UNIVERSITY OF GHANA

COLLEGE OF HUMANITIES

MICROFINANCE AND INCLUSIVE GROWTH IN SUB-SAHARAN AFRICA

BY

EBENEZER KONTOH (10469461)

A THESIS SUBMITTED TO THE DEPARTMENT OF FINANCE, UNIVERSITY OF GHANA BUSINESS SCHOOL, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF PHILOSOPHY IN FINANCE

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DECLARATION

I do hereby declare that this work is the result of my own research and has not been presented by anyone for any academic award at the University of Ghana or any other university. All references used in the study have been duly acknowledged.

I bear sole responsibility for any shortcomings.

…… 12/03/2021 ……

Ebenezer Kontoh Date

(10469461)

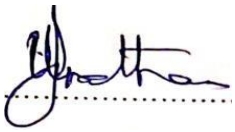
CERTIFICATION

We hereby certify that this thesis was supervised according to the procedures that have been laid down by the University of Ghana.

…… 12/03/2021

Dr. Emmanuel Sarpong-Kumankoma Date

(Lead Supervisor)



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Dr. Jonathan Welbeck Date

(Co-Supervisor)

DEDICATION

This work is first and foremost dedicated to my Lord, Jesus Christ for making everything possible to complete this thesis.

It is also dedicated to my father, Kwabena Kontoh, and my mother, Suzzy Kontoh. Their loving encouragements sustain me.

ACKNOWLEDGEMENT

I am indebted to my supervisors, Dr. Emmanuel Sarpong-Kumankoma and Dr. Jonathan Welbeck for their timeless corrections, dedication, and direction during the supervision of this work.

Finally, I would like to thank all my friends who contributed in one way or the other to help finish this study. You are all deeply appreciated.

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AfDB	African Development Bank
ASCA	Accumulating savings and credit association
AU	African Union
FE	Fixed effect
FGLS	Feasible Generalized Least Squares
KMO	Kaiser-Meyer-Olkin
MFI	Microfinance institution
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Square
PCA	Principal Component Analysis
PCSE	Panel Corrected Standard Error
SDGs	Sustainable Development Goals
RE	Random effect
ROSCA	Rotating savings and credit association
SSA	Sub-Saharan Africa
UN	United Nations
UNDP	United Nations Development Fund
VIF	Variance Inflator Factor
WB	World Bank
WDI	World Development Indicators
WLS	Weighted Least Squares

ABSTRACT

The aim of the study is to examine the impact of microfinance on inclusive growth in Sub-Saharan Africa. The dependent variable, inclusive growth, is an index of income and non-income measures and it is constructed after normalization with principal component analysis (PCA). Microfinance services and microfinance outreach are used as proxies for microfinance. A fixed effect regression with Driscoll Kraay standard error was used to assess the impact.

The study employs a dataset of 821 MFIs across 35 countries in Sub-Saharan Africa (SSA) over the period 2003-2017. The study finds evidence that microfinance services (microcredit and savings) constitute a small percent of GDP in many countries in Sub-Saharan Africa. While savings promotes inclusive growth, microcredit does not. The study also provides evidence that microfinance outreach (active borrowers and depositors) leads to greater inclusive growth. This implies that countries in Sub-Saharan Africa (SSA) that participate in microfinance programs are able to promote inclusive growth.

In light of these results, this study advocates that MFIs should develop products and services to encourage savings. National governments should also provide incentives to encourage MFIs to design services and products to expand access to savings among poor people. Furthermore, we recommend that international organizations and donor countries that commit to the goal of poverty alleviation and achieving high inclusive growth should intensify their efforts in reaching the poor through microfinance programs.

Keywords – Microfinance, inclusive growth, poverty, Sub-Saharan Africa

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Over the past two decades, global poverty has reduced drastically. Extreme poverty has also declined sharply. As of 2015, only 10% of the global population was living in extreme poverty. This is a drastic reduction, considering that in 1990 more than 30% of people living on earth were extremely poor. Using $1.9 a day purchasing power parity (PPP), people living in extreme poverty in 2015 stood at 736 million down from 2 billion in 1990 (World Bank, 2018). Much of this progress is coming from Asia, precisely East Asia and the Pacific (Fosu, 2010). The countries of this region recorded an average poverty rate of less than 3% in 2015 down from 62% in 1990. According to Fosu (2012), one of the key drivers of Asia's low poverty rate among others is strong global and regional economic growth.

Just like Asia, the Pacific, and the rest of the world, Sub-Saharan Africa (SSA) also experienced a reduction in the poverty rate over the same period of time. Unlike the rest, the reduction in the poverty rate is marginal, just from 54.3% in 1990 to 41.1% in 2015. Also, it is important to note that the decline in the rate of poverty was not driven by a reduction in the number of people living in poverty, but rather a fast-increasing population rate. In 1990, the number of poor people living in Africa with extreme poverty was 277.5 million. This number amazingly increased to 413.3 million in 2015 despite the poverty rate moving down from 54.3% to 41.1%. Doubling of the number of people living with poverty in SSA has resulted in more than half of the global extremely poor living in SSA as of 2015. The first figure below shows poverty distribution across regions in the world and the second depicts the increase in the number of poor people across regions.

Figure 1. 1: Share of population living in extreme poverty by world region

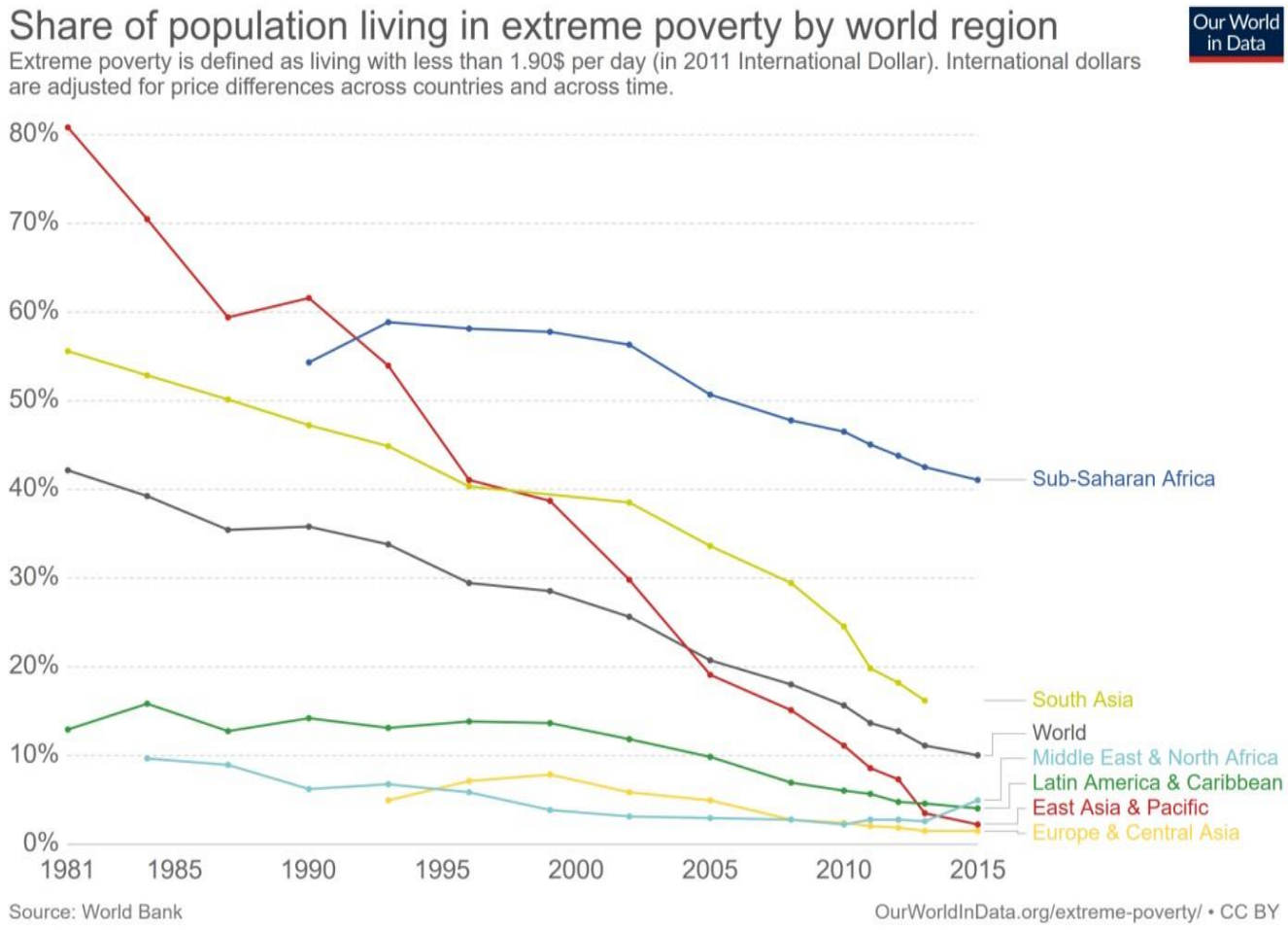
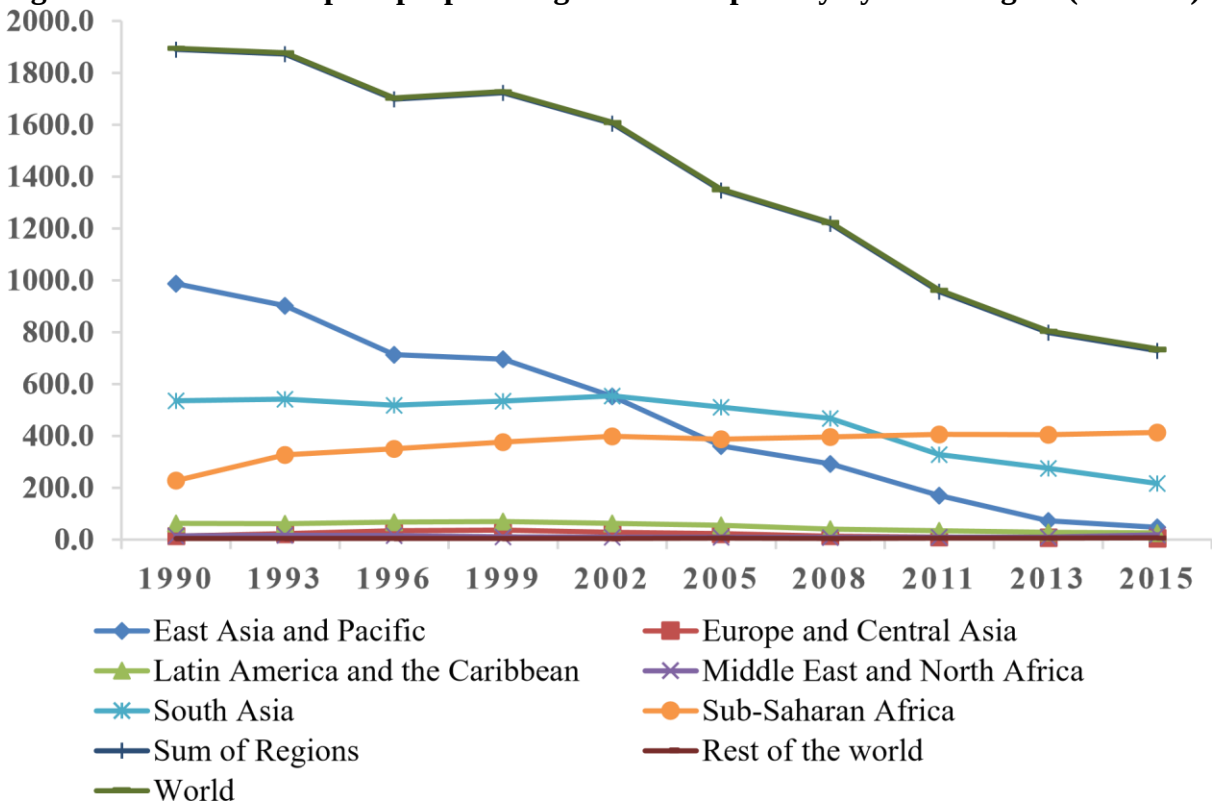


Figure 1.1 depicts the share of population living in extreme poverty by region. It is observed that the grey line (world) declined from 42% in 1981 to 10% in 2015. Focusing on Sub-Saharan Africa (blue line), extreme poverty declined marginally from 54.3% in 1990 to 41.1% in 2015. The extreme poverty rate in East Asia and the Pacific dropped drastically from about 82% in 1981 to 3% in 2015.

Figure 1. 2: Number of poor people living in extreme poverty by world region (Millions)



It is estimated that 87% of the number of poor people in the world will be living in Sub-Saharan Africa by 2030 (World Bank, 2018). This poses a huge problem to the region which needs an urgent response. One way to tackle the problem is embarking on pro-poor policies. That is, designing and implementing policies that are geared directly towards the poor (Dollar et al., 2013).

Microfinance is a pro-poor initiative; it refers to all types of financial services for the poor. It includes services like micro saving, micro insurance, micro-lending, payment, and money transfer services. Generally, providers of microfinance services, microfinance institutions have two main objectives; to serve the poor and then, to remain in business by making profits. In other words, at the heart of microfinance are the concepts of outreach and sustainability. Accessibility to financial services provided by microfinance institutions is made possible via individual loans, group

lending, regular or daily little savings, progressive lending, and collateral-free lending. These various types of lending are to provide flexibility and encourage the poor to participate in economic activities by starting and growing a micro business and to ultimately improve their standard of living.

Although universal banks are tasked with the roles of providing these financial services to the general populace, the poor usually do not get access to these services. With access to microfinance, poor households can borrow to invest in agriculture and other micro-businesses. They can insure their properties against disasters. They can provide education and healthcare for their children and women can be empowered when they have access to credit. As such, the demand for microfinance is high; for example, in the microcredit summit report in 2012, it was estimated that the number of poor clients with microcredit increased from 7.6 million in 1997 to 137.5 million at the end of 2010.

Since its inception, microfinance has been touted as the "magic" that will lift the poor out of poverty. What we see in Sub-Saharan Africa is that MFIs have been increasing over the years, so is the number of poor people. This observation casts doubts on the claim that microfinance is a poverty alleviation tool. Thus, investigations have to be launched to ascertain whether microfinance can help SSA solve its poverty problem.

