QUALITY OF LIFE, GROWTH AND DEVELOPMENT IN SUB-SAHARA AFRICA (SSA): A RE-EXAMINATION OF THE EVIDENCE[1]

By

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A DRAFT FOR PRESENTATION

ABSTRACT

After decades of achieving independence, countries in sub-Saharan Africa seemed trapped in the circle of poverty. Despite enormous human, material and natural resources coupled with selected years of growth trajectory, majority of the citizens lack the necessities of life. Relevant macroeconomic and social indices are moving in the wrong direction. Unemployment averages 25 percent and rising among youths, inflation exceeds single digit while the lending rates is about 28 per cent. The misery index for SSA has been rising for over 40 years. One of the biggest economies in SSA, Nigeria, was recently characterized as the poverty capital of the world. Economists have argued that inclusive and sustained growth can reduce poverty thus improving the quality of life. The paper examines the relationship between poverty and indices of the quality of life in SSA. Preliminary panel regression results indicate that increased growth and income per capita would reduce poverty while rising unemployment increases poverty.

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This paper is part of an on-going study on the quality of life in Africa.

1. Introduction

An analysis of the quality of life is becoming an area of interest in modern times because of its policy implications for any economy. Broadly, quality of life implies a good life and a good life is the same as living a life with high quality.

Most Africans have become disturbed about the quality of life in the continent. Despite the supposed rapid growth of per capita income in some countries in Africa, dissatisfaction among citizens grows due to social, political and environmental problems, political upheavals, inflation, and unemployment, among others

The illiteracy rate among the population has steadily been in the increase (ADB, 2015). Although some countries in Africa boast of improvement in general economic indices, it is still important to evaluate the quality of life and issues that border around the concept. This is especially important since economic wealth does not guarantee high quality of life in the continent.

Most economists agree that measuring the quality of life should go beyond GDP or income per capita. After-all, GDP per capita is an average measure and hence does not reflect most of what would constitute inputs in measuring and/or explaining the quality of life. An economy can experience positive GDP growth yet the quality of life in the said country may be nothing to write home about (Ekpo, 2016).

In a series of papers, Dudley Seers (1969; 1975) argued that even if GDP growth doubles but unemployment, poverty, inequality etc are worsening then there is no development. Development must have a human face.

In recent times, the economics of happiness has become an area of study concentrating in explaining quality of life. The components of the quality of life go

beyond economics and includes other aspects of social sciences such as sociology, psychology and geography. Furthermore, issues of quality of life are often examined in the medical sciences. Consequently, theoretical, and methodological issues concerning quality of life is multidimensional and multidisciplinary. We have argued elsewhere that measuring the quality of life in Africa remains a tall order due to data, political and social problems (Ekpo, 2020a). It is an open secret that millions of Africans have no access to the necessities of life such as food, shelter, running water, sanitation, quality health and quality education.

The objective of this paper is to examine the relationship between poverty and selected indicators of the quality of life such as income per capita, employment, growth, openness, and the quality of governance using panel regression methodology. The paper is organized as follows: section 2 of the paper discusses the economic performance of the Sub-Saharan African economy. Section 3 briefly presents the conceptual issues and review of related studies while section 4 presents the preliminary empirical results. Section 5 concludes the paper. It is expected that the inherent discussion would elicit insights and provoke discussion on the subject matter.

2. Performance of the African Economy: Stylized Facts:

Tables 1-4 below provide a summary of the macroeconomic performance of the African economy for the period 2010-2017 with projections for the year 2020. For the period 2010-14, the Central African region registered a growth rate of 5.0 percent while the West African region grew by 6.2 percent. Sub-Saharan Africa and Africa grew by 5.2 percent and 4.7 percent respectively for the period 2010-14 (Table 1 and figure 1 below). Most of the growth were driven by commodity exports and services sub-sector. Except for the Eastern African region, the growth trajectory for the period 2015-2018 was sluggish. Most African economies were in

a recession in 2016 – countries such as Nigeria, South Africa, Kenya, Egypt, Angola, and Zimbabwe experienced economic downturn during the entire period.

In 2016, the growth of per capita GDP was negative and thereafter grew marginally. The projections for the year 2020 have been overtaken by both the sharp decline in revenue earnings from the extractive sub-sector and the effect of the coronavirus pandemic. These episodes have resulted in another economic recession in 2020.

