MEASURING INCLUSIVE GROWTH IN SUB-SAHARAN AFRICA FROM 1996 TO 2019: EVIDENCE FROM A COMPARATIVE ANALYSIS

Lennon Jambo Habeenzu*

*Pan African University, Institute of Governance, Humanities and Social Sciences, Soa, Yaoundé, Cameroon.

ABSTRACT

Since inception, the concept of inclusive growth has been defined and measured differently among scholars and policymakers. This paper measures inclusive growth in Sub-Saharan Africa (SSA) from 1996 to 2019. A principal component analysis and weighted mean approaches have been applied following the Eurasian Economic Commission, and 20 methodologies. The study findings show that the inclusive growth index is sensitive to the measurement approach used due to different sets of indicators and dimensions. However, the methodologies provide a basis for comparing country performance. In addition, in both methodologies, economic performance was found to be a significant contributor to inclusive growth. Countries with higher economic performance witnessed higher inclusive growth. From the findings, policymakers could rely on more than one measurement approach to determine inclusive growth. This will enable them develop policy measures which address various dimensions that each of the SSA countries need to robustly invest and improve.

KEYWORDS

Inclusive Growth, Principal Component Analysis, Weighted Mean, Sub-Saharan Africa.

1. INTRODUCTION

The quest for inclusive growth has risen among academia, policymakers, and international development organizations. Majorly, calls for growth to be inclusive emanate from evidence obtained in developing economies. In the case of Africa, before the Covid 19 pandemic, the continent witnessed higher levels of economic growth. For instance, between 2000 and 2015, economic growth averaged 4.8 percent which was the highest growth rate globally [1]. Contrary to traditional economic expectations, higher growth did not result in any reduction in poverty, unemployment and inequality in Africa. Many Africans were left in the sideline during the years of higher economic growth heightening the calls for growth to be inclusive. [2] categorized this kind of growth as 'non-inclusive'.

Whereas in other parts of the world, the development path of countries such as the United States of America, United Kingdom and Northern Ireland shows that per capita income grew steadily together with reduction in inequality and unemployment [3]. In addition, countries such as China and Viet Nam managed to reduce poverty with higher economic growth [4]. Equally, prior to the financial crisis of the 1990s, Hong Kong, China, the Republic of Korea, Singapore, and Taiwan recorded rapid growth in per capita income with relatively stable and low inequality [5]. For Africa, this development path has been susceptible to scrutiny since many countries saw rapid growth together with widening inequality and poverty [1]. [6] noted that Sub-Saharan Africa's (SSA) growth rate averaged 4.145 percent between 2000 and 2010 about double the world

average. In the same period, 7 of the 10 most unequal countries in the world are SSA and the region has the highest poverty rate [7][8]. For further details on the analysis of growth, inequality and unemployment trends in Africa, see [1].

Cognizant of the fact that growth in per capita income has not benefited the majority of citizens in Africa. That is, growth benefits did not reach certain parts of the population. [9] launched the Agenda 2063 which fed into the SDGs, in particular, SDG 8 which aims at ensuring sustained and inclusive growth. Showing increased desire for inclusive growth, [10] developed an inclusive growth agenda. [10] observed that indeed higher economic growth on the continent occurred simultaneously with rising poverty, inequality, and youth unemployment. In other parts of the world, [11] devised an inclusive growth strategy 2020 in which inclusive growth is among key pillars of pursuit. [11] recognized the need for growth to have much sharper focus on ensuring that the economic opportunities generated by growth are available to all especially the poor to the maximum extent possible. Regional efforts to inclusive growth have culminated into an international recognition of its importance at the United Nations level. Therefore, in replacing the Millenium Development Goals, the Sustainable Development Goals (SDGs) were developed with emphasis on achieving inclusive growth among its goal.

Against this background, the need for growth to be inclusive has received international recognition and recommendation. However, questions that arise pertain to how inclusive growth must be defined and measured. For instance, in the review of ADB documents, [12] identified many conflicting definitions of inclusive growth. Also, measuring the concept of inclusive growth has seen many researchers proposing approaches and indicators. Studying inclusive growth has consequently increased among analysts (see, [13][14][15][16][17][1][18][12], among others). Hence, many sometimes conflicting, and complimenting definitions and measurements of inclusive growth sprouted.

[13] defined inclusive growth as growth that increases average opportunities available to the population and ensures equal access to the opportunities for all segments of society. In measuring inclusive growth, [13] proposed using the social welfare function in which growth is considered inclusive when it leads to the maximization of the social opportunity function. It is also defined as growth that ensures a "wider access to sustainable socio-economic opportunities for a broader number of people, regions, and countries, that protects the vulnerable within the atmosphere of fairness, equal justice, and political plurality" ([10] p.3).

In measuring inclusive growth, [13] used the social welfare function which was adapted by [15] and [1] among others. International organizations such as the Asian Development Bank (ADB), Eurasian Economic Commission and United Nations Conference on Trade and Development, European Commission, Organization for Economic Cooperation and Development (OECD), the United Nations Development Programme (UNDP), the World Bank (WB), and World Economic Forum (WEF) have proposed indicators and methods to measure inclusive growth.