Most of the studies done to test the veracity of this claim were conducted in countries and regions outside Sub-Saharan Africa and at the micro-level. According to Maîtrot, and Niño Zarazúa (2017), studies that have tried to assess the impact of microfinance poverty directly at the micro-level have largely been unsatisfactory. This is mainly due to the unavailability of accurate data and methodologies (De Aghion et al., 2005). There is also a plethora of mixed findings in these studies, for example, Imai et al. (2010) conducted a study in a specific part of India and found a positive

effect of microfinance on poverty reduction. Another study conducted by Banerjee et al. (2010) in another part of India found that microfinance did not lead to poverty reduction. Based on these opposing findings in the same country, it will be difficult to make national policies on whether microfinance should be considered as an effective tool to address poverty issue. Micro-level evaluations of the impact of microfinance are difficult to generalize (Hermes, 2014). Thus, evaluation from a macro-level perspective addresses this issue by answering the question: taking everything together in a country or a region, how does microfinance affect poverty? Empirical studies that answer this question are scanty. This is also probably due to a lack of data at the macro-level (Bauchet & Morduch, 2010).

In their attempt to bridge the gap as suggested by Dollar et al. (2013), a few researchers have decided to look at the issue from a macro-level perspective, examples are, Imai et al. (2012) and Khandker (2005) among a few. In Sub-Saharan Africa, there is very little research on macro-level microfinance impact on poverty reduction. This is surprising given that, Sub-Saharan Africa region has the highest number of poor people, and that is what calls for this study.

Apart from the focus of the majority of macro-level studies on Asia, the measurement of poverty in these studies, which has mainly been income, has not been an adequate measure, seeing that there are very potent non-income measures of poverty and recognizing the role of economic growth as well as the devastating effect of inequality on poverty reduction (McKinley, 2010). Consequently, recent literature has argued that there is the need to move beyond the question of whether a particular policy reduces poverty or not, to whether the poor participates and contributes to the growth that results in poverty reduction. This concept is could refer to inclusive growth. Inclusive growth is a broad-based measure that assesses the living standards of the poor (Gap, 2017).

Similarly, the focus of many macro-level studies on the impact of microfinance in Sub-Saharan Africa has been on individual specific variables such as income and inequality, with no emphasis on how both come together to reduce poverty. Indeed, Fosu (2015) notes that though the main channel through which a policy reduces poverty is through economic growth, high economic growth had little impact on poverty reduction in Sub-Saharan Africa due to high-income inequality. Berg and Ostry (2011b) lends credence to this claim by noting that inequality may reduce the efficacy of any policy targeted at poverty alleviation. Inclusive growth is not only a multidimensional measure, but it captures poverty and inequality. Hence, we embark on an ambitious journey to find the impact of microfinance on inclusive growth in Sub-Saharan Africa.

1.2 Research Problem

The current poverty trends of SSA as Asongu and Roux (2019) put it, is heartbreaking. Several studies have proffered ways through which poverty can be eradicated or at least, reduced in Africa (Kydd et al., 2004; Asongu & Roux, 2019). A good number acknowledges that finance plays a central role in achieving poverty reduction through the strategies they proffer. For example, Kydd et al. (2004) opines that smallholder agricultural growth is likely to be achieved if economic and financial hurdles are removed. Asongu and Roux (2019) also recommend that in tackling poverty, governments should focus on the economic situations first before any other strategy follows.

Financial services, unfortunately, are not accessible to everyone. Based on their characteristics, poor people often do not get access to financial services. Traditional commercial banks that are known to generally provide credit and services for businesses do avoid the poor. This is attributable to the fact that serving the poor can be extremely expensive and risky owing to where they live and the kinds of work they do, and so more funds are channeled by the traditional commercial banks

to individuals with consistent cash flows and relatively lower risk profiles. The invention of microfinance and the very fiber of its setup however allude to a vision targeted at serving the poor. Microfinance is a collection of banking activities that is built around the poor (De Aghion, Armendáriz & Morduch, 2005). This has evolved from just providing microloans to providing banking services like credit, savings, loans, and insurance (Inclusive finance) to the poor. Will accessibility and availability of finance to poor people lift them out of poverty? There is very little evidence to that on SSA in the available literature as stated in the background.

Recent literature argues that there is the need to move beyond the question of whether a particular policy reduces poverty or not, to whether the poor participates and contributes to the growth that results in the poverty reduction. In this way, poverty reduction can be sustainable and the pattern of economic growth would reflect inclusiveness. Others also argue that income measurement of poverty is inadequate as more often, poor people are also characterized by non-income poverty, like poor education and high mortality. Thus, inclusive growth has been mooted by many as a comprehensive measure that assess the condition of people with emphasis on the vulnerable. Gap (2017) defines inclusive growth as a broad-based measure that assesses the living standards of the poor. Ianchovichina and Lundstrom (2009) also defines the concept as a broad-based growth that provides benefit to the poor while at the same time, provides avenues for the poor to contribute to economic growth. Generally, inclusive growth measures the various conditions of the poor, which is consistent with the objectives of the establishment of microfinance institutions; for this reason, the link has to be assessed.

Inclusive growth is easily seen as ideal for measuring the well-being of the poor when one considers the important role of economic growth and the problem of income inequality in poverty alleviation. Income inequality does not only create a gap between the rich and the poor but also

reduces the effect of policies on poverty reduction; a problem which Fosu (2015) found to be the main reason why high economic growth could not translate into poverty reduction in SSA. So, any policy aimed at reducing poverty in SSA should also aim at reducing income inequality (Achieving inclusive growth is part of the long-term strategy of AfDB). According to Berg and Ostry (2011b), it would be a big mistake to separate analyses of growth and income inequality, considering the impact one has on the other. Inclusive growth measures both the income growth and the improvement and the distribution of the income (inequality) of the poor, as well as income poverty and non-income poverty.

Though some studies have been done in Africa on inclusive growth (Demirguc-Kunt, Klapper, & Singer, 2017; Abor, Amidu, & Issahaku, 2018;), none has explored the impact of microfinance on inclusive growth. This novel study does not only recommend inclusive growth as a comprehensive measure of the poverty condition of the poor but also assesses the impact of microfinance on inclusive growth in SSA; a region plagued with high levels of poverty and inequality.

1.3 Research Objectives

The broad objective is to assess the impact of microfinance on inclusive growth in Sub-Saharan Africa. This objective is decomposed into two sub-objectives, which are;

I. To examine the impact of microfinance services on inclusive growth in SSA.

II. To ascertain the impact of microfinance outreach on inclusive growth in SSA.

1.4 Research Questions

The research questions are;

I. What is the impact of microfinance services on inclusive growth in SSA?

II. What is the impact of microfinance outreach on inclusive growth in SSA?

1.5 Significance of the study

This study is significant and relevant in various ways and to a wide spectrum of parties. To begin with, this study makes a rich contribution to the literature on inclusive growth in Sub-Saharan Africa, a phenomenon that has attracted the attention of the African Union. It also explores the concept of microfinance, whose impacts on poverty we still know little about, especially in SSA. Concretely, this study will provide information to influence policies being formulated at all levels concerning inclusive growth and poverty alleviation in SSA. It will also inform donor organizations, development financial institutions, and investors in general who are interested in responsible investing, where their funds will be needed most with regards to achieving inclusive growth. The findings of this study will also be an addition to the scanty literature on microfinance and inclusive growth in the world in general, and particularly in SSA.

1.6 Limitation of the Study

This study is not without limitations. The first major limitation is the quality of the microfinance data. The microfinance dataset at WDI is self-reported by Microfinance Institutions (MFI) around the world. As a result, it is not subjected to proper external official audit. Another major limitation is the inability to include every country in SSA in the study. We could not obtain considerable microfinance data and data for some of the control variables for some countries for the period of our study. So, these countries were ignored in our study. Also, we were encumbered by the

unavailability of some non-income measures of poverty dataset for the construction of the inclusive growth index. We believe that the inclusive growth index would have been richer and more informative, had we obtained more indicators of non-income poverty.

1.7 Organization of the Study

The study is organized as follows. Chapter one broadly introduces the topic. It provides the background of the topic and related concepts. The chapter presents the research problem as well as the objectives and questions of the study. It also emphasizes the significance of the study, the limitation of the study and concludes with how the study is organized. Chapter two reviews extant literature relevant to the study. The literature review is broadly divided into two parts; theoretical and empirical review. Chapter three provides a discussion about the methodology for carrying out the study. Chapter four contains presentations and discussions of various results. The final chapter, chapter five; summarizes, concludes the study and provides some recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews extant literature that is relevant to the study. The literature review is broadly divided into two parts; theoretical and empirical review. The theoretical review covers key concepts pertinent to microfinance and inclusive growth, and how the two concepts are linked. The section ends with an empirical review of existing literature, to make clear the contribution of this study

2.2 Concept of Microfinance

Microfinance has been defined differently by different literature depending mostly on the scope of research. It generally refers to formal and informal, private, or governmental arrangements that offer financial services to the poor.

The concept of microfinance has evolved over the years. It has shifted from supply-led focus to client-led focus. At the inception of microfinance, the overriding model was that poor people needed credit to start and expand their businesses which will eventually translate to economic development. Along the line, there were calls for microfinance institutions (MFIs) to roll out services based on the actual financial needs of the poor and not the financial services MFIs think the poor needs. This led to studies into understanding the financial needs of the poor and the conclusion that poor women and men need more than microcredit (Ledgerwood, Earne & Nelson. (Eds.)., 2013).

Though many people still equate microfinance to microcredit, there is a huge difference.

Microcredit is the provision of credit which is usually used as capital for small business development; microfinance involves a lot more provision of micro-financial services than just microcredit. It refers to an array of financial services that include credit, savings, and insurance. Direct microfinance operation can lead to financial inclusion by extending banking services such as account ownership, insurance, money transfer, and financial advisory services to those who ordinarily will not have access to these services offered by traditional banks. So, in effect, microfinance encapsulates the supply of all the services the poor needs to be included in the financial system (Ledgerwood et al., (Eds.)., 2013).

MFIs serve both poor women and men, with poor women receiving a little bit more attention from MFIs than poor men. The first reason is simply because women are poorer than men, in scale and depth. In scale, this is because the number of poor women is larger than the number of poor men. In depth, this also due to the fact that as compared to men, women usually have lower levels of income. Second, microfinance is seen as a pathway to women empowerment. Women do not control assets as much as men, they lack the capital to expand their businesses. As such, they are more likely to attract microfinance services. Furthermore, poor women attract more microfinance services than poor men because in some cases non-income poverty, which is a focus of microfinance, such as child education and maternal health, is strongly related to the income of women. Child mortality and maternal health problems are likely to be eliminated when women are financially empowered.

Poor people have had ways of obtaining financial services. Whether they needed money to maintain a certain level of working capital or huge sums for a particular life cycle event, they have resorted to family, friends, and money lenders. Though these kinds of Informal financial services providers are very flexible, suited for the uncertainty of cash flows, they have not been reliable and the financial services provided by these providers are unable to satisfy all the financial needs of

the poor. Microfinance services providers range from informal to formal based on the level of flexibility and convenience. Ledgerwood et al., (Eds.). (2013) broadly categorizes financial service providers into two main groups. These are community-based financial service providers and institutional service providers.

Community-based financial service providers are informal financial service providers that provide financial services to poor people. Information that these financial service providers are privy to due to proximity to poor people helps in developing products that are relatively well-suited for the poor. The information available to these providers is often relatively less asymmetrical since they are in the same community as the poor people. This results in less paperwork, a challenge that excludes many poor people from the financial system and it may also reduce the problem of adverse selection. Community-based financial services, however, are unreliable and do not have a variety of financial services that the poor can adequately benefit from. Examples of community based financial services are Rotating savings and credit association (ROSCA), Accumulating savings and credit association (ASCA), and pawn shops. The two main sources of funding for community-based financial services providers are; own capital of the service providers and the contribution of members if it a group-based service provider.

Institutional financial services providers extend formal financial services to the poor. They are a legal entity with organizational structure and governance that are more complex than that of community-based financial service providers. Though institutional service providers are able to offer varieties of financial services, they lack proximity and flexibility. Institutional financial service providers are mainly funded through grants, equity, and debt. Examples include financial cooperatives, non-governmental microfinance institutions, deposit-taking microfinance institutions, and non-bank financial institutions.

2.3 Financial and Social Performance

At the heart of microfinance are the concepts of sustainability and outreach. The concept of sustainability basically says that MFIs should not die out in their desire to serve the poor but must make sure they stay alive and active to be able to serve the poor. Shah (1999) opines that the term sustainability under the "accounting approach" that takes into account only the financial aspect of the institution is too narrow. He explains that the concept of sustainability includes, amongst other criteria, obtaining funds at market rate, mobilizing local resources, and reaching the poorest of the poor, all of which are guided by the principles governing the MFIs through capital structure. Outreach refers to providing critical benefits to underserved customers. This is known as the social goal of microfinance. Both the financial and social goals of microfinance form the "double bottom line" of microfinance. The social goal of microfinance cannot be overemphasized. It is the main reason for the existence of microfinance. Remember, formal microfinance at its inception had only one goal, that is, to provide funds to small-scale workers and poor households mostly based in the rural areas. Shaped by this goal many MFIs were not-for-profit businesses and sourced their funds from donors. At the end of the period, these MFIs were primarily assessed with social performance indicators.

However, embracing financial goal has changed the landscape of microfinance. Influenced by a realization that the poor are economically viable customers and MFIs' need for more funds, MFIs now place considerable emphasis on financial performance (CGAP, 2006). Microfinance service providers sometimes find it hard to achieve both goals simultaneously, as in some cases; the goals may compete with each other. Cull et al. (2007) found that microfinance progressively serves the less poor as they increasingly become commercialized. This is known as mission drift. Mission

drift refers to a situation where increasingly less attention is paid to achieving high social performance in the desire to achieve high financial performance.

The possibility of mission drift has become a major subject of recent studies. Paxton, Graham, and Thraen (2000) argues that because transaction costs associated with small loans are comparatively high, there is a trade-off between improvement in financial performance and improvement in social performance.

2.4 Theories of Microfinance

2.4.1 The Life-Cycle Hypothesis

Richard Brumberg and his teacher, Franco Modgliani, came up with the life-cycle hypothesis in the early 1950s. The life-cycle hypothesis is a savings model that proposes that consumption decisions made by rational agents are underpinned by the availability of resources at various stages in the life-cycle and over their lifetime. The theory postulates that an individual's expectation of lifetime income influences his or her consumption in a particular period and their ability to smoothen their consumption pattern.