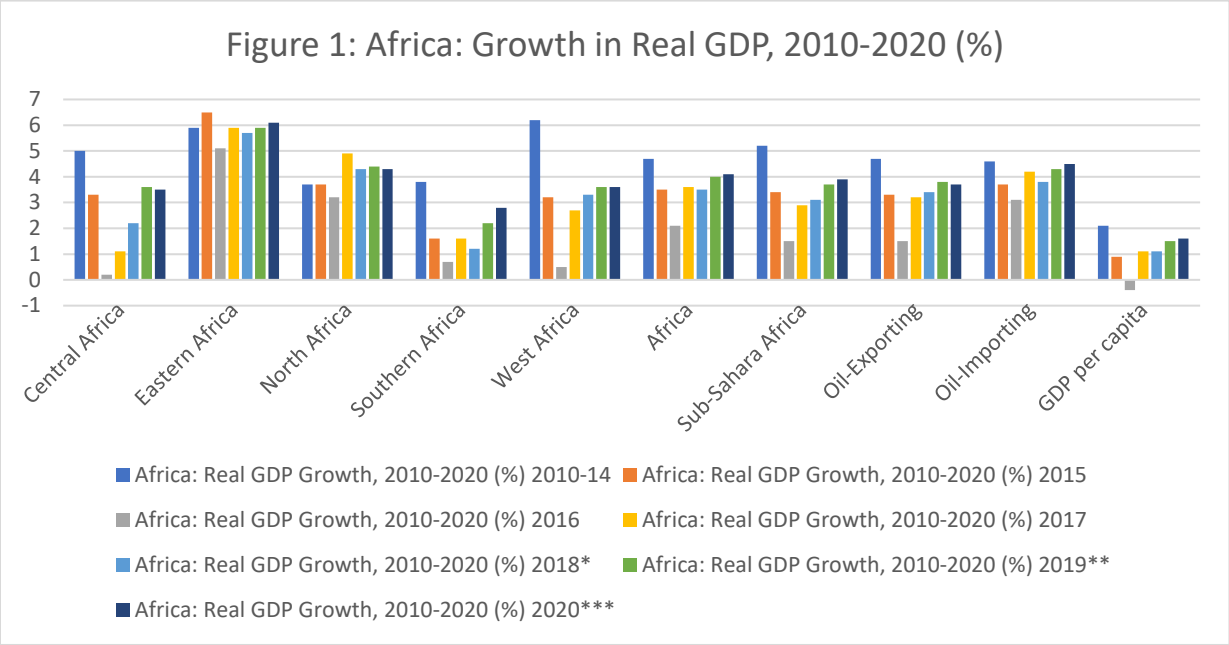
The marginal growth trajectory is driven more by consumption than investment in most of the countries. According to the African Development Bank: "growth remains insufficient to address the structural challenges of persistent current and fiscal deficits and debt vulnerability" (AfDB, 2019, p.1).

The contribution of consumption to real GDP growth declined from 55 percent in 2015 to 48 percent in 2018. However, investment's contribution increased from 14 percent to 48 percent during the same period. But the growth in investment is mainly from the rudimentary services sub-sector which is not linked to manufacturing and portfolio investment with the latter being hot money (see Table A1 in the appendix).

Table 1 : Africa: Real GDP Growth, 2010-2020 (%)

Region	2010-14	2015	2016	2017	2018*	2019**	2020***
Central Africa	5.0	3.3	0.2	1.1	2.2	3.6	3.5
Eastern Africa	5.9	6.5	5.1	5.9	5.7	5.9	6.1
North Africa	3.7	3.7	3.2	4.9	4.3	4.4	4.3
Southern Africa	3.8	1.6	0.7	1.6	1.2	2.2	2.8
West Africa	6.2	3.2	0.5	2.7	3.3	3.6	3.6
Africa	4.7	3.5	2.1	3.6	3.5	4.0	4.1
Sub-Sahara Africa	5.2	3.4	1.5	2.9	3.1	3.7	3.9
Oil-Exporting	4.7	3.3	1.5	3.2	3.4	3.8	3.7
Oil-Importing	4.6	3.7	3.1	4.2	3.8	4.3	4.5
GDP per capita	2.1	0.9	-0.4	1.1	1.1	1.5	1.6

Source: African Development Bank. **African Economic Outlook 2019,** Abidjan.
Notes: *=estimated; **=projected; ***=projected



