

Measuring Inclusive Growth in Nigeria: An Application of the Social Opportunity Function

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Abstract

Inclusive growth, pro-poor growth and broad-based growth are all terms used to explain growth processes that enables the entire population including the poor to actively participate and benefit from the growth process. In the last two decades Nigeria's GDP has averaged at about 7%, indicating a fast-growing economy. Despite having a high GDP growth rate, it has not translated to improved standard of living for majority of the people, rather the level of poverty is on the increase. Income inequality has also widened in the country. This clearly shows that increase in GDP alone is not a sufficient condition for reduction in poverty and inequality. In order to avoid the problem of unwanted labour reserves with high growth rate, it is important to make growth inclusive. This study utilised the opportunity index to analyse the growth and equity dimension of inclusive growth across the entire population distribution. Cross sectional data obtained from the General Household Survey (GHS) 2015, by the National Bureau of Statistics was used. This study revealed that inclusive growth was not achieved in the area of employment, provisions of health care in the private and rural health institutions, secondary and tertiary education.

1. Introduction

Inclusive growth is a broad based concept that cuts across different sectors of the economy. It is growth that encompasses equity, equality of opportunity in terms of access to markets, employment, resources and regulatory environment that provides a level playing field for all. It is a growth process that emphasizes active participation of the poor, creates new opportunities for everyone and ensures equal access to the opportunities created. Thus, inclusive growth is a pattern of economic growth which are interlinked and assessed together with the aim of reducing poverty and taking part in the shared prosperity together (UNDP, 2017; ADB 2010).

Economic growth although a necessary condition for poverty reduction is not a sufficient condition. Growth can overlook the poor or marginalized groups resulting in increased inequality. High and rising levels of income inequality can lower the impact of poverty reduction of a given rate of growth (Ali and Son, 2007). High inequality is inimical to political stability and social cohesion needed for sustainable growth. Consequently, increasing level of inequality in the developing countries has directed the attention of policy makers towards the new development policy of inclusive growth.

Although, there has been no consensus on how to define and measure inclusive growth, but the thrust of inclusive growth is ensuring that the economic opportunities generated by growth are accessible to all especially the poor. The focus is that the growth process creates new opportunities but the poor are generally constrained by market failures that makes it impossible for them to access these opportunities. As a result, the poor benefit less from growth than the non-poor. Ali and Son (2007) define inclusive growth as economic growth that not only creates new economic and social opportunities but also one that ensures equal access to the opportunities for all segments of the society irrespective of their socio-economic circumstances.

The Nigerian economy in the last decade had experienced an average annual growth rate of 7.4 percent (see African Economic outlook, 2012). This was before the economic recession in 2016. Yet, economic growth had not impacted significantly on the level of poverty and income inequality in the country. The Brookings Institution in June 2018, stated that Nigeria had overtaken India, as the poverty capital of the world, with 86.9 million living below the \$ 1.90 a day. The Gini coefficient which is a measure of income inequality has increased from 42.97–54.88% in 2009 and 2015 respectively indicating that opportunities from economic growth has been unequally distributed and the gap between the poor and the non-poor widened overtime. Income inequality originates from unequal opportunities despite economic growth (Adedeji et al., 2013).

Limited studies exist for Nigeria on inclusive growth. Available studies have only focused on the relationship between inclusive growth and its determinants (Tella and Alimi, 2016; Oluseye and Gabriel, 2017). Other studies have considered achieving inclusive growth through intervention in a particular sector of the economy such as medium scale enterprises (Oseni and Oseni, 2015).

An area that has not received consideration is the assessment of inclusive growth performance in Nigeria with particular emphasis on how access and equitable distribution of opportunities created by economic growth could benefit the entire population and particularly the marginalized in the society. Creation of economic opportunities and achieving equitable access to such opportunities by all irrespective of their socio-economic stand in the society is a prerequisite for inclusive growth and sustainable development (Samir and Sajid, 2011). Applying the concept of the social opportunity function this study focuses on a dynamic rather than static assessment of whether inclusive growth has been achieved overtime. This is done by determining firstly, if there has been an increase in the average opportunities available for all especially the poor in the area of employment, education and health. Secondly, whether the opportunities created have been equitably distributed. We focused on education and health because these aspects of human capital are key for the proper functioning of the individual and enhances their social, intellectual and financial capabilities making them better suited for the employment market.

This study made methodological contribution to the literature on inclusive growth in Nigeria by employing the social opportunity function in assessing whether inclusive growth has been achieved in Nigeria. The specific objectives were (i) to estimate the opportunities available to the poor in terms of employment, education and health; and (ii) investigate if the opportunities created were equitably distributed.

