Keywords: Income Inequality, Economic Growth

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Income differences between the rich and the poor are termed as income inequalities and a lot of attention has been shifted to it globally, especially in the policy cycle. The World Bank Group, for example, has prioritized eradicating poverty in Africa by increasing the income level of the poorest 40% of developing countries. The IMF has indicated inequality as a source of economic growth (Ostry et al., 2014). After comparing Africa, Asia, and Latin America, Milanovic (2003) found a Gini index for Africa to be 47%, 35.6% for Asia and Latin America to be 50.5%. This implies that Africa is the second unequal continent in the world after Latin America (AfDB, 2012; Fosu, 2017; Milanovic, 2003).

Inequality impacts opportunity, education, health outcomes, and the socio-political climate, which also impacts people's behaviour, which in turn has an effect on economic growth. Over the last two decades, evidence from around the world has shown that high levels of inequality negatively impact economic growth. Economic growth, poverty reduction, social unity, and public health (Adesina, 2016) are all influenced by income distribution disparity. Barro (2000) argued that inequality has a negative impact on growth in developing countries.

According to Huang and Jiang (2009), growth in non-OECD countries is negatively impacted by higher inequality. In reducing poverty, Ali and Thorbecke (2000) discovered that inequality is more sensitive to poverty reduction than growth in Africa. Inequality elimination has a greater effect on poverty reduction than increasing GDP. Statistically, a 1% increase in the level of income

is expected to result in a 4.3% poverty reduction in nations with extremely low inequality, or a 0.6% poverty reduction in nations with very high inequality (Ravallion, 2007).

With the issue of social cohesiveness, Pickett and Wilkinson (2010) argued that high inequality is "divisive and socially destructive," weakening social cohesion always. Wilkinson (2002) was of the view that the tendency of inequality in a society, on average affects its health status in the case of public health. The bigger the disparity between the rich and poors' earnings, the weaker the health of the poorer residents. These studies imply that reducing inequality is beneficial and necessary for increasing economic growth.

Inequality of income has always existed. Despite the efforts at all levels, including local, national, and global, income disparity is still on a rise. For instance, "in 2016, the share of total national income accounted for by nation's top 10% earners (top 10% income share) was 37% in Europe, 41% in China, 46% in Russia, 47% in US-Canada, and around 55% in sub-Saharan Africa, Brazil, and India. In the Middle East, the world's most unequal region according to the estimates, the top 10% capture 61% of national income" (WID, 2017). One of the most striking features of income disparity is that it seems to harm minorities more than others in practically every economic system (Yang & Greaney, 2017).

Furthermore, the nations with the greatest levels of economic disparity are primarily developing and underdeveloped. Also, it has been maintained that income equality contributes to long-term development (Aghion et al., 2019). On the other hand, income disparity has traditionally enabled the wealthy to earn higher returns on their investments and amass money quicker to transfer part of it to make all richer (Clarke et al., 2006).

Nevertheless, economic growth fueled by the service sector's boom may not have the same impact on the rural population as it does on the urban population, particularly those living in the country's poorest and least developed areas. As a result, population density might be a key factor in determining how economic growth influences income disparity.

Wealth, education, occupation, and life happiness may all play a role in these income distribution disparities. Many economies have had strong economic growth after World War II ended. However, the rise in productivity leads to growth and this has been accompanied by an unequal distribution of newly obtained wealth. Consequently, certain social groupings accumulated money more quickly than others (Andrei & Crăciun, 2015). Due to the unequal distribution of wealth, the continuous increase in production will have a positive impact on economic growth and this was one of the focus of Kuznets (1955).

1.2 Problem Statement

In the 1950's and 1960's the focus of researchers turned to the link between inequality and economic growth. The majority of these research looked at how income distribution affects consumption and saving. The macroeconomic theory lost interest in distribution concerns throughout the 1970s and 1980s, partially owing to a drop in interest in growth (Banerjee & Duflo, 2003). However, policymakers must understand how increase in production will be distributed among diverse actors in the economy and its limitation on growth in the future (Kamila & Semih, 2011).

However, many low-income developing nations remain caught in a vicious cycle of poverty. Between 1981 and 2001, the number of impoverished people in Sub-Saharan Africa increased from 41% to 46% (see World Bank report, 2003). In Eastern Europe and Central Asia populations increased to over 20% in 2001. According to Tabassum and Majeed (2008), the most difficult task

for low-income emerging nations is to reduce the widespread of poverty. Most recently, Omar and Inaba (2020) argued that economic progression in developing countries is threaten because of the slow nature of poverty reduction.

The relationship between inequality and economic growth has become a point of contention among most economists. The majority of empirical evidence has been rather inconclusive, resulting in this debate. (Alesina & Rodrik, 1994; Clark & Lawson, 2008; Forbes, 2000; Garbis, 2005; Ogus, 2012a; Perotti, 1996).

More recent research found a positive relationship between income inequality and economic growth (Akadiri & Akadiri, 2018; Ceesay et al., 2019) in Africa. Aremo and Abiodun (2020) and Lahouij (2017) found a unidirectional causality between income inequality and economic growth in MENA countries. Topolewski (2020) found a negative relationship between income inequality and economic growth using the Gini coefficient. According to Auza (2021), measuring income inequality through different means shows different dynamics through different growth periods. Thus, measuring inequality can give different results based on alternative income inequality measures used.

Notwithstanding, research conducted in Africa (Akadiri & Akadiri, 2018; Ceesay et al., 2019; Fields, 2000; Gyimah-Brempong, 2002; Jihène & Ghazi, 2013; Niyimbanira, 2017; Odedokun & Round, 2001) focused on using the Gini Coefficient which is popularly used in measuring income inequality whiles there are other alternatives in measuring income inequality. According to Cobham and Sumner (2013 p.2) “there seems to be little sense in using the Gini ratio, which is sensitive to changes at the middle class of the income spectrum but relatively blind to shifts at the extremes which the Palma ratio does.”

Also, inequality of opportunities may influence income inequality. Considering these examples, first of all, unequal access to education could lead to loss of educational opportunities which could result in less human capital and slowing growth (Galor & Zeira, 1993). Secondly, structural rigidities in labour market could lead to unequal access to labour opportunities both to insiders and outsiders. The last mechanism relates to unequal access to finance where in the presence of credit constrains, a shock in income could lead to squandered investment opportunities among those living at the bottom of the income distribution, resulting in lower economic growth.

This study looked at income inequality-economic growth relationship, with a focus on Sub-Saharan Africa, using the Palma ratio and the Gini index to measure income inequality, as well as the impact of this mechanism (unequal access to finance, the labor market, and education) on inequality and growth.

1.3 Research Purpose

For the purpose of this study, the overall goal is to look at the effects of income inequality, unequal access to education, labor market and finance on economic growth in Sub Saharan Africa.

1.4 Research objectives

i. To examine the impact of unequal access to finance, labour market and education on income inequality (Palma ratio and Gini index) of SSA.
ii. To investigate the effect of income inequality (Palma ratio and Gini index) on economic growth of SSA.

1.5 Research questions

i. How does unequal access to finance, labour market and education impact income inequality (Palma ratio and Gini index)?

ii. What is the effect of income inequality (Palma ratio and Gini index) on economic growth?

1.6 Research Hypothesis

i. H_1: unequal access to finance, labour market and education is positively linked to income inequality.

ii. H_2: Income inequality is negatively linked to economic growth.

1.7 Limitation and Delimitation of the Study

There are 48 countries in Sub-Sahara Africa, but this study was restricted to 47 countries leaving out Swaziland due to the unavailability of data. However, since the dataset is prepared to suit the owner, the analysis of the data can be restricted to certain angle. The data for some years for certain countries was unavailable restricting the number of years used for the analysis. This research is restricted in scope because this study could have considered the whole of Africa in practically undertaking the research. The chosen study uses a considerable amount of data in the empirical analysis.

1.8 Significance of the Study

This study will be valuable to economists, policymakers, and, most importantly, these nations. The findings of this study will aid policymakers in gaining a better understanding of how income disparity affects economic growth. It will also assist policymakers in revising and improving policies to a lower-income disparity across nations. Future researchers will use it as a reference guide to help them better this field of study.

1.9 Organization of the Research

There will be five chapters in the study. The first chapter will include the study's background, problem statement, research objectives, research questions, significance, scope, limitations, and ultimately, the research's structure.

The second chapter will be devoted to the literature review, including theoretical, conceptual, and empirical aspects. The approach employed and how the data will be acquired will be explained in Chapter three. The research paradigm, design, demographic, technique, sample size, study area, and data source will be included. The study's outcomes will be discussed in Chapter Four, and the conclusion, recommendation, and suggestions for future research will be discussed in Chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter researched on literature of the subject area under study. It is important to understand the theories and diverse perspectives that underpin the concept of income inequality on economic growth. The review attempted to relate this study to existing literature. This chapter reviewed theories, concepts and empirical evidence to the study.

2.2 Theoretical review

2.2.1 Theories of Economic Growth

2.2.1.1 Solow neoclassical growth Model

Most discussions on growth are centered on the Solow model (Romer, 2001). The Solow-Swan model or the neoclassical growth model was developed by Robert Solow in 1956 and W.T. Swan also in 1956. According to Smith (1904), theories developed on economic growth argued that economic growth is based on innovation which interacts with both the real and financial sectors to drive economic growth. The neoclassical model assumes diminishing marginal capital and labour returns and constant return to scale. This theory is centered on capital accumulation and its relation to decisions made on savings. In the model, Solow (1956) argued that technological growth befits the remaining factors in eliminating the long-term level of growth and academic growth resulting exogenously. Meaning it is self-reliant from all other factors of production.

A closed economy employs just capital and labour in producing goods. In the model, what drives productivity is labour, which entails the worker's output. In calculating the output per worker, the output level (Y) is divided by the economy's labour force (L), thus Y/L. According to Stiglingh

(2015), the neoclassical theory argues that there should be no government intervention in the economy. In sustaining long-term growth, there must be a commitment to building a labour force of high standard and growth in a country's technology (Solow, 1956). "Positive change in technology can only be determined by scientific processes that are autonomous to economic force" (Solow, 1956). There have been many criticisms of the neoclassical theory because of its inability to account for international income differences (Mankiw et al., 1992). To answer the questions that the neoclassical theory could not answer, it gave rise to the endogenous growth theory.

2.2.1.2 Endogenous growth theory

According to Smith (1904), economic growth is an endogenous phenomenon. According to Freeman and Kydland (2000), the endogenous growth theory argued that economic growth is caused by endogenous factors, which opposed Solow's neoclassical growth model. He stated that the growth rate was determined by the agents' decisions and actions (Romer, 2001). The endogenous view of new knowledge was also emphasized. New knowledge in technology is seen as a valuable factor because it come to be a public good (Ray, 2010). Increased output will result from increased production (Dornbusch et al., 1998).

Closing the gap between policies on reducing poverty and policies on improving technology and expanding productivity will be based on a fusion of growth ideas (Krugman, 1991). According to Gore (2007), the neoclassical theories and new endogenous growth theories are based on the general equilibrium conditions and the increasing function of production for the poor are not favourable. Their study stressed on this due to the theoretical framework which is insufficient to explain the relationship between poverty and growth.

2.2.2 Theories of Inequality

2.2.2.1 The Kuznets Hypothesis

Simon Kuznets' paper "Economic growth and income inequality" provided the framework for further research into how economic growth is influenced by income disparity. He was the first to research on inequality and economic growth. The assumption of his theory on income inequality-growth relationship which probable will take an inverted U-shape form, is known in literature as the Kuznets hypothesis. Based on a model where individuals migrate from a low-wage rural sector with little inequality to an urban sector with high-income inequality and high average income, this suggests that a level where income is low, inequality rises with per capita income also rising and only declines with industrialization, resulting in an inverted U-shaped relationship between per capita income and income inequality (Kuznets, 1955a).

2.2.2.2 The Marx Hypothesis

“Inequality is inherent in the capitalist mode of production”, according to Marx. This is unavoidably produced in capitalist economies, and it cannot be eliminated without fundamentally modifying capitalism's mechanism. Furthermore, it serves the system, implying that those in positions of power have a vested interest in maintaining social disparity. As a result, spending political resources on promoting policies that solely address the symptoms of inequality without addressing the underlying causes is pointless. As a result, calls for social and economic revolution, the downfall of capitalism, and the replacement of a production technique and related way of life-based on equality and social justice have become increasingly common.

Marxism advocates for a future society in which the distribution of income is not based on a capacity to produce but the needs of the person or other considerations. Inequality would be negligible in such a system. The believe of Marxists is that equality in the economy is required for

political liberty but political inequality will follow if economic equality does not exists (Peet, 1975). “The more resources are distributed in favour of the wealthy, the greater the tendency for overinvestment and under consumption, which will lead to economic crises and have a negative impact on economic growth” (Anyanwu & Oaikhenan, 1995).