Additionally, with regards to ensuring the maintenance of a constant level of consumption over time especially when income has fallen, the theory recommends that individuals save more in the early stages of life. This theory assumes the individual to be a net saver during the early stages of life and dissaves during retirement.

Haron and Wan Azmi (2006) argues that the cornerstone of the life-cycle hypothesis is age-related consumer heterogeneity. According to the predictions of the model of savings, the savings curve takes a hump-shaped pattern that peaks in the middle ages of one's life, with low savings during the young and old ages. The life-cycle theory postulates consumption smoothening, which is

extremely desired by the poor because of the nature of occupations most poor men and women engage in. The question is; if one does not have access to savings products, how will he or she save? Generalizing this theory assumes that everyone has access to financial services, which is obviously not the case. The fulcrum of this theory is the ability to save and borrow. It will be difficult to effectively save and borrow without the help of financial service providers. Thus, the life-cycle theory provides a valuable theoretical underpinning for the provision of microfinance.

2.4.2 Theory of Information Asymmetry

The theory of information asymmetry is founded on the gap in information availability. Propounded by Akerlof, Spence, and Rothschild, and Stiglitz, the theory of information of asymmetry is well-grounded in economics and finance. This theory suggests that, when two parties enter into a contract, there is a tendency that information about one party and his dealings is less known of by the other which may distort the agreement they reach since the agreement was not based on parity of information in each other's possession. In other words, the imbalance level of information (asymmetric information) may lead to an inefficient market as a result of the suboptimal allocation of resources.

Drawing from the economic concept of diminishing returns, derived from the concave production function, poor people should have higher marginal returns than rich people. This means that more funds should flow to the poor because they can provide a higher return on the funds than the rich. But rather what we see is that funds quickly get into the hands of the rich and extremely hesitantly in the hands of the poor. Inadequate information about the poor creates information asymmetry which makes it risky for banks to serve the poor. Microfinance service providers step in by designing programs to serve poor people. Some MFIs reduce the risk by charging a higher interest rate.

2.4.3 Empowerment Theory

Poverty is generally associated with vulnerability, voicelessness, and powerlessness (World Bank, 2001). Poverty is also associated with apathy and fear that sometimes prevent the poor from participating in social and political processes in a country. Referring to the work of Sen (1999), empowerment is defined as "the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives". On the heels of Sen's work, the World Bank developed the three-pillar theory of poverty to fight poverty. In addition to empowerment, opportunity and security were added to form the three-pillar theory of poverty. This theory is relevant to this study because microfinance can be used as a tool to empower the poor.

2.4.4 Schumpeter's Theory

Another theory related to this study is Schumpeter's theory of economic development. Propounded by Joseph Schumpeter in 1911, this theory places emphasis on the role of finance in economic growth. The theory explains that financial intermediaries mobilize savings, facilitate transactions, evaluate projects, manage risks, and monitor managers to ensure efficient allocation of funds for economic growth and development. The Schumpeterian model of economic development views entrepreneurs as key drivers of economic development. Entrepreneurs are seen as sources of innovation. They are able to use finance for innovative activities that may later result in an increase in economic development. The crux of this theory is that the optimal allocation of finance leads to economic development. The relevance of this theory to this study is that the optimal allocation of finance means everybody gets the chance to compete for finance, including the poor. MFIs make this possible by channeling funds to the poor.

2.5 Concept of Inclusive Growth

The biggest problem facing the world today is probably poverty since it is the number one goal of the Sustainable Development Goals (SDGs). Over the years, the concept of poverty has changed. Current discussions on poverty even suggest that the measurement of poverty is too restrictive and limiting (Rauniyar & Kanbur, 2010). The definition of poverty has moved beyond just low levels of income to a multidimensional phenomenon (Habito, 2009). One that sufficiently captures the poverty condition of the poor. According to Aguilar and Sumner (2020), a single measurement of poverty such as income seriously underestimates the number of poor people as opposed to a multidimensional one. Given this information, we do not think it will be overly ambitious to employ a measure that proxies poverty on a multidimensional level and considers economic growth in assessing the impact of a policy on poor people. Thus, in this study, we employ inclusive growth as a measurement for microfinance assessment.

Inclusive growth strongly recognizes the interplay of economic growth and income inequality in poverty alleviation. Inclusive growth considers economic growth as the main channel through which policies result in sustainable poverty alleviation and also considers income inequality as a phenomenon that erases gains that may accrue to the poor as found. So, on the one hand, inclusive growth is a multidimensional measurement of poverty and on the other hand, it is growth that is equitably shared. Ranieri and Ramos (2013) states that "inclusive growth is both an outcome and a process: on the one hand, it ensures that everyone can participate in the growth process, both in terms of decision-making for organizing the growth progression as well as in participating in the growth itself. On the other hand, inclusive growth makes sure that everyone shares equitably the benefits of growth".

Inclusive growth is related to pro-poor growth. Pro-poor growth refers to growth that the poor contributes to and participates in. Pro-poor growth can be absolute or relative. Absolute pro-poor growth refers to a situation where everyone benefits from economic growth equitably while relative pro-poor growth refers to a situation where the benefit that accrues to the poor exceeds that of the average growth. Simply put, relative pro-poor growth is growth accompanied by a reduction in inequality.

Unlike pro-poor growth which focuses mainly on the poor below the poverty line, Inclusive growth is a broad concept that captures other dimensions of poverty (Klasen, 2010). Inclusive growth can be either absolute pro-poor that is, growth with equitable benefit from a particular policy through economic growth or relative pro-poor which is the idea that poor people through economic growth benefit from policies more than rich people do.

2.6 Perspectives of Inclusive Growth

2.6.1 World Bank's Perspective

The World Bank defines inclusive growth as a broad-based growth that provides benefit to the poor while at the same time, provides avenues for the poor to contribute to economic growth (Ianchovichina & Lundstrom, 2009). This approach creates an implied direct link between micro and macro determinants of growth. It also interlinks the pace and pattern of growth. This perspective explains that inclusive growth should cut across sectors and should be labour-absorbing. Consistent with the Commission on Growth and Development (2008), this definition argues that, for a successful growth strategy, inequality has to be strongly tackled and inclusiveness in terms of equal access to opportunities, equity, and market protection have to be encouraged.

Another pillar of this approach to inclusive growth is the emphasis on long-term growth through productive employment as opposed to direct income redistribution. Any policy that does not affect productive employment should be viewed as short-term in nature and as such, offers only cosmetic solutions for excluded people. The World Bank's approach of defining inclusive growth does not only recognize key roles played by economic growth and income equality in poverty alleviation but also leans towards the idea that income distribution has to be absolute.

2.6.2 OECD's Perspective

OECD defines inclusive growth as a multidimensional living standard measure of how economic growth benefits a targeted income group (Boarini, Murtin, & Schreyer, 2015). This multidimensional living standards measure encompasses income and non-income measurements.

OECD considers well-being as the basis for understanding its definition of inclusive growth. It maintains the position that poverty goes beyond income and since GDP growth is not an end in itself, policies assessed should be considered for their contribution to GDP growth and other non-income measures such as education, health, and governance.

Marked characteristics of OECD's approach to inclusive growth is its emphasis on individuals and households of a selected group as opposed to the economic system in general and its leaning towards the relative definition of pro-poor growth. Here, the emphasis is placed on specific groups, in this case, income poor men and women. This approach proposes a framework for operationalizing inclusive growth by considering performing analysis on the distributional outcomes of various segments in addition to the averages.

OECD offers three steps for measuring multidimensional living standards which serve as the crux for inclusive growth. These are, measuring income-based living standards (which can be proxied by real income or consumption), adding and measuring non-income dimensions of poverty, and aggregating and expanding the living standards across groups and areas to cover all. OECD advises that policies should be linked to the various dimensions of the measurement of inclusive growth to ensure policy relevance.

2.6.3 UNDP's Perspective

UNDP defines inclusive growth as "equity with growth or broadly shared prosperity resulting from economic growth". This approach iterates that economic growth should benefit a wide share of the population across the economic, social, and political spectrum and the pattern of growth should involve a large segment of the population. This approach maintains the position that economic growth and inequality are not independent of each other. Thus, UNDP cites the nexus between

income distribution and growth, and the nexus between income distribution and extreme poverty as two significant things to consider in achieving inclusive growth when formulating development policy.

According to the UNDP, the pattern of growth broadly hinges on two factors; sustainable economic growth and environmentally sustainable growth. UNDP recognizes sustainable economic growth to be extremely important for poverty alleviation. However, economic growth can be disrupted by globalization. UNDP cites international trade, the private capital flow of funds and financial crisis to be some patterns that have influenced sustainable economic growth over the years.

Long and sustainable economic growth can only be achieved when there is environmental sustainability according to the UNDP. The organization defines environmental sustainability as "the rates of renewable resource harvest, pollution creation and non-renewable resource depletion that can be continued indefinitely". Drawing from the work of Daly (1990), they view sustainability from three aspects; renewable resources, pollution, and non-renewable resources.

2.6.4 ADB's Perspective

Asian Development Bank (ADB) interprets inclusive growth from two perspectives, narrow and broad definition, but subscribes to the broad definition in addition to economic growth. The narrow definition focuses on only economic growth while the broad definition focuses on human development. Human development is a non-income measurement of well-being such as good health, good education, and literacy.

ADB provides a general framework that it believes inclusive growth should entail. The framework starts with a focus on economic growth, productive employment, and economic infrastructure. The

framework assigns a weight of 25% to economic growth, which suggests that economic growth is the single most important factor among other factors in achieving inclusive growth. Also, ADB mentions that productive employment and economic infrastructure determine inclusiveness, in that, growth that provides employment and infrastructure such as electricity and internet benefit a lot of people

The second stage after laying the foundation is the focus on income poverty and general equity. Inclusive growth must include the well-being of the poor, taking into consideration the distribution of poverty, that is, how extremely or moderately poor they are. Fostering gender equity is also important for achieving inclusiveness of growth. Gender equity is captured by showing how women benefit from development-oriented policies such as health and education.

Apart from income measures of poverty to achieve inclusiveness, non-income measures need to be assessed because the lack of them is an indication of poverty. ADB's framework for inclusive growth recommends access to sanitation, adequate water and child mortality as some of the human capabilities' dimensions of inclusive growth.

Finally, a distinctive factor that ADB incorporates in its framework for inclusive growth is social protection. Social protection refers to creating an opportunity for minorities. A weight of 10% is assigned to social protection.

2.6.5 AFDB's Perspective

For the African Development Bank, the need for inclusive growth is driven by the non-inclusiveness of persistent increase in economic growth and the worsening state of income

inequality in many African countries over the years. Unemployment is high in many African countries, in some cases, as high as 80% while economic growth has been rising (AfDB, 2012).

AFDB defines inclusive growth as "economic growth that results in wider access to sustainable socio-economic opportunities for a broader number of people, regions or countries while protecting the vulnerable, all being done in an environment of fairness, equal justice, and political plurality." This approach views inclusive growth as a long-term sustainable growth that draws from broad-based growth, shared growth, and pro-poor growth.

The Bank identifies five pillars in its long-term strategy that will make it possible to achieve inclusive growth. These are; regional integration and trade, private sector development, governance, infrastructure, and higher education. AFDB contrasts its definition of inclusive growth and that of pro-poor growth by iterating that inclusive growth levels the playing field, focuses on opportunities, and enlarges productive employment while pro-poor has to do with focusing primarily on the well-being of the poor.

2.6.6 Perspectives of Others

Individuals have contributed to the definition of inclusive growth aside from the perspectives of multilateral organizations. Some have contributed to the understanding of the concept and others have contributed to measuring and operationalizing the concept.

Ali (2007) explains that varying levels of the combination of economic growth and income, and non-income distribution result in some kind of inclusive growth. The combination that achieves the highest level of inclusive growth in any country is when a country experiences strong economic growth and pro-poor distribution. Ali distinguishes between good inequality and bad inequality.

Good inequality refers to inequality as a result of hard work, incentives, and entrepreneurship. Bad inequality ensues as a result of lack of opportunities like lack of access to adequate credit, lack of social mobility, and inadequate level of human capital. This makes it difficult to be productive and causes poverty.

Ali and Son (2007) looked at inclusive growth from the perspective of social opportunity. They propose that inclusive growth must satisfy two conditions. The first and necessary condition is to create an average social opportunity for all and the second condition is how social opportunity is shared by everybody. The authors depict these using an opportunity curve and opportunity index. An upward shift of the opportunity curve at any level means that we can confidently say that growth is inclusive. Conversely, a downward shift of the curve means growth is not inclusive, all other things being equal. However, the degree of inclusiveness is determined by the direction of the slope of the curve. A downward slope (a slope in the direction of the poor) means that poor people have access to opportunities than non-poor people (equitable distribution). In contrast, an upward slope means that available opportunities available to the rich are more than those available to the poor (inequitable distribution).

Anand, Mishra, and Peiris (2013) measures inclusive growth by employing the microeconomic idea of social mobility function at the macro-level. Anand et al. (2013) defines inclusive growth in light of the absolute definition of pro-poor growth. They state that analyzing the impacts of policies on poverty by separating analyses of economic growth and inequality will be a mistake. The paper shows the relationship between economic fundamental variables and inclusive growth by listing trade openness, moderate inflation, output volatility, and fixed investment as macroeconomic variables that affect inclusive growth. The paper mentions macroeconomic stability, structural changes, and labour as key drivers of inclusive growth in emerging markets.

2.7 Determinants of Inclusive Growth

2.7.1 Microfinance

Formal financial products such as those offered by banks are not accessible to poor households in many developing countries. This means that there is a limited chance of securing funds for business startups, business expansion, and productive agricultural activities. MFIs try to bridge this funding gap by providing small loans and saving services to poor households with the aim of transforming productive activities. These activities may perhaps, spring forth employment, raise income, and eventually eradicate poverty.

A number of studies have strongly linked microfinance to improvement in the welfare of the poor. Some studies have also assessed the impact of microfinance which is measured by gross loan as a percentage of GDP, as a microfinance indicator on poverty indicators like headcount ratio, inequality, and economic development (Félix & Belo, 2019), but there is no empirical study on inclusive growth, which is the focus of this study.