This paper therefore measures inclusive growth in Sub-Saharan Africa (SSA) using [19] and [20]. The principal component analysis and weighted average methodologies are adopted. The novelty of this paper is that it measures inclusive growth in SSA by the Eurasian Economic Commission approach which no known study has attempted to do so. In addition, the paper has adopted the weighted mean approach by [20]. Hence, it is not only adding to the growing body of research on measures of inclusive growth but also empirically applies two of the proposed measures of inclusive growth. Moreover, out of curiosity, the paper ranked each country's performance and compares its performance relative to each approach. Contrary to [20] who after computing an inclusive growth index analyzed performance in 5 North African countries, thisstudy analyzed performance for 35 SSA countries. The paper is different to that of [1] [19] and [20] in that it uses

two approaches to measure inclusive growth. The study findings show that countries' performance on inclusive growth largely depend on the methodology used. However, each methodology enables researchers to compare country performance, and guide policymakers on which indicators a country must invest heavily to achieve higher inclusive growth.

Against this background, the rest of the paper is organized as follows: Section one has introduced the issues of main concern building the platform for the paper while section two is the literature review. In chapter three, the methodologies used to compute inclusive growth in SSA are discussed. Chapter four provides the results and discussion of the findings while chapter five is the conclusion and policy implications.

2. LITERATURE REVIEW

2.1. Review of Definitions and Measures of Inclusive Growth

Increased interest in inclusive growth has led to a large scholarship that provide definitions and propose ways to measure it. In many attempts, concepts that encompass growth and inequality have been proposed in development literature and policy debates such as broad-based growth, shared growth, and pro-poor growth which resulted in the birth of inclusive growth [1]. Hence, many attempts at defining and measuring inclusive growth spans across scholars and international institutions. As a result, many definitions and measure of inclusive growth have been proposed leading to lack of unanimity. This section therefore reviews the definitions and measures of inclusive growth in a non-exhaustive manner.

2.1.1. Some Definitions of Inclusive Growth

[10] acknowledges the role of economic growth in the realization of inclusive growth. In its agenda, inclusive growth is defined as economic growth leading to wider access to sustainable economic opportunities for a larger number of people, regions, or countries, at the same time ensuring that the vulnerable are protected, everything taking place in an environment of fairness, equal justice, and political plurality. In Asia, inclusive growth is one of the strategic pillars along with environmentally sustainable growth and regional integration that guides the activities of the Asian Development Bank [12]. The Asian Development Bank defined inclusive growth as one that creates and expands economic opportunities through the social opportunity function with broader access to the opportunities to which members of the society participate in and benefit from [21]. Therefore, inclusive growth from ADB's perspective comprises two factors: average opportunities available to the population and how the population share these opportunities [13].
In the European Union Development Strategy duped "Europe 2020", inclusive growth appears as one of the three priorities. [19] state that achieving inclusive growth requires the provision of high employment rates, investment in acquisition of necessary skills, combatting poverty and modernizing labor markets for forecasting and adaptation to various changes by the population. In addition, the expansion of positive effects of economic growth across all EU regions, including remote ones, which promotes equality in the quality of life throughout EU is a necessary condition. [19] defines inclusive growth as the "convergence in the quality of life of all population groups within a country, achieved not only through governmental redistribution of economic performance outcomes, but also through the creation of favourable, non-discriminatory economic conditions, that allow each population group to achieve self-sufficiently quality of life comparable to other groups and contributing to the improved quality of life of the entire population" (p. 20).

On the other hand, [22] defined inclusive growth as economic growth that creates opportunities for all segments of society and fairly distributes the dividends of increased prosperity in income and non-income terms across society. [22] additionally defined inclusive growth as the enhancement of multidimensional living standards of a representative (median) household calculated as a change in real disposable income adjusted for variations in living standards.

Growth is inclusive if it takes place in sectors for instance the agriculture that employs the poor, in rural and relatively backward areas where the poor live, employs labor as the main production factor which the poor possess in surplus, and leads to the reduction of prices of commodities the poor consume [23]. Further, [23] places more emphasis on the inclusive growth through the achievement of the Sustainable Development Goals. It defined inclusive growth as growth with low and declining inequality, economic and political participation of the poor and benefit-sharing in the growth process. [24] understands inclusive growth as growth which is rapidly-spaced, broad-based across all economic sectors and inclusive of the labor force of a country in large part. Growth is also considered inclusive when it improves productivity and creates employment opportunities [24]. The World Economic Forum defines inclusive growth as growth which implies improvement in the well-being and provision of better opportunities for everyone through means of institutional development[19]. It is a strategy of strengthening direct interconnections between top (real GDP growth) and bottomline (improvement in the quality of life) level economic policy outcomes.

As noted earlier, not only did the inclusive growth euphoria overtaken the international organizations, but also many academics and policymakers which led to further attempts in conceptualizing it. [25] argued that inclusive growth was first used by [26] to highlight what they considered to constitute pro-poor growth. Pro-poor growth became therefore distinct by referring to it as "Inclusive economic growth" ([26]: p.3).Hence, [26] defined inclusive growth as one enabling the poor to actively participate and to significantly benefit from economic activities.

[13] argued that growth can be considered inclusive when the average opportunities available to the population, and how opportunities are shared among the population lead to an increase in the social welfare function. [27] define inclusive growth as growth that promotes equal opportunities and also increases access to these opportunities so that all members of society are allowed to participate in and equally contribute to growth irrespective of their individual circumstances. It is also defined as GDP growth that leads to significant poverty reductions [28], and lowers income inequality between the non-poor and poor [29]. For [18], inclusive growth is higher economic growth and improved economic output of the economy that is accompanied by an increase in productive employment opportunities and a level playing field for investment.