On the other hand, Gupta et al. (2002) and Alesina and Perotti (1996) proposed a novel theory to explain the relationship between income disparity and economic growth. Increasing income disparity can generate instability of political or social economy, as well as revolutions and this insecurity will eventually deter investment and great leadership.

2.3 Conceptual Issues

2.3.1 Definition of Inequality

Inequality is defined as “the unequal distribution of household or individual income across the various participants in an economy” (Rosser et al., 2000). It is associated with the idea of "fairness" in income distribution. It is accounted "unfair" when the rich have a larger share of a county’s income distribution over the whole population (Rodriguez, 2000). Income inequality refers to the differences in income and successes of people. The role played by income inequality has received a lot of attention both in the press and political settings. The role played by income inequality has been weighed by IMF as a cause and benefit (Ostry et al., 2014).

According to Cowell and Jenkins (1995), “inequality is an obvious deviation from an elementary idea of equality –two or more numbers are equal in size”. Galor and Zeira (1993) study posit that inequality has negative association with the rich but positive to the poor. Income inequality is just not about distributional discrepancies but also denying them of certain rights and freedoms (UNICEF & Women, 2013).

Contemporary studies have come out to say that the different forms of inequalities depend on one other. For example, “Income inequality inhibits equal opportunities for individuals to succeed in life, and at the same time, inequality of opportunities result in income inequality” (UNDP, 2013). The measures used in reducing poverty is negatively affected by income inequality leading to the suppress of SDGs attainment. A study conducted by Fosu (2017) established that in developing countries, poverty-reducing tendency of growth is weakened by unequal income distribution. “Inequality also has the potential of inhibiting growth (Ncube et al., 2014; Okojie & Shimeles, 2006; Persson & Tabellini, 1994) and stability since the views of the poor are often not represented” (Dabla-Norris et al., 2016). Political instability, corruption and Conflicts arises because of social cohesion and mistrust due to income distribution disparity. Peoples happiness and investments are affect due to these conflicts and even economic growth (Anyanwu, 2016). On the other hand, Tchamyou (2019) was of the view that inequality can be reduced through financial stability and financial depth.

Different view has been expressed by research on the factors that affects income distribution. Bigsten (1983) was of the view that the factors that have been associated with the distribution of income results from issues of economic growth. To develop strategies to reduce poverty, it is important to understand the factors causing the income disparity with and among regions. Economic, political and demographic factors are seen as the factors that drive inequality (Milanovic, 2016). Economic growth, globalization, technological change, investments, civil war, and education are some of the other factors.

2.3.1.1 The Palma ratio

A Chilean economist called Gabriel Palma in 2011 published a paper showing an empirical regularity in regard to distribution of income across countries. Thus, those in the 5 to 9 deciles

known as the middle-income group, systematically get about 50% of the income distribution. According to Palma (2011) "the observed variability in inequality, therefore, would correspond to the way in which the other half of the total income is distributed in the complementary groups: the 10% richest and the 40% poorest". The battle is between the rich and the poor where the distribution of the other half of the total income is not shared to the middle class (Villar, 2015)

Villar (2015) defines the Palma ratio as "the ratio of the share of the total income enjoyed by the richest 10% of the population and the share of the income in the hands of the poorest 40% of the population". The Palma Ratio is defined as "the income share of the top 10% divided by that of the bottom 40%" (Cobham & Sumner, 2013).

A much more attention has been given to the proposal made by Palma since it offers a simple measure that is not arbitrary because the cutting points are based on empirical regularities. The key results of Palma across time was confirmed by the studies of (Cobham et al., 2016) which showed that the consistency of the middle class capture across countries has a greater variation in the Palma ratio. A study conducted by Cobham and Sumner (2013) discovered that the Palma ratio and Gini Coefficient had a strong correlation. Due to that, "the Palma ratio should be preferred to the Gini index because it is sensitive to changes at the extremes of the distribution rather than the middle class, since policy makers are more concern about that. The differences in sensitivity, combined with the relative stability of the intermediate deciles' share of income, militate in favour of the Palma over the Gini."

The reasons why it would be better to use the Palma ratio in measuring inequality than the Gini Coefficient are;

1) "The Palma ratio is more intuitive and easier to understand, both for policy makers and citizens".
2) "The Palma ratio overcomes the excessive sensitivity of the Gini Coefficient in the middle of the distribution and its relative insensitivity to changes at the top and bottom. By focusing on those part of the distribution where the differences concentrates, it become an index that clearly speaks about the struggle between the rich and poor and how changes in the middle class affect that division" (Villar, 2015:34).

The United Nation economic growth panel in March, 2013 was urged by Joseph Stiglitz to consider using the Palma ratio in measuring inequality because inequality is major concern of social and economic growth (Doyle & Stiglitz, 2014).

2.3.1.2 The Gini Coefficient

The Gini coefficient also known as Gini index or Gini ratio is a statistical measure of income inequality in population. It measures income or wealth dispersion among the members of a population. Gini Corrado, an Italian statistician defined the Gini index as "a measure of income across a population." It is the most used measure of income inequality and it takes values between 0 and 1. 0 indicate perfect equality income or wealth distribution and 1 indicate perfect inequality of income or wealth distribution (CFI report, 2015). The Gini index only measured the dispersion of income but not an absolute measure of a country's income (CFI report, 2015).

According to Morgan (1962), the Gini coefficient has been agreed widely as the single best measure of income inequality. However, Kendall and Stuart (1963) argued that the Gini coefficient suffers from "the disadvantage of being affected very much by the value of the mean measured from some arbitrary origin, and are not usually employed unless there is a natural origin of measurement or comparisons are being made between distributions with similar origins".

According to Hagerbaumer (1977), theoretically, the Gini coefficient becomes more disadvantageous when negative income is included in the income distribution, and empirically, the Gini coefficient can take a value more than 1 (Pyatt et al., 1980) but very rare in the world.

Atkinson (1970) noted that one of the measures that is sensitive to transfers to income levels is the Gini index. Alison (1979) and Jasso (1979) juxtaposed in this study that the Gini coefficient is more sensitive to transfers in the middle class of income distribution. Ahn (1997); Jones and Weinberg (2000); Madden (2000); Borghi (2005); De Maio (2007); Callan and Keane (2009); Cobham and Sumner (2013); OECD (2013); Pressman (2013); Schmid and Stein (2013); Chang, Gupta and Miller (2018); Bird and Zolt (2015) and Thewissen *et al.* (2015) have also noted that the Gini coefficient is only sensitive to changes in the middle class of the income distribution. Other authors such as Jenkins (2009); Park and MERCADO JR (2018) and Cobham and Sumner (2013) also stated that it is insensitive to changes in the top and bottom of the income distribution.

2.3.2 Definition of Economic Growth

Kuznets (1955) defined economic growth as a "long-term rise in the capacity of an economy to supply increasingly diverse economic goods and services to its population; this growth capacity is based on advancing technologies and institutional and ideological advancement". Anyanwu and Oaikhenan (1995) referred to growth as the "increase over time of a country's economic capacity to produce those goods and services needed to improve the wellbeing of the citizens in increasing numbers and diversity."

According to Myles (2009) the aspirations of governments is to attain greater growth in the economy because the economy becomes prosperous. Growth in a particular economy is attained when the manufacturing of "real market value of goods and services" appreciates over a certain period of time. Generally, the percentage increase in real GDP is the numeric measure of growth

(IMF, 2012). There are numerous factors that impact growth. Most importantly, the growth of an economy is swayed by entrepreneurship, improving productivity, innovation, and improvements in physical and human capital (Lucas, 1988; Rosenberg & Nathan, 1982; Roubini & Backus, 1998). Additional factors may include demographic changes and the participation of the labour force (Roubini & Backus, 1998), and the rule of law (Johnson & Koyama, 2017).

2.4 Empirical Review

2.4.1 Access to Finance and income inequality

Many studies have been conducted on access to finance and inequality. Studies conducted have shown that when the poor have access to finance, the income of the poor increases and savings also increases, thereby reducing the level of poverty. Burgess and Pande (2005) evaluated the impact of increase in bank branch on the level of poverty and found that increase in the number of bank branches increases the saving of the poor. Beck et al. (2007) also conducted a study on bank branches and its impact on poverty and found that increase in bank branches increases bank efficiency and in return, reducing income inequality and boosting economic growth.

Aportela (1999) alleged that the reason for low savings of people is due the barriers to using formal instruments. His study found that when access to finance increases, the income of the poor and savings will also increase. Cigno and Rosati (1992) found a negative relationship between access to finance and savings. According to Demirgüç-Kunt et al. (2008), accessing finance is a challenge because observing it is difficult. According to Tchamyou et al (2019), there is a low access to the financial sector because most adult do not own bank account.

Most recent paper has shown that inequality can be reduced by financial access and intermediation efficiency (Meniago and Asongu, 2018; Sarma and Pais, 2011). GFDR (2014) reported that poverty can be reduced by financial inclusion and this can be achieved by a well-designed effort.

A research conducted by Park and Mercado (2018) in Asia show that financial inclusion is increased when people complete primary education which has a significant impact on poverty reduction.

2.4.2 Access to Education and income inequality

Many studies have explored the topic of access to education and its impact on income inequality and economic growth. According to Toh (1984), education is one of the efficient ways of decreasing income inequality. Attaining better education plays an important role as a sign of ability and productivity in the labour market (A. J. Abdullah et al., 2011).

According to Blanden and Machin (2004), to the poor, education provides better economic opportunities because it shifts the composition of the labour force from unskilled to skilled. At the macroeconomic level, some empirical evidence fails to identify the significant role of education even though it is believed that it helps in reducing inequality. Some other studies conducted were of different views.

For instance, Chiswick (1974) inequality is increased due to access to higher education. Thus a positive relationship between education and income inequality. Ahluwalia (1974) found a negative relationship between schooling and inequality. There were varying results according to the measures employed. There was a positive relationship between secondary schooling and the share of the middle 40% of inequality but negative association between increase in literacy rate and income share of all groups.

One of the complicating factors about the impact of education on inequality is that the level of investment in education is the only factor that drive inequality (A. Abdullah et al., 2015). According to Ram (1989), another factor of the income distribution investment in non-human

activities and the rate of growth in education relates to other forms of capital. This can either increase or decrease income inequality. Many countries benefit from investment in education when government subsidize higher education (Asian Development Bank, 2008). Government subsidies in education has played significant role in prioritizing education (Lee & Francisco, 2012). Education subsidization give chance to poor children to access education.

Nonetheless, the effectiveness of reducing income inequality through government spending and subsidies is not clear (Glomm & Ravikumar, 2003). The gap between the rich and the poor cannot entirely be reduced by public spending, even if education is made equal to all because the choices of individual differs (A. Abdullah et al., 2015). Furthermore, according to Sylwester (2000), the poor may not benefit from educational expansion if the needed resources to attend school are insufficient. Spending in higher education is not beneficial to children from the low income families but beneficial to children from the middle and upper income groups and that would be the main aim for income redistribution policies (A. Abdullah et al., 2015). Jimenez (1986) is of the view that expenditure in public education does not proportionately benefit the rich because the taxes used in funding education are often regressive.

2.4.3 Access to the Labour Market and income inequality

According to Berg (2015), reducing inequality will need some concerted political action to strengthen the world's labour market. There is the notion that deregulating the labour market will help solve the unemployment problem and unequal access to work. In the labour market, jobs will not be valued equitably.

In developing countries, globalisation has led to new job creation in employment-incentive export industries. Still, the government holds wages and repressed unions out of the concern that increased wage will reduce a country's competitive edge (Berg, 2015). According to Lewis (1954),

"the increase in inequality in developing countries has always been a concern of policymaker, many of whom have subscribed to the view that rising inequality is part of the development process. The structural transformation shifting of workers from low-productivity of agriculture to high-productivity of manufacturing was believed to go hand in hand with widening urban-rural wage differentials, which would only cease when the pool of surplus labour was exhausted and structural transformation completed". Bhorat and Van der Westhuizen (2013) found a negative relationship between the labour market and inequality.

2.4.4 Income Inequality-growth Relationship

The impacts of "inequality on growth in developing countries are ambiguous: results of positive or negative effects are hampered by the insignificance, which varies based on the econometric method utilised, the inequality measure used, and the period studied" (Brida et al., 2020; Kesti, 2020; Younsi & Bechtini, 2020). "Privatisation (private sector growth and wage decompression, restructuring, and unemployment, growth of property income), macroeconomic stabilisation (fiscal adjustment affecting government expenditure and taxation, price liberalisation and inflation), and legal and institutional reforms (affecting and intervening with corruption, technological change, mobility, and globalisation) all contribute to rising inequality during the transition to a market economy" (Mitra & Yemtsov, 2006).