The paper was organised as follows; section two presents stylized facts about the study components, followed by a review of related literature in section three. Section four discusses the methodology while in section five empirical results are presented.

2. Stylized Facts On Education, Health And Unemployment In Nigeria

Education and Health

In Nigeria, primary education is officially free and compulsory for children aged 0-15 years, yet about 10.5 million children aged 5-14 years are not in school. Only 61 percent of children 6-11 year olds regularly attend school.

In response to the 1990 world conference on Framework Action on Education for All (EFA), the Nigerian government launched the Universal basic Education (UBE). The UBE is basic education for children aged 0-15 years and it is free, compulsory, universal and qualitative. The essence of the UBE is to ensure that as many children of school age as possible get access to basic education at the primary and secondary level. This was a way of reducing the level of illiteracy in the country, while improving their numeracy skills as well as developing their understanding of the world. Basic education in Nigeria covers formal compulsory schooling consisting of six years at the elementary level, three years at the junior secondary education and three years of senior secondary education.

Over the years a remarkable increase has occurred in access to primary and secondary education. The gross primary school enrolment rate in primary education was 93.67 percent as of 2013. Although there have been fluctuations in the school enrolment rate over the years, it reached a maximum of 112.81 percent in 1983 and a minimum value of 40.84 percent in 1990. While net primary enrolment was 63.84 percent as of 2010. Secondary school enrolment though significantly lower than primary school enrolment, reached a maximum value of 55.70 percent as of 2013 and a minimum value of 4.41 percent in 1970 (see Table 1)

In terms of health, the public and private sectors provide health care in Nigeria. Besides being a major health services provider the government formulates and designs health policy as well as manages the health system. The private sector accounts for 38 percent of all registered facilities in the country, of this 25 percent are at the secondary care level, while 75 percent are primary care FMOH, (2009) in Toyib Olaniyan, (2015). The public health sector on the other hand is built on the basis of the three tier government structure in Nigeria. The local government is responsible for primary health care, while the state government provides care at the secondary level through the general hospitals. The specialists' hospital provide the highest level of care and they are controlled by the Federal Ministry of Health. They serve as the last point of referral from the primary and secondary care levels. Public health sector is mainly financed by the government and expenditure consists of recurrent and capital spending from government budgets, external borrowing, grants and social health insurance funds. Due to reforms in the health sector, key health indicators have improved. While the mortality rate (under 5) fell from 285 per 1,000 live births in 1970 to 100.2 in 2017, the life expectancy has increased from 41 years in 1970 to 55 years in 2019. This means Nigeria has the lowest life expectancy among many countries giving the country a low world life expectancy ranking of 178.

Table 1: Education and Health Indicators in Nigeria

Indicators	1970	1980	1983	1985	1990	1995	2000	2005	2010	2013	2015	2016	2017	2018
School enrolment, primary (% gross)	40.84	94.62	112.81	106.03	86.26	89.06	98.36	100.93	84.72	93.67	na	na	na	na
School enrolment, primary (% net)	na	Na	na	na	na	na	64.87	66.57	63.87	Na	na	na	na	Na
School enrolment, secondary (% gross)	4.41	13.60	25.04	29.17	24.60	na	24.46	34.70	43.84	55.70	na	na	na	na
Mortality rate, under 5 (per 1000 live births)	285.70	214.50	208.70	209.90	212.90	208.30	187.40	157.90	129.60	115.60	108.00	104.30	100.2	120.0
Life expectancy at birth, total (years)	40.97	45.33	46.02	46.12	45.90	45.85	46.27	48.25	50.85	52.12	52.98	53.43	na	55.2

Unemployment

Nigeria has one of the world's highest economic growth rate averaging 7.4% (according to Nigeria's Economic Report, released by the World Bank, July 2014). Yet over 80 million Nigerians, that is, about 42.4% of the population currently live below the poverty line of \$1.90 per person per day, coupled with high rates of unemployment.