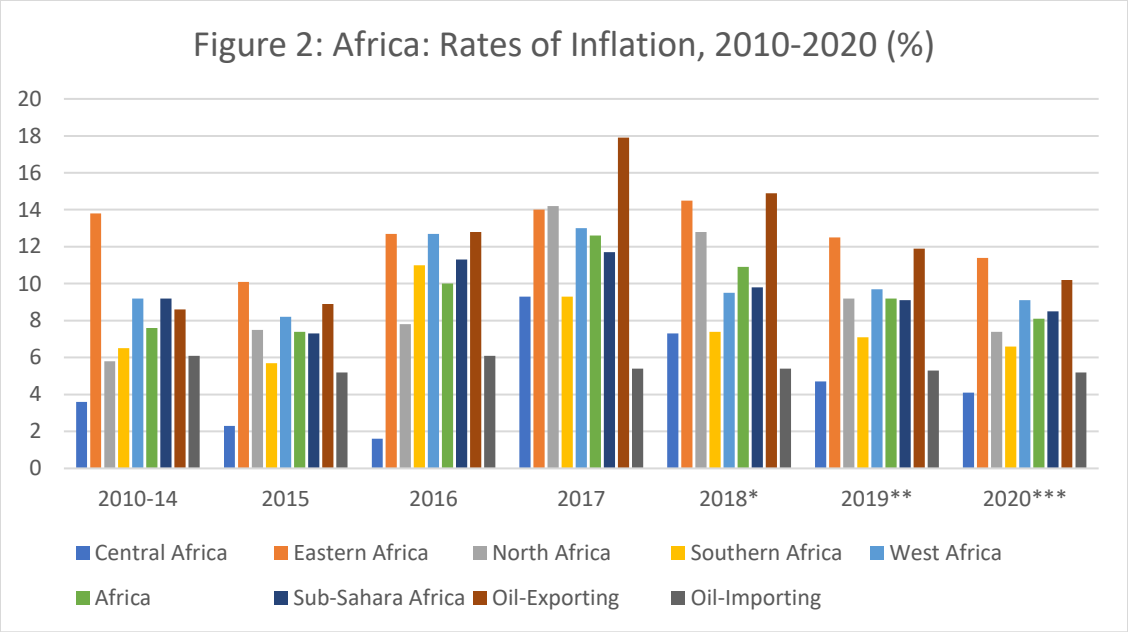
The rates of inflation in Africa varied among the regions (Table 2 and figure 2 below). The Central African region showed moderate rates of inflation for the period 2010-2018. For the period 2010-14, the rate of inflation for the region stood at 3.6 percent but declined to 1.6 percent during the economic downturn of 2016 while increasing to 9.3 percent in 2017. For Africa as a whole, inflation averaged 8 percent for the period 2010-2017. It is interesting that the oil-importing countries had low rates of inflation compared to oil-exporting countries. This may be due to the spending pattern of oil-exporting countries because of increased revenues. Nonetheless, the inflationary pressures on the continent remained stable. The issue is not necessarily having a single-digit rate of

inflation but to ascertain the inflationary threshold for each economy. An economy may have double-digit inflation rate and still have satisfactory economic performance.

Table 2: Africa: Rates of Inflation, 2010-2020 (%)

Region	2010-14	2015	2016	2017	2018*	2019**	2020***
Central Africa	3.6	2.3	1.6	9.3	7.3	4.7	4.1
Eastern Africa	13.8	10.1	12.7	14.0	14.5	12.5	11.4
North Africa	5.8	7.5	7.8	14.2	12.8	9.2	7.4
Southern Africa	6.5	5.7	11.0	9.3	7.4	7.1	6.6
West Africa	9.2	8.2	12.7	13.0	9.5	9.7	9.1
Africa	7.6	7.4	10.0	12.6	10.9	9.2	8.1
Sub-Sahara Africa	9.2	7.3	11.3	11.7	9.8	9.1	8.5
Oil-Exporting	8.6	8.9	12.8	17.9	14.9	11.9	10.2
Oil-Importing	6.1	5.2	6.1	5.4	5.4	5.3	5.2

Source: See Table 1
Notes: *=estimated; **=projected; ***=projected



The overall persistent fiscal balance indicates the pressure on the public finance space in the continent. If the African continent must close the infrastructure gap, then increased capital expenditures remain relevant. The fiscal deficits portray the rising debt profile of several economies in Africa. There is nothing wrong in borrowing to finance capital projects which have long-term positive multiplier effects provided that in addition the returns on such projects would pay the debt incurred.

The tax-GDP ratio in most African countries is less than 12 percent hence the low revenue base. The uncertainty, vulnerability, and fluctuation in the prices of commodity exports affect the revenue drive of most of the African countries. Furthermore, the current account deficits indicate the external weaknesses of the African economies (see Tables 3 and 4 below). The projected decline in current account/GDP deficits in 2020 have been over-shadowed by the global health pandemic. It is the West African region that had positive external balance for the

period 2000-14 and in 2017; all other regions had negative external current account/GDP ratios. Hence, the twin deficits issue would remain a major challenge for the African economy until economic diversification through industrialization become a priority.

Table 3: Africa: Overall Fiscal Balance, including grants (% of GDP), 2010-2020

Region	2010-14	2015	2016	2017	2018*	2019**	2020***	
Central Africa	-0.2	-4.7	-4.0	-3.0	-1.4	-1.0	-0.3	
Eastern Africa	-2.8	-4.5	-3.8	-3.8	-4.1	-3.7	-3.5	
North Africa	-5.9	-14.0	-13.9	-9.6	-6.0	-4.8	-4.1	
Southern Africa	-2.8	-4.4	-4.1	-4.5	-4.1	-4.2	-4.1	
West Africa	-2.5	-3.8	-4.4	-5.0	-4.2	-3.9	-3.9	
Africa	-3.4	-7.0	-7.0	-5.8	-4.5	-4.0	-3.7	
Sub-Sahara Africa	-2.5	-4.2	-4.1	-4.4	-3.9	-3.7	-3.6	
Oil-Exporting	-3.1	-8.5	-8.7	-6.8	-4.5	-3.8	-3.5	
Oil-Importing	-3.9	-4.8	-4.6	-4.6	-4.5	-4.2	-4.0	