The private-sector wages are less evenly distributed, privatisation raises inequities between the public and private sectors; with wage decompression, within-group inequality and regional segregation emerge due to minimum wage rules" (Mitra & Yemtsov, 2006). "Furthermore, full employment is not one of the macroeconomic policy targets that leads to inequalities due to wage income loss in a market economy, but for the employed, higher wage concentration is a strong inequality driver; the composition of income sources at different income levels may affect

inequality, depending on embeddedness within general structural reform (Milanovic, 1998). The situation of privatisation of the financial sector, foreign ownership brings efficient banking with spill overs" (Bittencourt, 2009), has mixed results in terms of inequality. Agnello et al. (2012), Bittencourt (2009), Kim and Lin (2011) and Zhang and Naceur (2019) found inequality-reducing impacts above a certain level of financial development, while others found overall inequality-enhancing effects (Jauch & Watzka, 2016).

According to Kuo (2019), the most important savings-induced growth driver is a tight fiscal policy. However, crowding-out may impact private savings depending on the level of development (Thimann & Dayal-Gulati, 1997). According to Howarth and Kennedy (2016) Inflation following liberalization of price during change raises real income growth and real interest rates, linked to greater income inequality in emerging nations (Berisha & Meszaros, 2020). Inequality and growth are influenced by structural developments such as globalization and technological progress. "Trade, capital and labour mobility, and legal and institutional international policy collaboration are all examples of economic integration. Combined with specific structural reforms, trade can promote equal income distribution and help growth" (Agnello et al., 2012; Kuo, 2019).

Certain complexities of the economy are positively associated with economic growth, but improving upon technology of middle and low-wage worker will result in increasing incomes at the top and declining income at the bottom (Basu & Guariglia, 2007; Mitra & Yemtsov, 2006; Moll et al., 2021). According to Chu and Hoang (2020) countries that have more effective government spending, and human capital can minimize inequality. Inequities at the regional level caused by actors in the institutions, such as differing policies on minimum wage, might be mitigated through the cooperation of international policy. On the other hand, globalization is linked to income disparity, and its negative consequences become less negative or positive as income

declines (Huh & Park, 2021). As a result of structural changes, developers have faced a dilemma: productivity improvement through structural transformation may lead to skill mismatches and labour surpluses. Income disparity rose in Central Europe, the Baltics, and East Europe due to privatisation and liberalisation policies, but there was significant variation within these countries (Leitner & Holzner, 2008; Rose & Viju, 2014).

Previous studies on inequality-growth relationship can be categorised into four. The first is a group of authors who looked into the relationship between income disparity and growth and discovered it to be positive (Babu et al., 2016; Benabou, 2000; Chan et al., 2014; Deininger & Olinto, 1999; Frank, 2009; Henderson et al., 2015; Lopez-Feldman, 2006). The second group of authors who also investigated the relationship between inequality and growth discovered a negative association (Balcilar et al., 2018; Alesina & Rodrik, 1994; Deininger & Squire, 1998; Fang et al., 2013; Majumdar & Partridge, 2009; Muinelo-Gallo & Roca-Sagalés, 2013; Nissim, 2007; Ogus Binatli, 2012b; Ostry et al., 2014). The third group asserted that the income inequality-growth association is inconclusive (Barro, 2000), while a mixed relationship that was found between income inequality and economic growth by the last group (Chen & Guo, 2002; Shin, 2012; Voitchovsky, 2005).

Alesina and Rodrik (1994) found an inverse relationship between wealth/income inequalities and growth. Persson and Tabellini (1994) used equality rather than inequality indexes and found a negative association between equality and growth. Ostry et al. (2014) study found a negative linear association between inequality and growth in a historical context using cross-country data. Perotti (1996) backed up this claim that inequality has a detrimental impact on growth. Nonetheless, in their quest to investigate the relationship between inequality and growth using a longitudinal data, Deininger and Squire (1998) refute Kuznets' findings, but Banerjee and Duflo (2003) encounter

the work of Deininger and Squire (1998) and re-establish the nonlinear form, concluding that differences in inequality in any ways (positive or negative) is related to a lower future growth rate.

In Africa, some thoughtful investigations on growth-inequality links have been conducted. Odedokun and Round (2001) explore factors that affect income disparity and its impact on African nations' economic growth using data from 35 African countries over 40 years. Ordinary Least Square (OLS) estimation techniques were used in the investigation. It has been revealed that rising income inequality has a negative impact on growth. According to the study, a disruption factor that spreads economic inequality is government budget size, the agricultural sector in human endowment, land, and growth among others. However, these inequities have grown due to a loss in education at all levels.

Furthermore, Bhorat et al. (2009) use data from 1995 to 2000 and their focus was on non-income and income inequality and how it affect growth in their analysis for South Africa. Throughout the study, they observed massive economic disparities. The study's findings were that the world's most unequal economy was South Africa. The outcome has bolstered the argument that inequality negatively influences growth.

Furthermore, Wahiba and El Weriemmi (2014) used time series yearly data to analysis between 1984 and 2011 to experimentally analyse the relationship between economic growth and differences in income in Tunisia. They discovered evidence for a negative link between inequality and growth. In accordance with their view, exchange flexibility and growth have exacerbated inequities due to trade liberalisation. In contrast, financial development and human capital investment have played a key role in reducing income disparity.

According to an IMF assessment from 2011, "Sub-Saharan Africa has been suffering massive levels of inequality, both in terms of gender and income, with international certainty that such levels of inequality could stifle macroeconomic growth and stability". According to the data, SSA countries has been battered by rising levels of income disparity, and income disparity has remained stable in the region for 15 years of sluggish growth. According to the paper, the growth-inequality linkage in the region is substantially different from those in other regions, in the sense that income inequality is seen to be far higher in Africa than any place else in the world at all levels of income. Meanwhile, sound economic policies were proposed to alleviate income inequality and speed up growth.

2.4.5 Income inequality and recessions

In contrast to the US debt-driven growth experience previous to the crisis, Horn et al. (2009) demonstrate weak domestic demand is as a result of income inequality and Germany's export-led growth instability. Goda (2016) combines the rising inequality and the demand hypothesis, restricting policy choices between the growth of debt-led and export-led. The view of absolute global wealth concentration, the wealthy were seeking for investable securities which led to a credit boom contrary to Bordo and Meissner (2012) findings, economic inequality does indeed lead to financial instability. Inequality rises before and drops after financial crises, according to Agnello et al. (2012), but not causality.

Several regional crises occurred between 1995 and 2017 and the financial crisis that occurred in 2007-008. The crisis that occurred in Czech was contained in 1997; in the same year, the Asian crisis and the Russian crisis in 1998, Poland, Hungary, the Czech Republic, and Baltic nations Yahyavi Dizaj et al. (2019) showed a strong response. According to Goda (2016), debt-driven development with a big current account deficit and capital inflows were used to solve excessive

income disparity and stagnating demand in CEE, which led nations into recession. Due to the loss of full-time jobs, income disparity increased in Slovenia, Latvia, and Bulgaria from 2008 to 2012. Inequality did not change in the Czech Republic, Lithuania, Poland, Romania, and Slovakia (Brzezinski, 2018).

2.4.6 Channels through which economic growth is affected by income inequality

Many literatures on economic growth have discussed some of the channels through which growth is affected by income inequality. The effect of income inequality on growth through the various channels can be of benefit or harmful. Moreover, some of these effects of income inequality on growth are realized slowly over time whiles others are realized quickly. These channels can be classified into different approaches. One based on political procedures and the other on economic mechanisms.

There is an indication that these channels through which income inequality impacts growth can either be ambiguous and complex. According to Halter, Oechslin and Zweimüller (2014), growth-enhancing is a positive purely economic mechanism that manifest its effect on inequality while a negative channel through which inequality hamper growth is the political procedures. However, these channels and their combined effect are still being debated.

Furthermore, there is a positive demand-side effect that are concentrated on wealth and income distribution. The demand for basic needs satisfaction is opposed by an increase in demand for innovative products. This will lead to investing in better varieties of product. However, families and individuals having low income in a model of credit market imperfection, cannot engage in product-enhancing investments training for themselves and education. Capital market imperfection comes as a result of the poor being constraint by the banking sector from borrowing. Productivity of investment is raised when there is redistribution of income assets from the rich to

the poor (Yang & Greaney, 2017). Piketty (1997) and Galor and Zeira (1993) have presented theories that underline this channel.

There are certain investments that require huge amount of capital, especially that of innovative activities. In providing the initial capital for the investment, innovators rely on high-income inventors. In an economy with income distribution disparity tends to find it easier funding innovative projects leading to growth.

One of the standard hypotheses of growth-enhancing inequality is that when income level of individuals increases, savings also increases. When more income goes to the rich, the rate of savings tends to increase leading to higher investment rate (Greaney & Li, 2017). Hence, through capital accumulation, a rise in inequality tends to impact growth positively.

Furthermore, economic growth is negatively affected by political procedures. For instance, engagement in crimes and other disruptive activities are as a result of income inequality, for which political stability is threatened and security of property right is also undermined. Theses phenomena of social unrest is not good for investment. Higher income inequality will thus go along worsening growth. According to Yusuf (2005, p.10), "in a system of majority voting, the pressure to redistribute income from the rich to the poor is greater when the ratio of the average income to the medium income in the society is larger."

Income redistribution measures can lead to economic disincentive to work, saving and investment hence lowering growth through higher taxes (Yang & Greaney, 2017). Benhabib and Rustichini (1996) and Alesina and Perotti (1996) have also presented theoretical frameworks which shows that high inequality negatively affect growth through political instability, social unrest, and increased crime.

In addition, if pressure is created on government through inequality, public education will be financed by government, which largely will be benefitted by the low-income people leading to increase in growth through higher accumulation of human capital. Meaning, the effect of inequality on growth will be dependent on what government is spending on and how the spending's are.

2.5 Research Gap

The differences in household income distribution has a great effect on the growth of an economy. The unequal distribution of income has caused many distresses in many economies. Policy makers are much more concerned about how to address the issue of income inequality both in developed and developing countries. There have been arguments on income inequality and its effect on the economy and this has given rise to studies to be conducted on income inequality and economic growth both in emerging countries and developed countries such as Kuznets (1955a); Osei-Assibey (2013) and many other researches but the Gini index is the commonly and widely used measure for income inequality. This study seeks to focus on impact of income inequality on economic growth in Sub-Saharan Africa using the Palma ratio as the main measure of income inequality.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter of the study describes the techniques employed in attaining the goals of the research. It emphasizes the numerous techniques and approaches used to demonstrate how income inequality is linked to economic growth. This section contains instructions and explanations on gathering, analyzing, and making statistical judgments that helped in answering the objectives of the research. The methodology includes research design, econometric technique, data sources, outcome variables, and explanatory variable.

3.2 Research Design

The study design has the greatest effect on the techniques to acquire the planned research findings. A study's design usually serves as a roadmap for solving the research questions. Bryman (2008) defines research design as a framework for gathering and analysing data in a study. The data collecting and analysis methods and the research techniques are critical components of the design. The data in this study are analysed and interpreted using a quantitative research technique. The quantitative research method aids in collecting, investigating, and predicting variables (Creswell, 2014). The research design is defined by Bell et al. (2018, p. 50) as "including the acquisition of numerical data and demonstrating a deductive perspective of the link between theory and research, a preference for a natural science approach, and an objectivist vision of social reality." This research method uses statistical approaches to investigate the correlations between numerical variables.

According to Dudovskiy (2016), quantitative research methodology uses organised data gathering procedures from well-defined data sources to deliver detailed responses to research questions. According to him, this strategy also aids in generalising research conclusions with high sample size. We choose nations in SSA for the research based on objective criteria to evaluate findings concerning the influence of income disparity on economic growth and recommend a course of action. The study analyses and evaluates secondary data on income disparity and economic growth, a quantitative research technique is suited for this topic.

3.3 Econometric Technique

With a large cross-sectional observation and a short country or firm level, a panel regression models are constructed in estimating the data. According to Roodman (2009), "the model is most useful when the outcome variable is dynamic and influenced by its previous year; the independent variables are not strictly exogenous; heteroscedasticity and autocorrelation are present".

Anyanwu (2016) posit that income inequality changes slowly and persistently, meaning that inequality in the past period influences the current period value so as economic growth. In controlling for essential variables that might have been included from the estimation, the lagged Gini coefficient, Palma ratio and economic growth variable is included as independent variable. The lagged Gini coefficient, Palma ratio and GDP per capita growth can be used as an internal instrument in controlling the link between the independent variable and idiosyncratic error term.