Unemployment in Nigeria is wide spread and cut across all facet of age group and educational strata. Figure 1 revealed that the level of unemployment in Nigeria had fluctuated over the years. It rose from 4.3 percent in 1970 to 6.4 percent in 1980 and rose to 7.0 percent by 1987. This increases in unemployment rate can be attributed to economic downturn in the 1980s as a result of a sudden fall in the price of crude oil. In order to stabilise the economy the government introduced various stabilization measures such as import restriction, embargo on employment and the Structural Adjustment Programme (SAP). The core objectives of these structural reforms was a total restructuring of the economy, however, the reforms did not yield the desired results. Even though, SAP was geared towards encouraging greater employment opportunities especially in the private sector, the unemployment rate continued to rise. The situation was further compounded by the continuous retrenchment and placement of embargo on employment in the public sector (Obadan and Odusola, 2001). Unemployment rate consistently fell for 7.0 percent in 1987 to 1.8 percent in 1995, after which it rose to 13.1 percent in 2000. It declined to 11.9 percent in 2005 and rose again from 12.3 percent in 2006 to 21.1 percent in 2010. It rose to an all-time high of 23.9 percent in 2011 and declined again to 9.0 percent in 2015, it is currently 23.1 percent as at third quarter of 2019.

3. Literature Review

Inclusive growth has been defined and explained in various ways, but the basic idea of inclusive growth is that it must be equitable such that the level of poverty is greatly reduced. It also focuses on ensuring that the economic opportunities created by growth are available to all, particularly the poor. Even though, economic growth brings with it greater material prosperity, it is not always true that the benefits are shared equitably in society so as to bring about improvements in the distribution of income. Therefore, for inclusive growth to be sustainable in the long run, it should broad based across sectors and equitable, Berg and Ostry, (2011).

Various methods have been used to measure inclusive growth, Joao Tovar Jalles and Luiz deMello, 2019, in a cross country study comprising 78 countries estimated logit and multinomial probit models to empirically determine episodes of inclusive growth. They focused on a series of episodes linking growth to income distribution. It was shown that, human capital accumulation, labour force participation, trade openness and a range of institutional characteristics including political systems durability were powerful determinants of the probability of the occurrence of inclusive growth episode. On the other hand, inflation and joblessness and economic volatility were detrimental to growth inclusiveness. The Autoregressive Distributed Lag Bound testing approach and the Error Correction Model were used by Oluseye and Gabriel (2017), to estimate the long-run equilibrium (co-integration) among the variables. They found that, initial income, foreign direct investment, capital formation, inflation, population growth, expenditure on education and government consumption are determinants of inclusive growth in Nigeria. Anand et al, 2013, employed an integrated methodology that directly link the micro and macro dimensions of inequality and growth, that reflects both the pace and distribution of income growth. They showed that macroeconomic stability, human capital development and structural changes and education levels were very important determinants of inclusive

growth. Structural changes such as trade openness and Foreign Direct Investment also foster inclusive growth. Ali and Son (2007), introduced the idea of a social opportunity function that is similar to a social welfare function to measure inclusive growth. They define growth as inclusive if it increases average opportunities available to the population and how the opportunities are shared among the population. Some of the key elements in inclusive growth process to be taken note of include (i) creating employment opportunities and promoting higher productivity (ii) developing human capabilities through adequate investment in basic social services of education and health; and (iii) providing social safety nets and targeted interventions to help those who suffer from extreme deprivation. They applied the social opportunity function by examining shifts in the opportunity curves in the Philippines. They found that, if the opportunity curve shifts upward, it suggests growth is inclusive this means that growth is increasing average opportunities available as well as increasing the opportunities of the poor that belong to the bottom of the income distribution. Adedeji, et al., (2013), applied the social opportunity function to selected African countries. Unlike Ali and Son (2007), they extend further by creating an equity index of opportunity that measures equity in access to education and health services. They found upward sloping opportunity curves for primary school enrolment, indicating that primary education opportunities were equitably distributed in these countries. There was also improvements in access to health care services, that is, there is increased average opportunity and improved distribution to health care services. They established increase in average access, distribution and opportunities for education and health in these selected African countries. Tella, et al., (2016) also focused on the role of health and population growth in inclusive growth in 14 selected countries. They used the fixed effect method to determine the inclusiveness. However, population growth of African countries deteriorated the level of inclusive growth.

4. Methodology

Inclusive growth is measured using the concept of the social opportunity function which is an offshoot of the utilitarian social welfare function. Within this framework inclusive growth is achieved when the social opportunity function is maximized. This depends on increasing the average opportunities available to the population and the equitable distribution of the available opportunities among the population. Greater weights are associated with the opportunities enjoyed by the poor. Such weighting ensures that the opportunities created for the poor are greater than those for the non-poor. Emphasis is that the extra opportunities are created for the poor without making the non-poor worse-off.