[30] identified two dimensions of inclusive growth: (1) achieving economic growth that creates and expands economic opportunities; and (2) ensuring broader access to these opportunities from growth for members of society to participate and benefit. [12] defined inclusive growth as economic growth that benefits in large parts groups that are disadvantaged. [31] argued that for growth to be inclusive, there should be an increase of consumption by the excluded group whose magnitude should be the same as the growth rate. [1] defined inclusive growth as broad-based growth in income that is shared by every member of society, that is, growth benefiting everyone in the economy or growth that reduced inequality, or a combination of both.

Many definitions have been attributed to inclusive growth as shown above. Therefore, in this paper inclusive growth is defined as economic growth in which all individuals—the poor and the rich, in rural and urban areas, working either in informal or formal sectors, either employed or self-employed take part in and benefit from economic activities and outcomes.

2.1.2. Measures of Inclusive Growth

The lack of consensus among scholars and policymakers on the definition of inclusive growth has seen the concept being defined differently. Therefore, lacking a universally accepted definition. Equally, motivated by lack of unanimity on the notion, measuring inclusive growth has been tackled differently among scholars. [12] argued that the absence of universally accepted definition of inclusive growth has resulted in a wide range of measurement indicators which vary from 'unclear' to 'straightforward' to 'technically difficult'.

[20] states that many concepts have emerged including: (1) narrower concepts which stresses outcome such as growth and equity which can be easily measured and monitored; (2) wider concepts which are multidimensional and more ambitious in scope with emphasis on improving opportunities to achieve better outcomes including non-income aspects. [1] identified four approaches each with merits and demerits that have operationalized and measured inclusive growth, namely, the unified measure of inclusive growth, the dashboard indicators, a single score index and an inclusive growth analytic framework.

The unified measure of inclusive growth is based on [13] that measured inclusive growth using the social welfare function. It was then adapted by [1] [15] [16]and [32]. Using the social welfare function to measure inclusive growth enable the use of growth and equity dimension thereby making the approach attractive. Equally, [1] argue that the unified approach to mearing inclusive growth has less data stress and can be used to compare countries.

The dashboard approach to measuring inclusive growth is based on the understanding that inclusive growth is multidimensional. [12] provides a list of elements that must be fulfilled for growth to be inclusive. Therefore, in measuring inclusive growth, many indicators capturing the various dimensions must be used. This measure is superior in that it accounts for both income and non-income dimensions. However, it requires a large set of indicators to measure inclusive growth which can be demanding on the part of developing countries [1].

[33] [30] and [34] have used a single score index to measure inclusive growth. This approach requires the construction of an inclusive growth index using a geometric mean of the standardized values for various indicators (see,[17][33]).[20] used the weighted mean computed by averaging the sum of the normalized values for each indicator, each component and each indicator within that component are equally weighted. The single score index broadly covers inclusive growth outcome and process but it is hard to interpret the index. In addition, indicators selection and assigning weights for each indicator is critiqued for being arbitrary [1][35]. [22] calculates inclusive growth as a change in real disposable income adjusted for variations in living standards using a generalized mean method. The World Economic Forum (WEF)calculates an inclusive growth index based on twelve indicators distributed equally among parameters of growth, inclusion, and sustainability. [19] computes an inclusive growth index based on pillars of economic, living conditions and inequality which is argued advantageous over the OECD methodology due to complicated sociological surveys for data.

The inclusive growth analytic framework is based on [18]. This is not a specific measure of inclusive growth but because inclusive growth leads to improved productivity and creates new employment opportunities. [18] provide a framework for assessing the sources and constraints to sustained high growth for all. The framework is a three steps process. First, undertake an underground analysis to examine the sources of growth, poverty, productivity and employment dynamics. Second, provide a detailed description of the profile of economic actors at various levels of disaggregation. Third, identify inclusive growth constraints for each economic actor. The framework is useful for identifying and prioritizing country-specific constraints to sustain

high growth and reduce poverty but does not allow making comparisons among countries. Also, it does not enable the measurement of the extent of inclusive growth [1].

On the other hand, in many empirical applications, scholars have proxied inclusive growth on certain indicators. For instance, [36][37] and [38] used income inequality and poverty to proxy inclusive growth. The use of income inequality and poverty in empirical literature is based on the fact that inclusive growth is growth leading to a decline in income inequality and poverty[29].

[39][40] and [41] used gross domestic product per person employed to capture inclusive growth. Gross domestic product per person employed represents productive and decent employment which is an important element of inclusive growth. It is evident from the definitions of inclusive growth that economic growth must be part of the process leading to inclusivity. Therefore, an important question arises: when is growth inclusive? Researchers such as [42] used growth elasticity of poverty to determine episodes in which growth was inclusive. Inclusive growth must improve the living standards of all in society, therefore, there must be no losers and winners if all have access to and benefit from economic outcomes. Hence, [43] assessed the inclusiveness of growth by tracing the yearly percentage change in individuals' household consumption over different growth spells.

3. MATERIALS AND METHODS

3.1. Scope

This paper set out to measure inclusive growth in Sub-Saharan Africa. Therefore, as noted, several approaches to measuring inclusive growth have been proposed and applied in many empirical literatures. To achieve the set objective, two approaches have been used to determine the inclusiveness of Sub-Saharan Africa from 1996 to 2019. In this study single index approaches proposed by [19] and [20] are used to measure inclusive growth. Due to data concerns, 35 SSA countries are analyzed using the former approach while 30 countries are included in the latter approach.

3.2. Research Design

To measure inclusive growth in SSA, the study employed a quantitative research design in which secondary data was collected from various sources. The quantitative research design enables the researcher to collect data, develop a methodology and analyze this data in order to answer the research question. Secondary data enable results to be easily computed using the two approaches as well as to make comparisons.