The general dynamic form of the panel model is specified as;

$$\boldsymbol{y_{it} = \alpha y_{it-1} + \theta X_{it} + \eta_i + \mu_t + \varepsilon_{it}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (\mathbf{3.1})$$

where, $\boldsymbol{i = 1, \ldots, N}$, **denotes the country and** $\boldsymbol{t = 1, \ldots, T}$, denotes the year. $\boldsymbol{\eta_i}$ represent the unobserved country-specific heterogeneity, $\boldsymbol{\mu_t}$ represent the unobserved time effect, $\boldsymbol{\varepsilon_{it}}$ represent

the idiosyncratic error term, $\boldsymbol{\alpha}$ denotes the coefficient of the lagged outcome variable, $\boldsymbol{y_{it-1}}$ denotes the lag of the dependent variable, $\boldsymbol{y_{it}}$ represents the dependent variable, $\boldsymbol{\theta}$ denotes coefficients of the explanatory variables; $\boldsymbol{X_{it}}$ denotes the explanatory variables.

The Generalised System Method of Moment (GMM) was also employed to estimate the model. The GMM is divided into two; "the one-step system GMM and the two-step system GMM. This study used the two-step system GMM since it improves efficiency by using the error from the one-step system GMM. There are two reasons for the use of the system GMM. Firstly, it improves efficiency by giving better and consistent estimates than the static models, which is accounted for by the orthogonality condition imposed on the lagged variable and the idiosyncratic error term" (Arellano & Bond, 1991; Arellano & Bover, 1995). Secondly, according to Blundell and Bond (1998), the two-step system GMM controls the problem of heteroscedasticity, endogeneity and autocorrelation.

Also, "two rules that underpin the system GMM is no serial autocorrelation exists in the error term, and the instruments used are valid. The hypothesis of no second-order serial autocorrelation test is conducted to show the consistency on the estimates using the Arellano-Bond test, and the Hansen test of over-identifying restrictions is used to prove that the instruments are valid in the estimation."

3.4 Measuring the impact of unequal access to finance, labour market and education on income inequality

Depending on the dynamic nature of economic growth, it requires estimation with a regression model that is dynamic to prove consistency in the outcome. The System GMM (two-step) is used to estimate the impact of income inequality on economic growth in SSA countries. According to Blundell & Bond (1998, p. 120), "the estimator deals with the problem of omitted variable biases that occur when conducting panel data analysis". Additional moment conditions are employed that

work with non-stationarity data. In estimating the empirical relationship between income inequality and economic growth in SSA, the model of adopted that of Odusanya & Akinlo(2020); Ogus Binatli (2012a); Akadiri & Akadiri (2018); Yang & Greaney (2017) even though modified. The empirical models are therefore specified as;

$$\boldsymbol{IncIneq_{it}} = \boldsymbol{\varphi IncIneq_{it-1}} + \boldsymbol{\omega_1 dopc_{it}} + \boldsymbol{\omega_2 gce_{it}} + \boldsymbol{\omega_3 popgr_{it}} + \boldsymbol{\omega_4 fr_{it}} + \boldsymbol{\varrho_i} + \boldsymbol{\upsilon_t} + \boldsymbol{\xi_{it}} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \textbf{(3.2)}$$

where $\boldsymbol{IncIneq_{it}}$ is income inequality measured by the Gini coefficient and the Palma Ratio, and $\boldsymbol{IncIneq_{it-1}}$ is the same country's observation in the past year included as independent variable $\boldsymbol{dopc}$ is the distribution of opportunity channels and the channels used are unequal access to finance, labour market and education; gce denotes government expenditure; $popgr$ represent population growth, $\boldsymbol{fr}$ denotes fertility rate, $\boldsymbol{\varrho_i}$ represent the unobserved country-specific heterogeneity, $\boldsymbol{\upsilon_t}$ represent the unobserved time effect and $\boldsymbol{\xi_{it}}$ represent the error term.

3.5 Measuring the effect of income inequality on economic growth

In estimating the impact of income inequality on economic growth, the model is specified as follows;

$$\boldsymbol{GDPpcg_{it}} = \boldsymbol{\vartheta GDPpcg_{it-1}} + \boldsymbol{\gamma_1 IncIneq_{it}} + \boldsymbol{\gamma_2 dopc_{it}} + \boldsymbol{\gamma_4 gce_{it}} + \boldsymbol{\gamma_5 popgr_{it}} + \boldsymbol{\gamma_6 fr_{it}} + \boldsymbol{\tau_i} + \boldsymbol{\sigma_t} + \boldsymbol{\epsilon_{it}} \dots\dots\dots\dots\dots\dots\dots\dots \textbf{(3.3)}$$

$\boldsymbol{GDPpcg_{it}}$ denotes gross domestic product per capita growth, which denoted dependent variable and $\boldsymbol{GDPpcg_{it-1}}$ is the same country's past year observation included as an explanatory variable, $\boldsymbol{IncIneq_{it}}$ is income inequality measured by the Gini coefficient and the Palma Ratio, and $\boldsymbol{dopc}$ is the distribution of opportunity channels and the channels used are unequal access to finance, labour market and education; gce denotes government expenditure; $popgr$ represent population

growth, $\boldsymbol{fr}$ denotes fertility rate, $\boldsymbol{\tau_i}$ represent the unobserved country-specific heterogeneity, $\boldsymbol{\sigma_t}$ represent the unobserved time effect and $\boldsymbol{\epsilon_{it}}$ represent the error term.

3.6 Data Sources

This research makes use of macro-level data gathered from secondary sources. Panel data is used, with data from 47 SSA countries, from 2000 to 2018, the countries include Burkina Faso, Burundi, Botswana, Benin, Cabo Verde, Cameroon, Central African Republic, Sudan, South Sudan, South Africa, Chad, Cote d'Ivoire, Ghana, Gambia, Guinea, Liberia, Mauritania, Mali, Nigeria, Angola, Comoros, Senegal, Mauritius, Cong Republic, Congo Democratic Republic, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Sao tome and Principe, Seychelles, Somalia, Tanzania, Togo, Uganda, Zambia , Zimbabwe, Sierra Leone, and Niger. The majority of the data for the research came from the World Development Indicators database and other reliable and approved data sources for academic investigations.

We use the gross domestic product per capita growth (GDPCG) as a measure of economic growth, the Gini coefficient and the Palma ratio as a proxy for income inequality in the research (INQ), the distribution of opportunities channels, thus unequal access finance proxy by commercial bank branches, unequal access to the labour market proxy by employment to population ratio and unequal access to education proxy by school enrolment, tertiary, government consumption expenditure (GCE), population growth rate (POPR), and fertility rate, which are considered to be key determinants of growth (Li et al., 2016; Odedokun & Round, 2001). The statistics on income inequality came from the Global Consumption and Income Project Database (GCIP), all other data came from the World Development Indicators Database.

3.7 Dependent Variable

3.7.1 Gross Domestic Product Per capita Growth

The development of a country is affected by the degree of income distribution, which is measured by the Palma Ratio or Gini index. According to Kuznets (1955), growth is realized when income inequality decline. As a result, we anticipated the income inequality gap to close as African nations progress economically, confirming the negative relationship between income inequality and economic growth.

3.8 Independent Variable

3.8.1 Income Inequality

Income inequality was employed as the main independent variable for the study. The Gini coefficient goes from 0 (total equality) to 100 (complete inequality), and the Palma ratio, the top 10% divided by the lowest 40%, are indicators for this variable. Countries that had their indices around zero are said to be more equal than those near one hundred. The Global Consumption and Income Project (GCIP) established the Gini index, which gives detailed and reliable statistics on income inequality for practically every country on the planet. The Gini index is calculated using per capita or per home, statistics to calculate gross or net income (Solt, 2016). The Palma ratio and the Gini coefficient data for 47 SSA regions were utilized in this research. Income inequality has a negative association with economic growth.

3.8.2 Population growth

The rate of population increases, symbolized by the symbol "popr," impacts income distribution by affecting labour supply, which impacts the income and earnings of employees. Due to the diminishing salaries of extra labour needed, it was expected that a quickly developing economy would increase income disparity. When emerging nations become socially heterogeneous due to

their failure to disseminate technology into their systems equally, demographic variables such as population exacerbate inequality (Anyanwu, 2016).

3.8.3 Government consumption expenditure

Some academics have looked at the topic of government expenditure. Cooray (2009), Ranjan and Sharma (2008), Al-Yousif (2000), and Albatel (2000), for example, have claimed that the goal of public spending is to safeguard and supply specific public goods for citizens, which helps development. Government spending financed by borrowing, on the other hand, pushes out private sector investment, slowing economic growth (Barro, 1991; Engen & Skinner, 1992; Fölster & Henrekson, 2001; Landau, 1986). According to Fölster and Henrekson (2001), when resources are misallocated to nonproducing sectors and sectors that can be owned more effectively by the private sector, the government produces an economic scenario that causes growth rates to drop. As a result, this study predicts a negative relationship between government consumption expenditure and economic growth.

3.8.4 Fertility Rate

According to Hartnett (2016) "measures the level of childbearing in a population. It helps determine the growth rate of a population and its age structure". According to De La Croix and Doepke (2003), income inequality adversely impacts growth fertility rate. In this case, income inequality at the extremes and the differential of high fertility negatively impacts human capital which leads to a fall in the growth of the economy. The study documented a widening gap between income inequality and different fertility between the rich and poor.

3.8.5 Unequal access to Education

Many studies have explored the topic of education and its impact on income inequality and economic growth. According to Toh (1984), education is one of the efficient ways of decreasing

income inequality. Attaining better education plays an important role as a sign of ability and productivity in the labour market (A. J. Abdullah et al., 2011). According to Blanden and Machin (2004), to the poor, education provides better economic opportunities because it shifts the composition of the labour force from unskilled to skilled. At the macroeconomic level, some empirical evidence fails to identify the significant role of education even though it is believed that it helps in reducing inequality.

3.8.6 Unequal access to Finance

Claessens (2006) defined unequal access to finance as "the unavailability of financial products and services at a reasonable cost to the poor." Since there are various dimensions to access finance, it isn't easy to define access to finance explicitly. According to Demirgüç-Kunt et al. (2008), accessing finance is very challenging because observing it is difficult. Aportela (1999) argued that the poor could not save because of the barrier to using formal instruments. His study found that when access to finance decreases the saving and income of the poor decreases. Cigno and Rosati (1992) found a negative relationship between unequal access to finance and savings.

3.8.7 Unequal access to Labour Market

According to Berg (2015), reducing inequality will need some concerted political action to strengthen the world's labour market. There is the notion that deregulating the labour market will help solve the unemployment problem and unequal access to work. In the labour market, jobs will not be valued equitably.

In developing countries, globalization has led to new job creation in employment-incentive export industries. Still, the government holds wages and repressed unions out of the concern that increased wage will reduce a country's competitive edge (Berg, 2015). According to Lewis (1954), "the increase in inequality in developing countries has always been a concern of policymaker,

many of whom have subscribed to the view that rising inequality is part of the development process. The structural transformation shifting of workers from low-productivity of agriculture to high-productivity of manufacturing was believed to be associated with widening urban-rural wage differentials, which would only cease when the pool of surplus labour was exhausted and structural transformation completed". Bhorat and Van der Westhuizen (2013) found a negative between the labour market and inequality.

Table 3.1:Definition of variables

Variables	Definition	Source	Sign
GDP per capita growth	GDP per capita growth (Annual %)	WDI	
Gini coefficient	Measures the dispersion intended to represent income inequality	GCIP	+/-
Palma ratio	The top 10% divided by the bottom 40%	GCIP	+/-
Population rate	The rate at which all residents, regardless of citizenship, increases. Measured by population growth as annual %	WDI	+/-
Unequal access to finance	Measured by commercial bank branches (per 100,000 adults)	WDI	+/-
Unequal access to the labour market	Measured by employment to population ratio, 15+, total (%)	WDI	+/-
Unequal access to Education	School enrollment, tertiary (% gross)	WDI	+/-
Government Consumption Exp.	General government final consumption expenditure (% of GDP)	WDI	+/-
Fertility Rate	The number of children born to women in their reproductive years.	WDI	+/-

	Measured by fertility rate, total (birth per woman)

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The results and findings of the study are presented in this chapter. The descriptive statistics and the matrix of correlations of the variables used for the study are discussed. Discussion of pre-estimation test and the two-step System GMM estimation technique results were conducted based on the variables of interest with statistically significant variables.

4.2 Descriptive Statistics

Descriptive statistics are used to describe the variables used in the regression model. The table shows the descriptive statistics for the data used for the study, and GDPPCG was the proxies for economic growth, using data from 2000 to 2018. The elements in the descriptive statistics as shown below include sampled observations, mean, standard deviation, and Minimum (Min) values and maximum (Max) values.

