

Millennium Development Goals and Poverty in Nigeria – An Empirical Analysis

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Abstract

As Nigeria counts down to 2015, there is need to evaluate millennium development goals (MDGS) to appraise the efforts that have been put in place to achieve them and the possible effect on poverty which is endemic in Nigeria. Literacy rate (LR), Infant mortality rate (IMR), Life expectancy rate (LER), Per capita income (PCI), Trade Openness (TO) were used to capture MDGS and poverty index (PI) was used to capture poverty incidence in Nigeria. Correlation analysis shows LR has a positive and significant association with PI, PCI and TO but negative and significant association with IMR at 0.01 level of significance. LR has a positive and significant association with PCI and TO but a negative and significant one with IMR. IMR has a very strong, negative and significant association with PCI and TO but the association is not significant with LER. LER does not have a significant association with PCI and TO, PCI has a very strong, positive and significant association with TO. The overall correlation coefficient ($r = 0.837^a$) shows that the indicators of MDGs have strong, positive and significant association with PI at 0.01 level of significance. Regression analysis shows that PCI and IMR have a negative and significant effect on poverty incidence in Nigeria but LR has a positive and significant effect on PI. MDGs indicators have a significant effect on PI in Nigeria. It is therefore recommended that; each of the dimensions of poverty in Nigeria should be identified and solve so that the nation can experience growth and development.

Key Words: Millennium Development Goals, Poverty, Literacy rate, Life Expectancy Rate, Mortality Rate.

1. Introduction

Nigeria, the “Giant of Africa” has been a country of paradoxes. It is a country abundantly blessed with natural and human resources. With a population estimated at about 150 million. It is the 8th largest deposit of natural gas in the world. There are also abundant solid mineral deposits that remained largely untapped. Nigeria is blessed with abundant resources.

Chukwuemeka (2009) observes that the country is blessed with natural and human resources, but in the first five decades of its independence, the potentials remained largely untapped and even mismanaged. Nigeria presents a paradox, i.e. the country is rich but the people are poor. Given this condition, Nigeria should rank among the richest countries that should not suffer poverty entrapment. However, the monumental increase in the level of poverty has made the socio-economic landscape frail and fragile. With over 120 tertiary institutions producing more than 200,000 graduates per annum (Soludo, 2006). Startling as it may be, a great percentage of Nigerian people are poor, yet Nigeria is a country with vast potential wealth. Although revenues from crude oil have been increasing over the past decades, our people have been falling deeper into poverty. Poverty levels vary across the country, with the highest proportion of poor people in the Northwest and the lowest in the Southeast.

However, in order to solve the problems of poverty in Nigeria, the Nigerian government has embarked on different programs (such as: Operation Feed the Nation (OFN), Green Revolution, Agriculture Credit and Guarantee Schemes, Nigeria Agriculture and Cooperative Bank (NACB), Better Life for Rural dwellers, National Directorate of Employment (NDE), Directorate for Food, Roads and Rural Infrastructural (DFRRI), Nigerian Agriculture and Land Development Authority (NALDA), and Family Economic Advancement Program, just to mention a few), strategies with massive aids and grants and also decades of special initiatives to cure poverty in the country. In fact hardly will any Nigerian government will not leave behind any form of poverty eradication strategy. But pervasive and widening inequality persists as the fundamental development challenge of the 20th century in Nigeria and other developing countries. Looking at these numerous efforts both by the government and concerned citizens of this country, one would wonder why poverty persists in the country, the reasons cannot be farfetched. They include inadequate coordination of these programs, the Nigerian spirit of lack of accountability and transparency, political and policy instability, lack of targeting mechanism for the poor and the fact that most of the programs are not directly targeted at the poor as observed by UNDP, over extended scope of activities of institutions, absence of an effective collaboration and complementation among the three tier of government etc.

As a result of these observed phenomena in almost all developing economies of the world, there was a consensus call for global approach to the problem and solution to poverty worldwide. Therefore after keen observation and deliberation, the international community decided to present common goals towards poverty eradication globally. This is what brings about the subject matter Millennium Development Goals.