Following Ali and Son (2007), supposing there are n persons in the population having incomes $x_1, x_2, x_3, \dots, \dots, x_n$ where the poorest individual in the population is x_1 and the wealthiest x_n . The social welfare function W which is an increasing function of income x is specified as;

$$W = W(x_1, x_2, \dots, \dots, x_n) \quad (4.1)$$

Similarly, the social opportunity function O is expressed as an increasing function of income x . The Social opportunity function is denoted as

$$O = O(y_1, y_2, \dots, \dots, y_n) \quad (4.2)$$

Where y_1 denotes the opportunity enjoyed by the 1^{th} person having income x_1 .

Opportunity is expressed in the form of access to health, education or employment. y_1 can take the form of a binary value of 0 and 100, when the i^{th} person has access to a specified opportunity, it takes a value of 100, that is, having access to employment and 0 if there is lack of access. The percentage of the population, QN that has access to a given opportunity is denoted by the opportunity curve as;

$$Y^*(Q) = \left(\frac{\sum_i^{QN} y_i}{QN} \right) \quad (4.3)$$

Where; the cumulative percentage of the population is denoted by Q . Given, that y_i is a binary number which assumes the value 0 or 1, the average opportunity $Y^*(Q)$ is analogous to the percentage of the population having access to a particular opportunity. Maximizing $Y^*(Q)$ is a necessary but not sufficient condition in determining if inclusive growth has been achieved. To perform of a comprehensive assessment of inclusive growth, considering the distribution of opportunities across different income groups in the population is essential. Including distribution concerns requires that the opportunity function satisfy the transfer principle. The transfer principles connote that the transfer of opportunity from a non-poor individual to one who is poor will enhance the social opportunity function. This is captured by the opportunity curve.[1] The opportunity curve also referred to as the partial approach to measuring inclusive growth is useful for determining the growth pattern in terms of access and equity of opportunity. However, it does not quantify the exact amount of change that has occurred in opportunities overtime.

To capture the magnitude of changes in opportunities overtime, the social opportunity function is utilized and an index from the area under the opportunity curve which is analogous to the concentration curve is estimated. The opportunity index is obtained as twice the area under the generalized concentration curve. This is denoted as;

$$OI = 2 \int_0^1 Y^*(Q)C(q)dq = Y^*(Q)EIO \quad (4.4)$$

Where; $EIO = 1 - C$ is the equity index of opportunity and C the concentration index of opportunity. If EIO is greater (less) than 1 then opportunity is equitable (inequitable). The equation shows that the opportunity index is a product of the average opportunity and the equity index of opportunity (Son, 2011).

To ensure inclusive growth OI must increase, this can be achieved by increasing the average opportunities $Y^*(Q)$ or increasing the equity index of opportunity EIO , or increasing both the average opportunities and the equity index of opportunities. Differentiating both sides of equation 4.4

$$dOI = Y^*(Q)dEIO + EIOdY^*(Q) \quad (4.5)$$

Where dOI quantifies the changes in magnitude of growth inclusiveness. Growth inclusiveness is increased if dOI is > 0 . The first term on the right side of equation 4.5 is the contribution to growth inclusiveness as a result of a change in the distribution of opportunities when the average opportunity remains constant. The second term show the contribution of changes in the average opportunity to the inclusiveness of growth when the distribution of opportunity remains unchanged. The policy implication of the above formulation is that if there are improvements in the average opportunities accessible to the population and if these opportunities are distributed equitably then growth inclusiveness can be achieved.

The data utilized in this study to determine access and equity of opportunity was the General Household survey (GHS) which contains micro level information about the household. The GHS was conducted by the Nigerian

National Bureau of Statistics in collaboration with the Federal Ministry of Agriculture and Rural development and The World Bank Living Standards Measurement Study (LSMS) team as part of the Integrated Surveys on Agriculture (ISA) program. It is a nationally representative survey of 5,000 households which are also representative of the six geopolitical zone in Nigeria which are grouped into urban and rural areas. The GHS offers information on demographics; education; healthcare utilization, labour, food and non-food expenditure. Specifically, two sets of the General household survey (GHS) of the National Bureau of statistics in Nigeria, 2012-2013 and 2015-2016 were utilized in the analysis. For 2012-13 we utilized 4,755 households in the study, while 2015-16 3,442 households were utilized.

[1] For more information on the application of opportunity curve in the measurement of inclusive growth see Ali and Son (2007), Adedeji, Du and Opoku-Afari (2013).