2.7.2 Microfinance Outreach

Higher levels of participation in microfinance services are linked to higher improvements in the welfare of the poor and access to opportunity (Hermes, 2014). A very important constituent of inclusive growth is access to opportunity. We expect that access to credit and savings services will be a key that unlocks other opportunities in our social life. So, the larger the number of poor individuals with access to finance, the higher we expect inclusive growth to be. A lot of studies have found that participating in microfinance initiatives leads to poverty reduction (Maldonado & Gonzalez-vega, 2008; Hermes, 2014). Following the work of Hermes, (2014), we measure

microfinance participation by dividing the number of active borrowers by total population and included in the study is the number of depositors divided by total population.

2.7.3 Labour Productivity

Small business start-ups and business expansions in rural areas are sources of employment for poor people. Higher employment rate has been associated with tremendous poverty reduction especially in developing countries (Page & Shimeles, 2015). It is reasonable to say that reduction in poverty can be further achieved when employees or workforce is very efficient. Poor individuals can be broadly categorized into two groups, self-employed and those employed by others. Labour productivity impacts poverty by an increase in output of the business owned by the poor self-employed and the increase in the wage rate of the poor employee (Dev, 1988). The pattern of economic growth determines whether growth is beneficial to the poor or not. Income from labour is the main source of income for poor people. So, growth in agriculture and non-farm rural activities as a result of efficient labour may contribute to higher inclusive growth by increasing the average income of poor people (Islam, 2004). Briones (2013) argues that the rural economy constitutes the main source of employment for poor men and women in developing countries. The paper underscores employment as the main conduit through which the rural economy impacts inclusive growth.

2.7.4 Population Growth

Malthusian theory of population postulates a time where population will outgrow available resources. This theory suggests that the rate of population growth will increase more than proportionally to economic growth and an increase in poverty. In contrast, the Solow-Swan model

of growth specifies population as a source of growth by providing a workforce that will contribute to economic growth. These theories suggest that population growth can have either a positive or negative impact on economic growth. Headey and Hodge (2008) asserts that population growth impact on economic growth depends on the segment that experiences higher growth. The paper argues that a higher growth rate among the adult population is associated with economic growth but growth in the young-age population is associated with a decline in economic growth. A study by Klasen and You (2003) reveals that higher population growth is associated with a decline in economic growth and higher levels of poverty. Generalizing to inclusive growth, we can deduce that inclusive growth can be either positively impacted or negatively impacted by population growth rate.

2.7.5 Inflation Rate

Inflation rate is defined as the rate of increase in the general prices of consumer goods and services in a country over a period of time. It can be proxied by consumer price index or GDP deflator. In drawing the link between inflation and inclusive growth, we look at economic growth and poverty as the transmission mechanisms through which inflation affects inclusive growth. According to Levine and Renelt (1992), there is an inverse relationship between inflation and economic growth. This means when inflation goes up, we can expect economic growth to decrease. Going by the conclusion reached by Dollar and Kraay (2002), we deduce that inflation impacts poverty indirectly through economic growth. Also, there is a direct relationship between inflation and poverty. (Ticci, 2011; Chani, Irfan, Pervaiz, Jan, Ali & Chaudhary, 2011). This means that higher levels of inflation lead to higher levels of poverty, and thus, lower levels of inclusive growth.

2.7.6 Government Expenditure

In many countries, the government is the biggest spender. This is also true for some African countries. Data from World Bank depicts that government can contribute as high as 40% to the GDP in SSA countries. The enormity of government expenditure has precipitated a lot of research to determine its effect. For example, Loizides and Vamvoukas (2001) found that government expenditure positively influences short-term and long-term economic growth. Ojunugwa and Agbede (2015) also found similar results for both short-term and long-term when they conducted a similar study in Nigeria. Some studies on government expenditure on poverty, point to a negative relationship (Fan, Hazell & Thorat, 2000; Fan & Zhang, 2008; Hidalgo-Hidalgo & Iturbe-Ormaetxe, 2018). But it is also possible that the poor may not benefit from government expenditure. The enormity of government expenditure and its impacts on economic growth and poverty alleviation in the long-term and short-term suggest that it might play an important role in achieving inclusive growth.

2.7.7 Trade Openness

The traditional theory of trade posits that there are welfare gains that accrue to countries that embark on trade openness. Countries benefit from trade openness through productivity, specialization, a surge in investment, and efficient resource allocation. Establishing the relationship between trade openness and inclusive growth is analyzed through the relationship between trade openness and economic growth and the relationship between trade openness and poverty since they enter into the inclusive growth index. It is well established in the literature that trade liberalization has a positive impact on economic growth (Yanikkaya, 2003; Karras, 2003; Awokuse, 2008; Ulaşan, 2015). This positive relationship is confirmed in Africa (Brueckner & Lederman, 2015; Zahonogo, 2016; Keho, 2017). Trade liberalization impacts poverty at different

stages. In the short run, trade liberalization is likely to increase poverty by destabilizing poor people. This is because, in the short run, most poor people are unable to take advantage of opportunities created by trade openness, mainly because they do not have the required skills to do so (Kelbore, 2015; Winters, 2000). Despite the likelihood of no impact of trade on poverty in the short run, a large body of evidence indicates that trade liberalization reduces poverty in the long run (Pradhan & Mahesh, 2014; Kelbore, 2015). Given the long-term characteristic of inclusive growth, we expect a positive relationship between trade openness and inclusive growth.

2.8 Empirical Review

2.8.1 Microfinance and Economic Growth

Literature on microfinance has increased over the years. In the early stages, research works on microfinance, like any other nascent phenomenon, was primarily trying to understand microfinance and what it wanted to achieve (Shah, 1999; Robinson, 2001). Along the line, studies on microfinance shifted to how best microfinance can be delivered by looking at issues like corporate governance, capital structure and general efficiency. For about two decades now, in addition to continued research on microfinance delivery, there have been a lot of studies with focus on impacts of microfinance. Turning to economic growth, there are empirical studies that indicate that microfinance contributes to economic growth (see Sodokin & Donou-Adonsou, 2010; Sultan & Masih, 2016; Donou-Adonsou & Sylwester, 2017). For example, in Bangladesh, Raihan et al. (2017) found that microfinance does not only positively impact GDP, its contribution to the rural GDP is even higher. While microfinance impacts on economic growth is necessary, it has received

relatively less attention in the literature since economic growth as a measure of a country's progress does not necessarily mean poverty reduction.

2.8.2 Microfinance and Poverty Reduction

The mission of providing financial services to the poor is to serve the poor and the vision is to lift the poor, served by these financial services, out of poverty. Poverty, whether measured using the poverty line or just lower levels of income, has a profound effect on individuals, households, and economies. According to DeLoach, and Lamanna (2011), poverty affects several interlinked aspects such as education, child health, and women empowerment. For example, a poor household may not be able to provide meals with necessary adequate nutrients for their child, as a result of that the child is often sick and is unable to get proper education. This example is given with the assumption that the child now enjoys some kind of free education or the household has enough funds for the child's tuition, which is not always the case.

The impact of microfinance on poverty is powerfully depicted when one considers how microfinance intuitively addresses poverty, directly by affecting the incomes of poor individuals and households or indirectly by influencing factors that impact poverty. For example, Cremin and Nakabugo (2012) reveals that education leads to sustainable economic development, thus, reducing poverty. This means that if microfinance positively impacts education, then it may indirectly reduce poverty. Using the same example, microfinance could even be more powerful when there is a bi-causal impact between education and poverty, like Van der Berg (2008) reveals. That is when education impacts poverty and poverty in turn impacts education.

Poverty is not always defined in terms of financial condition; it goes beyond simply lack of adequate financial resources to include other non-income measures. Sen (2001) defines poverty as the lack of freedom to choose as a result of a lack of basic capability to function well in society.

The provision of financial services by MFIs is not only to increase income levels of the poor but also to improve other types of non-poverty conditions; including education, health care, and mortality.

One characteristic of poverty is its geographical distribution. Though we do have the urban poor, poverty is more pronounced among people in rural areas. It is easy to see that funds from MFIs should flow to the rural areas more than the urban areas if MFIs' operations are being shaped by the goal of microfinance.

In a typical poor household, poverty is more likely to be associated with women than with men. Also, men are seen as economic providers, especially in developing countries. They control assets and make big economic decisions in the family. This phenomenon makes men more powerful and women less powerful in terms of making economic decisions in the family. Availability and access to funds for women are able to help correct this problem. Investment in women's capabilities empowers them to make choices that yield greater benefit for them and the family as a whole (Swain & Wallentin, 2009). So, microfinance is strongly linked with women empowerment through the provision of financial services to women by MFIs. In light of this, we now see why microfinance is more geared towards women in relation to men.

In conclusion, poverty goes beyond low levels of income. It is generally divided into two broad groups; income poverty and non-income poverty. MFIs in accordance with their goal seek to serve the poorest of the poor.

2.8.3 Microfinance and Income Measurement of Poverty

Most of the studies on microfinance and poverty look at the impact of microfinance on income poverty. One of such studies is "The Microfinance Phenomenon", a synthesis of studies on microfinance impact on poverty by McGuire and Conroy (2000). The study concluded that microfinance plays a role in reducing poverty. Imai and Azam (2012) did a study on the impact of microfinance on poverty in Bangladesh and also found that microfinance alleviates poverty. Drawing data from a nationally representative household data, the study concluded that microfinance increases the income and consumption of poor households. Other studies that recorded a positive impact of microfinance on income poverty are Remenya et al (2000), Robinson (2001), Weiss and Montgomery (2005), Mahjabeen (2008), Razzaque (2010), Samer et al. (2015) and Agbola et al. (2017).

Other studies such as Shaw (2004) and Mondal (2009), report that microfinance does not lift the poor out of poverty. Hulme and Rutherford (2002) and Banerjee and Jackson (2017) assert that microcredit does not only fail to reduce poverty but may become debt for poor people due to their inability to pay back, which plunges them deeper into poverty. Hence, findings of microfinance impact on income poverty have been largely mixed.

Findings in the case of Africa have not been any different. Barnes et al. (2001), Mondal (2009), Adjei (2009), and Nukpezah and Blankson (2017) found that microfinance lifts poor people out of poverty. In contrast, Van Rooyen, et al. (2012) and Islam and O'Gorman (2019) found otherwise, stating that microfinance does not significantly lift poor people out of poverty. Policies are unlikely to be made based on these mixed findings. Hence, this calls for more studies in this area.

Most of the studies that focus on the impact of microfinance on poverty have been done from a micro-level perspective, that is, at household and individual levels in certain societies within a country. According to Maîtrot, and Niño Zarazúa (2017), studies that have tried to assess the impact of microfinance on poverty directly at the micro-level have been largely unsatisfactory. This is mainly due to the unavailability of accurate data and methodologies (De Aghion et al., 2005). There is also a plethora of mixed findings in these studies, for example, Imai et al. (2010) conducted a study in a specific part of India and found a positive effect of microfinance on poverty reduction. Another study conducted by Banerjee et al. (2014) in another part of India found that microfinance did not lead to poverty reduction. Based on these opposing findings in the same country, it will be difficult to formulate policies on whether microfinance should be considered as an effective tool to address poverty. Micro-level evaluations of the impact of microfinance are difficult to generalize (Hermes, 2014). While it is important to get details of microfinance impacts on poverty by evaluating individual and household income, it is equally important finding out microfinance impacts on an aggregate level for policymaking.

Recently, studies have turned to macro evaluation or country-level evaluation on the link between microfinance and poverty, but they are scanty. Some of the prominent ones are Imai et al. (2012), Lopatta and Tchikov (2016), Raihan, et al. (2017), and Alimukhamedova (2019). Most of these studies focus on countries in other regions and a few focuses on countries in SSA. So as of now, very little is known about the macro impacts of microfinance in SSA.

2.8.4 Microfinance and Non-income Poverty

Non-income poverty refers to measurements of poverty other than income. There have been calls to recognize other factors besides low level of income as measurements of poverty (Ianchovichina

& Lundstrom, 2009). Focusing on only income measurement of poverty is inadequate as the poor, more often than not are also characterized by non-income poverty, like poor education and high mortality.

Microfinance has been strongly associated with such measures. Maldonado and Gonzalez-vega (2008) found that microfinance can promote child schooling by boosting income and reducing the business risk that might cause the withdrawal of children from school to work. DeLoach and Lamanna (2011) found that microfinance improves child health in two ways. The first is women get access to health-related information through their social capital built through their participation in microfinance programs. Also, when microfinance empowers women; this translates into increased bargaining power of women in terms of allocation of resources which serves to benefit the children. In SSA, a study conducted by Ssewamala et al. (2012) found that microfinance intervention can reduce mental health among AIDs-orphaned youth and children. Bhuiya et al. (2018) also found that health benefits associated with microfinance are those that are typically associated with the poor. These studies highlight the importance of microfinance to the poor, even beyond the increase in the level of income.

2.8.5 Microfinance and Inclusive Growth

Studies on inclusive growth have largely focused on building the concept. (Ramos, Ranieri & Lammes, 2013; Klasen, 2010; Ianchovichina & Lundstrom, 2009; Rauniyar & Kanbur, 2009). Some studies looked at measures, determinants, and indicators (Ali & Son, 2007; Anand et al., 2013; Klasen, 2010; McKinley, 2010). Others have also explored the link between financial inclusion and inclusive growth (Kim 2016; Demirguc-Kunt, Klapper & Singer, 2017; Abor, Amidu & Issahaku, 2018). Though some work has been done in Africa on inclusive growth (Demirguc-Kunt et al., 2017; Abor, Amidu & Issahaku, 2018), none has explored the impact of microfinance

on inclusive growth. The closest is financial inclusion and inclusive growth. But microfinance is different from financial inclusion and so we cannot assume that they will produce the same results. For example, Global Findex (2016) reports that the number of women that are served by financial institutions lags behind the number of men that are served by these financial institutions. On the contrary, more women are being served by MFIs than men. However, it is important to note that microfinance helps carry out the objective of achieving financial inclusion.

Taking into consideration the promise that microfinance is expected to deliver to the poor and the current poverty condition of SSA, it is very necessary that microfinance is assessed to ascertain whether it can play a role in achieving inclusive growth in the region.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter provides a detailed discussion about how the research objectives were achieved. We open the discussion with comments on the research design, the method of analysis, and the sample for the study. We touch on the model specification and how we constructed the index for our dependent variable. Justifications are provided for independent variables and we conclude with the expected signs for every independent variable.

3.2 Research Design

The research design of any study is the framework that outlines the inter-relationship between the various activities required to effectively address the central aim of the study (Buame, 2010). This study relied on numerical data thus; it is purely a quantitative study. We employ quantitative techniques to estimate and analyze our results to achieve our objectives.