3.3. Measurement Approaches

3.3.1. The Eurasian Economic Commission Approach (PCA)

The composite index approach used by [19] to measure inclusive growth is argued to maximize the number of countries in the analysis, and to ensure the assessment of various aspects of inclusiveness comprehensively. In this approach, inclusive growth is defined by three dimensions: 1) economy; 2) living conditions; and 3) equality which are based on indicators selected to leverage the notion of inclusive growth. The economy pillar of the index includes GDP-related indicators, labor market situation, and external trade, among others. The living conditions include issues of ecology, access to education, health, logistics, financial and telecommunication services while inequality takes into account discrepancies in income, access

to labor markets and decision-making processes [19]. There are 21 indicators that make up the various components of inclusive growth under the Eurasian Economic Commission. In this paper, 17 indicators have been used for which data was available.

Similar to [19], the principal component analysis was used to compute the index from the three pillars for which the weights are determined by statistical instruments. There are two advantages of using statistical instruments to determine weight: (1) help to scientifically identify and quantify underlying interconnections implied in the original data; and (2) reducing the bias associated with experts' view. In principal component analysis, the multi-correlated input indicators are distilled to form new variables known as principal components. The components account for shares of the original data variance and assigns each component the weight equal to the share of variance explained [19].

PCA methodology requires a comprehensive data set. However,data missingness is a big concern especially among developing economies. Therefore, to address this issue, missing data was imputed using appropriate procedures including interpolation, and regression model. In cases data is not available for an indicator such as proportion of the population using safely managed drinking water services was replaced by an analogous variable—the proportion of population using at least basic water services [19]. This ensured that at least 35 countries in SSA are included in the analysis.

Data on certain indicators was inverted and transformed. For instance, under living conditions, under-five mortality rate was inverted using the observed maximum among countries. In the inverted form, the higher figure indicates more live births. Income inequality, carbon dioxide emissions, poverty and ratio of youth to adult employment were equally inverted. Indicators that were transformed symmetrically are such that perfect parity (one) is the highest value and all deviations from it reduces the value. Hence, one would represent full equality and zero maximum inequality. Gender parity in the number for seats held by women and men in national parliament has been transformed such that a 50-50 parity in parliament becomes the highest value 1 and all distributions that deviates from it reduced the value.

3.3.2. (Weighted Mean)

[20] measured inclusive growth in North Africa. The researcher proposed an inclusive growth framework based on AfDB's formulation of four broad components: economic, social, spatial and political. The formulation was extended to have five components: economic, social, political, spatial and environmental. This classification makes possible to include many aspects of inclusive growth leading to the selection of appropriate sub-indicators.

Similar to [20], the economic pillar captures growth and jobs while health, education, social protection and gender fall under the social pillar. For the five dimensions, eight broad dimensions are used, and a total number of 14 indicators are used to construct an inclusive growth, and assigned weights according to [20]. From the collected data, equation 1 shows the arithmetic mean approach used to compute an index by averaging the sum of the normalized values for each indicator s_j for country i. Under this method, each component and each indicator within the component are equally weighted [20].

$$IG_i = \sum_{i=1}^{m} w_i \cdot s_{ji} \tag{1}$$

Where: $i = 1,\ldots m$: country i included in the dataset.
$j = 1,\ldots n$: indicator j included in the dataset.

3.4. Data and Data Sources

Data on the selected SSA countries was collected annually from 1996 to 2019. The selected indicators' inclusion into the sample was based on the list of indicators used under the PCA and weighted mean measures by [19] and [20] respectively. Data on real GDP growth, GDP per capita, adjusted net national income, GDP per person employed, under-5 mortality rate, wage and salaried workers, employment, life expectancy at birth, public health expenditure, public expenditure on education, Gini index, and poverty was obtained from the World Bank's World Development Indicators. Data on people using safely managed water services was obtained from the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) while the ratio of youth to adult employment rate was gotten from the International Labor Organization (ILO). Data on essential health services coverage was obtained from the World Health Organization and World Bank, Carbon dioxide emissions came from the Carbon Dioxide Information Analysis Center, and gender parity in the number of seats held by women and men in national parliament was obtained from the Inter-Parliamentary Union.

4. PRESENTATION AND DISCUSSION OF RESULTS

The study results for two approaches applied are presented in this section. In section 4.1 the results are based on [19] approach for measuring inclusive growth. This approach contend that inclusive growth has three dimensions. In section 4.2, the [20] weighted average approach to measuring inclusive growth is used. In both approaches, the study has used indicators proposed by these approaches to measure inclusive growth. In this way, the approaches enable the analysis of the results between countries and establish underlying reasons for disparities in performance.

4.1. Inclusive Growth Performance using the Eurasian Economic Commission Approach

Generally, higher level of inclusive growth is expected to be associated with countries that are advanced relative to others [19]. In this study, findings support this notion. Examining the performance of SSA countries, the top performers between 1996 and 2019 are upper income countries—Mauritius, Gabon, and South Africa while bottom performers include Burundi, Mozambique and Guinea. Economic performance is important in achieving inclusive growth. Certain level of economic growth enables countries to distribute the benefits of economic growth. Despite the fact that countries with higher economic performance are also among the top ranked, in this study equal weights have been applied to the dimensions.

Figure 1 shows the economic performance of SSA from 1996 to 2019 in the context of equality and living conditions. The size of the bubbles indicates economic size. As can be seen from the graph, the top right corner shows Mauritius which is ranked highest in equality and living conditions combined by a quite large economic performance. Mauritius performs better in per capita gross domestic product and in per capita adjusted net national income. On the other hand, Angola has quite a larger economic size compared to Cape Verde. However, the country performs poorly in equality and living conditions. Angola's poor performance in equality is attributed to low female to male labor force participation, gross secondary school enrolment (gender parity index), and gross secondary school enrolment combined with higher under-five mortality rates leading to poor living conditions.

