Social Dimension of Inclusive Growth in ECOWAS: Implication for Poverty Reduction

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This study investigates the implication of the social dimension of inclusive growth on poverty reduction in Economic Community of West African States (ECOWAS) countries. It specifically examines how social indices of inclusive growth comprising of income inequality, education, and health outcomes affect poverty reduction. The study uses a panel dataset of the six (6) lower-middle income countries in ECOWAS which was analysed via panel Difference Generalised Method of Moment (D-GMM). The results show that GDP per capita exerts significant negative effect on poverty while inequality, education and health outcomes do not show significant effect on poverty. Although, the estimates of inequality, health and education outcomes are insignificant, poverty reduces with inequality but increases with education and health outcomes. The study submits that ECOWAS member countries have not benefited from social inclusive growth strategy in terms of eradicating poverty. Consequently, there is need for urgent and serious effort to promote social inclusion via improved health and education outcomes in addition to reduction in inequality. This will require an overhaul reform in the health and education sectors through improved funding, introduction of curriculum tailored at meeting the changing labour market needs and a wage policy that reflects the minimum international standard to improve the overall contribution of health and education to poverty reduction.

1. Introduction

Poverty has both macroeconomic and microeconomic effects on economic development by lowering the average output of the labour force in productive jobs (Dursun

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& Ogunleye, 2016). When the productive capacity of the employed labour force expand along with improved efficiency more level of employment is created through the integration of the unemployed and underemployed in productive activities. Within this process, productivity and income will rise (Dursun & Ogunleye, 2016). In Sub-Saharan Africa, although the growth rate has been negative for a few years since 1961, Africa has largely been experiencing positive growth in the last two decades (Adekoya *et al.*, 2022). Despite this encouraging growth performance, only two of the top ten fastest growing economies in Africa, make the list of top ten results in poverty reduction (Rwanda and Chad) (World Bank, 2021). This reflects the fact that the region's economic development has failed to alleviate poverty. In the region, poverty, as measured by the international poverty line, remains high. Furthermore, there has been a continuous rise in the absence of economic participation and opportunities, and unemployment, particularly among the youth (Kpongnon *et al.*, 2020).

Globally, there has been a paradigm shift in the national and international strategy and direction of building a nation state and achieving the desired social, political, and economic progress. The Adams Smith submission, which focused on wealth accumulation primarily through agriculture and trade, was replaced with the idea of economic growth associated with an increase in a nation's productive capacity. However, as the level of poverty and inequality increased globally, there was a policy shift in favour of inclusive development, which ensures that no one is left behind in the process of economic change.

Inclusive growth, according to Obokoh and Goldman (2016), ensures that everybody profits equally from growth. In this way, the focus of inclusiveness are economic (quality of infrastructure, the role of agriculture and rural economy), social (social security covering social development, eliminating inequality, quality of health, empowering women and providing the poor with social safety nets), and institutional (social inclusion by removing institutional and policy barriers" and empowerment by providing access to productive assets, capacities and resources) which are its three pillars (Rauniyar & Kanbur, 2009; Ali & Son, 2007; Bolt, 2004; Tandon & Zhuang, 2007; Ali & Yao, 2004).

One of the largest regional economic communities in Africa is the Economic Com-

munity of West African States (ECOWAS) which was founded in 1975 with the aim of promoting growth and national development (ECOWAS, 2010). The economic community is made up of fifteen (15) small and geographically dispersed economies with a collective distance above 6 million kilometre square which make her economic geography a challenging one (Brown, 1982). Meanwhile, limited interaction among these counties reduced the potential of regional integration among member nations to boost economic growth (Jakoba, 2020). Although the growth rate of the region from 1981 to 2019 has been sluggish, it was growing at an average rate of 1.5%. In spite this noticeable growth, the gap between the poor and the rich has widened, the number of people living below the international poverty line has risen astronomically, the rate of unemployment grew, and her populace lack the opportunity to participate in the growth process (Anyanwu, 2013).

There are numerous studies (Ju & Dumor, 2020; Adeniyi *et al.*, 2020; Dursun & Ogunleye, 2016; Anyanwu, 2013; Sinnathurai, 2013) that connect poverty and economic development. However, majority of these studies were conducted based on evidence from country specific research, resulting in findings that cannot be generalised for a community of countries. Furthermore, the few current studies that are cross-country in nature are not recent, and have either focused attention on economic dimension (sustainable and equitable growth) or institutional dimension (social inclusion and empowerment) of inclusive growth with little or no attention on the implication of its social dimension on poverty. Meanwhile, the social dimension is a core dimension of inclusive growth (Rauniyar & Kanbur, 2009; Asian Development Bank, 2008). However, poverty as one of the menaces facing the region can be tamed faster through the application of inclusive growth strategies and income redistribution policies. Therefore, the study of the implication of inclusive growth on poverty is imperative for the analysis of the menace of poverty and to contribute to the design of inclusive growth strategies practicable to ECOWAS (Anyanwu, 2013). This study was motivated to address this gap by investigating the implication of inclusive growth on poverty in ECOWAS. In line with Rauniyar and Kanbur, (2009), Bolt, (2004), Tandon and Zhuang, (2007), and Ali and Yao, (2004) on the dimension of inclusive growth, our focus is mainly on the implication of the social dimension of inclusive growth covering social development captured by educational outcomes,

eliminating inequality, quality of health represented by health outcomes on poverty reduction based on evidence from Anyanwu (2013).