3.3 Sample

The study sampled 821 MFIs in 35 selected countries in Sub-Saharan Africa from 2003 to 2017. The choice for the number of MFIs and the period is based on the availability of data. Data on these MFIs and the countries were sourced from WDI. Table 3.1 presents the data and their sources. The indicators proposed for the construction of inclusive growth index is provided in Table 3.2 and Table 3.3 presents the number of MFIs for each country.

Table 3. 1: Data and their sources

Variables	**Source of Data**
Gross Loan	WDI
Deposits	WDI
Number of active borrowers	WDI
Number of depositors	WDI
Labour productivity	WDI
Population growth rate	WDI
Inflation	WDI
Government Expenditure	WDI
Trade Openness	WDI

Table 3. 2: Indicators proposed by ADB for constructing inclusive growth index

Variables	**Source of Data**
Real GDP growth per capita	WDI
Employment rate	WDI
Mobile cellular subscriptions (per 100 people)	WDI
Poverty headcount ratio at $1.90 a day	WDI
Inequality measured by the Gini index	WDI
The ratio of literate females to literate males among those aged 15-24	WDI
Under-5 mortality rate	WDI
Net secondary enrollment ratio	WDI
The proportion of the population with access to adequate sanitation	WDI

Table 3. 3: The number of MFIs in selected countries of the study

Countries	Number of MFIs
Angola	2
Benin	35
Burkina Faso	32
Burundi	22
Cameroon	34
Central African Republic	2
Chad	4
Comoros	4
Congo, Democratic Republic of the	30
Congo, Republic of the	6
Cote d'Ivoire (Ivory Coast)	31
Ethiopia	27
Gabon	1
Gambia, the	3
Ghana	85
Guinea	8
Guinea Bissau	4
Kenya	44
Liberia	5
Madagascar	18
Malawi	10
Mali	22
Mozambique	12
Namibia	2
Niger	22
Nigeria	88
Rwanda	52
Senegal	84
Sierra Leone	13
South Africa	15
Swaziland	2
Tanzania	23
Togo	35
Uganda	34
Zambia	10

3.4 Model Specification

We employed a panel data regression. The decision to use panel data is based on our research objective and the availability of macro-level data. The main independent variables are microfinance measured as gross loan to GDP and deposits to GDP, and microfinance outreach measured as the number of active borrowers divided by total population and the number of depositors divided by total population. The control variables are population growth, labour productivity, government expenditure, inflation, and trade openness. We twigged the model that was used by Whajah et al. (2019). The models we used are as follows:

$$IG_{it} = \alpha + \beta_1 \text{Microfinance}_{it} + \beta_2 Lprod_{it} + \beta_3 Popgrwth_{it} + \beta_4 Inflation_{it} + \beta_5 Govexpd_{it} + \beta_6 Trade_{it} + \xi_{it} \quad (1)$$

$$IG_{it} = \delta + \theta_1 \text{outreach}_{it} + \theta_2 Lprod_{it} + \theta_3 Popgrwth_{it} + \theta_4 Inflation_{it} + \theta_5 Govexpd_{it} + \theta_6 Trade_{it} + \psi_{it} \quad (2)$$

Equation 1 is the model that is used to estimate the first objective (impact of microcredit on inclusive growth. Equation 2 is used to estimate the second objective (impact of microfinance outreach on inclusive growth). The dependent variable IG_{it} is inclusive growth for country *i* at time *t*. *M*icrofinance denotes microcredit which is measured by gross loan to GDP and deposit to GDP in country i at time t. Outreach denotes microfinance outreach, measured as the number of active borrowers divided by total population and the number of depositors divided by total population. $Lprod$ denotes labour productivity, $Govexpd$ stands for Government expenditure. $Inflat$ion denotes inflation, $Popgrwth$ denotes population growth and $Trade$ represents trade openness.

Also, ξ_{it} and ψ_{it} are the error terms. The error terms are decomposed, where $\xi_{it} = \mu_i + \lambda_t + \varepsilon_{it}$ for equation 1 and $\psi_{it} = \upsilon_i + \omega_t + \nu_{it}$ for equation 2.

3.5 Index Formation

Composite indices are created to capture multidimensional concepts of a phenomenon that cannot be adequately measured by a single indicator. Composite indices are relatively easier to interpret, powerful in tracking the progress of a phenomenon in a particular country overtime and summarizes complex realities to aid in decision making.

OECD (2008) provides steps that serve as guidelines for creating index and that is what we followed to create our index. The first step is to select the variables that will be used for the creation of an index based on theory. The second step is to select data that represent the variables. The next step is to provide an estimate for all missing values. The structure of the dataset needs to be examined to ascertain its suitability for the creating of the index, in terms of the types of data that will be combined to create the index which will provide a basis for choosing the methodology. Several datasets with different units of measurement come together to form the index, as such, a normalization procedure has to be performed to make the variables unit-free and easily comparable. The next steps are to assign a weighting to the variables based on the theoretical framework and perform sensitivity and uncertainty analysis to test the robustness of the previous procedures. The composite may be de-constructed to understand how similar variables drive the composite (OECD, 2008).

3.6 Construction of Inclusive Growth Index

As said earlier, we followed the steps proposed by OECD to construct the inclusive growth index which is our dependent variable. The first step was to select the variables that will be included in

the index based on the framework provided by the Asian Development Bank (ADB). The ADB framework provides four pillars under which indicators are provided for building inclusive growth index, the indicators are shown in table 3.2. These four pillars are a) growth, productive employment, and economic infrastructure, b) income, non-income poverty, and equity, c) human capabilities and d) social protection. The framework proposed by ADB is suitable for this SSA because of the shared characteristics with Asia. Countries in SSA and most countries in Asia are all developing countries.

3.7 Estimation Technique

The Driscoll Kraay Standard Error estimates parameters using different types of estimators including Ordinary Least Squares (OLS), Fixed Effect (FE) model, Random Effect (RE) model, or weighted least squares (WLS). It is a modified form of Newey-West–type correction estimator that corrects for autocorrelation, heteroscedasticity and considers cross-sectional dependency too.

Growing concerns of cross-sectional dependency triggered an invention of Driscoll Kraay Standard Error to deal with the issue (see Driscoll & Kraay, 1998). Compared to PCSE and FGLS, estimation with Driscoll Kraay handles balanced and unbalanced data well. Aside from the fact that our data is unbalanced, the data has a large cross-section and a shorter period of time. Driscoll Kraay is suitable whether the cross-section (N) is larger than the time (T) or the other way around (Hoechle, 2007). Some prominent studies that have estimated with this standard error are Özokcu and Özdemir (2017), Bölük and Mert (2014), and Drobetz et al. (2010).

We moved on to normalize the variables that were used for the index since they were of different measurement forms. We followed OECD (2008) to reconstruct the variables into unit-free variables. The formula for achieving that is as follows:

$$X_{it} = \frac{A_{it} - L_{it}}{U_{it} - L_{it}} \quad (3)$$

Equation 3 is an equation for normalizing the selected indicators.

Where;

A_{it}- represents the actual value for country i at time t

U_{it} - denotes maximum value for country i at time t

L_{it} – denotes minimum value for country i at time t

X_{it} – denotes indicator for country i at time t

3.8 Selection Criteria for Index

PCA predicts components that can be used as the index. In order to select the most suitable prediction, we fell on two criteria; eigenvalue and scree plot. The highest eigenvalue and the elbow effect of the scree plot are used as criteria for selecting the components. An eigenvalue is a measure of the amount of variability explained by each principal component. The highest value means higher amount of variability. The criterion for selecting components is an eigenvalue greater than 1. The component with the highest eigenvalue is then selected as the proxy for the index. Also, the robustness of the index was tested using Kaiser-Meyer-Olkin (kmo). Kmo is a statistic that ranges from 0 to 1. Any figure greater than 0.6 on this scale is considered acceptably adequate for factor analysis (Hair et al., 2010).

3.9 Justification of Independent variables

3.9.1 Microfinance

Formal financial products such as those offered by banks are not accessible to poor households in many developing countries. This means that there is limited chances of securing funds for business

startups, business expansion, and productive agricultural activities. MFIs try to bridge this funding gap by providing small loans (microcredit) and deposit services (micro savings) to poor households with the aim of transforming productive activities. These activities may perhaps, spring forth employment, raise income and eventually eradicate poverty. A number of studies have strongly linked microcredit to improvement in the welfare of the poor and they have assessed the impact of microfinance on poverty indicators like headcount ratio, inequality and economic development (Félix and Belo, 2019), but there is no empirical study on inclusive growth, which is the focus of this study. Given the findings in the literature, either a positive or negative relationship with inclusive growth is expected. Microcredit is measured as gross loan as a percentage of GDP and saving is also measured as deposit as a percentage of GDP. Data for these variables were obtained from WDI

3.9.2 Microfinance Outreach

Higher levels of participation in microfinance services are linked to higher improvements in the welfare of the poor and access to opportunity (Hermes, 2014). A very important constituent of inclusive growth is access to opportunity. We expect that access to credit will be a key that unlocks other opportunities in our social life. So, it is expected that the larger the number of poor individuals with access to finance, the higher we expect inclusive growth to be. A lot of studies on outreach indicate that participating in microfinance initiatives leads to poverty reduction (Imai et al., 2012; Hermes, 2014; Bangoura et al., 2016). Following the work of Hermes, (2014), microfinance outreach by dividing the number of active borrowers by total population and the second indicator of outreach is measured as the number of depositors as a percentage of total population. Data for these variables were obtained from WDI.

3.9.3 Labour Productivity

Small business start-ups and business expansions in rural areas are sources of employment for poor people. Higher employment rate has been associated with tremendous poverty reduction especially in developing countries (Page & Shimeles, 2015). It is reasonable to say that poverty reduction can be further achieved when employees or workforce is very efficient. Poor individuals can be broadly categorized into two groups, self-employed and those employed by others. Labour productivity impacts poverty by an increase in output of the business owned by the poor self-employed and the increase in the wage rate of the poor employee (Dev, 1988). The pattern of the economic growth can determine whether the growth is beneficial to the poor or not. Income from labour is the main source of income for poor people. So, growth in agriculture and non-farm rural activities as a result of efficient labour may contribute to higher inclusive growth by increasing the average income of poor people (Islam, 2004). Briones (2013) argues that the rural economy constitutes the main source of employment for poor men and women in developing countries. The paper underscores employment as the main conduit through which the rural economy impacts inclusive growth. This study hopes to find a positive relationship. Data for this variable was obtained from WDI.

3.9.4 Population Growth

Malthusian theory of population postulates a time where population will outgrow available resources. This theory suggests that the rate of population growth will increase more than proportionally to economic growth which will eventually lead to an increase in poverty. In contrast, the Solow-Swan model of growth specifies population as a source of growth by providing a workforce that will contribute to economic growth. These theories suggest that population growth can have either a positive or negative impact on economic growth. Headey and Hodge (2008) assert

that population growth impact on economic growth depends on the segment that experiences higher growth. The paper opines that a higher growth rate among the adult population is associated with economic growth but growth in the young-age population is associated with a decline in economic growth. A study by Klasen and You (2003) also reveals that higher population growth is associated with a decline in economic growth and higher levels of poverty. It is expected that inclusive growth will be either positively impacted or negatively impacted by population growth rate. Data for this variable is obtained from WDI

3.9.5 Inflation Rate

Inflation rate is defined as the rate of increase in the general prices of consumer goods and services in a country over a period of time. It can be proxied by consumer price index or GDP deflator. In drawing the link between inflation and inclusive growth, we look to economic growth and poverty as the transmission mechanisms through which inflation affect inclusive growth. According to Levine and Renelt (1992), there is an inverse relationship between inflation and economic growth. This means when inflation increases, we can expect economic growth to decrease. Going by the conclusion reached by Dollar and Kraay (2002), one could deduce that inflation impacts poverty indirectly through economic growth. Also, there is a direct relationship between inflation and poverty. (Ticci, 2011; Chani, Irfan, Pervaiz, Jan, Ali & Chaudhary, 2011). This means that higher levels of inflation may lower inclusive growth by decreasing economic growth and increasing poverty levels. Data for this variable was obtained from WDI.

3.9.6 Government Expenditure

In many countries, the government is the biggest spender. This is also true for some African countries. Data from World Bank depicts that government can contribute as high as 40% to GDP

in many countries in SSA. The enormity of the expenditure has precipitated a lot of research to determine its effect. For example, Loizides and Vamvoukas (2001) found that government expenditure positively influences short-term and long-term economic growth. Ojunugwa and Agbede (2015) also found similar results for both short-term and long-term when they conducted a similar study in Nigeria. But we know that the poor might not benefit from government expenditure or as much as the non-poor would, especially when the huge fraction of government funds is spent in urban areas. Some studies on the relationship between government expenditure and poverty provide evidence to that effect by finding a negative relationship (Fan, Hazell & Thorat, 2000; Fan & Zhang, 2008; Hidalgo-Hidalgo & Iturbe-Ormaetxe, 2018). This study may find either a positive or a negative relationship between government expenditure and inclusive growth. Data for this variable are obtained from WDI.

3.9.7 Trade Openness

The traditional theory of trade posits that there are welfare gains that accrue to countries that embark on trade openness. Countries benefit from trade openness through productivity, specialization, a surge in investment, and efficient resource allocation. Establishing the relationship between trade openness and inclusive growth is analyzed through the relationship between trade openness and economic growth and the relationship between trade openness and poverty since they enter into the inclusive growth index. It is well established in the literature that trade liberalization has a positive impact on economic growth (Yanikkaya, 2003; Karras, 2003; Awokuse, 2008; Ulaşan, 2015). This positive relationship is strongly confirmed in Africa (Brueckner & Lederman, 2015; Zahonogo, 2016; Keho, 2017).

Trade liberalization impacts poverty at different stages. In the short run, trade liberalization is likely to increase poverty by destabilizing poor people. This is because, in the short run, most poor people

are unable to take advantage of opportunities created by trade openness, mainly because they do not have the required skills to do so (Kelbore, 2015; Winters, 2000). Despite the likelihood of no impact of trade on poverty in the short run, a large body of evidence indicates that trade liberalization reduces poverty in the long run (Pradhan & Mahesh, 2014; Kelbore, 2015). Given the long-term characteristic of inclusive growth, the expectation of this study is to find a positive relationship between trade openness and inclusive growth. Data for this variable was obtained from WDI.