Source: See Table 1

Notes: *=estimated; **=projected; ***=projected

Table 4: Africa: External Current Account, including grants (% of GDP), 2010-2020

Region	2010-14	2015	2016	2017	2018*	2019**	2020***
Central Africa	-2.0	-9.0	-9.3	-4.3	-2.0	-1.0	-1.3
Eastern Africa	-6.7	-7.9	-5.9	-5.0	-4.9	-4.6	-4.6
North Africa	-0.8	-8.4	-9.4	-7.4	-5.7	-5.0	-5.0
Southern Africa	-2.6	-6.5	-3.4	-2.1	-2.9	-3.0	-3.3
West Africa	0.5	-4.1	-1.5	0.2	0.4	0.1	-0.2
Africa	-1.7	-6.7	-5.4	-3.6	-3.0	-2.8	-3.0
Sub-Sahara Africa	-2.1	-6.1	-3.8	-2.2	-2.2	-2.1	-2.3
Oil-Exporting	1.8	-6.7	-5.3	-2.8	-1.3	-0.8	-1.0
Oil-Importing	-6.4	-6.6	-5.5	-4.5	-5.0	-5.0	-5.2

Source: See Table 1

Notes: *=estimated; **=projected; ***=projected

There is no doubt that the macroeconomic performance of the African economy had been unsatisfactory and has thus affected indirectly the quality of life. Figures 3 and 4 below show vividly the performance of key economic fundamentals in the Sub-Saharan region. The growth of both capital expenditures and private investment show declining trend. From 2011, the rate of unemployment exceeded that of the growth of GDP mirroring the pattern which existed in the 1990s. However, the selected macroeconomic indicators must be examined along with social indices to better explain the economic performance as well as the quality of life in the continent.

Figure 3. Trends of Inflation, Capital Expenditure and Private Investment in Sub-Saharan Africa

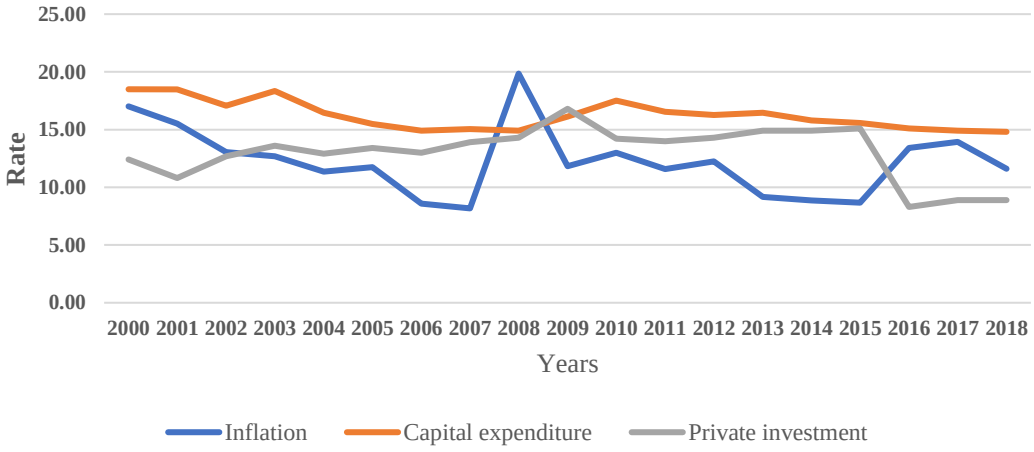
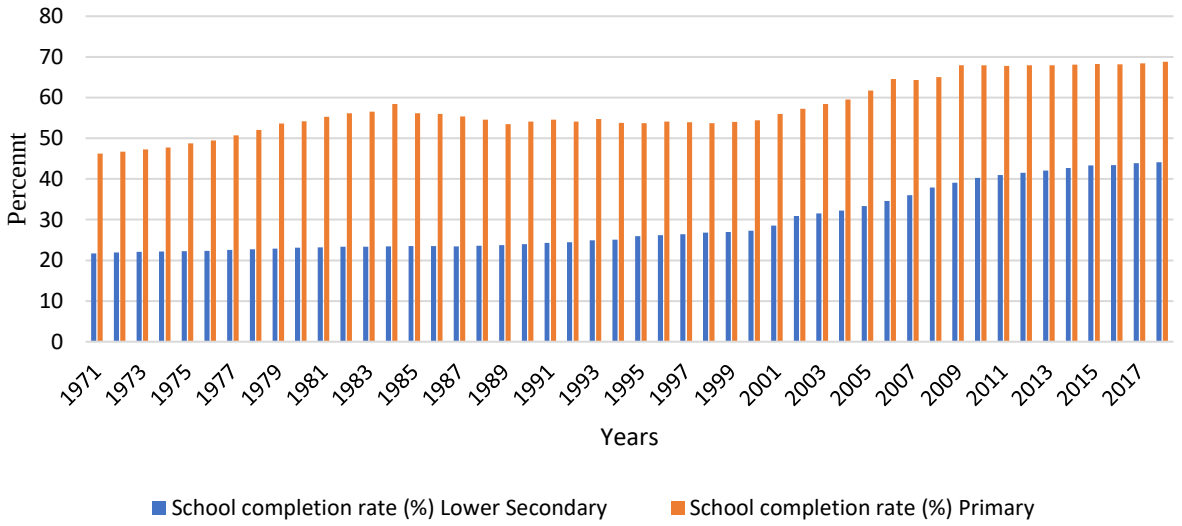