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Gdppcg	857	1.766	5.341	-47.596	56.789
Acfin	892	4.362	8	.14	54.36
aclab mkt	892	61.173	15.941	4	87.82
Acedu	892	4.664	6.84	.352	41.6
Ginicoeff	727	.574	.058	.326	.852
Palmaratio	727	6.159	1.761	1.255	14.435
gce	893	12.747	7.915	.952	54.797
Popgr	886	2.575	.932	-2.629	5.65
Fr	893	5.023	1.249	1.36	7.87

gdppcg represents the Gross Domestic Product Per capita Growth, ginicoeff represents the Gini Coefficient, palmaratio denotes the Palma Ratio, acfin represents unequal Access to Finance, aclab_mkt represents unequal Access to the Labour Market, acedu representes unequal Access to Education, gce represents Government Consumption Expenditure, popgr represents Population Growth Rate and fr represents Fertility Rate.

From table 4.1, the dependent variable Gross Domestic Product per capita growth (GDPPCG) had a mean of 1.766% with a standard deviation of 5.341. It was also hovering around -47.6, recorded

by South Sudan and 56.79 by Equatorial Guinea, thus the Min and the Max. The mean of unequal access to finance was 4.362 over the period under study. Seychelles recorded the highest of 54.36 in 2014, and in 2000, Angola, Benin, Burundi, Burkina Faso recorded the lowest unequal access to finance of 0.14. The mean of unequal access to the labour market was 61.173 over the period under study. Madagascar had the highest of 87.82 in 2000, and in 2011, Senegal and Seychelles recorded the lowest of 4 in 2018 and 2000, respectively. The mean of unequal access to education was 4.664 over the period under study. Mauritius had the highest of 41.6 in 2017, and in 2000, Senegal and Seychelles recorded the lowest of 0.352.

The Gini coefficient recorded an average of 0.574 in Africa with a standard deviation of 0.058. Countries that generally had a high-income inequality level in Africa were Botswana, Namibia, South Africa and Gambia for the period under study. South Africa had the highest Gini coefficient of 0.852 in 2018, and Zimbabwe recorded the lowest of 0.362 in 2011.

The Palma Ratio recorded an average of 6.159 in Africa with a standard deviation of 15.941. South Africa had the highest Palma ratio of 14.435 in 2018, and Zimbabwe recorded the lowest of 1.255 in 2011. Botswana, Namibia and Sao Tome recorded the least income inequality from the raw data.

The mean of Government Consumption Expenditure (GCE) was 13.396% of GDP over the period under study. Government Consumption Expenditure in Eritrea had the highest of 54.8% of GDP in 2000, and in 2003, Nigeria recorded the lowest Government Consumption Expenditure (GCE) of 0.95%. This implies that government expenditure contributes significantly to GDP in Africa. On average, the Population Growth Rate (POPGR) in Africa recorded 2.575% over the years under study. It also recorded a standard deviation of 0.932%. The rate at which the population of Rwanda was increasing was high, recording a rate of 5.65 in the year 2000, while in Seychelles, the

population decline reported a rate of -2.63%. On average, Africa's Fertility Rate (FR) recorded 5.025% with a standard deviation of 1.249%, with Niger recording the highest fertility rate of 7.87% in 2016 and Mauritius recording the lowest of 1.36% in 2015.

4.3 Correlation Matrix

The correlation table shows the relationship between all of the variables in the study. However, it should be remembered that the correlation between variables does not imply causation.

In testing for multicollinearity, the study employed Pearson's correlation coefficient matrix and the VIF to check for multicollinearity among the variables was used in the study. The correlation coefficient index provides the magnitude and directional relationship between two sets of variables without causality implications (Pindyck & Solimano, 1993). According to Kennedy (2008), the threshold for Pearson's correlation to show the existence of substantial collinearity between the independent variables is 0.7. The results from both tests presented in Table 4.2 indicates no issue of multicollinearity among the variables.

Table 4.2: Matrix of correlations

Variables	Gdppcg	acfin	aclab_mkt	acedu	palmaratio	ginicoeff	gce	popgr	fr
gdppcg	1.000								
acfin	0.312*	1.000							
	(0.000)								
aclab_mk	-0.363*	-0.491*	1.000						
	(0.000)	(0.000)							
acedu	0.220*	0.409*	-0.147*	1.000					
	(0.000)	(0.000)	(0.000)						
palmaratio	0.174*	-0.078*	-0.120*	0.099*	1.000				
	(0.000)	(0.038)	(0.001)	(0.007)					
ginicoeff	-0.167*	-0.137*	-0.076*	0.133*	0.898*	1.000			
	(0.000)	(0.000)	(0.039)	(0.000)	(0.000)				
gce	0.132*	0.168*	-0.114*	0.123*	0.245*	0.229*	1.000		
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)			
popgr	-0.093*	-0.384*	0.309*	-0.383*	-0.166*	-0.092*	-0.096*	1.000	
	(0.007)	(0.000)	(0.000)	(0.000)	(0.000)	(0.013)	(0.007)		
fr	-0.367*	-0.543*	0.414*	-0.519*	-0.245*	-0.140*	-0.160*	0.691*	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

**** p<0.01, ** p<0.05, * p<0.1*

gdppcg represents the Gross Domestic Product Per capita Growth, ginicoeff represents the Gini Coefficient, palmaratio denotes the Palma Ratio, acfin represents unequal Access to Finance, aclab_mkt represents unequal Access to the Labour Market, acedu representes unequal Access to Education, gce represents Government Consumption Expenditure, popgr represents Population growth Rate and fr represents Fertility Rate.

Table 4.3: Variance Inflation Factor (VIF)

Variable	*VIF*	*1/VIF*
Palmaratio	*5.71*	*0.175126*
Ginicoeff	*5.35*	*0.186990*
Fr	*3.34*	*0.299353*
Popgr	*1.96*	*0.510687*
Acfin	*1.83*	*0.545520*
aclab_mk	*1.63*	*0.614231*
Acedu	*1.43*	*0.699612*
Gce	*1.10*	*0.912884*
Mean VIF	*2.79*	

The result from table 4.3 suggests that the variables used in the estimation are suitable because none of the variables had a VIF greater than 10. This complies with Kusi et al. (2017).

4.4 Empirical Results

The regression results on channels of distribution of opportunities on income inequality in SSA countries was presented in Table 4.4. Panel A of table 4.4 captures the effect of the distribution of opportunities channel proxies (acfin, aclab_mkt, and acedu) on the Gini Coefficient. Panel B of table 4.4 captures the result of distribution of opportunities channel proxies (acfin, aclab_mkt, and acedu) on the Palma ratio.

In Panel A, the first column reports on regression result, with the control variables excluded. The second column of Panel A reports on regression result including the control variables for robust analysis. Essentially, in checking the viability of the models, two criteria were used, thus, the second-order autocorrelation (AR (2)) null hypothesis by Arellano and Bond for no evidence of autocorrelation in the error terms and the Hansen test should not be significant because the null hypotheses assumption is that the error term is not related to the instrument variables.

In validating the estimation in Table 4.4, the Arellano-Bond test and the Hansen's test are used. The analysis result indicated that AR (2) *p-value* > 5% suggesting no evidence of second-order autocorrelation for the model at a 5% significant level. As shown by the *p-value* of the Hansen test > 5% at a 5% level of significance, instruments are valid.

Table 4.4 showed that unequal access to finance positively and significantly related to the Palma ratio at 5% and 1% significance levels, respectively. As for unequal access to the labour market, a positive coefficient is observed at both 5% and 1% significance levels. Access to education significantly increases the Gini coefficient at 1% significant level.

Table 4.4: Distribution of opportunity channels and income inequality

	Gini Coefficient		Palma Ratio	
Variables	Panel A		Panel B	
	I	II	I	II
L.ginicoeff	0.949*** (0.00614)	0.945*** (0.0319)		
L.palmaratio			0.991*** (0.0994)	0.898*** (0.0201)
Acfin	-0.00792 (0.00697)	0.000277 (0.0479)	0.0481** (0.0435)	0.0330*** (0.0806)
aclab_mkt	0.00115** (0.00545)	0.0543** (0.0436)	0.0839 (0.0307)	0.00164*** (0.0570)
Acedu	0.0171*** (0.0528)	0.0102*** (0.0343)	0.0611 (0.0130)	0.00171*** (0.0336)
Gce		-0.0817* (0.0434)		-0.0323*** (0.0740)
Popgr		-0.0134** (0.0557)		-0.0514 (0.0967)
Fr		-0.0920** (0.0403)		-0.258*** (0.0758)
Constant	0.0227*** (0.0546)	0.0939** (0.0383)	-0.491* (0.252)	2.800*** (0.567)
Hansen test	0.49	0.395	0.312	0.267
AR (2)	0.287	0.596	0.224	0.330
Number of Instruments	24	24	23	23
Observations	434	558	434	434
Number of Country	42	47	42	42

*Legend: Standard errors in parentheses below their coefficient; *** means the p-value < 0.01, ** means the p-value < 0.05, * means the p-value < 0.1. First L.ginicoeff represents the lagged of Gini Coefficient, second L.palmaratio denotes the lagged of Palma Ratio, acfin represents Unequal Access to Finance, aclab_mkt represents Unequal Access to the Labour Market, acedu*

representes Unequal Access to Education, gce represents Government Consumption Expenditure, popgr represents Population growth Rate and fr represents Fertility Rate.

Access to the labour market had a significant and positive relationship with the Palma ratio at a 1% significant level. For the control variables, government consumption expenditure has a negative effect on the Gini coefficient and the Palma ratio at a significant level of 10% and 1%. An increase in government expenditure reduces income inequality when the government spends more on education and development. This result aligns with Sidek (2021). On the other hand, population growth rate also has a negative and significant effect on income inequality regarding the Gini coefficient at a 5% significance level. Also, the fertility rate was found to negatively affect both the Gini coefficient and Palma ratio at 5% and 1% levels of significance.

Table 4.5 shows the effect of income inequality (Gini coefficient and Palma ratio) on economic growth in Sub-Saharan Africa. Table 4.5, Model 5, shows how the Gini coefficient impacts on growth, while Model 6 presents the outcome of the Palma ratio on economic growth. The results showed that the Gini coefficient and the Palma ratio are significant. This means that income inequality plays a significant role in economic growth; economic growth is still affected by rising income inequality in the SSA region. As shown in Table 4.5, Models 5 and 6, there is a negative and statistically significant effect of the Gini coefficient and Palma ratio on economic growth at a significant level of 5%, but with the Gini having a higher magnitude, all other things equal. This may be attributed to the increasing income distribution disparities. Economic growth can be stifled by income inequality in many ways. First of all, a high level of poverty is attributed to high-income inequality, which leads to an increase in crime rate and poor health, which places some burden on the economy. In a study conducted by Fajnzylber et al. (2002), the effect of crime rate income inequality showed a positive relationship between income inequality and crime activities.

Furthermore, a high level of income inequality can lead to poor public health outcomes such as mental health, short life expectancy and other health-related problems. Another channel through which income inequality may negatively affect growth is political instability. Income inequality increases political instability by stimulating social discontent (Alesina & Perotti, 1996).

Nevertheless, the result suggests that unequal access to finance, education, and the labour market decelerate economic growth. The variables were found to significantly reduce economic growth at 10% and 1% significance levels in Model 5 and 6. This can be attributed to the poor's low level of access to financial services owed to financial literacy. The financial market of SSA regions are underdeveloped and has led to income inequality in the regions. Uneasy access to an employable job by the poor due to their inability to attain the requisite skill. According to Blanden and Machin (2004), to the poor, education provides better economic opportunities because the labour force composition is shifted from unskilled to skilled. Education is one of the channels through which income distribution disparities can be reduced. The poor's access to quality education leads to a fall in income inequality in SSA regions. Due to poor educational structures and policy implementation, it is not easy to access quality education. Only the rich in society are able to afford better and quality education. This has led to an increase in inequality. This support the views of Menyelim et al. (2021) and Aiyar and Ebeke (2020).