Table 3. 4: Variables and their expected signs

Variables	**Expected Signs**	**Source**
Microfinance	+/-	WDI
Microfinance outreach	+	WDI
Labour productivity	+	WDI
Population rate	+/-	WDI
Inflation rate	-	WDI
Government Expenditure	+/-	WDI
Trade Openness	+	WDI

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter simply contains the presentation of results and the discussion of results. The chapter begins with the presentation of output of the index formation of the dependent variable, inclusive growth. Descriptive statistics and correlational analysis are presented to give an idea of the characteristics of the data. We then proceed to do some diagnostic tests. The chapter ends with presentation and discussion of regression results.

4.2 Inclusive Growth Index

Our dependent variable, inclusive growth is a multidimensional measurement of poverty. Therefore, we construct an index which serves as a measurement of inclusive growth. The statistical tool that is used to construct the index is Principal component analysis (PCA). PCA reduces large dataset into smaller dimensions while retaining most of the important information. Each variable in the dataset represents a dimension in PCA. PCA reduces these dimensions into components that can be used. The highest eigenvalue and the elbow effect of the scree plot are used as criteria for selecting the components. An eigenvalue is a measure of the amount of variability explained by each principal component. The highest value means higher amount of variability. The criterion for selecting components is an eigenvalue greater than 1. Then the component with the highest eigenvalue is then selected as the proxy for the index.

4.2.1 Results of Principal Component Analysis

From table 4.1, the eigenvalues for comp 1 and comp 2 are above 1, the rest are below 1. So, based on their respective eigenvalues, 1.971 and 1.184, comp1 and comp 2 are chosen. This result is confirmed by the scree plot in figure 2, where the elbow effect (initial bend) occurs at comp 2. This shows that comp 1 and comp 2 are sufficient in describing the variability in the dataset. Comp 1 is then selected as the proxy for

inclusive growth since it has the highest eigenvalue. Table 4.2 presents the proportions of the various variables that make up comp 1. We see that GDP per capita contributes 4.9% to Comp 1. Employment rate contributes 50.3% and Mobile cellular subscription contributes 45.8%. Poverty rate contributes 45.6% to Comp 1, Gini index contributes 20.3% and mortality contributes 53.4%.

Principal components/correlation	Number of obs	=	614
	Number of comp.	=	6
	Trace	=	6
Rotation: (unrotated = principal)	Rho	=	1.0000

Table 4. 1: Components and their corresponding eigenvalues

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	2.516	1.486	0.419	0.419
Comp2	1.030	0.021	0.172	0.591
Comp3	1.008	0.257	0.168	0.759
Comp4	0.751	0.322	0.125	0.884
Comp5	0.430	0.165	0.072	0.956
Comp6	0.265	.	0.044	1.000

Source: Table constructed by the author using output generated from data analysis software

Table 4. 2: Contribution of each variable to the various components.

Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6	Unexplained
GDPpc	0.049	-0.166	0.969	-0.127	0.121	-0.002	0
Employment	-0.503	-0.188	-0.074	0.244	0.795	0.120	0
Mobile	0.458	0.363	-0.083	-0.501	0.457	0.437	0
Poverty	0.456	-0.356	0.002	0.591	-0.061	0.559	0
Inequality	-0.203	0.812	0.220	0.456	-0.084	0.190	0
Mortality	0.534	0.138	-0.005	0.341	0.366	-0.667	0

Source: Table constructed by the author using output generated from data analysis software

Figure 4.1: Scree plot of eigenvalues after PCA

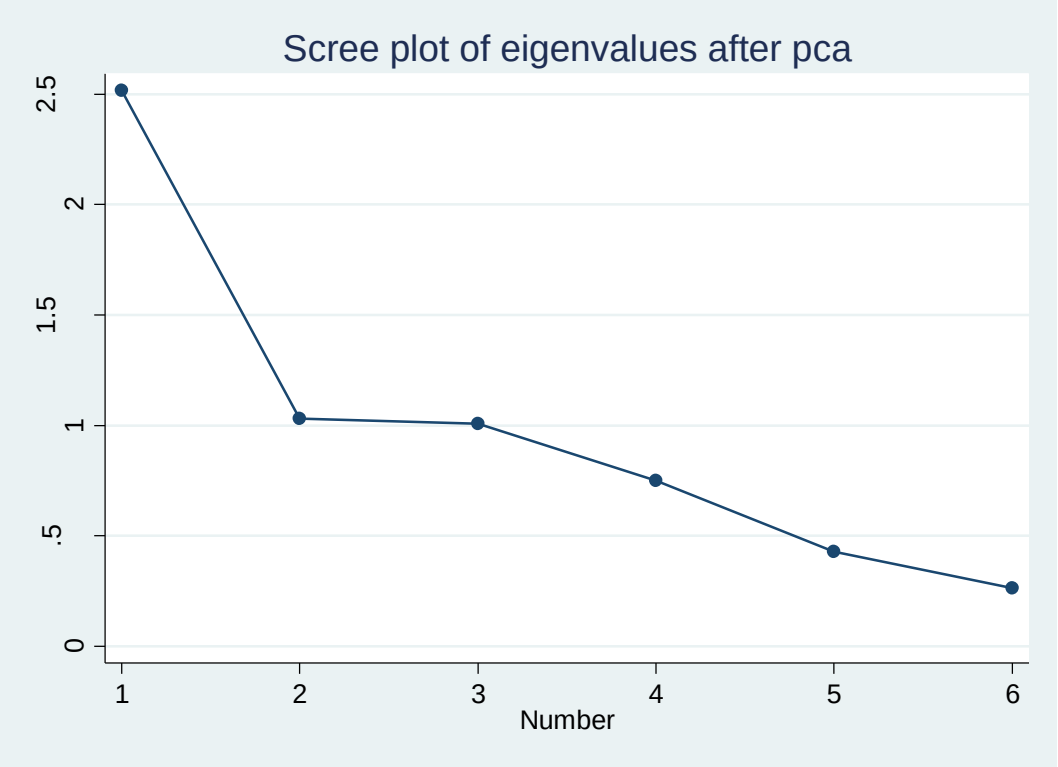


Table 4. 3: Kaiser-Meyer-Olkin measure of sampling adequacy

Variable	Kmo
	0.415
	0.766
	0.626
	0.576
	0.478
	0.642
Overall	0.639

Source: Table constructed by the author using output generated from data analysis software

Table 4.3 presents the result of Kaiser-Meyer-Olkin measure of sampling adequacy. The overall score is 0.639 out of 1. This indicates that the data is adequate for principal component analysis.

4.3 Descriptive Statistics

Descriptive statistics is a collection of information that brings out the characteristics of the variables of the dataset. It quantitatively summarizes the basic nature of the variables that make up the dataset. A key strength of descriptive statistics is its simplicity. A simple presentation of descriptive statistics is able to tell us the basic features of a dataset by reducing and simplifying the large dataset. The table below presents the descriptive statistics.

Table 4. 4: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
IG	3749	0.449	1.156	-3.85	2.915
Mic	3548	0.332	0.27	0	1
Deposit	3747	0.001	0.004	0	0.06
Active borrowers	3086	0.36	0.246	0	1
Depositors	3747	0.003	0.011	0	0.202
Lprod	3749	7317.01	6335.053	1656.809	58519.485
Popgrwth	3749	2.78	0.411	0.34	4.63
Inflation	3749	102.208	46.132	14.424	219.512
Govexpd	3749	198.721	137.633	1	430
Trade	3749	225.381	117.205	1	445

Source: Table constructed by the author using output generated from data analysis software. Microcredit is measured as gross loan as % of GDP, Deposit represents amount of deposit as % of GDP, Active borrowers is measured as MFIs number of active borrowers as % of total population, Depositors is measured as MFIs number of depositors as % of total population, 'Lprod' represents labour productivity measured as GDP per person employed, 'Inflation' represents GDP deflator, 'Govexpd' represents government expenditure as % of GDP, 'Trade' represents trade openness.

The first variable in table 4.4 is inclusive growth. It has a minimum value of -3.85 and a maximum value of 2.915. We see that inclusive growth in some countries in Sub-Saharan Africa from 2003 to 2017 deteriorated by 3.85%, but also improved by 2.915% over the same period. On average, microcredit constitutes 0.332% of GDP based on our sample. With the lowest percentage so small that we can say it is practically 0% and 1% as the highest percentage of gross loan as a portion of GDP, we conclude that credit to the poor forms a tiny portion of GDP in most countries in Sub-Saharan Africa. Total deposits, on average is 0.001% of GDP. The average number of people served by microfinance institutions is 0.36% of total population. Just like microcredit, the lowest percentage and the highest percentage of the number of poor people served with loan services are 0% and 1% respectively. The descriptive statistics reveal that on average, 0.003% of poor people use savings services from MFIs. This sample result paints a grim picture of the number of people that are being served by MFIs in a region where over 41% of its population is extremely poor (World Bank, 2018). It is observed in our sample that labour productivity is $7317.01 on average. The minimum value is $1656.809 and the maximum value is $58519.49. Also, over the period of the study the average population growth recorded in our sample is 2.78%, the slowest rate of population growth is 0.34% and the fastest rate of population growth is 4.63%. The lowest inflation value recorded for our chosen sample over the period from 2003 to 2017 is 14.424%. The highest value for inflation is 219.512% and the mean value is 107.724%. The average government expenditure is 198.721% of GDP. The minimum and maximum government expenditures in our study are 1% and 430% respectively. Trade openness, measured as a percentage of GDP, has an average value of 225.381%, a minimum value of 1% and maximum value of 445%.

4.3.1 Correlation Analysis

Correlation refers to the relatedness of two variables. Correlation analysis uses statistical technique to assess how one variable is related to the other and the degree to which the variable is linearly associated with the variable (the strength of the association). When correlation analysis is applied to any two variables, it only means that the statistical relationship between the variables is tested. It does not imply that there is a causal relationship between the two variables. However, correlation can provide grounds for causality analysis. Statistical packages present correlation results in a matrix form. The matrix contains correlation coefficients of the variables. The coefficients are numbers that range from positively perfect relationship (+1) to negatively perfect relationship (-1).

Table 4.5 presents the correlation matrix for the independent variables. A glance at the correlation matrix reveals that majority of the coefficients fall below 0.5. Nonetheless, there is a pair that registered a high correlation coefficient. The weakest relationship recorded among different pairs of the variables is between microcredit and trade, which is indicated by the lowest coefficient 0.001. At 0.847, the correlation between deposits and depositors crosses the 0.5 threshold and is the strongest. The linear association between the pair, labour productivity and population growth is also above 0.5. This is a course for concern, because coefficients above 0.5 mean an unhealthily high relationship between pairs of variables and can suggest a problem of multicollinearity. We employ VIF in the next section to ensure that multicollinearity is checked, so that we can have accurate estimates.

Table 4. 5: Matrix of correlations

Variables	Microcredit	Deposit	Active borrowers	Depositors	Lprod	Popgrwth	Inflation	Govexpd	Trade
Microcredit	1.000								
Deposit	0.018	1.000							
Active borrowers	0.105	0.031	1.000						
Depositors	0.027	0.847	0.038	1.000					
Lprod	-0.132	-0.041	-0.046	-0.008	1.000				
Popgrwth	0.085	-0.018	0.002	-0.032	-0.529	1.000			
Inflation	0.026	0.106	0.030	0.089	0.001	0.279	1.000		
Govexpd	-0.125	-0.050	-0.071	-0.053	0.161	0.061	0.144	1.000	
Trade	0.001	-0.006	0.004	-0.002	0.037	-0.113	0.024	0.016	1.000

Source: Table constructed by the author using output generated from data analysis software. Microcredit is measured as gross loan as % of GDP, Deposit represents amount of deposit as % of GDP, Active borrowers is measured as MFIs number of active borrowers as % of total population, Depositors is measured as MFIs number of depositors as % of total population, 'Lprod' represents labour productivity measured as GDP per person employed, 'Inflation' represents GDP deflator, 'Govexpd' represents government expenditure as % of GDP, 'Trade' represents trade openness.

4.4 Diagnostic Tests

In order to select the appropriate estimator for a particular sample, there have to be diagnostic tests to ascertain the fitness of the estimator for the sample. Diagnostic Tests are statistical checks that are performed on samples to ascertain whether the samples satisfy certain assumptions required to use a particular estimator. These tests give an idea of the kind of statistical tool to employ in analyzing a dataset. In this section, we perform multicollinearity, autocorrelation, heteroscedasticity, cross dependency and Hausman tests. The results inform our choice of estimator.

4.4.1 Multicollinearity

The problem of multicollinearity arises when a pair or more of independent variables are unacceptably highly correlated. A model is ideally not supposed to have any of its independent variable related to the error term because of the problem of endogeneity. So, variables in the error term that correlate with any of the independent variables are in some cases brought out and added to the model. It is therefore natural for a pair or more of independent variables to be correlated (Wooldridge, 2012). However, high correlation may lead to large standard error which makes the estimates inefficient. There are a number of tests for multicollinearity. The prominent one and the one used in this study is variance inflation factor (VIF). It is a general rule that VIF greater than 10 indicates high incident of multicollinearity and is problematic. We go by this rule to set the acceptable VIF at 10.

Tables 4.6 and 4.7 present the results for multicollinearity test using VIF for model 1 and model 2 respectively. It is observed that all the variables in both tables are below 10. This suggests that both models do not have a problem of multicollinearity.

Table 4. 6: Variance inflation factor for model 1

	VIF	1/VIF
Mic	1.027	0.973
Deposit	1.018	0.982
Lprod	1.535	0.651
Popgrwth	1.639	0.61
Inflation	1.146	0.872
Govexpd	1.07	0.935
Trade	1.012	0.988
Mean VIF	1.207	.

Source: Table constructed by the author using output generated from data analysis software

Table 4. 7: Variance inflation factor for model 2

	VIF	1/VIF
Active borrowers	1.01	0.99
Depositors	1.018	0.982
Lprod	1.508	0.663
Popgrwth	1.626	0.615
Inflation	1.156	0.865
Govexpd	1.077	0.928
Trade	1.019	0.982
Mean VIF	1.202	.

Source: Table constructed by the author using output generated from data analysis software

4.4.2 Heteroscedasticity

Heteroscedasticity occurs when the variance of the error term is not constant across different samples of a population. The presence of heteroscedasticity causes high standard error. Though the presence of heteroscedasticity does not make estimates biased or inconsistent when estimated with OLS estimators, OLS estimators are rendered inefficient when a dataset has a problem of heteroscedasticity (Wooldridge, 2012). Heteroscedasticity violates the homoscedastic assumption in OLS yet it is prevalent in panel data.