5. Empirical Illustration

The full approach to measuring inclusive growth was applied in this study. It was used to obtain estimates of the Average Opportunity ($Y^*(Q)$), Opportunity Index (OI) and the Equity Index of Opportunity (EIO). These estimates are a prerequisite for evaluating the changes in access to health, employment opportunity and education. They also help to quantify how equitably these opportunities have been distributed overtime across the various socio-economic groups of the population.

5.1 Access to Employment Opportunities in Nigeria

The result from table 5.1 on access to employment opportunity showed that in 2012-13, approximately 43.7 percent of the male population was employed. This figure declined to 31.8 percent in 2015-16. These finding suggest that less than half of the male population was employed for the two periods. The EIO (1.02) and (1.03) for 2012-13 and 2015-16 respectively and was greater than 1. The results suggested that there was an equitable distribution of job opportunities for the male population across the income groups which improved over the two year period. The decline in the OI from 44.4 percent to 33.8 percent in 2012-13 and 2015-16 periods respectively confirmed that inclusive growth was not achieved. This could be attributed to the decline in the job opportunities available to them.

In 2012-13, the distribution of employment opportunities in the female population was not equitable. The EIO (0.99) was less than 1. The EIO estimate (1.05) was greater than 1 in 2015-16 indicating that employment opportunities were equitable distributed and skewed towards females on the lower end of the income distribution. Notwithstanding the improvement in the EIO in the second period, less than half of the female population had access to job opportunities for the two periods. This was despite the increase in the job opportunities available to women from 40.1 percent to 41.1 percent over the two periods. The OI improved from 39.9 percent to 43.2 percent. These findings confirm that moderate growth inclusiveness had been achieved in access to job opportunities for women.

In the first period, at lower income levels on the average, men tended to have access to more employment opportunities than the women. The distribution of job opportunities was also more equitable for the males than females. By the second period, the EIO for both male (1.02) and female (1.05) was greater than 1, confirming a more equitable distribution of job opportunities for female population on lower part of the income distribution. The access to employment opportunity was higher for females than males. An estimated 41.1 percent of women were employed compared to 31.8 percent of the men. These finding could be attributed to the increasing education of women and

the shift from the more traditional roles of full-time housewives and care givers to taking up jobs both in the formal and informal sectors of the economy.

Table 5.1: Opportunity for Access to Employment Opportunities in Nigeria, 2012-2016

Population Share (percent)	Male		Female		Total	
	2012-2013	2015-2016	2012-2013	2015-2016	2012-2013	2015-2016
10	51.56	45.83	45.16	40.93	48.30	42.80
20	46.62	25.69	43.80	49.33	45.31	40.18
30	51.98	37.42	40.62	45.84	46.32	41.98
40	48.93	32.90	41.33	42.00	44.95	37.60
50	48.73	39.80	41.23	38.46	44.61	39.09
60	49.19	33.41	45.23	40.68	47.25	37.32
70	49.88	42.59	48.61	34.80	49.21	38.75
80	43.01	35.04	46.85	31.41	45.02	32.95
90	51.78	27.16	42.59	33.88	46.99	31.03
100	43.70	31.80	40.37	41.13	41.95	36.69
Opportunity Index	44.57	33.75	39.96	43.19	42.36	38.16
Equity Index of Opportunity	1.02	1.03	0.99	1.05	1.01	1.04
Comment	Equitable	Equitable	Not Equitable	Equitable	Equitable	Equitable

Source: Authors Calculation based on 2012-2013 and 2015-2016 GHS Survey

Overall, there was a decline in the job opportunities for the population. About 41.9 percent of the population were employed in 2012-13. This figure declined by 5.3 percent signalling a decline in the job opportunities available to the entire population and a possible increase in the unemployment rate. This result was confirmed by a decline in the OI from 42.4 percent to 38.2 percent. This suggest that in Nigeria, inclusive growth had not been achieved in assessing of job opportunities.

5.2 Access to Health care Facilities in Nigeria

Table 5.2 contains results for inclusiveness in the utilization of health care facilities by the sick in Nigeria. The result suggest that the number of sick individuals who sought care increased from 13.6 percent to 20.8 percent in 2012-13 and 2015-16 respectively. The EIO of 1.03 and 1.04 for the two periods was greater than 1. This revealed an increase in the equitable distribution of health services which was skewed towards the lower income group. Indicating that the poor had increased access to health care facilities as depicted in an increased use of overall health facility across the income distribution especially among the poor. The findings suggest that inclusive growth had been achieved in the overall access to health facility with the increase in the OI from 13.4 percent to 17.45 percent in 2012-13 and 2015-16 respectively.