Table 4.5: The effect of income inequality on economic growth

VARIABLES	Model 5	Model 6
L.gdppcg	0.0948*** (0.0304)	0.127*** (0.0338)
Ginicoeff	-57.51** (26.91)	
Palmaratio		-1.377** (0.616)
Acfin	-0.394*** (0.123)	-0.416*** (0.140)
aclab_mk	-0.118*** (0.0337)	-0.110*** (0.0320)
Acedu	-0.234* (0.153)	-0.267* (0.155)
Gce	-0.594*** (0.127)	-0.665*** (0.135)
Popgr	-0.0911 (0.581)	-0.625 (0.472)
Fr	-4.819*** (1.418)	-4.505*** (1.322)
Constant	64.98*** (21.66)	41.53*** (11.71)
Hansen test	0.114	0.072
AR (2)	0.101	0.102
No. of Instrument	30	30
Observations	392	392
Number of c_id	41	41

*Legend: Standard errors in parentheses below their coefficient; *** means the p-value < 0.01, ** means the p-value < 0.05, * means the p-value < 0.1. L.gdppcg represents the lagged Gross Domestic Product Per capita Growth, ginicoeff represents the Gini Coefficient, and palmaratio denotes Palma Ratio.*

The control variables outcome had shown that the level of general government final consumption expenditure significantly reduces economic growth in the region. This implies that the more government of SSA spends on projects that do not lure to the benefit of the citizen will lead to a decline in economic growth. Studies such as Abu-Bader and Abu-Qarn (2003); Barro (1991) has

reported on government expenditure adversely impacting economic growth. This adverse effect can also be attributed to a lack of good governance and weak control of corruption. This result is in tangent with that of Lahouij (2017). Government spending financed by borrowing, on the other hand, pushes out private sector investment, slowing economic growth (Barro, 1991; Engen & Skinner, 1992; Fölster & Henrekson, 2001; Landau, 1986).

The fertility rate also had a negative and significant impact on economic growth in Model 5 and 6. At a significant level of 10%. This result agrees with Ashraf et al. (2013). According to his study on fertility reduction on economic growth, the results showed that increase fertility results in decrease in economic growth. According to De La Croix and Doepke (2003), income inequality at the extreme and the differential of high fertility rate negatively affect human capital, which leads to a fall in the growth of the economy. The study documented a widening gap between economic growth and different fertility between the rich and the poor. High fertility slows economic growth by posing health risks for children and their mothers, aggravates environmental threats and detracts from human capital investment

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter of the study presents a summary of the findings from chapter four and conclusions were given based on the findings and results of the study. The chapter also gives recommendations based on the findings and result and suggestions for future research have also been presented in order to draw attention of other researchers to that areas.

5.2 Summary

This study examines the relationship between income inequality and economic growth in Sub-Saharan Africa (SSA), where the distribution of income is uneven and on the rise. The study used 47 African countries because of the availability of data. The data used was obtained from World Development Indicators (WDI) and Global Consumption and Income Project (GCIP). The System GMM regression model was used in determining the impact of income inequality on economic growth.

To begin with, the result from the study showed a significant and positive relationship between unequal access to finance and income inequality, unequal access to the labour market also showed a significantly and positive association income inequality, and unequal access to education also showed a positive and significant association with income inequality. As a result, access to financial services by the poor is low. Poor access to quality education and difficulty in accessing a well-paying job due to low level of education.

The results showed that the coefficient of the Gini and the Palma ratio are significant and showed an adverse effect on growth. Thus, income inequality plays a major role in the growth of the

economy. Economic growth can be stifled by income inequality in many ways. Firstly, a high level of poverty is attributed to high-income inequality, which leads to an increase in crime rate and poor health, which places some kind of burden on the economy. From the findings, unequal access to the labour market and unequal access to education reduces economic growth and unequal access to finance also had a mitigating effect on economic growth.

The study's outcome found a negative relationship between government expenditure and economic growth. This implies that an increase in government expenditure leads to a reduction in growth. High government spending financed by borrowing, on the other hand, pushes out private sector investment, slowing economic growth. Fertility rate negatively affected economic growth. It has been recognized that high fertility slows economic growth by posing health risks for children and their mothers, aggravates environmental threats and detracts from human capital investment

5.3 Conclusions

The uneven income distribution has become a major problem globally, especially in Latin American and Africa. The rich are getting richer, and the poor getting poorer due to unequal income distribution.

The study seeks to examine the relationship between income inequality and economic growth. The system GMM were adopted to address the questions of the study. The dataset used spans from 2000 to 2018 of 47 countries in SSA. The regression result and diagnostics test showed that the variables used were valid, and there was no second-order autocorrelation in the estimation.

The outcome of the study showed that unequal access to finance positively and significantly affected income inequality while unequal access to the labour market, and unequal access to education positively and significantly affect income inequality. The study also found that

government expenditure and fertility rate had significant and mitigating effect on income inequality. Population growth rate also had negative and significant effect on income inequality.

The study again found that income inequality negatively and significantly affected economic growth. Furthermore, unequal access to finance, unequal access to the labour market, and unequal access to education negatively and significantly affected economic growth. Government expenditure and fertility rate had negative and significant effect on growth. From the research findings, it can be concluded that much attention should be given to access to finance, labour market and education because of its association with income inequality and economic growth. The variables used for the study showed a positive relationship between unequal access to finance, labour market and education and income inequality. The increase in income distribution disparities may be caused by unequal access to finance, labour market and education. The study also found that increase in government expenditure leads to a reduction in growth; likewise, fertility rate also negatively affected economic growth.

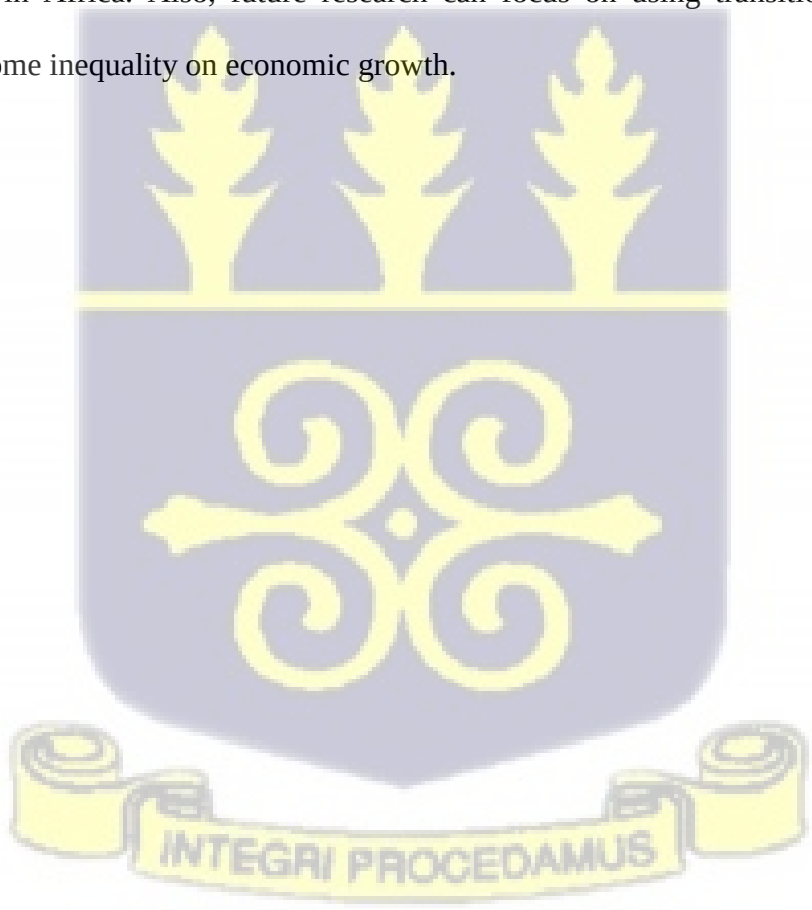
5.4 Recommendations

A slow-growing economy leading to unequal income distribution disparities depends on a range of policy implementation. From the study, we recommend that much attention be given to the unequal access to finance, labour market and education because of its association with income inequality and economic growth. They have the tendency of increasing income distribution disparities and lowering economic growth. The government of SSA should create a conducive environment for growth, where macroeconomic and social policies are targeted at improving the lives of the poor. Access to finance, education, and the labour market should be accessible to all. Also, government expenditure should be geared towards education and development improves the lives of the poor.

5.5 Future Research Recommendation

This research focused on the relationship between income inequality and economic growth in Sub-Saharan African countries. Using the Gini coefficient and Palma ratio as a measure of income inequality. Other studies can focus on their studies in Ghana. There might be other channels through which income inequality can be affected and these other channels can be explored by other research. The channels used in this study were used separately, but other studies can do various combinations to amplify the negative impact on income distribution disparities.

Future research can use other alternatives to measure income inequality in Africa as done in other regions but not in Africa. Also, future research can focus on using transitional measures in determining income inequality on economic growth.



REFERENCES

Abdullah, A., Doucouliagos, H., & Manning, E. (2015). Does education reduce income inequality? A meta-regression analysis. *Journal of Economic Surveys*, *29*(2), 301–316.

Abdullah, A. J., Doucouliagos, H., & Manning, E. (2011). Education and income inequality: A meta-regression analysis. *Unpublished Manuscript, Deakin University*.

Abu-Bader, S., & Abu-Qarn, A. S. (2003). Government expenditures, military spending and economic growth: causality evidence from Egypt, Israel, and Syria. *Journal of Policy Modeling*, *25*(6–7), 567–583.

Adesina, J. O. (2016). 18. Inequality in sub-Saharan Africa: dimensions and drivers. *World Social Science Report*, 96.

AfDB, O. (2012). UNDP and UNECA. 2012. *African Economic Outlook*.

Aghion, P., Akcigit, U., Bergeaud, A., Blundell, R., & Hémous, D. (2019). Innovation and top income inequality. *The Review of Economic Studies*, *86*(1), 1–45.

Agnello, L., Mallick, S. K., & Sousa, R. M. (2012). Financial reforms and income inequality. *Economics Letters*, *116*(3), 583–587.

Ahluwalia, M. S. (1974). Income inequality: some dimensions of the problem-Excerpts from a chapter of the new World Bank book that explores policies to improve income distribution. *Finance & Development*, *11*(003).

Ahn, K. (1997). Trends in and determinants of income distribution in Korea. *Journal of Economic Development*, *22*(2), 27–56.

Aiyar, S., & Ebeke, C. (2020). Inequality of opportunity, inequality of income and economic

growth. *World Development*, *136*, 105115.

Akadiri, S., & Akadiri, A. (2018). Growth and Inequality in Africa: Reconsideration. *Academic Journal of Economic Studies*, *4*(3), 76–86.

Al-Yousif, Y. (2000). *Do government expenditure inhibit or promote economic growth: Some empirical evidence from Saudi Arabia" the Indian economic journal, 48*.

Albatel, A. H. (2000). *The relationship between government expenditure and economic growth in Saudi Arabia*.

Alesina, A., & Perotti, R. (1996). Income distribution, political instability, and investment. *European Economic Review*, *40*(6), 1203–1228.

Alesina, A., & Rodrik, D. (1994). Distributive politics and economic growth. *The Quarterly Journal of Economics*, *109*(2), 465–490.

Ali, A. A. G., & Thorbecke, E. (2000). The state and path of poverty in Sub-Saharan Africa: some preliminary results. *Journal of African Economies*, *9*(Supplement_1), 9–40.

Alison, R. M. (1979). On Guilt. *Legal Med. Q.*, *3*, 28.

Andrei, A., & Crăciun, L. (2015). Inequality and economic growth: theoretical and operational approach. *Theoretical & Applied Economics*, *22*(1).

Anyanwu, John C. (2016). Analysis of gender equality in youth employment in Africa. *African Development Review*, *28*(4), 397–415.

Anyanwu, John Chukwudi, & Oaikhenan, H. E. (1995). *Modern macroeconomics: Theory and applications in Nigeria*. Department of Economics & Statistics, University of Benin.

Aportela, F. (1999). *Effects of financial access on savings by low-income people*. Citeseer.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, *58*(2), 277–297.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, *68*(1), 29–51.

Aremo, A. G., & Abiodun, S. T. (2020). Causal Nexus among Fiscal Policy, Economic Growth and Income Inequality in Sub-Saharan African Countries (1995-2016). *African Journal of Economic Review*, *8*(1), 1–25.

Ashraf, Q. H., Weil, D. N., & Wilde, J. (2013). The effect of fertility reduction on economic growth. *Population and Development Review*, *39*(1), 97–130.

Atkinson, A. B. (1970). On the measurement of inequality. *Journal of Economic Theory*, *2*(3), 244–263.

Auza, K. A. (2021). *Income Inequality and Economic Growth in Central and Eastern European Transition Countries (Doctoral dissertation)*. Universidade de Coimbra.

Babu, M. S., Bhaskaran, V., & Venkatesh, M. (2016). Does inequality hamper long run growth? Evidence from Emerging Economies. *Economic Analysis and Policy*, *52*, 99–113.

Balcilar, M., Chang, S., Gupta, R., & Miller, S. M. (2018). The relationship between the inflation rate and inequality across US states: a semiparametric approach. *Quality & Quantity*, *52*(5), 2413–2425.