With the recognition of poverty as a common denominator in the global community, the Millennium Development Goals (MDGs) were adopted in September 2000 by 189 world leaders. The overall goal of the Millennium Declaration which gave birth to the Millennium Development Goals was a reinstatement of commitment to free all men, women and children from the abject and dehumanizing conditions of extreme poverty by the year 2015. With reference to sub-Saharan Africa including Nigeria, the inauguration of the Millennium Development Goals more or less represents an exit strategy from poverty trap. The global partnership for development which constitutes the substance of goal 8 reflects the commitment of the industrialized world to the fight against poverty in the developing world through official development assistance. The specific objectives of the MDGs are arranged in the table below:

GOALS	TARGETS
1. To eradicate extreme poverty and hunger	Reduce by half the percentage of the population living in poverty
2. Achieve universal access to education	Attain 100 percent primary school enrolment by 2015
3. Promote gender equality and empower women	Reduce the gender gap in primary and secondary enrolment and literacy among 15-24 years old by 2005
4. Reduce infant and child mortality	Reduce infant and child mortality between 1990 and 2015 by 2/3
5. Improve maternal health	Reduce the maternal mortality ratio by 2/3 between 1990-2015
6. Combat HIV/AIDS malaria and communicable diseases	Slow the rate of HIV/AIDS Increase contraceptive prevalence
7. Ensure environmental sustainability	Reduce by half the percentage of the population without access to safe drinking water between 1990 and 2015
8. To develop a global partnership for development	To coherence between the member countries towards a partnership towards uniform development.

Despite the implementation of the Millennium Goals in Nigeria and the activities of other poverty alleviation agencies, the scourge still remains widespread. Therefore, this work intends to examine strategies by the Nigerian government to tackle poverty up to date, the relationship between these millennium development goals and poverty reduction in Nigeria, to measure the effectiveness and the impact of various poverty eradication strategies put in place toward the achievement of the millennium development goals, to carry out an up to date assessment of the millennium development goals and the poverty level in Nigeria, to carry out a detailed analysis of the problem confronting poverty eradication in Nigeria and those constraints that can hinder the achievement of the millennium development goals, to provide a good premise on which logical conclusion and forecast can be made on the possibility of achievement of the millennium development goals, also examine the possibility of the achievement of the millennium development goals, what part of these goals has been achieved up to date, and what should be the content of the review criteria when next the United Nations want to review its success so far.

A lot has been done on evaluation of millennium development goals (MDGs) and this work does not intend to add to the volume of work in that direction but to look at MDGs in line with each of the goals and to determine its possible effect on poverty in Nigeria.

2. Literature Review

Okoli (2009) examined UNICEF and UK department for international Development (DFID) efforts in Nigeria, assessing them through progress on MDGs 4 and 5 targets which are to reduce maternal and under five mortality

ratios. He adopted the documentary method review method involving sector specific analysis of policy papers and related publications and found out that only marginal improvements have been recorded. Aid administration processes and the adverse influence of women's poverty and cultural biases which reinforce gender inequality are the major problems. It was therefore advised that aid should be implemented using budget support, sector wide operations or recurrent cost financing.

Adedokun, Omitogun and Sangosanya (2011) critically examine the imperative for gender balance in human capital development in order to achieve MDG goals in Nigeria by 2015 using descriptive and graphical analysis. They found out that there is wide gender disparity gap between male and female primary school enrollment in Nigeria and with consequential accelerating poverty prevalence rate during the disparity periods. It was recommended among other things that household heads in rural areas should be well sensitized on the importance of basic primary education and a balance between the male and female enrollment.

Jimi and Adeniran (2012) studied development issues in Nigeria using the MDGs. Agenda setting and development media theories formed the theoretical framework for the study. 364 editions of both THE PUNCH and THE GUARDIAN newspapers published from Jan 1, 2008 to June 30, 2008 were content analyzed. Their findings showed that the Nigerian media did not do much to educate, enlightens or motivate the public towards the need to achieve the developmental issues reported. Therefore, from their findings it was suggested that the media should pay more attention to development issues such as child mortality, maternal health and universal primary education. The media must also develop a watch dog role by monitoring progress on developmental program of the government.