Table 5.2: Opportunity for Access to Various Health Facilities in Nigeria, 2012-2016

Population Share	Government Hospital		Private Hospital		Rural Health Facility		Health Facility	
	2012-2013	2015-2016	2012-2013	2015-2016	2012-2013	2015-2016	2012-2013	2015-2016
10	37.95	38.00	58.09	57.81	0.21	3.64	14.90	22.02
20	39.28	39.96	54.10	59.04	2.50	0.88	14.64	25.11
30	28.14	34.24	69.47	64.83	0.40	0.83	12.45	20.88
40	26.80	32.90	67.73	65.99	0.72	0.61	12.41	22.73
50	43.99	25.94	51.80	67.76	2.45	2.35	12.35	19.07
60	27.14	24.95	66.42	66.87	2.87	3.99	13.35	22.85
70	18.74	25.65	77.41	73.26	2.17	0.61	14.14	19.84
80	25.15	22.12	69.58	77.19	0.90	0.41	12.27	22.16
90	28.69	37.35	67.78	62.44	0.55	0.14	11.40	17.30
100	19.33	30.97	76.46	68.87	0.43	0.09	12.95	16.81
Opportunity Index	21.26	32.83	72.69	66.33	0.42	0.11	13.38	17.48
Equity Index of Opportunity	1.10	1.06	0.95	0.96	0.98	1.25	1.03	1.04
Comment	Equitable	Equitable	Not Equitable	Not Equitable	Not Equitable	Equitable	Equitable	Equitable

Source: Authors Calculation based on 2012-2013 and 2015-2016 GHS Survey

Table 5.2 also reveals the type of health facilities visited by sick individuals. Majority of the population preferred private hospitals and government health institutions. 19.33 percent and 30.96 percent of sick people utilized government hospitals in 2012-13 and 2015-16 respectively. The EIO of 1.1 and 1.06 being greater than 1 for the two periods indicated that the distribution of utilization of government hospitals was skewed towards the lower income groups. This finding implied alongside the OI which increased from 21.3 percent to 32.8 percent in 2015-16 confirmed that inclusive growth was achieved in the utilization of government health institutions by the sick.

Although, the average opportunity associated with the utilization of private hospital was the highest for all categories of health facilities 76.5 percent and 68.9 percent in 2012-13 and 2015-16 respectively, the distribution of access to private hospitals by the sick favoured the higher income groups. This finding was confirmed by the value of the EIO for both periods (0.95) and (0.96) which was less than one. This result implied that the health care services offered by private hospitals which provide an estimated 70 percent of all health care services in Nigeria were largely utilized by the wealthy. Which increased inequality in access and was inimical to achieving inclusive growth. This finding is similar to that obtained in the study for the Philippines (Ali and Son, 2007).

The average opportunity in the utilization of rural health facility was rather low. An estimated 0.43 percent and 0.09 percent of the sick population utilized rural health facilities for the two periods. In 2012-13, the EIO (0.98) which was less than 1, suggested that the rural clinic was utilized primary by the non-poor. The estimate of the EIO (1.25) in the second period, which was greater than 1 and improved slightly in 2015-16, indicated that the utilization of rural

health facility was equitable and skewed towards the lower income group. The OI declined from 0.4 to 0.1 in the second period suggesting that although, there was improvement in the distribution of access to rural health facility which favoured the poor inclusive growth was not achieved. This could be attributed to the decline in the average opportunities available for the sick to utilize rural facilities in the second period.

5.3 Access to Education in Nigeria.

Table 5.3 contains results required for assessing if inclusive growth has been achieved at primary, secondary and tertiary levels of education in Nigeria.

Table 5.3: Opportunity for Access to Education in Nigeria, 2012-2016

Population Share (percent)	Primary 6-11 years Attending School		Secondary 12 -17 years Attending School		Tertiary	
	2012-2013	2015-2016	2012-2013	2015-2016	2012-2013	2015-2016
	10	48.51	62.66	36.65	29.37	6.20
20	49.14	62.62	37.00	30.13	8.28	3.88
30	52.62	53.66	30.69	37.94	11.90	7.51
40	45.43	53.40	38.29	33.22	10.85	8.22
50	56.90	48.40	29.65	39.71	9.33	10.80
60	56.12	55.17	31.98	34.17	7.99	9.76
70	55.84	59.70	31.00	33.20	11.22	6.54
80	42.53	62.33	37.78	34.35	17.39	3.02
90	49.52	61.11	34.86	28.88	13.54	9.72
100	40.32	47.60	45.03	38.88	13.65	13.36
Opportunity Index (\bar{y}^*)	41.12	48.08	43.86	38.49	12.07	11.86
Equity Index of Opportunity (ϕ)	1.02	1.01	0.97	0.99	0.88	0.89
Comments	Equitable	Equitable	Not Equitable	Not Equitable	Not Equitable	Not Equitable