In the light of the foregoing, this study sought to investigate the implication of the social dimension of inclusive growth on poverty reduction in ECOWAS. The study poses the following research questions: what is the effect of income inequality on poverty? how does educational outcomes affect poverty? what is the effect of health outcomes on poverty? and how does GDP growth affect poverty in ECOWAS regions?. The study will be of immense benefit to the government to address the threat poverty poses in the realization of inclusive growth in the region. It will also provide an invaluable source of reference material for further studies on poverty and inclusive growth nexus.

The paper is divided into five sections. Section two follows the introductory section and summarizes previous research by clarifying and evaluating the principles, hypotheses, and empirical literature on the topic. The methodology is covered in Section three, which includes the model, variables, and data sources. The findings of the empirical analysis are summarized in Section four. The conclusion and recommendations are provided in Section five.

2. Literature Review

2.1 Theoretical Literature

In the traditional views on the relationship between poverty and inclusive growth upon which this study is anchored, poverty corresponds to the majority of the market advocating laissez-faire principles, which attribute responsibility for individual outcomes, such as their well-being, to their own economic decisions. As a result, people are held responsible for their experiences of poverty, which are ultimately linked to purely individual deficiencies. Individual characteristics can range from "a lack of an industrious work ethic or virtuous morality to low levels of education or competitive market skills," (Rank, Yoon, & Hirschl, 2003). The relevance of this traditional view of poverty on the nexus between poverty and inclusive stem from the submission of the theory that poverty is a consequence of individual outcomes in terms of their personal economic decision. One of the core decisions of life recognised in the literature as capable of lifting-out an individual and or a society out of poverty is hinged on

the three pillars of inclusive growth consisting of economic, social and institutional inclusion. For instance, individual's consistent right or wrong economic, social and institutional choices over time is a fundamental of poverty status of the individual or society.

In a similar vein, the Sub-culture theory of poverty submitted that poverty is passed down through generations in dynastic families, either due to a genetic component or due to upbringing. As a result, "poverty begets poverty," as children growing up in dysfunctional families feed off on their forefathers' deviant behaviour, which serves as a role model (Blank, 2010). As a result, intergenerational transmission of attitudes about poverty can be perpetuated through a persistent "culture of poverty," which may aid poor families in coping with limited resources. This theory linked poverty with inclusive growth from intergenerational channel. The theory submitted that a generation that fail to ensure growth inclusiveness such that the benefit of growth is unevenly distributed, such generation will begets poor generation in the future. The poverty of the current generation will be passed down to the future generation either through genetic component of upbringing.

Another perspective to the analysis of the implication of inclusive growth on poverty is the Classical theory, which holds that the outcome of market exchanges is efficient, and thus wages reflect individual productivity. Individuals are thus trapped in a "poverty or welfare trap" due to their poor productivity level. Adams Smith was the first to analyze poverty in his postulates on wealth-creating poverty. He sees poverty which he defines not as an economic condition but as the lack of ability to buy required materials that are necessary according to nature and custom resulting in social exclusion and mental trauma (Jung & Smith, 2007). That is, poverty is not a condition of economic deprivation but a cause of social isolation and mental difficulties. "Thus poverty, as addressed by Smith in 1759, did not subjected individual to hunger, malnutrition, disease, lack of clothing or shelter; rather, it shamed him through a pained awareness of his inferior position in the social scale" (Gilbert, 1997). The theory argued that income earned by the poor through a wage paying job from the rich will provide solution to the problems of poverty.

The limitation about this position is that, the theory did not account for the situation

where the minimum wage cannot cater for the basic needs of the poor. The theory submitted that social problem arises where the wealthy acquire greater share of the economy's purchasing power, they are likely to absorb too much of the socially available subsistence, leaving inadequate supplies for the less privilege. Resultantly, the society would be less happy and agreeable if the member did not assist one another from generous and disinterested motive which is the bane of inclusive growth (Gilbert, 1997). This theory implies that individual productivity level which is the bane of economic inclusion as a pillar of inclusive growth is a precondition for to wealth creation and subsequently poverty alleviation. This is a recognition of the potential role of inclusive growth strategy for poverty reduction.

2.2 Empirical Literature

Three strands of studies can be distinguished based on their findings in the literature on the nexus between poverty and inclusive growth. The first strands of studies are studies with evidence of a positive relationship between poverty and inclusive growth and its measures. The second perspectives are studies that provide evidence for negative relationship between the two variables. The third views are studies on the level of achievement of inclusive growth.