Mauritania has good record in equality outshining Gabon despite Gabon having higher performance in economic pillar. Mauritania's performance is attributed to higher ratio of female to male employment rate and ratio of female to male labor force participation between 1996 and

2019. Performance in one indicator under each pillar does not warrant performance in the overall pillar. Rwanda recorded the highest number of seats held by women in national parliament averaging 72.48 percent during the study period. However, the country has poor performance in indicators of equality such as ratio of female to male labor force participation, ratio of female to male employment, and income equality. This undermined its overall performance in equality.
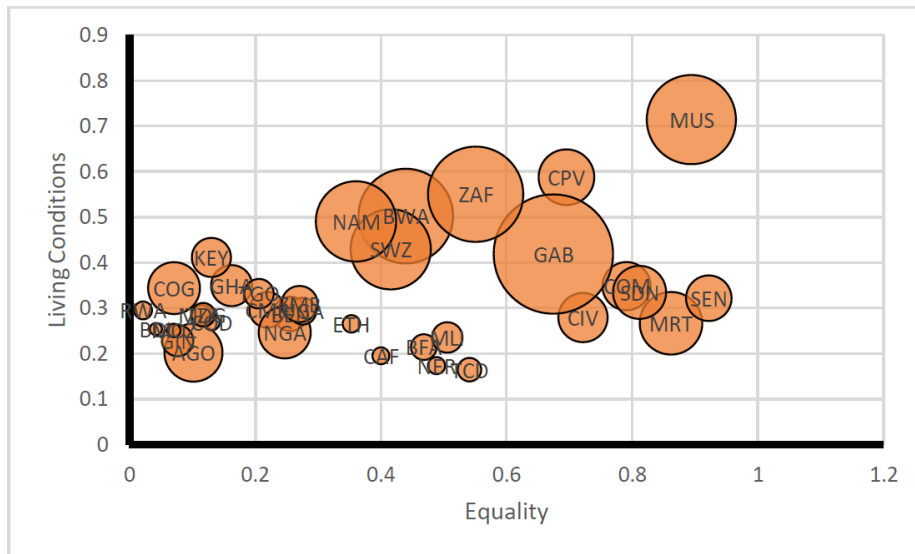

Figure 1. Economic Performance in the Context of Equality and Living Conditions from 1996-2019.

4.2. Inclusive Growth Results (Weighted Mean Approach)

Figure 2 shows the performance of SSA in inclusive growth index measured using the weighted average approach. Contrary to [20] the study period covered was from 1996 to 2019 and the index is for the entire period. As indicated infigure 1, Mauritius experienced higher inclusive growth rate in SSA while Mali was the lowest performer. Botswana, Tanzania and Ethiopia followed the performance of Mauritius in that order. The dimension analysis of country performance shows that Mauritius has heavily invested to improve health and demographics, environmental sustainability, and in reducing inequality and poverty. In addition, it has improved labor force and employment, and gender equality. Hence, the higher performance in inclusive growth index. On the contrary, Mali performs poorly in environmental sustainability, and school enrolment. Moreso, the country has highest levels of child mortality rate and gender inequality. Therefore, the country performs poorly on the overall inclusive growth index during the study period.

Botswana is the second ranked country in inclusive growth when measured using the weighted average approach between 1996 and 2019. Country analysis of various dimensions indicate that Botswana has the best governance system in SSA. Also, the country has invested in improving health and demographics, particularly, increasing expenditure on health thereby reducing child mortality. Tanzania's performance is promoted by its excellent performance in environmental, and labor force and employment dimensions whereas Ethiopia's performance is attributed to labor force and employment, growth, environment, and equality. The analysis of other bottom ranked countries shows that their performance in many dimensions leaves more room for improvement. For instance, Chad and Mauritania have highest levels of gender inequality and poorest environmental performance. Moreover, Chad exhibits low life expectancy at birth, high

mortality rate, low percentage of wage and salaried workers as a share of total employment, and low environmental performance.
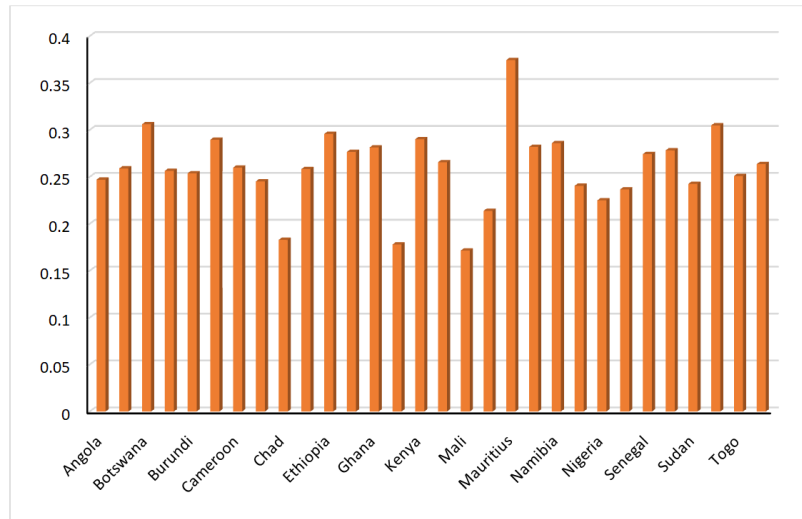

Figure 2. SSA's Weighted Average Inclusive Growth Index from 1996-2019.