Source: Authors Calculation based on 2012-2013 and 2015-2016 GHS Survey

Table 5.3 revealed that less than half the population of children (40.32%) and (47.6%) aged between 6 and 11 years attended primary school. The average primary school attendance figure though low for the two periods was equitably distributed in favour of children from poor households. This finding was confirmed by the EIO (1.02) and (1.01) which was greater than 1 in 2012-13 and 2015-16 respectively. The opportunity index improved from 41.1 to 48.08 in 2015-16, suggesting that inclusiveness had been achieved in the opportunities available for children to attend primary school in Nigeria. This finding was different from that obtained by Ali and Son (2007), Samir and Sajid (2011). Both studies identified that the distribution of educational opportunities at the primary level was not equitable both for the Philippines and Pakistan.

The average opportunity for attending secondary school for children between 12 to 17 years declined from 45.0 percent to 38.9 percent in 2012-13 and 2015-16 periods respectively. This finding revealed that less than half the

population of children within the above specified age bracket had access to secondary education. The decline in secondary school attendance was confirmed by the opportunity index that declined from 43.9 percent to 38.5 percent over the two year period. The EIO (0.97) and (0.99) tended to suggest that educational opportunity at secondary level was not equally shared between children from poor households and their non-poor counterparts. The findings revealed that although there was a moderate improvement in the equity index of opportunity, in the second period children at the bottom half of the income distribution has lesser access to secondary education. Thus, inclusiveness had not been achieved in opportunities given to poor children to attend secondary school in Nigeria. These findings were similar to those of Samir and Sajid (2011) which observed that the distribution of opportunities to secondary education were inequitable in Pakistan.

On the average the tertiary level attendance figure were worse than those of secondary school. The average opportunity for the population in tertiary level of education decline from 13.7 percent to 13.4 percent in 2012-13 and 2015-16 periods respectively. The OI declined from 12.1 percent to 11.9 percent indicating a drop in the opportunities available for attending tertiary institutions within the country. The EIO improved slightly from 0.88 percent to 0.89 percent indicating an uneven distribution of opportunities to tertiary education. The findings from the study indicated that primarily individuals on the upper end of the income distribution had greater opportunities for attending tertiary institutions. Furthermore, the distribution of attendance declined across the various income groups over the two year period increasing the level of inequality. These estimates confirm that growth inclusiveness in the access to tertiary education had not been achieved over the two year period.

6. Conclusion

This paper adopted the concept of social opportunity curve which is analogous to the social welfare function in measuring inclusive growth. The social opportunity function depends on two concepts the average opportunities available and how these opportunities are distributed across the population.

This study identified that inclusive growth has not been achieved for the period of the study especially in the area of employment, provisions of health care in the private and rural health institutions, secondary and tertiary education. This finding was confirmed by the decline of their respective opportunity index over the two-year period.

The results confirmed a decline in employment opportunities. To increase access to employment there must be increased investment in health and education. Workers must be trained and equipped with relevant skills to be absorbed into dynamic sectors of the economy especially the industrial and manufacturing subsector. Investment in the manufacturing sector must be encourage through granting of credit. This will deepen the links of the industrial sector with the agriculture and service sector consequently increasing the employment opportunities within the country.

Significant progress was made in the utilization of government hospitals by the poor. Although, there was an increase in the average utilization over time less than half of the population utilized government hospitals. Over 60 percent of the population utilized private hospitals with the poor not having access. On the other hand less than one percent of the population utilized rural health facilities. These findings reveal that there is need for increased government funding of health care in Nigeria. This is in line with the 2001 Abuja declaration where it was pledged by African heads of states that 15 percent of their respective budgets will be allocated to the funding of their respective health sectors. Currently the budgetary allocation of the government to the health sector is less than 6 percent. Trained and qualified health workers and medical personnel should be employed in the rural clinics as this will decrease the utilization of private hospitals by the poor who are unable to afford them. The government needs to

target resources towards the provision and equipping of rural health facilities and government hospitals because they create increased opportunities for the poorer segment of the population who face a greater disease burden to utilize health care. Financial subsidies and exemptions at the point of payment in public hospitals must be effectively implemented such that they are targeted towards the poor.