Figure 4.Trends in Unemployment rate and GDP Growth in Sub-Saharan Africa

2.1 Performance of Selected Social Indicators

The education sector in Africa particularly Sub-Saharan Africa has lagged in comparison to other regions. There is high decadence in physical educational amenities, thus reducing the effectiveness of the human resource output. Available data showed that improving the learning levels need to be urgently addressed. Data also showed that the region has the highest rate of education exclusion, with over one-fifth of children within the 6-11 age bracket are out of school. There is relatively low completion rate in terms of primary and lower secondary education as can be seen in the figure below:

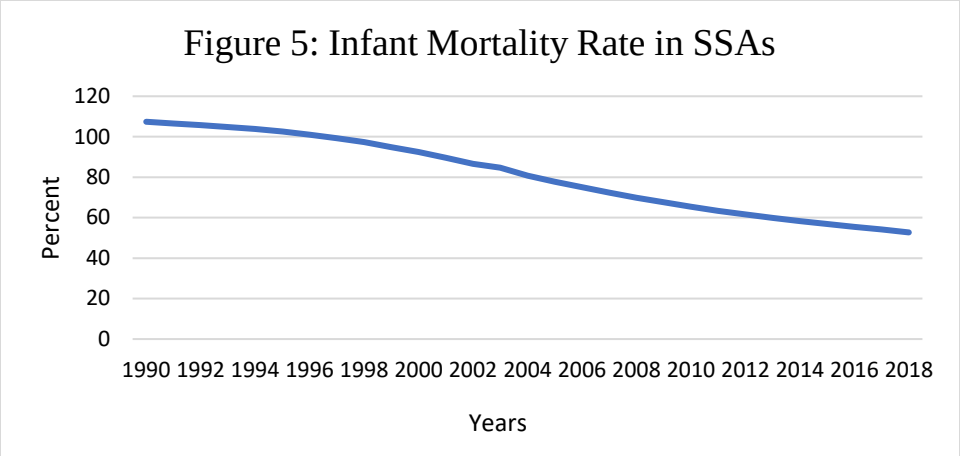
Figure 5:Education Performance in the SSAs



The continuous disparity in educational outcomes between countries in sub-Saharan Africa and other parts of the world has been a recurring problem which has long-term implications.

Sub-Saharan Africa remains one of the regions with modest health outcomes with the region bearing huge disease burden. Some of the resultant consequences of this trend are evidenced by high maternal mortality ratio and under-5 mortality rates (Nkhana and Abdulsalam, 2018).

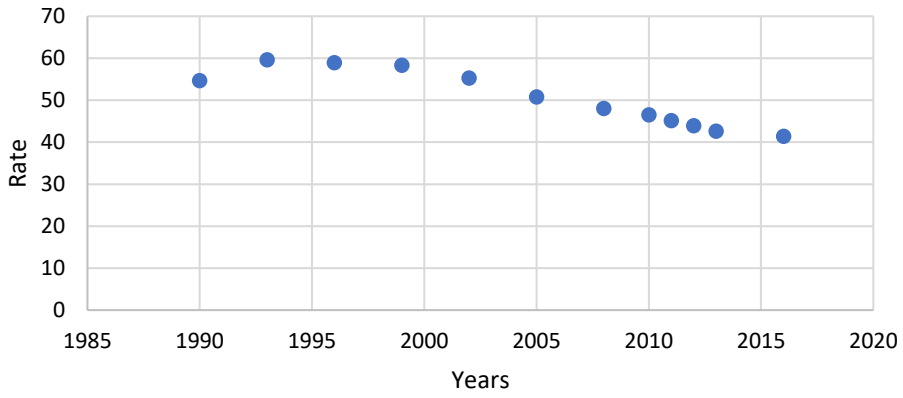
The World Health Organization Report showed that although maternal mortality has been declining steadily through the years (as seen in the figure below), it remains one of the key health challenges in sub-Saharan Africa (WHO, 2015), with some estimated 303,000 maternal deaths in 2015 alone (Ross and Von Xylander, 2016).



The situation above is complicated with increase in the doctor-to-patient ratio, which is mainly caused by massive migration in the health labour force to developed countries. Education and health which constitute human capital formation are crucial factors for sustained economic growth and development. A country which ignores the qualitative development of her health and education infrastructure does so at her own peril and in fact such an economy may never experience development.

Sub-Saharan Africa is a region saddled with **extreme poverty** in many quarters. The region accommodates some of the poorest people in the globe. It is interesting to note that Nigeria, usually recognized as the economic giant in the region was recently called the "*poverty capital of the world*", with some 86.9 million persons living in extreme poverty in the country. The figure below showed the level of poverty in the region in terms of headcount ratio.