4.3. Comparative Analysis of Inclusive Growth Rate Performance

The study used two approaches in measuring inclusive growth as indicated. Though the purpose of the paper was to measure inclusive growth in SSA from 1996 to 2019, the study has applied two distinct approaches. Each of the measures has its own methodology and the indicators included in computing inclusive growth index. Religiously following the methodologies of each approach, Table 1shows the rankings of SSA countries on each of the approach used.

The difference in country rankings between the two approaches is unsurprising. Among the many reasons for different country rankings include: a) method used to compute the index; b) the composition of indicators; and c) different weights used under each measure. For instance, the [19] approach suggest using PCA in which the weights are assigned by the given technique whereas [20] expertly assigned weights to indicators and dimensions. Also, the dimensions of inclusive growth differ in the two approaches. The Eurasian Economic Commission identifies three pillars—economic, living conditions and equality while [20] lists eight components to measure inclusive growth index. These include: a) growth; b) labor force and employment; c) health and demographics; d) education; e) gender; f) environment; g) inequality and poverty; and h) governance.

Table 1. Comparing Country Performances using PCA and Weighted Mean values of Inclusive Growth in SSA.

Country	Inclusive Growth (EEU)	Country	Inclusive Growth (Hakimian)
Mauritius	0.748604	Mauritius	0.37457
Gabon	0.586856	Botswana	0.306115
South Africa	0.542487	Tanzania	0.304932
Mauritania	0.492121	Ethiopia	0.295821
Sudan	0.483874	Kenya	0.290203
Senegal	0.468231	Cabo Verde	0.289679
Botswana	0.459366	Namibia	0.286037
Comoros	0.458862	Mozambique	0.281939
Cabo Verde	0.449678	Ghana	0.281481
Namibia	0.415837	South Africa	0.278287
Eswatini	0.414806	Gabon	0.276704
Cote d'Ivoire	0.391809	Senegal	0.274382
Mali	0.314912	Madagascar	0.265628
Chad	0.303951	Uganda	0.263664
Nigeria	0.293207	Cameroon	0.259893
Niger	0.287958	Benin	0.259033
Burkina Faso	0.279273	Congo, Dem. Rep.	0.258365
Ghana	0.273992	Burkina Faso	0.256493
Cameroon	0.263409	Burundi	0.253776
Kenya	0.258803	Togo	0.25091
Zambia	0.248478	Angola	0.247043
Ethiopia	0.238877	Central African Republic	0.245267
Angola	0.229888	Sudan	0.242641
Uganda	0.226414	Niger	0.240557
Central African Republic	0.22393	Rwanda	0.236693
Togo	0.214865	Nigeria	0.225029
Tanzania	0.207034	Mauritania	0.213823
Congo, Rep.	0.206372	Chad	0.182896
Congo, Dem. Rep.	0.19518	Guinea	0.17795
Benin	0.188012	Mali	0.171561
Rwanda	0.170129	Comoros	
Madagascar	0.165463	Congo, Rep.	
Burundi	0.154048	Cote d'Ivoire	
Mozambique	0.147252	Eswatini	
Guinea	0.138886	Zambia	

The results show that in both cases, Mauritius outperform all SSA in inclusive growth in the period studied. On the contrary, Guinea and Rwanda appear among the bottom five ranked countries in inclusive growth. As suggested above, each country's ranking differs on the two approaches except for Mauritius. This shows that a country's inclusive growth performance varies from approach to approach. For instance, Gabon is ranked second under the EEU's approach while it is ranked eleventh using the weighted average approach by [20]. In the latter approach, Botswana, Ethiopia, Tanzania, and Kenya, for instance, outperform Gabon. This is due to the countries' high performance in the growth dimension over the study period. This component is among the four that have the highest weight in the computation of the inclusive growth index.

5. CONCLUSION AND POLICY IMPLICATIONS

Inclusive growth has become a global mantra among the policymakers, and development practitioners since its conceptualization in the early 2000s. As a result, it has brought a two-edged sword problem among scholars, policymakers and international organizations. On one edge, there is no universally accepted definition of the concept. On the other edge, no single indicator or measure of the concept has universally been adopted and acknowledged. As a result, many definitions and measurement approaches mushroomed. This paper's objective was to measures inclusive growth in SSA from 1996 to 2019. However, it has also reviewed various definitions and measures of inclusive growth. In addition, the [19] and [20] approaches of measuring inclusive growth have been applied to SSA. The former approach used the PCA while the latter applied the weighted mean approach.

Many scholars and international organizations have defined inclusive growth in different ways. At its inception, it was referred to as pro-poor growth by [26]. [22] define inclusive growth to mean economic growth that produces opportunities for all segments of society and distributes prosperity dividends fairly across society. [23] argues that growth is inclusive when it takes place in the agriculture sector and in rural areas where the poor are employed and live respectively, and leads to a reduction commodity prices for the poor. It is growth that allows the poor to actively participate and benefit from economic activities [26]. For [28] growth is considered inclusive when it significantly reduces poverty while [29] add that it should lower inequality between the poor and non-poor.

As there are many definitions for inclusive growth, so are various propositions for measuring the concept. [13] used a social welfare function to measure inclusive growth in Philippines. This approach was adopted in studies by [15] [16] [32]. [22] suggests measuring inclusive growth using a generalized mean method as a change in real disposable income adjusted for variations in living conditions. The World Economic Forum, and the Eurasian Economic Commission calculated the inclusive growth index based on various set of indicators.