Looking at evidence on positive effect of inclusive growth and its measures on poverty, Ijaiya *et al.* (2015) used a multiple regression model to investigate the effect of economic growth on poverty reduction in Nigeria and it was found that a positive shift in growth contribute to poverty reduction while initial level of growth does not affect poverty. The same positive effect of inclusive growth on poverty was corroborated by Dursun and Ogunleye (2016) using data on West African countries between 1991 and 2010. It was found that growth has a positive effect on poverty reduction in West Africa, while an insignificant positive relationship between employment and poverty reduction was identified.

Similarly, Adeniyi *et al.* (2020) provide evidence for the positive role of educational quality measured by school enrolment on growth inclusiveness in both short run and long run in West Africa between 1990 and 2017 using the ARDL "Bounds" tests. The study conducted by Olanrewaju *et al.* (2019) on the causal interactions between the institutional quality, financial inclusion and inclusive growth in Nigeria using Toda

Yamamoto (TY) Granger non-causality test within the augmented VAR framework based on data from 1998 to 2017 also gave credence to the positive nexus between poverty and inclusive growth. Institutional quality as one of the criteria of inclusive growth was found to granger-caused inclusive growth, but without any evidence of feedback. The study conducted by Sinnathurai (2013) on the nexus of poverty, GDP growth, dependency ratio and employment in developing countries using OLS approach gave credence to the positive nexus between poverty and inclusive growth. Employment as one of the criteria of inclusive growth was found to have a negative impact on poverty incidence, but this effect was not important, while economic development, poverty, and industrial employment all had a significant impact on the age dependence ratio.

Based on evidence on the negative effect of inclusive growth on poverty Rank *et al.* (2003) submitted that poverty is adversely affected by economic, social and political levels and that U.S. poverty is ultimately the result of structural failings at the economic, political, and social levels based on three lines of thoughts. Similar result was established by Nguyen and Singh (2014) on the implication of growth on poverty in Vietnam by providing evidence for growth elasticity of poverty based on the national accounts. The decomposition of growth elasticity of poverty reveals that income growth has been pro-poor during the 1990s and the 2000s while the estimates of growth semi-elasticity of poverty are 55% and 24%, which are rather similar to those using survey data, and much smaller than those using national accounts data. The negative effect of inclusive growth on poverty was corroborated by Anyanwu (2013) using multivariate models based on data from 43 African countries from 1980 to 2011 and it was found that poverty and development have a strong negative relationship. It was found that income inequality, primary education, mineral rents, inflation, and population growth all contribute to poverty in Africa.

Studies have also explored how countries or region fare in terms of the realisation of the goal of inclusive growth. For instance, Stawska and Jabłonska (2021) studied the degree of inclusive growth and examines its determinants in the European Union (EU-27) countries, with particular emphasis on factors related to the influence of governments and central banks, it was noticed that among the 27 EU countries in the

study, only four countries distinguished themselves with the highest inclusive growth over the last 21 years on the basis of the build-up indicator of inclusive growth. On the other hand, three countries recorded the lowest inclusive growth based on inclusive growth indicator used. The study took advantage of the weight correlation method, which was used to build the inclusive growth measure for the EU countries for the years 2000, 2008, and 2020.

The same rising trend in the achievement of inclusive growth objective was confirmed in the study conducted by Jiang *et al.* (2021) to construct an indicator system that measures the inclusive growth of Chinese rural areas from 2004 to 2017 in four aspects, namely, economic growth, social equity, environmental sustainability, and infrastructure. The result of the entropy weight and TOPSIS methods used to evaluate the inclusive growth of rural areas in China show that the inclusive growth index in rural China is steadily rising, and infrastructure has a significant effect on inclusive growth. Conversely, Rini and Tambunan (2021) established that economic growth in Indonesia is not yet fully inclusive as result shows that only a few provinces have achieved inclusive growth based on the regional data from 34 provinces for the period 2016-2018 and three indicators of inclusive growth, namely, economic growth that reduces inequality, poverty, and unemployment (or increases employment), the Poverty-Equivalent Growth Rate (PEGR) method, and the technique of multiple linear regression analysis (that is the fixed effect model).

3. Data and Methodology

3.1 Data

This study is an investigation into the relationship between the social indices of inclusive growth and poverty reduction in ECOWAS. The study used a panel data collected from the six (6) low-middle income ECOWAS countries comprising of two Anglophone (Nigeria and Ghana), three francophone (Benin, Cote d'Ivoire and Senegal) and one Portuguese speaking (Cape Verde) countries out of the fifteen (15) countries in the ECOWAS region. These countries were classified by the World Bank under the low-middle income category. The choice of these six (6) ECOWAS member states was based on their level of income. The World Bank using the Gross National Income (GNI) per capital which is a measure of economic prosperity or performance

of a nation, classified these six (6) countries among the low-middle income countries (i.e. countries with income level between \$1,046 and \$4,095) suggesting that the poverty level in these countries is more severe compared to any other grouping of the ECOWAS member states (World Bank, 2020). The data collected from World Bank Development Indicator (WDI) spans the years 1980 to 2020. The time frame included the period (2015 to 2018) when the region's population growth rate over-shot the growth productivity.