Lawal, Obasaju and Rotimi (2012) investigates through the use of non-parametric statistical test the extent to which MDGs have been achieved. In their study, they observed that the degree of achievement recorded in Nigeria is convincingly below expectation. Among others it was suggested that aggressive investment in poverty reduction schemes must be made both by the public and non-governmental institutions.

Alaba and Alaba (2006) investigated malaria in Rural Nigeria in relation to meeting the millennium development goals. Using the cost of illness analysis, the paper found out that 10% of gross domestic output of Oyo state is lost annually to malaria attack and this has a serious implication for the achievement of development blueprints in NEEDS and MDGs targets. It was then advised that effective malaria control can be capable of reducing inequality, household poverty, welfare and aggregate development.

Chukwuemeka (2010) looked into the poverty situation in Nigeria and the various efforts the government is putting in place to stamp out poverty through the use of descriptive analysis. He found out that poverty is still very high in Nigeria since the government pursues two incompatible goals at the same time. The paper then recommended that the power sector be restructured so has to enable Small business holders to operate and break even.

Despite the large number of literatures on poverty and the millennium development goals, most of the studies make use of descriptive analysis void of any empirical analysis especially in Nigeria apart from Lawal, Obasaju and Rotimi (2012) who used non parametric test. However, this study is an attempt to contribute to existing literatures using correlation to find out the relationship that exist between poverty and MDGs and regression analysis to test for the level of significance. The proportion of people living in poverty declined from 65.6% to 54.4% in 2011 (Cyprian, Emmanuel & Japheth Terande, 2013)

3. Methodology

The variables under consideration are macro in nature and strictly secondary data. Since the aim of this research is to determine the effect of millennium development goals on poverty, Pearson Moment Correlation Coefficient was used to ascertain within association of the variables. Ordinary Least Square (OLS) method of multiple regression analysis was equally employed. Poverty Index (PI) was used as a proxy to poverty incidence in Nigeria to capture millennium goal 1 which is to eradicate extreme poverty and hunger, enrollment rate would have been the best proxy for universal basic education but unfortunately as identified by UN (2007), the data suffers from few disadvantages ; the attendance rate is not known even if enrollment rate is known because some children actually enrolled but never attended classes, no data for regularity of pupils/students in class, also official data are not usually available for countries during conflict and after the conflict. Therefore, in this paper, literacy rate (LR) will be used to capture goal 2. To capture goal 4 which is to reduce infant and child mortality, infant mortality rate (IMR) will be used. Life Expectancy rate (LER) was used to capture mortality rate of Nigerians. Per capita income (PCI) was used to capture the percentage of persons with access to portable water in Nigeria with the assumption that if income increases, individuals can access good drinking water. Trade Openness (TO) was used to indicate globalization, which is goal 8 of MDGs.

3.1 Model Specification

The model specified for this work was first used in Indonesia to measure how well societies satisfy certain specific life serving social characteristics but it is used here with little modification.

$$PI = f(LR, IMR, LER, PCI, TO) \text{ ----- i}$$

$$PI = a_0 + a_1LR + a_2IMR + a_3LER + a_4PCI + a_5TO + \mu \text{ ----- ii}$$

Where

PI = Poverty index, LR = Literacy Rate, IMR = Infant Mortality Rate, LER = Life Expectancy Rate, PCI = Per Capita Income, TO = Trade Openness, a_0 = constant or intercept and μ = stochastic variables.