Figure 6: Poverty (Headcount ratio) in SSAs



Although poverty statistics are scanty in the region, evidence abound that sub-Saharan Africa is home to the highest percentage of the world's "*poorest of the poor*". If the governments in the region are unable to change the current trajectory, sub-Saharan Africa will be home to some 110 million people living in extreme poverty by the year 2030.

In addition, according to the World Data Lab's Global Poverty Ranking, if the trend continues unabated, by the end of 2030, nine of the 10 countries with the poorest people will be in sub-Saharan Africa, with Nigeria and Democratic Republic of Congo (DRC) taking the first and second position respectively.

Water and sanitation pose another serious challenge for SSA. Reports showed that in terms of accessibility to portable water and decent sanitation facilities, sub-Saharan Africa has fared relatively low. Despite the various governments' efforts in establishing and sustaining various water, sanitation and hygiene (WASH) systems and services, health issues emanating from inaccessibility of clean water and sanitation facilities still ravage the region.

For instance, in various parts of the region, recurrent outbreaks of water borne diseases such as cholera has continued to afflict the populace, since an insignificant minority is able to access portable and clean water especially in rural

communities, while a huge proportion of the population lack access to basic sanitation facilities (UNDP, 2007).

According to (UNDESA, 2012, p.1)

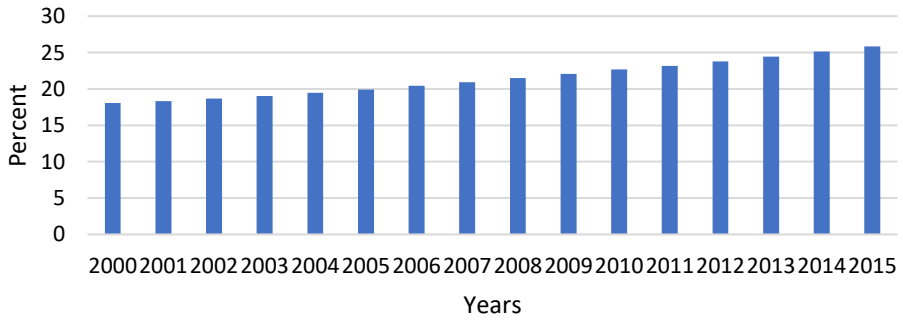
"Sub-Saharan Africa experiences a contrasting case with 40% of the 783 million people without access to an improved source of drinking water from the region. Sub-Saharan Africa is off track from meeting the MDG on water with just 61% water coverage and with the current pace cannot reach the 75% target set for the region."

The Report also presented a bleak scenario in terms of access to sanitation facilities:

"Sub-Saharan Africa has a startling 30% coverage with only a 4% increase from 1990. This is a serious concern because of the associated massive health burden as many people who lack basic sanitation engage in unsanitary activities like open defecation, solid waste disposal and wastewater disposal. The practice of open defecation is the primary cause of faecal oral transmission of disease with children being the most vulnerable" (UNDESA, 2012, p.1).

The figure below shows the trend in access to quality water in the region. Though the figure depicts a steady rise, the growth in the accessibility rate is relatively low. As of 2015, it was barely above 25 percent.

Figure 7: Accessibility to Quality Water in SSAs



3. Conceptual Issues and Review of Related Studies[3]

Several studies have addressed the issue of the quality of life conceptually and empirically. (Brauer and Dymitrow, 2014; Hrehorowicz-Gaber, 2013; Andrasko, 2013; Kacmarova et al., 2013; Tej et al., 2012; Masik, 2010). Some scholars argue that the subject matter is multidimensional:

> **"Quality of life is a result of mutual interaction of social, health, economic and environmental conditions, which are connected to human and social development. It represents, on the one hand, the objective condition for a good life and on the other the subjective experience of living a good life. The objective side of quality of life is about the fulfilling of social and cultural needs, depending on sufficiency of sources, and social acceptance of an individual and their physical health***"*** (Hornak and Rochovska, 2007, p. 55).

Murgas (2005) conceptualized that quality of life "is formed by somatic, psychological, social and economic goods which result in a subjective feeling of happiness or satisfaction - challenged by health, sociopath logical, economic and environmental 'bads'" (Murgas, 2005, p. 66)

Felce and Perry defines quality of life as "an overall general wellbeing that comprises objective descriptors and subjective evaluations of physical, material, social, and emotional wellbeing together with the extent of personal development and purposeful activity, all weighted by a personal set of values" (Felce & Perry, 1995, p. 51).

[3] This section draws from Ekpo, A.H (2020)"Theoretical and Methodological Issues in Measuring Quality of Life in Africa", **Nigerian Journal of Economic and Social Studies,** forthcoming

For its part, the World Health Organization (WHO) defines quality of life as "an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns" (WHOQOL Group, 1994, p. 24).