3.2 Model Specification

Several measures of inclusive growth has been used in the literature including GDP per capita (Mutiiria *et al.*, 2020; Wu & Zhou, 2019; Sun *et al.*, 2018; Anyanwu, 2013; Wei & Ren, 2011), proportion of government spending on health (World Economic Forum, 2018); proportion of government spending on education (World Economic Forum, 2018; Sun *et al.*, 2018), employment rate (Sun *et al.*, 2018; Wu & Zhou, 2019), labour productivity measure by ratio of GDP to total number of employees (Wei & Ren, 2011; Wu & Zhou, 2019), GDP growth rate (Wei & Ren, 2011; Yu & Wang, 2012), under-five mortality rate per 1,000 live births (Yu & Wang, 2012; McKinley, 2010), Junior high school entrance rate (World Economic Forum, 2018; Sun *et al.*, 2018).

Based on the previous studies on the measurement of inclusive growth and the model used in the study conducted by Anyanwu (2013) on the correlates of poverty for inclusive growth in Africa, this study utilised' the under-explored social measure of inclusive growth in the literature comprising of educational outcome proxy by secondary school enrolment; health outcome proxy by total life expectancy at birth and income inequality proxy by the Gini coefficient in addition to GDP per capita a widely used measurement of inclusive growth. In the literature, the social dimension of inclusive growth covers educational outcomes, eliminating inequality, quality of health represented by health outcomes on poverty reduction (Rauniyar & Kanbur, 2009; Bolt, 2004; Tandon & Zhuang, 2007; Ali & Yao, 2004). In this study, GDP per capita was measured at constant 2010 US\$ while the poverty level was measured via poverty head count ratio. The choice of GDP per capita among the other several measures of inclusive growth is mainly because of its popularity in the

literature and its advantage in reflecting how income is shared among the populace through the households purchasing power and their investment capacity that is captured in the measure. Both health outcome and educational outcome were introduced as modifications to the variables used in Anyanwu's (2013) model. In addition, the study's scope was extended, and the analysis was narrowed down to a panel of six (6) ECOWAS member countries that are within the World Bank (WB) low-middle income countries classification. The model for the study can be rewritten as follows:

$$POV_{it} = \beta_0 + \beta_1 GPPC_{it} + \beta_2 INEQ_{it} + \beta_3 EDU_{it} + \beta_4 HTOU_{it} + \mu_i \qquad (1)$$

where POV_{it} is poverty level is proxy by poverty headcount ratio at US\$1.90 a day, GDPC is GDP per capita measured at constant 2010 US\$, EDU_{it} is educational outcome proxy by secondary school enrolment; $HTOU_{it}$ is health outcome is proxy by total life expectancy at birth; and NEQ_{it} is income inequality measured by the Gini coefficient.

3.3   Estimation Procedure

To estimate the model based on a dataset of six (6) countries (N) in line with Gujarati, (2004) and Zainudin and Nordin (2017) that used five cross-sectional units, this study which covers the period of forty one (41) years (1980 to 2020), employed the dynamic panel estimator of Arellano and Bover (1995). Arellano and Bover's (1995) dynamic panel's original estimator is known as Difference Generalised Method of Moment (D-GMM), while its expanded estimator is known as system GMM. The choice of D-GMM over other methods is because the technique prevents over-identification and instrument proliferation (Asongu *et al.*, 2017). However, the issue of overidentification problem that may affects the estimated result due to the use of more instruments (i.e proliferation of instruments) when dealing with small cross sectional units (n=5) and large period that ensures that each regressor is instrumentalised by all their differences and levels is addressed by using the Hansen tests to confirm the validity of the instrument (Roodman, 2009; Labra & Torrecillas, 2018). The lag of the dependent variable is introduced into the model in equation (1) as one of the independent variables to transform our linear model into a differenced GMM dynamic panel model:

$$POV_{it} = \beta_{it} + \rho POV_{it-\tau} + \beta_1 GDPC_{1it} + \beta_2 INEQ_{2it} + \beta_3 EDU_{3it} + \beta_4 HTOU_{4it} + \mu_i \qquad (2)$$

Equation (3) is a modified version of equation (2) in level form for dynamic panel results, with the lagged value of the dependent variable included. Taking the first difference as a transformation of equation 2 yields:

$$\Delta POV_{it} = \beta_{it} + \rho \Delta POV_{it-\tau} + \beta_1 \Delta GDPC_{1it} + \beta_2 \Delta INEQ_{2it} + \beta_3 \Delta EDU_{3it} + \beta_4 \Delta HTOU_{4it} + \mu_i \quad (3)$$

The inclusion of lagged levels and lagged differences into the model gives this estimator an advantage over Arellano and Bond's (1991) estimator. As a result, the corresponding specification is a homoscedasticity-consistent two-step GMM with forward orthogonal deviations instead of differencing (Asongu *et al.,* 2017).