Banerjee, A. V, & Duflo, E. (2003). Inequality and growth: What can the data say? *Journal of*

Economic Growth, *8*(3), 267–299.

Bank, W. (2003). *World Development Report 2004: Making services work for poor people*. The World Bank.

Barro, R. J. (1991). Economic growth in a cross section of countries. *The Quarterly Journal of Economics*, *106*(2), 407–443.

Barro, R. J. (2000). Inequality and Growth in a Panel of Countries. *Journal of Economic Growth*, *5*(1), 5–32.

Basu, P., & Guariglia, A. (2007). Foreign direct investment, inequality, and growth. *Journal of Macroeconomics*, *29*(4), 824–839.

Beck, T., Levine, R., & Levkov, A. (2007). *Big bad banks? The impact of US branch deregulation on income distribution*. National Bureau of Economic Research Cambridge, Mass., USA.

Bell, E., Bryman, A., & Harley, B. (2018). *Business research methods*. Oxford university press.

Benabou, R. (2000). Unequal societies: Income distribution and the social contract. *American Economic Review*, *90*(1), 96–129.

Benhabib, J., & Rustichini, A. (1996). Social conflict and growth. *Journal of Economic Growth*, *1*(1), 125–142.

Berg, J. (2015). Income security in the on-demand economy: Findings and policy lessons from a survey of crowdworkers. *Comp. Lab. L. & Pol'y J.*, *37*, 543.

Berisha, E., & Meszaros, J. (2020). Macroeconomic determinants of wealth inequality dynamics. *Economic Modelling*, *89*, 153–165.

Bhorat, H., & Van der Westhuizen, C. (2013). Non-monetary dimensions of well-being in South Africa, 1993–2004: A post-apartheid dividend? *Development Southern Africa*, *30*(3), 295–314.

Bhorat, H., Van der Westhuizen, C., & Jacobs, T. (2009). Income and non-income inequality in post-apartheid South Africa: What are the drivers and possible policy interventions? *Development Policy Research Unit DPRU Working Paper*, *09/138*.

Bigsten, A. (1983). *Income distribution and development; theory, evidence, and policy*.

Bird, R. M., & Zolt, E. M. (2015). Fiscal Contracting in Latin America. *World Development*, *67*, 323–335.

Bittencourt, M. (2009). Macroeconomic performance and inequality: Brazil, 1983–94. *The Developing Economies*, *47*(1), 30–52.

Blanden, J., & Machin, S. (2004). Educational inequality and the expansion of UK higher education. *Scottish Journal of Political Economy*, *51*(2), 230–249.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, *87*(1), 115–143.

Bordo, M. D., & Meissner, C. M. (2012). Does inequality lead to a financial crisis? *Journal of International Money and Finance*, *31*(8), 2147–2161.

Borghi, E. (2005). *Trade openness and wage distribution in Chile*. CESPRI.

Brida, J. G., Carrera, E. J. S., & Segarra, V. (2020). Clustering and regime dynamics for economic growth and income inequality. *Structural Change and Economic Dynamics*, *52*, 99–108.

Bryman, A. (2008). Why do researchers integrate/combine/mesh/blend/mix/merge/fuse quantitative and qualitative research. *Advances in Mixed Methods Research*, *21*(8), 87–100.

Brzezinski, M. (2018). Income inequality and the Great Recession in Central and Eastern Europe. *Economic Systems*, *42*(2), 219–247.

Burgess, R., & Pande, R. (2005). Do rural banks matter? Evidence from the Indian social banking experiment. *American Economic Review*, *95*(3), 780–795.

Callan, T., & Keane, C. (2009). Non-cash Benefits and the Distribution of Economic Welfare. *Economic & Social Review*, *40*(1).

Ceesay, E. K., FANNEH, M. M., & TSENKWO, J. B. (2019). Effect of Income Inequality on Economic Growth in Selected West Africa Countries: An Empirical Analysis. *BİLTÜRK Journal of Economics and Related Studies*, *1*(3), 240–257.

Chan, K. S., Zhou, X., & Pan, Z. (2014). The growth and inequality nexus: The case of China. *International Review of Economics & Finance*, *34*, 230–236.

Chang, S., Gupta, R., & Miller, S. M. (2018). Causality between per capita real GDP and income inequality in the US: Evidence from a wavelet analysis. *Social Indicators Research*, *135*(1), 269–289.

Chen, B.-L., & Guo, J.-T. (2002). Is Income Inequality Really Not Harmful for Economic Growth? *Economics Working Paper*, 10–38.

Chiswick, B. R. (1974). Front matter to Income Inequality: Regional Analyses within a Human Capital Framework. In *Income Inequality: Regional Analyses within a Human Capital Framework* (pp. 10–16). NBER.

Chu, L. K., & Hoang, D. P. (2020). How does economic complexity influence income inequality? New evidence from international data. *Economic Analysis and Policy*, *68*, 44–57.

Cigno, A., & Rosati, F. C. (1992). The effects of financial markets and social security on saving and fertility behaviour in Italy. *Journal of Population Economics*, *5*(4), 319–341.

Claessens, S. (2006). Access to financial services: A review of the issues and public policy objectives. *The World Bank Research Observer*, *21*(2), 207–240.

Clark, J. R., & Lawson, R. A. (2008). The impact of economic growth, tax policy and economic freedom on income inequality. *The Journal of Private Enterprise*, *Fall*.

Clarke, G. R. G., Xu, L. C., & Zou, H. (2006). Finance and Income Inequality: What Do the Data Tell Us? *Southern Economic Journal*, *72*(3), 578. https://doi.org/10.2307/20111834

Cobham, A., Schlögl, L., & Sumner, A. (2016). Inequality and the Tails: The Palma Proposition and Ratio. *Global Policy*, *7*(1), 25–36. https://doi.org/10.1111/1758-5899.12320

Cobham, A., & Sumner, A. (2013). Is it all about the tails? The Palma measure of income inequality. *Center for Global Development Working Paper*, *343*.

Cooray, A. (2009). Government expenditure, governance and economic growth. *Comparative Economic Studies*, *51*(3), 401–418.

Cowell, F. A., & Jenkins, S. P. (1995). How much inequality can we explain? A methodology and an application to the United States. *The Economic Journal*, *105*(429), 421–430.

Creswell, J. W. (2014). *Qualitative, quantitative and mixed methods approaches*. Sage.

Dabla-Norris, E., Kochhar, K., Suphaphiphat, N., & Ricka, F. (2016). E. Tsounta.(2015). *Causes*

and Consequences of Income Inequality: A Global Perspective.

De La Croix, D., & Doepke, M. (2003). Inequality and growth: why differential fertility matters. *American Economic Review*, *93*(4), 1091–1113.

De Maio, F. G. (2007). Income inequality measures. *Journal of Epidemiology & Community Health*, *61*(10), 849–852.

Deininger, K., & Olinto, P. (1999). Asset distribution, inequality, and growth. *Inequality, and Growth (November 1999)*.

Deininger, K., & Squire, L. (1998). New ways of looking at old issues: inequality and growth. *Journal of Development Economics*, *57*(2), 259–287.

Demirgüç-Kunt, A., Beck, T. H. L., & Honohan, P. (2008). *Finance for all?: Policies and pitfalls in expanding access*. Tilburg University, School of Economics and Management.

Dornbusch, R., Favero, C., & Giavazzi, F. (1998). Immediate challenges for the European central bank. *Economic Policy*, *13*(26), 16–64.

Doyle, M. W., & Stiglitz, J. E. (2014). Eliminating extreme inequality: A sustainable development goal, 2015–2030. *Ethics & International Affairs*, *28*(1), 5–13.

Dudovskiy, J. (2016). Purposive sampling. *Retrieved from Research-Methodology: Http://Researchmethodology. Net*.

Engen, E. M., & Skinner, J. S. (1992). Fiscal policy and economic growth. *NBER Working Paper*, *w4223*.

Fajnzylber, P., Lederman, D., & Loayza, N. (2002). Inequality and violent crime. *The Journal of Law and Economics*, *45*(1), 1–39.

Fang, Z., Zhu, J., & Deng, R. (2013). Estimating Gini Coefficient Based on Hurun Report and Poverty Line. *Open Journal of Statistics*, *03*(03), 167–172. https://doi.org/10.4236/ojs.2013.33018

Fields, G. S. (2000). *The dynamics of poverty, inequality and economic well-being: African economic growth in comparative perspective*.

Fölster, S., & Henrekson, M. (2001). Growth effects of government expenditure and taxation in rich countries. *European Economic Review*, *45*(8), 1501–1520.

Forbes, K. J. (2000). A reassessment of the relationship between inequality and growth. *American Economic Review*, *90*(4), 869–887.

Fosu, A. K. (2017). Growth, inequality, and poverty reduction in developing countries: Recent global evidence. *Research in Economics*, *71*(2), 306–336.

Frank, M. W. (2009). Income inequality, human capital, and income growth: Evidence from a state-level VAR analysis. *Atlantic Economic Journal*, *37*(2), 173–185.

Freeman, S., & Kydland, F. E. (2000). Monetary aggregates and output. *American Economic Review*, *90*(5), 1125–1135.

Galor, O., & Zeira, J. (1993). Income distribution and macroeconomics. *The Review of Economic Studies*, *60*(1), 35–52.

Garbis, I. P. (2005). Inequality. *Poverty, and Growth: Cross-Country Evidence: IMF Working Papers*, 5–28.

Glomm, G., & Ravikumar, B. (2003). Public education and income inequality. *European Journal of Political Economy*, *19*(2), 289–300.

Goda, T. (2016). Global trends in relative and absolute income inequality. *Ecos de Economía*, *20*(42), 46–69.

Gore, C. (2007). Which growth theory is good for the poor? *The European Journal of Development Research*, *19*(1), 30–48.

Greaney, T. M., & Li, Y. (2017). Multinational enterprises and regional inequality in China. *Journal of Asian Economics*, *48*, 120–133.

Gupta, S., Davoodi, H., & Alonso-Terme, R. (2002). Does corruption affect income inequality and poverty? *Economics of Governance*, *3*(1), 23–45.

Gyimah-Brempong, K. (2002). Corruption, economic growth, and income inequality in Africa. *Economics of Governance*, *3*(3), 183–209.

Hagerbaumer, J. B. (1977). The Gini concentration ratio and the minor concentration ratio: a two parameter index of inequality. *The Review of Economics and Statistics*, 377–379.

Halter, D., Oechslin, M., & Zweimüller, J. (2014). Inequality and growth: the neglected time dimension. *Journal of Economic Growth*, *19*(1), 81–104.

Hartnett, C. S. (2016). Fertility Rates. *Encyclopedia of Family Studies*, 1–5.

Henderson, D. J., Qian, J., & Wang, L. (2015). The inequality–growth plateau. *Economics Letters*, *128*, 17–20.

Horn, G. A., Dröge, K., Sturn, S., van Treeck, T., & Zwiener, R. (2009). *From the financial crisis to the world economic crisis: The role of inequality*. IMK Policy Brief.

Howarth, R. B., & Kennedy, K. (2016). Economic growth, inequality, and well-being. *Ecological Economics*, *121*, 231–236.

Huh, H., & Park, C. (2021). A new index of globalisation: Measuring impacts of integration on economic growth and income inequality. *The World Economy*, *44*(2), 409–443.

Jasso, G. (1979). On Gini's mean difference and Gini's index of concentration. *American Sociological Review*, *44*(5), 867–870.

Jauch, S., & Watzka, S. (2016). Financial development and income inequality: a panel data approach. *Empirical Economics*, *51*(1), 291–314.

Jenkins, S. P. (2009). Distributionally-sensitive inequality indices and the GB2 income distribution. *Review of Income and Wealth*, *55*(2), 392–398.

Jihène, S., & Ghazi, B. (2013). The causality between income inequality and economic growth: empirical evidence from the Middle East and North Africa region. *Asian Economic and Financial Review*, *3*(5), 668.

Jimenez, E. (1986). The public subsidization of education and health in developing countries: A review of equity and efficiency. *The World Bank Research Observer*, *1*(1), 111–129.

Johnson, N. D., & Koyama, M. (2017). States and economic growth: Capacity and constraints. *Explorations in Economic History*, *64*, 1–20.

Jones, A. F., & Weinberg, D. H. (2000). *The changing shape of the nation's income distribution, 1947-1998* (Issue 204). US Department of Commerce, Economics and Statistics Administration, US ….

Kamila, M.Y., Semih, B. K. (2011). *Income inequality and economic growth: enhancing or retarding impact?14th International Student Conference on Economics.*

Kendall, M., & Stuart, A. (1963). *The Advanced Theory of Statistics I, 2nd ed. (London: Charles*

Griffen and Company.