In economics, quality of life is viewed as an economic good. Wingo (1973) offers three reasons for this conclusion:

- Quality of life is scarce. Thus, there is often a trade-off between it and other economic goods to satisfy the needs of individuals.
- Decisions made by households and businesses are hugely determined by the quality of life.
- Community resources are often allocated to achieve quality of life thus making a public good.

According to Moller, *et al*., (1987) irrespective of the population or indicator(s) employed, quality of life should cover the following domains: food, shelter, education, wages, health and financial security.

After a clear analysis of various studies on the quality of life, Lambiri *et al*., (2006) classified the similarities of the studies into six basic groups:

- natural environment (climate, state of natural environment, etc.),
- built environment (type and state of building, etc.),
- socio-political environment (community life, political participation, etc.),
- local economic environment (local income, unemployment, etc.),
- cultural and leisure environment (museums, restaurants, etc.),
- public policy environment (safety, health care, education provision, etc.)

The human development index of the UNDP combines three indicators of well-being: life expectancy, GDP per capita and educational attainment, including adult literacy and enrolment in schools and universities. It is apparent that the quality of

life is broader than economic output and living standards. It includes what people value in life beyond its material aspect, job and health status to social relationships, security and governance.

The above discussion connotes the fact that the quality of life is difficult to analyze and measure. Nonetheless, let us examine its implications for Africa.

3.1 Measuring quality of life in Africa: Theoretical Issues

In measuring the quality of life in Africa, one basic theoretical issue to tackle is that of the appropriate approach to adopt. There are basically two approaches to the quality of life:

(i) Objective approach

This approach is also referred to as the "Scandinavian approach". It comprises the use of indicators or instruments which are both social and economic in nature. It looks at the quality of life in an environment based on available resources to the individual in order to satisfy his needs. The resources include, among others, income, education and security.

(ii) Subjective approach

The subjective approach is also known as the "American approach" which has its foundation in utilitarianism (level of satisfaction). Within this context, individuals are given the opportunity to evaluate the level of the quality of life they are leading. Assessment of quality of quality of life subjectively by individuals is adjudged to likely be biased due to individual-specific adaptation and response to the given environment (Bacova, 2008). The basic indicators of the quality of life under this approach are seen as subjective and can alone be assessed by the individual under assessment.

Eid and Diener (2003) asserted that subjective approach to quality of life has to do with assessing one's life using cognitive and affective reactions to life in a multidimensional assessment profile

Some of the theoretical issues emanating from the approach to measuring the quality of life include the following:

- Clarity between the boundary of objective and subjective indicators
- Indices to measure subjective indicators
- The relationship(s) between objective and subjective indicators

There are several theories which attempt to examine the measurement of quality of life. Liu (1977; Bucur, 2014) provide the political and mathematical approaches to measuring the quality of life. However, these approaches have implications for Africa. The approaches did not consider the measurement, analytical, cultural and ideological matters influencing the quality of life in Africa. (Ekpo, 2020a).

3.2 Empirical Model and Data

Based on the conceptual, theoretical and brief review of related studies, we specify the following model:

$$Pov = f(Yp; Xi) \qquad (1)$$

Where:

Pov = poverty incidence measured as poverty headcount of $1.90 a day;

Yp = income per capita; and

Xi = several control variables which have bearing on the quality of life such as growth in GDP (Δy), rate of inflation (infla), unemployment (Unemp), openness (Opn), and governance (Gov).

It is broadly assumed that increased income per capita should reduce poverty and invariable improve the quality of life. From the control variables, the argument is that high rates of inflation affect the poor hence increased rates of

inflation would accentuate the poverty situation. Furthermore, both reduced rates of employment as well as trade via openness should reduce poverty and improve the quality of life. It should be stated that these assertions are preliminary.

The data set is from the World Bank Indicators and the African Development Bank statistical data bank. The data were subjected to time series diagnostics to reduce spurious regression results. Data were available for 38 African countries (see appendix for the list of countries).

4. Analysis of the Empirical Results

Using panel regression method, we estimated equation (1) and the results are presented in Table 5 below. The low R2 is normal for panel regression hence it is not out of place. The result though preliminary is respectable. At least 40 percent of the variance is explained by the independent variables.

Table 5. Fixed Effect Panel Regression Results

Duration: 1981-2018. No of Observations: 798

Number of countries: 38. Dependent variable: Poverty Incidence

Poverty	Coefficient	Standard Error	t-score
Δy	-1.272	0.645	1.97**
Infla	-1.412	1.332	1.06
Yp	-0.370	0.085	4.36*
Opn	0.043	0.024	1.76
Unemp	0.337	3.065	0.11
Constant	12.579	22.871	0.55

R2 = 0.41; F(38, 158) = 6.77; *=significance at 1%; **significance at 5%

The results indicate that a one percent increase in growth would reduce poverty by 1.2 percent and it is statistically significant. The rate of inflation is negatively related to poverty which is contrary to expectation though not statistically significant. Increased per capita income reduces poverty by less than

one percent. Both openness and unemployment are positively related to poverty; increased rate of unemployment increases poverty as expected but openness has the contrary expectation – they are both statistically insignificant.