4. Results and Discussion

4.1 Pre-estimation Results

The descriptive statistics of the data set in Table 1 revealed that the mean value of poverty, tend towards its maximum value which indicate that the values of this variable over time is generally high in ECOWAS members countries. On the contrary, the mean value of GDP per capita, inequality, health outcome and educational outcome tend toward the minimum values suggesting that over time the level of these variables across the countries in ECOWAS has been generally low.

The standard deviations of all the variables are relatively low, which indicates a low degree deviation from the actual values for the successive periods from their mean values. Specifically, in the case of poverty which is the dependent variable, its maximum value is 84.50000 whereas the minimum is as low as 15.40000 with a mean of 59.14390 which is closer to the maximum rather than the minimum value. The claim is strongly confirmed by the standard deviation since it is far away from the mean. In contrast, the maximum value of GDP per capita which is one of the explanatory variables in the study is 3482.448 while the minimum is 606.4455 with a mean of 1491.179 closer to the minimum value and a low standard deviation suggesting a low disparity from the mean. This result revealed that poverty level in the

region during the period is high while GDP per capita is low in ECOWAS. Similarly, the maximum value of health outcome is 73.16600 while the minimum is 45.33300 with a mean of 57.10302 closer to the minimum value and a low standard deviation suggesting a low disparity from the mean. Also, the maximum value of inequality is 54.10000 while the minimum is 35.10000 with a mean of 42.56179 closer to the minimum and a high standard deviation suggesting a wide dispersion from the mean. Likewise, the maximum value of educational outcome is 96.65943 while the minimum is 7.502520 with a mean of 36.94425 closer to the minimum value and a low standard deviation suggesting a low dispersion from the mean.

Table 1: Descriptive Statistics

	POV	GDPC	INEQ	HTOU	EDOU
Mean	59.14390	1491.179	42.56179	57.10302	36.94425
Median	67.70000	1318.010	40.40000	56.85250	34.99748
Maximum	84.50000	3482.448	54.10000	73.16600	96.65943
Minimum	15.40000	606.4455	35.10000	45.33300	7.502520
Std. Dev.	21.66399	652.1380	5.669655	7.156942	20.77149
Skewness	-0.589640	0.969067	0.854044	0.371129	1.049468
Kurtosis	1.966385	3.151593	2.449615	2.404231	3.571073
Jarque-Bera	25.20537	38.73824	33.01001	9.285349	43.17639
Probability	0.000003	0.000000	0.000000	0.009632	0.000000
Sum	14549.40	366830.0	10470.20	14047.34	8090.791
Sum Sq. Dev.	114985.5	1.04E+08	7875.521	12549.35	94057.11
Observations	246	246	246	246	219

The Jarque-Bera statistics which tests for the normality in the data set suggest that all the variables (poverty, GDP per capita, inequality, health outcome and educational outcome) are not normally since the associated probability value of the Jarque-Bera statistics for each of these variables are statistically significant at 5% critical value.

We used Levin, Lin, and Chu (LLC) unit root test without intercept and trend (none), with intercept only and with intercept and trend to test for the existence of stationarity or otherwise. The choice of Levin, Lin and Chin panel unit root is because it is one the prominent second generation unit root tests that account for cross-sectional dependence that is apparent among group of countries and as such it produce a better and more accurate result compared to the traditional unit root test methods.

Table 2: Levin, Lin and Chu Panel Unit Root Results

Variables	None		With intercept		With intercept and trend		Order of integration
	Level	1st Diff	Level	1st Diff	Level	1st Diff	
POV	-2.53567	-10.6935	1.46947	11.75621	0.02273	-13.6467	I(1)
	(0.0056)	(0.0000)	(0.9291)	(0.0000)	(0.5091)	(0.0000)	
GDPC	3.11703	-7.6352	0.93374	-6.77032	-0.45495	-7.31375	I(1)
	(0.9991)	(0.0000)	(0.8248)	(0.0000)	(0.3246)	(0.0000)	
INEQ	0.67582	-14.1715	-0.27244	-13.9186	0.44806	-13.1329	I(1)
	(0.7504)	(0.0000)	(0.3926)	(0.0000)	(0.6729)	(0.0000)	
HTOU	0.69370	-9.14989	-3.61884	-16.4059	-28.4059	-16.6084	I(0)
	(0.7561)	(0.0000)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	
EDOU	3.7599	-9.69240	0.74122	-9.82341	0.68922	-9.71380	I(1)
	(0.9999)	(0.0000)	(0.7707)	(0.0000)	(0.7547)	(0.0000)	

Note: Figures in and outside parenthesis are probability and t-statistics respectively.