In this paper, we have applied the composite index approaches to compute inclusive growth in SSA. Specifically, we have used the approaches that [19] and [20] applied in computing inclusive growth. As indicated in the section for methodology, the dimensions and indicators under each approach differ. In this study, we have ranked the performance of SSA under each approach as well as compared inclusive growth indexes obtained using two approaches. As a result, this study's findings have the following implications:

- Performance in inclusive growth is sensitive to the measurement approach used due to different measurement technique, components and indicators.
- Economic performance is important in determining inclusive growth in SSA.

- Policymakers can take interest in identifying areas a country needs to improve in order to improve performance in inclusive growth.
- Researcher wanting to compare country performance in inclusive growth cannot solely rely on one approach. Hence a combination of approaches must be used for robustness as well as sensitivity tests carried out under each approach. In this study sensitivity analysis has been left for future researchers.

REFERENCES

[1] Hussein A. Khaled., Allan Mukungu., and Yusuf Mohammednur Awel. 2018. Drivers of inclusivegrowth in Africa.Economic Commission for Africa. https://archive.uneca.org/sites/default/files/PublicationFiles/e1701271_0.pdf

[2] Economic Commission for Africa., and African Union. 2013. Overview of economic and social conditions in Africa in 2012[Paper presentation]. Meeting of the Committee of Experts of the Sixth Joint Annual Meetings of the ECA Conference of African Ministers of Finance, Planning and Economic Development and African Union Conference of Ministers of Economy and Finance, Abidjan, Côte d'Ivoire.

[3] Berg, G. Andrew., and Jonathan D. Ostry. 2011. Equality and efficiency. *Finance & Development*, Vol. 48, No. 3, pp12-15.

[4] United Nations Development Programme. 2017. *Income inequality trends in sub-Saharan Africa: Divergence, determinants and consequences*. United Nations Development Programme. https://www.undp.org/sites/g/files/zskgke326/files/migration/africa/undp-rba_Income-Inequality-in-SSA_Chapter-1.pdf

[5] Dagdeviren, Hulya., Rolph van der Hoeven., and John Weeks. 2000. *Redistribution matters: Growth for poverty reduction*. Geneva, International Labor Organization.

[6] World Bank. 2022. *World Development Indicators*. Washington DC: World Bank. https://databank.worldbank.org/source/world-development-indicators.

[7] Schoch, Marta., and Christoph Lakner. 2020. The number of poor people continues to rise in Sub-Saharan Africa, despite a slow decline in poverty rate. *World Bank Blogs*. https://blogs.worldbank.org

[8] World Population Review. 2022. Gini coefficient by country 2021. 2021 World Population by Country.https://worldpopulationreview.com/country-rankings/gini-coefficient-by-country.

[9] African Union. 2012. Goals & Priority Areas of Agenda 2063. https://au.int/agenda2063/goals2063

[10] African Development Bank. 2012. Inclusive Growth Agenda. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Revised-%20BRIEF%20-IG%20AGENDA%20-%20LTS%20FINAL%20DRAFT%20FEB20-2012%20REVISED.pdf

[11] Asian Development Bank. 2007. Toward a new Asian development bank in a new Asia: Report of the eminent persons group to the president of the Asian development bank. Manilla: Asian Development Bank.

[12] Klasen, Stephan. 2010. Measuring and Monitoring Inclusive Growth: Multiple Definitions, Open Questions, and Some Constructive Proposals. *ADB Sustainable Development Working Paper Series*, (12).

[13] Ali, Ifzal., and Hyun H. Son. 2007. Defining and Measuring Inclusive Growth: Application to the Phillipines. *Asian Development Bank*.

[14] Ali, Ifzal and Juzhong Zhuang. 2007. Inclusive Growth toward a Prosperous Asia: Policy Implications. *ERD Working Paper Series* No. 97. July. Manila: ADB.

[15] Anand, Rahul., Saurabh Mishra., and Shanaka j. Peiris. 2013. Inclusive Growth: Measurement and Determinants. *International Monetary Fund Working Paper Series 13/135*. Washington DC: International Monetary Fund.

[16] Balakrishnan, Ravi., Chad Steinberg., abd Murtaza Syed. 2013. The Elusive Quest for Inclusive Growth: Growth, Poverty, and Inequality in Asia. *International Monetary Fund Working Paper Series 13/152*. Washington DC: International Monetary Fund.

[17] Hakimian, Hassan. 2013. The search for inclusive growth in North Africa: a comparative approach. *Economic Brief*, Tunis: African Development Bank.

[18] Ianchovichina, Elena., and Susanna Lundstrom. 2009. Inclusive growth analytics: Framework and application. *Policy Research Working Papers, WPS 4851*, Washington DC: World Bank.https://doi.org/10.1596/1813-9450-4851

[19] Eurasian Economic Commission. n.d. *Inclusive Growth of the Eurasian Economic Union Member States: assessments and opportunities*. Eurasian Economic Commission and United Nations Cenference on Trade and Development.

[20] Hakimian, Hassan. (2016). Measuring Inclusive Growth: From Theory to Application in North Africa. *AfDB Working Paper Series*, Tunis: African Development Bank.

[21] Asian Development Bank. 2008. *Strategy 2020*. Manila: Asian Development Bank.

[22] Organization for Economic Cooperation and Development. 2014. *Report on the OECD framework for inclusive growth:Meeting of the Second OECD Council at ministerial level, 6 and 7 May 2014, Paris*. Paris: Organization for Economic Cooperation and Development www.oecd.org/inclusivegrowth/

[23] United Nations Development Programme. 2015. *What does inclusive economic growth mean in practice?* New York City: United Nations Development Programme. www.undp.org/content/undp/en/ home/blog/2015/7/31/What-does-inclusive-economic-growth-actually-mean-inpractice-.html

[24] World Bank. (2009). *What Is Inclusive Growth?* Washington DC: The World Bank.