It should be noted that the results are preliminary hence should be interpreted with caution. A more robust analysis encompassing relevant development variables and different conceptualization of poverty would be undertaken in due course.

5. Conclusion

The stylized facts on the African economy indicate that the macroeconomic performance was unsatisfactory with different regions exhibiting varied growth trajectories. The sluggish growth for the period 2010-2017 was driven by commodity exports and increased household and family consumption. The inflationary pressure was minimal on the continent. Between 2012-2017, the rate of unemployment exceeded the growth in GDP which is not too health for all the regions. On the social indicators performance, SSA lagged behind other regions in health, education and sanitation (see Table A4 in the appendix).

The preliminary regression results were mixed and needs to be interpreted with caution. While the growth in GDP, income per capita and unemployment had the expected signs, rate of inflation and openness were off-track. However, more estimation would be undertaken to determine the precise relationship between quality of life and relevant socio-economic variables.

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Appendix

List of Countries

S/N	Countries
1	Angola
2	Benin
3	Burkina Faso
4	Botswana
5	Central African Republic
6	Cote d'Ivoire
7	Cameroon
8	Congo, Dem. Rep.
9	Congo, Rep.
10	Comoros
11	Gabon
12	Ghana
13	Guinea
14	Gambia, The
15	Guinea-Bissau
16	Equatorial Guinea
17	Kenya

18	Liberia
19	Lesotho
20	Madagascar
21	Mali
22	Mauritania
23	Mauritius
24	Malawi
25	Namibia
26	Niger
27	Nigeria
28	Rwanda
29	Sudan
30	Senegal
31	Sierra Leone
32	Seychelles
33	Chad
34	Togo
35	Tanzania
36	Uganda
37	South Africa
38	Zimbabwe

Table A1: Africa Structure of Output (As share of GDP %)

	2007	2014
Agriculture	16.2	16.3
Total Industry	36.7	30.9
Manufacturing	10.1	11.2
Services	46.1	52.8

Source: See Table 1.

Table A2: Decomposition of Annual Growth in Labour Productivity in Selected Countries in Africa

	1975 – 1990			2000 – 2013		
Country	Average Annual Labour	Within Sector Labour	Between Sector Labour Productivity	Average Annual Labour	Within Sector Labour	Between Sector Labour Productivity

	Productivity Growth	Productivity Growth	Growth (Structural Transformation)	Productivity Growth	Productivity Labour	Growth (Structural Transformation)
Botswana	3.77	1.34	2.43	2.38	2.23	0.15
Egypt	4.47	3.56	0.91	3.14	2.43	0.70
Ethiopia	-1.63	-1.59	-0.03	2.07	1.63	0.44
Ghana	-1.31	-1.33	-0.03	2.20	1.07	1.14
Kenya	-0.02	-0.44	0.42	0.71	-0.02	0.73
Malawi	-0.55	-0.49	-0.06	0.60	-0.61	1.21
Mauritius	2.80	2.00	0.80	4.94	-4.18	0.76
Nigeria	-1.04	-1.48	0.44	2.88	2.98	-0.11
Senegal	-1.78	-2.31	0.53	0.76	-0.12	0.88
South Africa	0.05	-1.03	1.08	3.72	3.40	0.32
Tanzania	0.03	-0.16	0.19	1.21	0.34	0.87
Zambia	-0.80	0.09	-0.89	1.85	1.76	0.09
Average	0.33	-0.15	0.49	2.21	1.61	0.06

Source: African Economic Outlook, AfDB, P.9

Table A3: Infrastructure Access data for selected Global Reforms in 2013

Indicator	Africa	Asia	Europe	Latin America
Transport Paved road density (Km of paved road per 100 km^2 of land area	2	25	122	3
Railway lines (Km)	46,380	197,610	85,986	89,002
Information & Communication Technology Fixed broadband subscriptions per 100 population	1	6	15	9
Mobile cellular and subscriptions per 100 population	73	85	119	115
Power Electricity Production per capital (Kwh)	572	1,930	3,355	2,116
Electricity access (% of total population)	46	88	100	97

Water Supply and Sanitation Improved water (% of total population)	69	90	99	94
Improved sanitation (% of total population)	39	61	93	82

Source: AfDB Statistical Year Book

Table A4: Adult Illiteracy Rate in Selected Africa Countries (%)

County	2001 – 2005	2006 – 2010	2011 – 2015
Angola	32.59	-	29.04
Botswana	18.81	-	12.11
Egypt	28.59	30.79	25.28
Ethiopia	67.14	61.00	50.91
Ghana	-	28.50	23.42
Kenya	-	27.84	22.03
Malawi	-	38.69	34.21
Mauritius	-	-	10.07
Nigeria	45.23	48.92	40.43
Rwanda	-	34.15	30.58
Senegal	60.72	54.21	48.82
South Africa	-	8.50	6.30
Tanzania	30.57	32.20	20.35
Uganda	31.86	27.71	27.97
Africa	41.17	37.03	37.03

Source: African Statistical Year Book 2016, AfDB