The unit root test results reported in Table 2 without intercept and trend (none), with intercept only and with intercept and trend revealed that health outcome is the only variable that is stationary at level I(0) across two panel options (i.e. with intercept only and with intercept and trend), while the other variables (poverty level, GDP per capita, inequality and educational outcome) were found to be stationary only at first difference across the three panel unit root options at 5% level of significance. Meanwhile, poverty level out of the three panel options was found to be stationary at level only under one of the panel option (i.e. without intercept and trend). Hence, the result in general revealed a mixture of variables stationary at level and at first difference in the data set.

In order show the behaviour of the variables across sections, Figure 1 presents the graphical trend analysis of the social dimension of inclusive growth and poverty in ECOWAS from 1980 to 2020. Over the period of 1980 to 2020, Figure 1 illustrates that the countries with the highest level of poverty level for most periods are Senegal, followed by Benin republic and Nigeria while Cape Verde followed by Cotedvoire and then Ghana were the least in terms of poverty level among the lower-middle income ECOWAS countries. In terms of trend, poverty level moves from high level in past years to low level in current years in Nigeria, Cape Verde, Ghana, Benin republic and Senegal in an unstable version but in Cote d'ivoire poverty has rose from low to high level in volatile magnitude.
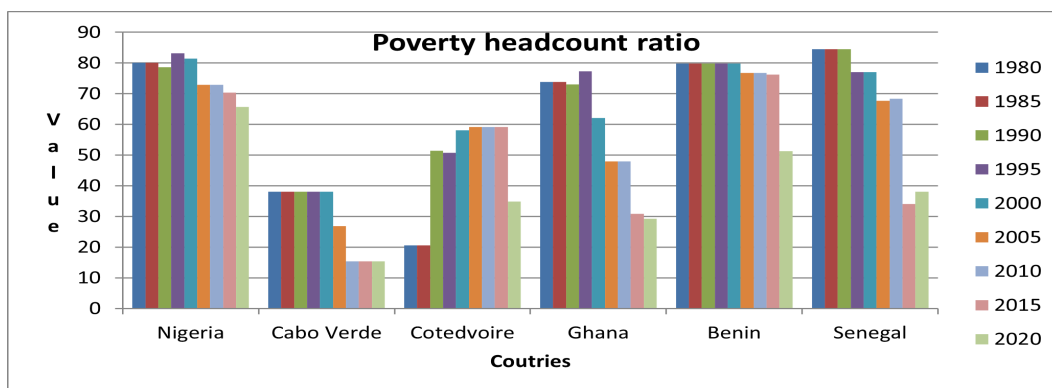
Figure 1: Trend of Poverty Level in ECOWAS.

The highest poverty level recorded for Nigeria was in 1995, for Senegal it occurs
across 1980 and 1990, Benin republic highest poverty experience happen across 1980
and 2000 and Ghana suffered the highest level of poverty in 1995 while Cape Verde
experienced theirs across 1980 and 2000 and Cote d'ivoire experienced the highest
level of poverty across 2005 and 2015. The lowest level of poverty in Nigeria oc-
curred in 2020, in Cabo Verde, it occurred across 2010 and 2020, in Cote d'voire
poverty was at the lowest level between 1980 and 1985, both Benin and Ghana ex-
perience their lowest level of poverty in the same period in 2020 while in Senegal it
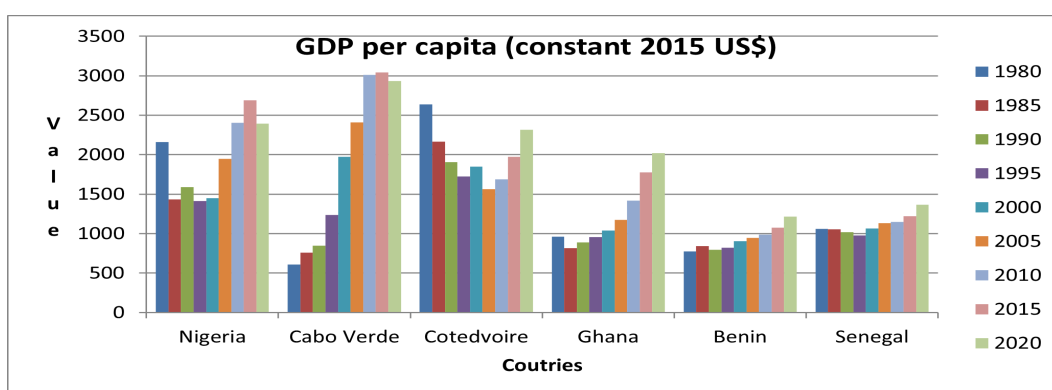occur in 2015.

Figure 2: Trend of Inclusive Growth Proxy by GDP per Capita in ECOWAS.