The education sector performed poorly. Although, the primary school enrolment was equitably distributed less than half than 50 percent of children were enrolled in primary school. Average access to secondary and tertiary education was very low and were not equitably distributed. These findings suggest that the poor do not have access to education after primary level. To tackle these inequalities that exist in education, public-private partnership must be in the area of provision of education at all levels to meet the educational needs of the less advantaged. This could come in the form of re-training of teachers in public schools to be at par with global trends in the educational sector, provisions of low-cost schooling by private individuals and organization. Improved educational opportunities for the poor will effectively lower income inequality as education affords the lower income group avenues to seek better economic opportunities and improve their livelihood.

The findings of this study highlighted crucial aspects of intervention in the aspects of education, health and employment in Nigeria which should not be overlooked if inclusive growth is to be achieved. Growth without access to human capital (education and health) needed to engage in income generating activities will not achieve inclusiveness because improved health and education have direct benefits on labour productivity especially for the poor.

Declaration

- Availability of data and materials: the data used for this study was sourced from the General Household Survey data published by the National Bureau of Statistics, Nigeria
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- Authors contribution: both authors contributed equally to this research
- Acknowledgement: not applicable

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Figures

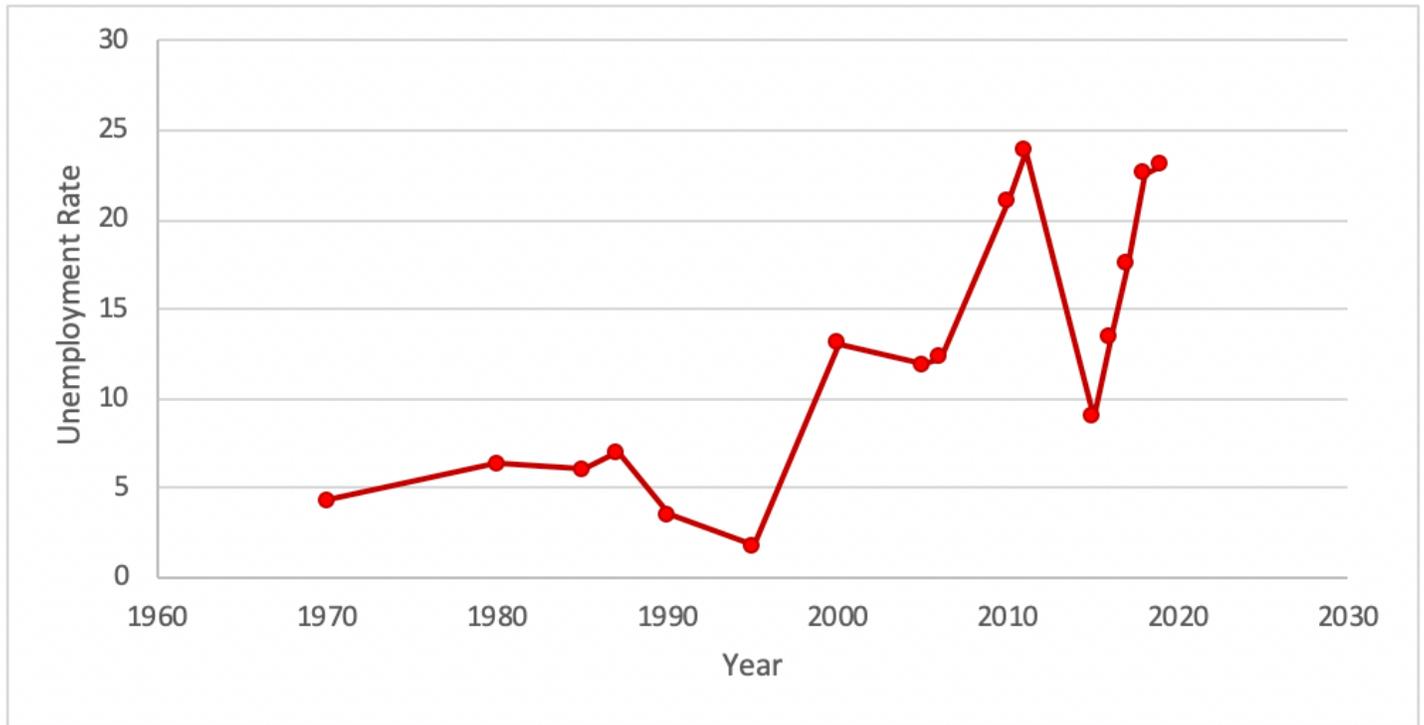


Figure 1

Rate of Unemployment in Nigeria (1970-2018)