The problem of heteroscedasticity can be corrected by 'robust' standard errors or 'heteroscedasticity-corrected' standard errors (Wooldridge, 2012). We adopt a test to detect the issue of heteroscedasticity. The test is Breusch Pagan/Cool-Weisberg test.

Table 4.8 contains the result of the Breusch-Pagan test for heteroscedasticity for the two models. At 5% significant level, we observe that the null hypotheses are rejected. This means that we do not find enough evidence to conclude that the variance of the error term across the samples of the population is constant. We therefore accept that there is a problem of heteroscedasticity based on Breusch-Pagan / Cook-Weisberg test for heteroscedasticity. We correct for this by using fixed effect with Driscoll Kraay standard error for estimation.

Table 4. 8: ***Breusch-Pagan / Cook-Weisberg test for heteroscedasticity***

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity	
H0: Constant Variance	
Model 1	**Model 2**
chi2(1) = 36.34	chi2(1) = 20.44
Prob>chi2 = 0.0000	Prob>chi2 = 0.0000
Source: Table constructed by the author using output generated from data analysis software	

4.4.3 Autocorrelation

Autocorrelation occurs when errors are correlated across time. Random distribution of errors is one of the basic linear regression assumptions. Just like heteroscedasticity, autocorrelation causes inefficient coefficient estimates when estimated with OLS (Brooks, 2008). To test for the presence of autocorrelation in our model, we employ Wooldridge test for autocorrelation in panel data.

Table 4.9 contains the result of the Wooldridge test for autocorrelation for the two models. At 5% significant level, we observe that the null hypotheses for both models are rejected. This means that we do not find enough evidence to conclude that the error terms across the samples of the population and across time are uncorrelated. We therefore accept that there is a problem of autocorrelation for both models based on Wooldridge test for autocorrelation. The presence of autocorrelation makes OLS estimators inappropriate for estimating our model.

Table 4. 9: Wooldridge Test for Autocorrelation

Wooldridge Test for Autocorrelation	
H0: No first order autocorrelation	
Model 1	**Model 2**
F (1, 466) = 118.790	F (1, 419) = 74.535
Prob>F = 0.0000	Prob>F = 0.0000
Source: Table constructed by the author using output generated from data analysis software	

4.4.4 Cross-sectional Dependency

Cross-sectional dependency or spatial dependency of errors occurs when errors are correlated across cross section. This happens because of the common factors that individuals in our data share. This could happen as a result of, for example, globalization, when our samples are drawn from many countries across the world. Globalization has led to integration of events and processes across many countries in the world. This may cause interdependency of errors across these countries as countries are somehow correlated. The presence of cross-sectional dependency of errors causes inefficient estimates and as such must be dealt with. We employ Pesaran test for weak cross-sectional dependence to check cross-sectional dependence.

Table 4. 10: Pesaran Test for Weak Cross-sectional Dependency

Result for Weak Cross-sectional Dependency using Pesaran test	
H0: Errors are weakly cross-sectional dependent	
Model 1	**Model 2**
CD = 2.625	CD = 2.996
P-value = 0.009	P-value = 0.003
Source: Table constructed by the author using output generated from data analysis software	

Table 4.10 contains the results of the Pesaran (2015) test for weak cross-sectional dependence for the two models. At 5% significant level, we observe that the null hypothesis is rejected. This means that we do not find enough evidence to conclude that errors across the cross-sectional data of the population is weakly uncorrelated. We therefore accept that there is a problem of strong cross-sectional dependence for both models based on Pesaran (2015) test for weak cross-sectional dependence.

4.4.5 Test for Statistical Model

Panel data is made up of the combination of cross section data and time series data. In other words, panel data is a collection of data on one or more entities across time. One way of characterizing panel data is the view that the unobserved factors that affect dependent variables either change over time (time variant) or do not change over time (time invariant). This has an implication for deciding the choice of model for estimation. The presence of correlation between unobserved variables in the error term and the independent variables are likely to result in biased estimates (Wooldridge, 2012). The fixed effects model is appropriate for analyzing data that vary across time. The model assumes that the unobserved time invariant variables are correlated with the explanatory variables. As such the model corrects for omitted time invariant characteristics. The random effects model is attractive when the unobserved differences across entities are random. That is, they are not correlated with the explanatory variables. The Hausman test is used in the study to test the model fit for estimation.

Table 4.11 shows the results of the Hausman test for difference in coefficients not systematic for the two models. At 5% significant level, we observe that the null hypothesis is rejected. This means that we do not find enough evidence to conclude that errors are not uncorrelated with explanatory variables. The fixed effect model is used for estimation in this study based on the Hausman test.

Table 4. 11: Hausman Test for endogeneity

Result for appropriate statistical model using the Hausman test	
H0: difference in coefficients not systematic	
Model 1	**Model 2**
chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 1927.07	chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 868.50
Prob>chi2 = 0.0000	Prob>chi2 = 0.0000
(V_b-V_B is not positive definite)	
Source: Table constructed by the author using output generated from data analysis software	

4.5 Presentation of Results

The tables below present the regression results for model 1 and model 2. A total of 3,747 observations across 821 microfinance institutions from 2003 and 2017 were sampled for assessing the relationship between microfinance services and inclusive growth, and the relationship between microfinance outreach and inclusive growth. The fixed effect model with Driscoll Kraay standard error was used for the estimation.

4.5.1 Relationship Between Microfinance services and Inclusive Growth

Column 2 of Table 4.12 presents the relationship between microcredit and inclusive growth (model 1). One of the variables of interest in the model, microcredit with a coefficient of 0.0104, is positively related to inclusive growth. This suggests that microcredit and inclusive growth move in the same direction. However, microcredit is not statistically significant, even at 10%. On the contrary, savings is strongly, significantly and positively associated with inclusive growth at 5%.

It is observed that labour productivity is strongly negatively related to inclusive growth. It is significant at 1%. Just like labour productivity, population growth is negatively related to inclusive growth. However, it is insignificant. Inflation is positive and significant at 10%. Both government expenditure and trade openness are negatively related to inclusive growth. Government expenditure is not significant even at 10%. Trade openness, on the other hand, is significant at 5%. With a coefficient of -0.000242, a 1% increase in trade openness will cause inclusive growth to decrease by 0.000242%.

Table 4. 12: Relationship between microfinance services and inclusive growth

Complete model		
Independent variables	**Fixed effects (Driscoll Kraay Standard Error)**	**Fixed effect (Driscoll Kraay Standard Error)**
Microcredit	0.0121 (0.0105)	
Deposit		7.925** (3.372)
Lprod	-8.31e-05*** (9.05e-06)	-8.25e-05*** (1.12e-05)
Popgrwth	-0.0442 (0.0593)	-0.0556 (0.0580)
Inflation	0.00147** (0.000659)	0.000344 (0.000380)
Govexpd	-0.000198 (0.000125)	-0.000182 (0.000120)
Trade	-0.000195* (0.000107)	-0.000199 (0.000117)
Constant	2.024*** (0.223)	2.123*** (0.240)
Country effect	No	No
Year effect	Yes	Yes
Observations	3,548	3,747
Number of groups	808	821
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		
Source: Table constructed by the author using output generated from data analysis software Microcredit is measured as gross loan as % of GDP, Deposit represents amount of deposit as % of GDP, 'Lprod' represents labour productivity measured as GDP per person employed, 'Inflation' represents GDP deflator, 'Govexpd' represents government expenditure as % of GDP, 'Trade' represents trade openness.		

4.5.2 Relationship Between Microfinance Outreach and Inclusive Growth

Table 4.13 presents the relationship between the outreach of microfinance activities and inclusive growth (model 2). Active borrowers, a variable of interest has a coefficient of 0.0264 and is significant at 5%. A 1% increase in the number of people served by microfinance is expected to increase inclusive growth by 0.0264%, all other things being equal. Likewise, the second measure of outreach, number of depositors is observed to be significantly related to inclusive growth at 1%.

It is observed that just like the first model, both labour productivity and population growth are negatively related to inclusive growth. Labour productivity is strongly significant at 1% but population growth is not significant at any of the levels of significance, even at 10%. The results also reveal that inflation is positively related to inclusive growth, but it is not significant even at a 10% significant level. Government expenditure and trade openness are all negatively related to inclusive growth, but they are insignificant.

Table 4. 13: Relationship between microfinance outreach and inclusive growth

Complete model		
Independent variables	**Fixed effects (Driscoll Kraay Standard Error)**	**Fixed effects (Driscoll Kraay Standard Error)**
Active borrowers	0.0256** (0.0110)	
Depositors		1.806*** (0.444)
Lprod	-8.38e-05*** (1.01e-05)	-8.49e-05*** (9.46e-06)
Popgrwth	-0.0508 (0.0572)	-0.0415 (0.0613)
Inflation	0.00141* (0.000682)	0.00144** (0.000639)
Govexpd	-0.000214 (0.000124)	-0.000198 (0.000123)
Trade	-0.000158 (0.000106)	-0.000201* (0.000101)
Constant	2.079*** (0.215)	2.030*** (0.229)
Country effect	No	No
Year effect	Yes	Yes
Observations	3,086	3,747
Number of groups	706	821
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		
Source: Table constructed by the author using output generated from data analysis software *Active borrowers is measured as MFIs number of active borrowers as % of total population,* *Depositors is measured as MFIs number of depositors as % of total population, 'Lprod' represents labour productivity measured as GDP per person employed,* *'Inflation' represents GDP deflator, 'Govexpd' represents government expenditure as % of GDP, 'Trade' represents trade openness.*		

4.5.3 Robustness Checks

Table 4.14 and Table 4.15 present results for model 1 and model 2 respectively from Pooled Ordinary least squares (OLS), random effect (RE) model, and fixed effect (FE) model. These results from different estimators are provided for comparison and robustness checks. The first column reports result from Pooled OLS, the second column reports results from random effects and the third presents results from fixed-effect model for both tables. All these estimators used Driscoll kraay standard errors to correct heteroscedasticity, autocorrelation, and cross-section dependence which according to the diagnostic tests, were found to be present in the data.

Beginning with table 4.14, the reported R-squared for model 1 is high at 97.4%. This means that model 1 explains 97.4% of the variability in inclusive growth. Estimates for the independent variables are similar across all three estimators except microcredit. Estimates for microcredit are similar in terms of the direction across the three models (positively related to inclusive growth) but differ in terms of their significance. Pooled OLS estimates microcredit at a significant level of 10%. The random effects model estimates microcredit at significant level of 5%, but the fixed effect finds microcredit to be insignificant in explaining inclusive growth. Estimation at different significant levels is not the only thing we see across the three estimators, but we also see varying coefficients. Pooled OLS reports the highest coefficient of 0.0289, followed by a random effects, 0.0281, and then fixed effects model reports a coefficient of 0.0121. Estimates for deposit are insignificant across Pooled OLS and random effects model. The fixed effects model reports a significant relationship between deposit and inclusive growth at 5% with relatively high coefficient.

Table 4. 14: Relationship between microfinance services and inclusive growth

Model 1 with Driscoll Kraay Standard Error						
Independent variables	**Pooled OLS**	**RE**	**FE**	**Pooled OLS**	**RE**	**FE**
Microcredit	0.0289* (0.0160)	0.0281* (0.0159)	0.0121 (0.0105)			
Deposit				0.287 (0.574)	0.922 (0.902)	7.925** (3.372)
Lprod	-9.14e-05*** (1.39e-05)	-9.11e-05*** (1.42e-05)	-9.57e-05*** (1.26e-05)	-8.27e-05*** (1.28e-05)	-8.41e-05*** (1.28e-05)	-8.31e-05*** (9.05e-06)
Popgrwth	0.0211 (0.0809)	0.00584 (0.0808)	-0.0332 (0.0614)	0.00916 (0.0819)	-0.0101 (0.0817)	-0.0442 (0.0593)
Inflation	0.00197** (0.000900)	0.00193* (0.000917)	0.00153** (0.000671)	0.00192** (0.000890)	0.00184* (0.000907)	0.00147** (0.000659)
Govexpd	-0.000295 (0.000185)	-0.000277 (0.000172)	-0.000209 (0.000122)	-0.000276 (0.000184)	-0.000254 (0.000167)	-0.000198 (0.000125)
Trade	-0.000418** (0.000181)	-0.000396** (0.000162)	-0.000249** (9.78e-05)	-0.000397** (0.000162)	-0.000348** (0.000159)	-0.000195* (0.000107)
Constant	2.871*** (0.333)	2.889*** (0.355)	2.084*** (0.248)	2.781*** (0.299)	2.792*** (0.320)	2.024*** (0.223)
Country effect	Yes	Yes	No	Yes	Yes	No
Year effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,548	3,548	3,548	3,747	3,747	3,747
R-squared	0.974			0.973		
Number of groups	808	808	808	821	821	821
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1						

Source: Table constructed by the author using output generated from data analysis software Microcredit is measured as gross loan as % of GDP, Deposit represents amount of deposit as % of GDP, 'Lprod' represents labour productivity measured as GDP per person employed, 'Inflation' represents GDP deflator, 'Govexpd' represents government expenditure as % of GDP, 'Trade' represents trade openness.