Over the period of 1980 to 2020 growth across the lower-middle income countries
in ECOWAS region is generally low as illustrated in Figure 2. The countries with
the highest level of growth are Cape Verde, followed by Cote d'ivoire and Nigeria

while Benin, Senegal and Ghana were the least in terms of inclusive growth among the lower-middle income ECOWAS countries. Comparing the outcome of the trend analysis in Figure 1 with Figure, it is clear that countries with a relative better growth performance like Cape Verde, Cote d'ivoire and Ghana have the least poverty level except Nigeria which have high score in both growth performance and poverty level which can be attributed to the severity of corruption and income inequality in the country. In terms of trend, growth moves from low level in past years to high level in current years in Cape Verde, Ghana, Benin, Senegal and Nigeria in an volatile version but in Cote d'ivoire growth curve is U-shaped. The highest inclusive growth as proxy by GDP per capita recorded for Nigeria was in 2015 which coincide with that of Cabo Verde, for Cote d'ivoire it occurs in 1980 and Ghana enjoyed the highest growth in 2020 while Benin and Senegal experienced the highest growth level in the same year 2020. The lowest growth in Nigeria occur in 1995, in Cabo Verde growth was at the lowest level in 1980, in Ghana it occurs in 1985, in Benin it occurs in 1980 and Senegal experience their lowest level of growth in 1995.

4.2 Empirical Results

4.2.1 Difference GMM Dynamic Panel Results

The results from the difference GMM dynamic panel data analysis is presented in Table 2.

Table 3: Difference GMM Dynamic Panel Results

Variables→	Coefficients	Std. Error	t-statistics	P-values
POV(-1)	-0.019579	0.001676	-11.68098	0.0000
GDPC	-0.330895	0.130963	-2.526630	0.0123
INEQ	-0.001616	0.003839	-0.420880	0.6743
HTOU	0.088282	0.102345	0.862598	0.3894
EDOU	0.001304	0.002139	0.609643	0.5428
Post estimation test				
F-test of Joint Significance			F = 2.091984	
Arellano-Bond test for AR(1) in first Difference			z= -0.153229; pr < z = 0.8782	
Arellano-Bond test for AR(2) in first Difference			z= -2.675057; pr > z = 0.0075	
Hansen J-test of overidentifying Restrictions			prob > chi(2) = 0.898855	

In the difference GMM dynamic model estimation, the lag of poverty, GDP per capita and inequality are negatively signed, while health outcome and educational outcome are positively signed, as shown in Table 3. A negative significant relationship flowing

from the lag of poverty (POV(-1)) was identified, suggesting that an high previous level of poverty translates to lower current level of poverty which negate the prediction of vicious cycle of poverty in ECOWAS. The lag of poverty (α_1= -0.019579, t = -11.68098 & p = 0.0000 < p0.05) and GDP per capita (α_3 = -0.330895, t = -2.5266300776 & p = 0.0123 < p0.05) exert a significant negative effect on poverty level while inequality (α_2= -0.001616, t = -0.420880& p = 0.6743 > p0.05), health outcome (α_4= 0.088282, t = 0.862598& p = 0.3894 < p0.05) and educational outcome (α_3= 0.001304, t = 0.609643 & p = 0.5428 < p0.05) do not have a significant any effect on poverty level in ECOWAS.

Although they are not significant, the positive sign of both the estimates of educational outcome and health outcome suggest that, there has been a negligible rise in poverty level as educational outcome and health outcome increase in the region. From the result, GDP per capita as a measure of inclusive growth show a significant negative impact on poverty in the region. That is, the current growth level of countries in the ECOWAS has a tickle-down effect on the high poverty level in the region. This suggests that, inclusive growth as measure by GDP per capital reduce poverty in ECOWAS. Conversely, the study found that three social dimensions of inclusive growth comprising inequality, health outcome and educational outcome tested in this study do have a significant effect on poverty level in ECOWAS. Meanwhile, for growth to be inclusive all the three dimensions of inclusive growth covering economic, social and institutional need to contribute significantly to poverty reduction.

However, in ECOWAS case as the result suggest, despite the core role of social dimension of inclusive growth covering reduction in inequality and improvement in both health and educational outcome in reducing poverty, it has not impacted significantly to poverty reduction in the region the insignificant effect of health outcome on poverty reduction can be attributed to the low health outcome of the people in the region. Equally, the issue of brain-drain, backward educational system and policies that turn-out graduates without requisite skills to engineer economic progress and political system structured with poor regard for educational attainments can be attributed for the insignificant effect of educational outcome on poverty reduction. Finally, the estimate of inequality which is also insignificant but positive suggest that

inequality does not have a significant effect on poverty in the region. This is suggestive of the fact that to reduce poverty in the region, there is a need for more equitable income distribution policy that can reduce the gap between the poor and the rich.

The study submits that the social dimensions of inclusive growth comprising of educational outcome and health outcome do not have implication on poverty reduction in ECOWAS. However, inclusive growth measured by GDP per capital was found to reduce poverty in the region. The policy implication of the insignificant adverse effect of health outcome on poverty level in ECOWAS region can be attributed to the region's low score in various health indices including infant mortality ratio and life expectancy compared to the developed regions. Also, judging from the estimate of educational outcome which also shows insignificant adverse implication on poverty level, it can be argued low score in educational outcome compared to other region inhibits the role of education in reducing poverty.