[25] Ranieri, Rafael., and Raquel Almeida Ramos. 2013. Inclusive growth: Building up a concept. *Working Paper Number 104,* Brasilia: International Policy Centre for Inclusive Growth.

[26] Kakwani, Nanak., and Ernesto Pernia. 2000. What is pro-poor growth? *Asian Development Review*, Vol. 18No. 01, pp1-16. https://doi.org/10.1142/s0116110500000014

[27] Zhuang, Juzhong., and Afzal Ali. 2009. Inequality and Inclusive Growth in Developing Asia. Introduction to a book publication. ADB.

[28] Habito, F. Cielito. 2009. Patterns of Inclusive Growth in Developing Asia: insights from an Enhanced growth-poverty elasticity analysis. *ADBI Working Paper Series, No. 145*. Tokyo: Asian Development Bank Institute.

[29] Rauniyar, Ganesh., and Ravi Kanbur. 2010. Inclusive growth and inclusive development: A review and synthesis of Asian development bank literature. *Journal of the Asia Pacific Economy*, Vol. 15, No.4, pp455-469. https://doi.org/10.1080/13547860.2010.517680

[30] McKinley, Terry. 2010. Inclusive Growth Criteria and Indicators: An Inclusive Growth Index for Diagnosis of Country Progress. *ADB Sustainable Development Working Paper Series, No. 14*. Mandaluyong City: Asian Development Bank.

[31] Bushani, Indu. 2013. Do We Know What Inclusive Growth Really Means? *Asian Development Blog*.

[32] Aoyagi, Chie., and Giovanni. Ganelli (2015). Asia's Quest for Inclusive Growth Revisited. *Journal of Asian Economics*, Vol. 40, pp29-46.

[33] Ncube, Mthuli. 2015. Inclusive Growth in Africa: Current Performance and Prospects. In *Africa at a Fork in the Road: Taking Off or Disappointment Once Again?* Ernesto Zedillo, Olivier Cattaneo and Haynie Wheeler, eds. A Yale Center for the Study of Globalization eBook. New Haven.

[34] Ramos, Raquel Almeida., Rafael Ranieri., and Jan-Willem. 2013. Mapping Inclusive Growth. *International Policy Centre for Inclusive Growth(IPC-IG) Working Paper Number 105,* Brasilia: International Policy Center for Inclusive Growth. https://ipcig.org/pub/IPCWorkingPaper105.pdf

[35] Ravallion, Martin. 2001. Growth, Inequality and Poverty: Looking Beyond Averages. *World Development*, Vol. 29, No. 11, pp1803-1815. https://doi.org/10.1016/s0305-750x(01)00072-9

[36] Ghandour, M. Malak. 2020. The Role of Economic Institutions and Macroeconomic Policies on Inclusive Growth: An Empirical Study in the ESCWA Region. *Management Studies and Economic Systems*, Vol. 5, No. 3-4, pp105-115. https://doi.org/10.12816/0059074

[37] Shahabadi, Abolfazl., Morteza Nemati., and Seyed E. Hosseinidoust. 2016. The Effect of Knowledge Economy Factors on Income Inequality in the Selected Islamic Countries. *Journal of the Knowledge Economy*, Vol. 8, No.4, pp1174-1188.https://doi.org/10.1007/s13132-016-0431-3

[38] Park, Cyn-Young., and Racquel Claveria. 2018. Does Regional Integration Matter for Inclusive Growth? Evidence from the multidimensional regional integration index. *SSRN Electronic Journal*.https://doi.org/10.2139/ssrn.3339137

[39] Ayinde, Taofeek Olusola., and Olumuyiwa Ganiyu Yinusa. 2016. Financial development and inclusive growth in Nigeria: A threshold analysis. *Acta Universitatis Danubius (AUDOE)*, Vol.12, No. 5, pp326-346.

[40] Oluseye, Ibukun Cleopatra., and Aremo Adeleke Gabriel. 2017. Determinants of Inclusive Growth in Nigeria: An ARDL Approach. *American Journal of Economics*, Vol 7, No.3, pp97-109. https://doi.org/10.5923/j.economics.20170703.01

[41] Tella, A. Sherriffdeen and Olorunfemi Y. Alimi. 2016. Determinants of Inclusive Growth in Africa: Role of Health and Demographic Changes. *African Journal of Economic Review*, Vol. 4, No. 2, pp138-146.

[42] Mphuka, Chrispin., Oliver Kaonga., and Mike Alex Tembo. 2021. *Economic growth, inequality, andpoverty*. Routledge eBooks. https://doi.org/10.4324/9781003241027-8

[43] Houngbonon, Georges Vivien., Arthur Bauer., Abdoulaye Ndiaye., Clara Champagne., Tite Yokossi., Natalie Ferrière., Hédi Brahimi., and Jeanne Avril. (n.d.). Assessing the Inclusiveness of Growth in Africa: Evidence from Cameroon, Senegal and Tanzania. https://www.worldbank.org/content/dam/Worldbank/Feature%20Story/Africa/afr-georges-vivien-houngbonon.pdf

AUTHOR

Lennon Jambo Habeenzu is a Ph.D Candidate in Governance and Regional Integration at the Pan African University with over six years of experience in banking, trade and regional integration. Lennon has research interest in inclusive growth, trade and regional integration.