Table 4. 15: Relationship between microfinance outreach and inclusive growth

Model 2 with Driscoll Kraay Standard Error						
Independent variables	**Pooled OLS**	**RE**	**FE**	**Pooled OLS**	**RE**	**FE**
Active borrowers	0.0232* (0.0120)	0.0254* (0.0131)	0.0256** (0.0110)			
Depositors				0.738** (0.268)	1.043** (0.387)	1.806*** (0.444)
Lprod	-8.77e-05*** (1.38e-05)	-8.58e-05*** (1.38e-05)	-8.38e-05*** (1.01e-05)	-8.53e-05*** (1.26e-05)	-8.41e-05*** (1.28e-05)	-8.49e-05*** (9.46e-06)
Popgrwth	0.0240 (0.0751)	0.00452 (0.0760)	-0.0508 (0.0572)	0.0101 (0.0823)	-0.00915 (0.0822)	-0.0415 (0.0613)
Inflation	0.00200** (0.000920)	0.00190* (0.000943)	0.00141* (0.000682)	0.00190** (0.000886)	0.00183* (0.000901)	0.00144** (0.000639)
Govexpd	-0.000322 (0.000186)	-0.000298 (0.000173)	-0.000214 (0.000124)	-0.000275 (0.000184)	-0.000253 (0.000167)	-0.000198 (0.000123)
Trade	-0.000393** (0.000167)	-0.000341* (0.000160)	-0.000158 (0.000106)	-0.000397** (0.000161)	-0.000346** (0.000158)	-0.000201* (0.000101)
Constant	2.734*** (0.314)	2.747*** (0.332)	2.079*** (0.215)	2.779*** (0.297)	2.792*** (0.318)	2.030*** (0.229)
Country effect	Yes	Yes	No	Yes	Yes	No
Year effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,086	3,086	3,086	3,747	3,747	3,747
R-squared	0.97			0.973		
Number of groups	706	706	706	821	821	821
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1						

Source: Table constructed by the author using output generated from data analysis software. Active borrowers is measured as MFIs number of active borrowers as % of total population, Depositors is measured as MFIs number of depositors as % of total population, 'Lprod' represents labour productivity measured as GDP per person employed, 'Inflation' represents GDP deflator, 'Govexpd' represents government expenditure as % of GDP, 'Trade' represents trade openness.

Turning to the second model, which is in table 4.15, the reported R-squared is also high at 97.3%. This means that model 2 explains 97.3% of the variability in inclusive growth. We see that most of the estimates of the independent variables are similar in terms of direction (in their relation to inclusive growth) and significance. Active borrowers in model 2 is positively related to inclusive growth across all three models. The fixed effect model estimates a coefficient of 0.0256 at a 5% significant level. The random effect model estimates a higher coefficient of 0.0254 at a 10% significant level and Pooled OLS estimates a much lower coefficient of 0.0232 at a 10% significant level for number of active borrowers. Estimates for the number of depositors show significant and positive relationship with inclusive growth across all three models. The fixed effect model shows the strongest significance (1%).

Including pooled OLS, estimations for population growth for the random effect model and fixed effect model are negatively related to inclusive growth, though these estimations across all three estimators are not significant. Estimations for inflation for both models are significant across all three estimators. Government expenditure is not significant for across all three estimators for both models. All three estimators report that trade is negatively related to inclusive growth. But in contrast to the fixed effect model for model 2, both Pooled OLS and random effect models estimate trade at a 5% and 10% significant level.

4.6 Discussion of Results

4.6.1 Microfinance Services and Inclusive Growth

We begin with a discussion of the first objective, which is the impact of microfinance on inclusive growth. Just as expected microcredit has a positive relationship with inclusive growth. But the relationship is not significant. This result concurs with Crepon et al. (2011); Banerjee et al. (2014), Tarozzi et al. (2015), Angelucci et al. (2015), Sayvaya and Kyophilavong (2015), Bangoura et al. (2016) and Meager (2019) which found no transformative impact of microcredit on consumption and the welfare of the poor.

The first possible reason is that the size of microcredit is too small to bring any change in the level of inclusive growth in the region. The descriptive statistics reveal that microcredit on average constitutes less than 0.5% of GDP in a region which has 41% of its population living in extreme poverty. This is just a drop of water in the ocean. Thus, it is not surprising that microcredit has no effect on inclusive growth. Sayvaya and Kyophilavong (2015) assert that at the household level, MFIs borrowers' productivity maybe curtailed with small loan size. The study adds that small loan size maybe an encumbrance to engaging in high income-generating activities. Miled and Rejeb (2015) also reveals the importance of microcredit size at the macro level by providing empirical evidence that a higher amount of gross loan is associated with lower levels of poverty in developing countries. Thus, perhaps, large gross loan amount is important for achieving inclusive growth in the region. Aside from scanty loan amounts, the high interest rate which is often associated with microcredit may erode business profit and reduce consumption. This may hinder poor people from benefiting from economic growth they may have contributed to. For example, Banerjee et al. (2014) found that, for those they surveyed, microcredit increased their business profit and expenditure on durable goods but there were no significant changes in education and health.

Similarly, Crépon et al. (2011) found no impact of microcredit on education and health, though income increased. Interestingly, this study found that savings promotes inclusive growth in SSA. The informal sector in SSA is huge and poor people constitute a large part. Savings from this sector with a large population of poor individuals may promote inclusive growth through capital accumulation for developmental projects. Furthermore, savings provide the needed capital for starting businesses and may serve as insurance for cushioning poor people against economic shocks associated with the volatility of cash flows and riskiness of their business. Savings may also help raise the financial status of poor individuals to a level where they will be attractive for traditional financial services (Barr, 2004). All these may help stimulate the relative income of the poor for improving their wellbeing and promoting inclusive growth.

4.6.2 Microfinance Outreach and Inclusive Growth

The second objective is to test the impact of microfinance outreach on inclusive growth. The results reveal that microfinance outreach is positively and significantly related to inclusive growth. The finding suggests that microfinance institutions in SSA serve the poor as found by Imai et al. (2012), Hermes (2014), and Bangoura et al. (2016) in other areas.

The result also reveals that the participation of poor people in microfinance programs does not diminish inclusive growth. But rather, inclusive growth may rise with the increase in serving poor people. This is confirmed by Bangoura et al. (2016) who found that though the amount of individual loans is not significant in reducing poverty, wider coverage of poor people by MFIs decreases both poverty and inequality. So, we expect that inclusive growth will go up with the expansion of MFIs existing programs and/or entirely new programs and products to uncharted territories inhabited by poor people.

Also, the regression results provide evidence that highlights the social capital benefits of microfinance programs. Indeed, DeLoach and Lamanna (2011) found that participating in microfinance programs creates social capital that facilitates the share of health-related information. Ssewamala et al. (2012) also asserts that higher participation in MFIs programs like savings account services and workshops can help reduce depression. This suggests that when an individual participates in a microfinance program, he or she may experience improved non-income poverty variables such as health conditions and improved sanitation while simultaneously benefitting from high income levels. Hence, inclusive growth may increase.

4.6.3 Labour Productivity and Inclusive Growth

Contrary to our expectation labour productivity measured by GDP per person employed is found to have a negative relationship with inclusive growth. At the first glance, this result may seem surprising but it is very plausible. The negative relationship between labour productivity and inclusive means that, the poor benefits less and less as labour productivity increases. This is plausible when we think of the transmission mechanisms through which labour productivity impacts the poor. In 2004, research conducted by the centre for Study of living Standard found labour productivity to be the highest determinant of economic growth. The paper asserts that labour productivity may not impact poverty when there is high income inequality. Fosu (2015) also found that the reason why increasing economic growth could not translate to significant poverty reduction in Sub-Saharan Africa is because of high income inequality. It is possible that poor people in some countries in sub-Saharan Africa do not benefit from labour productivity because of high income inequality.

Another plausible explanation of the result is when we consider where the labour productivity is coming from. Labour productivity and growth in agriculture and non-farm rural activities (which

constitute the main source of employment for poor men and women in developing countries.) contribute to inclusive growth by increasing the average income of poor people (Islam, 2004). But the poor may benefit less from labour productivity when it occurs in urban areas. Even when labour becomes productive in the rural economy, apart from making it had for poor people with low skills looking for work to get employed, existing workers could be displaced. Also, to the centre for the Study of Living of Living Standards, labour productivity agriculture may result in low food prices. This can cause lower income for poor farmers leading to a decline in inclusive growth.

4.6.4 Population Growth and Inclusive Growth

According to the Malthusian theory of population, the population may outgrow available resources which may cause the rate of population growth to increase more than proportionally to economic growth leading to an increase in poverty. In contrast, the Solow-Swan model of growth specifies population as a source of growth by providing a workforce that will contribute to economic growth. Our results provide empirical evidence that population growth is negatively related to inclusive growth. However, the evidence shows that the relationship is not significant. The result suggests that population growth is not important in achieving inclusive growth. This result contrasts a study by Whajah et al. (2019). But it confirms the result of Imai et al. (2017) when generalized to inclusive growth.

4.6.5 Inflation and Inclusive Growth

Extant literature suggests that poor people do not benefit from increasing inflation (Ticci, 2011; Chani, Irfan, Pervaiz, Jan, Ali & Chaudhary, 2011). Also, Whajah et al. (2019) found an insignificant relationship between inflation and inclusive growth. However, the results in both model 1 and model 2 reveal that inflation does significantly increase inclusive growth. This implies that inflation transfers income or wealth to marginalized groups especially the poor, since they

may be less affected. This is probably because poor people in SSA hold less cash and they may be involved in activities that are positively related to inflation.

4.6.6 Government Expenditure and Inclusive Growth

We found in both models that government expenditure does not significantly affect the level of inclusive growth. A possible reason is that government spends little on things that benefit the poor. Also, not everyone, especially the poor is able to take advantage of seemingly targeted projects the government spends on, so inclusive growth will not respond to it. This is evidenced by Fan et al. (2008) and Babatunde (2018), who found that government expenditure targeted at the agricultural sector that usually employs a lot of poor people is on the decline.

4.6.7 Trade Openness and Inclusive Growth

Our finding disagrees with the constructs of Ricardo's theory of comparative cost advantage that indicate that trade openness positively affects economic performance. We found that Trade openness is negatively related to inclusive growth and the relationship is significant in the first model but insignificant in the second model. The result for the first model suggests that not everyone benefits when a country opens up its economy. Agreeing with the interpretation of Pradhan and Mahesh (2014) and Kelbore (2015) that poor people may eventually benefit from trade openness, trade openness may cause a decline in inclusive growth because poor people may not benefit as much as the rich. For the second model, trade openness is found not to be important in achieving inclusive growth. This finding concurs with Whajah et al. (2019). This result is an indication that the non-income aspect of wellbeing might not be significantly affected when an economy is opened up, though economic growth might increase. There might only be little impact of trade openness on inclusive growth until gains from economic growth as a result of opening the economy is used to promote non-income wellbeing.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

The final section provides a summary of key findings and discussions from the analysis of the relationship between microfinance and inclusive growth. It then draws conclusions from the study and makes recommendations relevant to policy, practice, and future research.

5.2 Summary of Findings

This study examines the role of microfinance in poverty reduction. Microfinance is measured by microfinance services and microfinance outreach. This study recognizes the role of economic growth and the multidimensionality of poverty, so the study created an inclusive growth index with principal component analysis (PCA). The PCA combined an economic growth measure, income poverty indicators, non-income poverty indicators, an income inequality indicator, and other indicators into a single indicator. The indicator, inclusive growth is long term, broad based, and multidimensional. The study used data from 821 microfinance institutions (MFIs) across 35 Sub-Saharan African countries over a fifteen-year period, from 2003 to 2017. Fixed effect with Driscoll Kraay standard error was used to investigate the relationship between microfinance and inclusive growth after controlling for inflation, labour productivity, trade openness, government expenditure, population growth, and trade openness. Driscoll Kraay standard error was used to correct serial correlation, heteroscedasticity, and cross-sectional dependency. Pooled OLS and Random effect both with Driscoll Kraay standard errors served us robustness checks for the estimates.

The first objective was to assess the impact of microfinance services on inclusive growth. Microfinance service is measured as gross loan to GDP (microcredit) and deposit to GDP (savings). The result reveals that microcredit has an insignificant positive relationship with inclusive growth and savings has a positive and significant relationship with inclusive growth. The descriptive statistics reveal that microcredit constitutes a tiny portion of GDP, and this may account for the reason why microcredit does not affect the level of inclusive growth in Sub-Saharan Africa.

The second objective sought to assess the impact of microfinance outreach on inclusive growth. Microfinance outreach is measured by the number of active borrowers divided by the total population and the number of depositors divided by the total population. Microfinance outreach is found to increase inclusive growth. The first interpretation of this result is that participation in microfinance programs does not diminish inclusive growth. Microfinance programs do not only serve as a means through which poor people obtain credit but also serve as channels through which information that benefits poor people is shared. This finding confirms the results of some studies conducted in SSA in this regard. A study found that participation in microfinance programs is able to reduce depression and another study found a positive link between microfinance participation and improved child health.

The study reveals that labour productivity decreases inclusive growth. Also, we found that population growth, government expenditure, and trade openness did not play an important role in achieving inclusive growth in SSA. However, inflation improves inclusive growth.

5.3 Conclusions

Sub-Saharan Africa is saddled with probably the most pressing problem in the world, poverty. According to the World Bank, Sub-Saharan Africa has the highest number of poor people in the

world. This problem could get worse if the region does not get the needed response because it is projected that Sub-Saharan Africa will be home to some 85% of the world's poor people by 2030. This calls for urgent intervention. Informed by studies that says that multidimensionally poor people are more than the income poor people and economic growth and inequality are important for poverty alleviation, we develop a multidimensional measure to assess the comprehensive impact of our proposed policy on the poor.

The first objective was to examine the effect of microfinance services on inclusive growth. Our study has revealed that microcredit does not play a significant role in achieving inclusive growth in SSA but savings does. The second objective was to ascertain the effect of microfinance outreach on inclusive growth. The study reveals that the expansion of microfinance programs does improve the inclusive growth. This implies that countries in Sub-Saharan Africa that participate in microfinance programs are able to promote inclusive growth.

5.4 Recommendations

5.4.1 Policy and Practice

Over the years, microfinance has been touted by many as the panacea for poverty. If this claim is true, then SSA should be the target of microfinance services since it is the region with the highest number of poor people. This study sought to contribute to finding a solution to this problem. The findings from our study have diverse implications for policy and practice.

To begin with, microcredit was found not to play a role in achieving inclusive growth. However, the study found that savings plays a significant role in the promotion of inclusive growth in SSA. Based on these findings, there is the need for MFIs to roll out services that will encourage savings.

Also, national governments can supplement the work of MFIs or be at the fore front by providing financial education for the poor individuals to encourage savings.

The study also found that microfinance outreach improves inclusive growth. Therefore, the study recommends international organizations and donor countries that commit to the goal of poverty alleviation and achieving high inclusive growth to intensify their efforts in reaching the poor through microfinance programs. Development agencies and social investors can achieve their social goals by investing in MFIs that embark on microfinance programs. At the meso level, MFIs could design microfinance programs and services to expand microfinance access to poor people.

5.4.2 Further Research

This study does not consider the different types of MFIs. The study lumps for-profit MFIs and not for profit MFI in examining the impact of microfinance on inclusive growth. Considering the influence, the type of MFIs has on their service to the poor, it will be interesting to know which type improves inclusive growth the most.

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