The study supports the findings of Anyanwu (2013) that income inequality, primary education, mineral rents, inflation, and population growth all contribute to poverty in Africa. It further shows a positive effect of economic growth on poverty reduction in West Africa, while an insignificant positive relationship between employment and poverty reduction was identified. The result is also in line with Ijaiya *et al.*, (2015) that applies multiple regression to investigate the effect of economic growth on poverty reduction in Nigeria. The findings show that poverty reduction is not dependent on the initial level of economic growth but is dependent on a positive shift in economic growth. In the same vein, our result corroborates the findings of Adeniyi *et al.* (2020) on the role of education in growth inclusiveness in West Africa between 1990 and 2017 using the ARDL "Bounds" tests. The study revealed a positive impact of school enrolment measures in most of the countries in both short run and long run. Education quality proxy show a positive impact and significant in few of the countries.

Based on the infinite sample feature of System GMM estimator, its estimate is often threatened by the number of moment conditions and the strength of identification. To validate the identification issue Arrelano and Bond (1991) first-order serial correlation and second-order serial correlation is widely used in the literature. To test

whether or not the instruments used in the estimation of the model, we follow the Arellano and Bond (1991) condition which requires that the residual term has first order serial correlation AR(1) as against the second-order serial correlation AR(2). By implication, the null hypothesis should be rejected for AR(1) and accepted for AR(2). In the estimation model in Table 3, the null hypothesis for AR(1) can be rejected (z= -0.153; pr = 0.8782 > 0.05) while for AR(2), the null hypothesis can be accepted (z = -2.675; pr = 0.0075 < 0.05). The result of the Arellano and Bond (1991) of first and second order serial correlation in the residual suggest that there is first order but no second order serial correlation in the residual which confirm that the instrument used in the estimation of the model is valid (Wilfred & Mbonigaba, 2019). Also, as shown in Table 3 the Hansen J-statistic tests (Chi(2) = 0.898855 > 0.05) show that the model has valid instruments. As a consequence, we cannot dismiss the null hypothesis. At a 5% significance level, the F-statistic indicates that all explanatory variables jointly and substantially explain the model.

5.   Conclusion and Policy Recommendations

Based on the findings, health outcome, educational outcome and inequality which are the social dimensions of inclusive growth do not have a significant effect on poverty while GDP per capital measure of inclusive growth is found to exert a significant positive effect on poverty level in ECOWAS. This implies that the level of poverty do not respond significantly to changes in educational outcome and health outcome of the people in ECOWAS. Although, the estimates of educational outcome, health outcome and inequality are insignificant, against a priori expectation poverty shows a positive relationship with educational outcome and health outcome while inequality was found to be negatively related to poverty in line with a priori expectation. Meanwhile, for growth in GDP per capita to be broad based, education outcome and health outcome are expected to significantly reduce poverty while inequality which is negatively sign according to a priori knowledge is also expected to be significant. This means that the level of education and health in the region is not capable of engineering the desired reduction in poverty level. In addition, the gap between the poor and the rich judging from the insignificant estimates of inequality has not reduce sufficiently enough not significantly reduce poverty in the region.

Consequently, urgent and serious effort is needed to achieve social inclusion via improved health and educational outcomes in addition to reduction in inequality. The constraints of education in the region have been attributed to the issue of brain-drain, backward educational system and policies that turn-out graduates without requisite skills to engineer economic progress and political system structured with poor regard for educational attainments. The insignificant health outcome as a measure inclusive growth on poverty reduction in ECOWAS and the estimates of inequality can be attributed to the fact that, in many of the countries in the region, there are few rich and high level of poverty in addition to ill health among majority. The situation has also eliminated the middle class leaving many poor and minority rich people.

The study submitted that ECOWAS member countries have not benefited sufficiently from the use of inclusive growth strategy in eradicating poverty in the region. More specifically, social indices of inclusive growth including health outcome, educational outcome and the level of inequality which are supposed to reduce the poverty level in the region are instead not providing any stimulus for poverty reduction. However, the positive growth over the last two decades recorded in the region has trickle-down effect on poverty level in the region.

Policy-wise, it becomes necessary for the region to raise average per capita income of the people through income redistribution policy such as the introduction of progressive tax system and the promotion of a balanced access to resources and opportunity across all income levels, gender and ethnicity to make growth inclusive. There is a need for an overhaul reform in the health and educational sectors through improve funding of the health sector, introduction of curriculum tailored at meeting the changing labour market needs and a wage policy that reflects the minimum international standard to improve the overall contribution of health and education to poverty reduction. There is also the need to boost social support via free education, health care and skills acquisition training for the low-income households and the less privileged to reduce income inequality.

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