Kennedy, P. (2008). *A guide to econometrics*. John Wiley & Sons.

Kesti, E. (2020). *The Effects of Income Inequality and Poverty on Economic Growth*.

Kim, D.-H., & Lin, S.-C. (2011). Nonlinearity in the financial development–income inequality nexus. *Journal of Comparative Economics*, *39*(3), 310–325.

Krugman, P. (1991). Increasing returns and economic geography. *Journal of Political Economy*, *99*(3), 483–499.

Kuo, S. W. Y. (2019). *The Taiwan economy in transition*. Routledge.

Kusi, B. A., Agbloyor, E. K., Ansah-Adu, K., & Gyeke-Dako, A. (2017). *Research in International Business and Finance*.

Kuznets, S. (1955a). Economic growth and income inequality. *The American Economic Review*, *45*(1), 1–28.

Kuznets, S. (1955b). Linked references are available on JSTOR for this article. *Academy of Management Review*, *65*(1), 386–408.

Lahouij, H. (2017). The Effects of Income inequality on Economic Growth Evidence from MENA Countries. *Excellence in Student Researchand Creative Activity*, 1–26. http://thekeep.eiu.edu/lib_awards_2017_docshttp://thekeep.eiu.edu/lib_awards_2017_docs/4

Landau, D. (1986). Government and economic growth in the less developed countries: an empirical study for 1960-1980. *Economic Development and Cultural Change*, *35*(1), 35–75.

Lee, J.-W., & Francisco, R. (2012). Human capital accumulation in emerging Asia, 1970–2030. *Japan and the World Economy*, *24*(2), 76–86.

Leitner, S., & Holzner, M. (2008). Economic inequality in central, east and southeast Europe. *European Journal of Economics and Economic Policies: Intervention*, *5*(1), 155–188.

Lewis, W. A. (1954). *Economic development with unlimited supplies of labour*.

Li, M., Goetz, S. J., Partridge, M., & Fleming, D. A. (2016). Location determinants of high-growth firms. *Entrepreneurship & Regional Development*, *28*(1–2), 97–125.

Lopez-Feldman, A. (2006). Decomposing inequality and obtaining marginal effects. *The Stata Journal*, *6*(1), 106–111.

Lucas Jr, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, *22*(1), 3–42.

Madden, J. F. (2000). *Changes in income inequality within US metropolitan areas*. WE Upjohn Institute.

Majumdar, S., & Partridge, M. D. (2009). *Impact of economic growth on income inequality: A regional perspective*.

Mankiw, N. G., Romer, D., & Weil, D. N. (1992). A contribution to the empirics of economic growth. *The Quarterly Journal of Economics*, *107*(2), 407–437.

Menyelim, C. M., Babajide, A. A., Omankhanlen, A. E., & Ehikioya, B. I. (2021). Financial inclusion, income inequality and sustainable economic growth in Sub-Saharan African countries. *Sustainability (Switzerland)*, *13*(4), 1–15. https://doi.org/10.3390/su13041780

Milanovic, B. (1998). *Income, inequality, and poverty during the transition from planned to*

market economy. Citeseer.

Milanovic, B. (2003). Is inequality in Africa really different? *Available at SSRN 636588*.

Milanovic, B. (2016). *Global inequality*. Harvard University Press.

Mitra, P., & Yemtsov, R. (2006). Inequality and Growth in Transition: Does China's Rising Inequality Portend Russia's Future? *World Bank ABCDE Conference Beyond Transition, San Petersburgo*.

Moll, B., Rachel, L., & Restrepo, P. (2021). *Uneven Growth: Automation's Impact on Income and Wealth Inequality*. National Bureau of Economic Research.

Morgan, J. (1962). The anatomy of income distribution. *The Review of Economics and Statistics*, 270–283.

Muinelo-Gallo, L., & Roca-Sagalés, O. (2013). Joint determinants of fiscal policy, income inequality and economic growth. *Economic Modelling*, *30*, 814–824.

Myles, G. D. (2009). *Economic growth and the role of taxation-disaggregate data*.

Ncube, M., Anyanwu, J. C., & Hausken, K. (2014). Inequality, economic growth and poverty in the Middle East and North Africa (MENA). *African Development Review*, *26*(3), 435–453.

Nissim, B. (2007). Economic growth and its effect on income distribution. *Journal of Economic Studies*.

Niyimbanira, F. (2017). Analysis of the impact of economic growth on income inequality and poverty in South Africa: the case of Mpumalanga Province. *International Journal of Economics and Financial Issues*, *7*(4), 254–261.

Odedokun, M. O., & Round, J. I. (2001). *Determinants of income inequality and its effects on economic growth: evidence from African countries* (Issue 2001/103). WIDER Discussion Paper.

Odusanya, I. A., & Akinlo, A. E. (2020). Growth effect of income inequality in sub-Saharan Africa: exploring the transmission channels. *International Journal of Management and Economics*, *56*(2), 176–190. https://doi.org/10.2478/ijme-2020-0012

Ogus Binatli, A. (2012a). Growth and income inequality: a comparative analysis. *Economics Research International*, *2012*.

Ogus Binatli, A. (2012b). Growth and Income Inequality: A Comparative Analysis. *Economics Research International*, *2012*(2), 1–7. https://doi.org/10.1155/2012/569890

Okojie, C., & Shimeles, A. (2006). Inequality in sub-Saharan Africa. *The Inter-Regional Inequality Facility. Overseas Development Institute (ODI). London*.

Osei- Assibey, E. (2013). Inequalities in Ghana: Nature, Causes, Challenges and Prospects. *Ndpc Unicef*, *April*, 1–7.

Ostry, M. J. D., Berg, M. A., & Tsangarides, M. C. G. (2014). *Redistribution, inequality, and growth*. International Monetary Fund.

Palma, J. G. (2011). National inequality in the era of globalisation: what do recent data tell us? In *The Handbook of Globalisation, Second Edition*. Edward Elgar Publishing.

Park, C.-Y., & MERCADO JR, R. (2018). Financial inclusion, poverty, and income inequality. *The Singapore Economic Review*, *63*(01), 185–206.

Peet, R. (1975). Inequality and poverty: a Marxist-geographic theory. *Annals of the Association*

of American Geographers, *65*(4), 564–571.

Perotti, R. (1996). Growth, income distribution, and democracy: What the data say. *Journal of Economic Growth*, *1*(2), 149–187.

Persson, T., & Tabellini, G. (1994). ls lnequality Harmful for Growth. *American Economic Review*, *84*(3), 600–621.

Pickett, K. E., & Wilkinson, R. G. (2010). Inequality: an underacknowledged source of mental illness and distress. *The British Journal of Psychiatry*, *197*(6), 426–428.

Piketty, T. (1997). The dynamics of the wealth distribution and the interest rate with credit rationing. *The Review of Economic Studies*, *64*(2), 173–189.

Pindyck, R. S., & Solimano, A. (1993). Economic instability and aggregate investment. *NBER Macroeconomics Annual*, *8*, 259–303.

Pressman, S. (2013). Cross-national comparisons of poverty and income inequality. *The Economics of Inequality, Poverty and Discrimination in the 21st Century*, 17–37.

Pyatt, G., Chen, C., & Fei, J. (1980). "The Distribution of Income by Factor Components,." *Quarterly Journal of Econom*, 451–473.

Ram, R. (1989). Can educational expansion reduce income inequality in less-developed countries? *Economics of Education Review*, *8*(2), 185–195.

Ranjan, K. D., & Sharma, C. (2008). *Government Expenditure and Economic Growth: Evidence from India. The ICFAI University Journal of Public Finance, 6 (3): 60-69.*

Ravallion, M. (2007). Evaluating anti-poverty programs. *Handbook of Development Economics*, *4*, 3787–3846.

Ray, D. (2010). Uneven growth: A framework for research in development economics. *Journal of Economic Perspectives*, *24*(3), 45–60.

Rodriguez, F. (2000). Inequality, economic growth and economic performance. *A Background Note for the World Development Report*.

Romer, D. (2001). *Advanced Macroeconomics [M]*. *2nd*. Shanghai: Shanghai University of Finance &Economics Press.

Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in Stata. *The Stata Journal*, *9*(1), 86–136.

Rose, S., & Viju, C. (2014). Income inequality in post-communist Central and Eastern European countries. *Eastern Journal of European Studies*, *5*(1).

Rosenberg, N., & Nathan, R. (1982). *Inside the black box: technology and economics*. cambridge university press.

Rosser Jr, J. B., Rosser, M. V, & Ahmed, E. (2000). Income inequality and the informal economy in transition economies. *Journal of Comparative Economics*, *28*(1), 156–171.

Roubini, N., & Backus, D. (1998). Productivity and Growth. *Lectures in Macroeconomics*.

Saint Akadiri, S., & Akadiri, A. C. (2018). Growth and inequality in Africa: Reconsideration. *Academic Journal of Economic Studies*, *4*(3), 76–86.

Schmid, K., & Stein, U. (2013). *Explaining rising income inequality in Germany, 1991-2010*.

Shin, I. (2012). Income inequality and economic growth. *Economic Modelling*, *29*(5), 2049–2057.

Sidek, N. Z. M. (2021). Do government expenditure reduce income inequality: evidence from developing and developed countries. *Studies in Economics and Finance*.

Smith, H. B. L. (1904). *The Return to Protection*. JSTOR.

Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, *70*(1), 65–94.

Solt, F. (2016). The standardized world income inequality database. *Social Science Quarterly*, *97*(5), 1267–1281.

Stiglingh, A. (2015). *Financial development and economic growth in BRICS and G-7 countries: a comparative analysis*.

Sylwester, K. (2000). Income inequality, education expenditures, and growth. *Journal of Development Economics*, *63*(2), 379–398.

Tabassum, A., & Majeed, M. T. (2008). Economic growth and income inequality relationship: role of credit market imperfection. *The Pakistan Development Review*, 727–743.

Thewissen, S., Kenworthy, L., Nolan, B., Roser, M., & Smeeding, T. (2015). *Rising income inequality and living standards in OECD countries: How does the middle fare?* LIS Working Paper Series.

Thimann, C., & Dayal-Gulati, A. (1997). Saving in Southeast Asia and Latin America Compared: Searching for Policy Lessons. *Journal Issue*, *1997*, 110.

Toh, K. W. (1984). Education as a vehicle for reducing economic inequality. *Ethnicity, Class and Development Malaysia: Persatuan Sains Sosial Malaysia*.

Topolewski, Ł. (2020). The impact of income inequalities on economic growth. *Ekonomia i*

Prawo. Economics and Law, *19*(2), 355–365.

UNDP (United Nations Development Programme). (2013). *Humanity Divided: Confronting Inequality in Developing Countries, New York: UNDP*.

UNICEF, & Women, U. N. (2013). *Synthesis Report on the Global Thematic Consultation on Addressing Inequalities*. New York: UNICEF.

Villar, A. (2015). Crisis, households' expenditure and family structure: The Palma ratio of the Spanish economy (2007-2014). *Documento de Trabajo*, *15/22*.

Voitchovsky, S. (2005). Does the profile of income inequality matter for economic growth? *Journal of Economic Growth*, *10*(3), 273–296.

Wahiba, N. F., & El Weriemmi, M. (2014). The relationship between economic growth and income inequality. *International Journal of Economics and Financial Issues*, *4*(1), 135–143.

WID. (2017). *WID World inequality Report (No. 0098)*. https://wir2017.wid.world/www-site/uploads/2017/03/0098-21_WIL_RIM_RAPPORT_A4

Wilkinson, R. G. (2002). *Unhealthy societies: the afflictions of inequality*. Routledge.

Yahyavi Dizaj, J., Saeidpour, J., Na'emani, F., & Irandoust, K. (2019). Inequality in payments for health insurance in Iran: during the study period 2011-2017. *Iran J Health Insur*, *2*(2), 81–87.

Yang, Y., & Greaney, T. M. (2017). Economic growth and income inequality in the Asia-Pacific region: A comparative study of China, Japan, South Korea, and the United States. *Journal of Asian Economics*, *48*, 6–22. https://doi.org/10.1016/j.asieco.2016.10.008

Younsi, M., & Bechtini, M. (2020). Economic growth, financial development, and income

inequality in BRICS countries: does Kuznets' inverted U-shaped curve exist? *Journal of the Knowledge Economy*, *11*(2), 721–742.

Yusuf, A. A. (2005). *A survey on growth and inequality: Does improved inequality data have anything to say (CEDS Working Papers No. 200501). http://Ceds. Feb. Unpad. Ac. Id/Wopeds/200501. Pdf.*

Zhang, R., & Naceur, S. Ben. (2019). Financial development, inequality, and poverty: Some international evidence. *International Review of Economics & Finance*, *61*, 1–16.