4. Analysis

4.1 Correlation Analysis

Correlation Matrix

	PI	LR	IMR	LER	PCI	TO
PI	1 .000 31					
LR	.714** .000 31	1 31				
IMR	-.630** .000 31	-.725** .000 31	1 31			
LER	-.192 .301 31	-.135 .469 31	.114 .542 31	1 31		
PCI	.527** .002 31	.691** .000 31	-.975** .000 31	-.112 .548 31	1 31	
TO	.609** .000 31	.739** .000 31	-.977** .000 31	-.132 .479 31	.982** .000 31	1 31

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix shows that PI and LR have strong, positive and significant ($p = 0.000$) association. Poverty Index also has a positive and significant ($p = 0.002$) association with PCI as well as a relatively strong and significant ($p = 0.000$) association with Trade openness. The association between Poverty Index and infant mortality rate is relatively strong, negative and significant ($p = 0.000$) while the association between PI and LER is positive but not significant ($p = 0.301$). The association between literacy rate and infant mortality rate is negatively strong and significant ($p = 0.000$), which shows that if literacy rate increases, infant mortality rate will increase as citizens will know the dos and don'ts and abide by them which will in turn reduce mortality rate. The relationship between LR and LER is positive as expected but not significant at 0.01 level. LR and per capita income (PCI) have positive, relatively strong and significant association, this means that as LR increases, PCI increases as expected. LR and trade Openness have strongly positive and significant association as LR increases, TO rises. The association between IMR and LER is positive but not significant $p = 0.542$. IMR has a very strong negative and significant association with PCI, as PCI increases, IMR reduces as expected. IMR also has a negative and significant association with TO, as TO increases, IMR reduces. Surprisingly, the association between LER and PCI is negative but not significant and the association between LER and TO is equally negative and not significant. Pearson Product Moment correlation coefficient 'r' is 0.837, which shows a very

strong and positive association exists between poverty incidence in Nigeria and indicators of millennium development goals.

4.2.1 Regression Analysis

Augmented Dickey Fuller (ADF) unit root test shows that the data are stationary at level, $p = 0.0336$ at $\alpha = 0.05$ level of significance. The model in section 3.1 is restated below;

$$PI = a_0 + a_1LR + a_2IMR + a_3LER + a_4PCI + a_5TO + \mu \text{ ----- ii}$$

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The signs under equation (ii) show the a priori expectations. It is expected that as literacy rate increases, poverty incidence in Nigeria will reduce, a positive relationship is expected between infant mortality rate and poverty index in Nigeria that is; an increase in poverty index should bring about an increase in infant mortality rate. It is also expected that a negative relationship should exist between poverty index and life expectancy rate, as LER increases, PI should increase. Also, a negative relationship is expected between PCI and PI as well as between TO and PI in Nigeria.

4.2.2 Hypothesis

H0: MGDs indicators have no significant effect on poverty in Nigeria.

4.2.3 Regression Result

Variable	Coefficient	Prob.
LR	0.710355	0.0304
IMR	-1.481445	0.0111
LER	-0.013657	0.4647
PCI	-0.490722	0.0021
TO	1.638047	0.1572
C	198.2884	0.0105
R-squared	0.700077	
Adjusted R-squared	0.640092	
F-statistic	11.67094	
Prob(F-statistic)	0.000007	

$$\hat{PI} = 198.288 + 0.710LR - 1.481IMR - 0.014LER - 0.490PCI + 1.638TO$$

4.3 Discussion and Policy Implication

From the multiple regression result, the model suggests that 70% variation in poverty incidence in Nigeria is explained by the influence of the independent variables, while the remaining 30% is explained by factors outside the components of the independent variables. This result suggests a good fit, meaning that the necessary variables that explain variation in poverty incidence in Nigeria are well taken care of.

The F-statistic value of 11.67 shows that the model is significant at 0.05 since the probability attached to it is $p = 0.000007$ which is far less than 0.05. By implication the null hypothesis is rejected.

Literacy rate (LR): The coefficient of the variable suggests a positive relationship between the Literacy rate and Poverty Incidence which is inconsistency with the expectation. It is expected that the higher the Literacy rate the lower the Poverty Incidence but this wasn't the case. The relationship between PI and LR is significant ($p = 0.030$) at α – level of 0.05. In term of Literacy Rate, Obadan (2009) submitted that the efficiency of primary education has improved over the years. He also observed that literacy rate among 15 –24 years old also improved from 76.2% and this occurred during the period Poverty Incidence increased. By implication, as the literacy level increases, the Poverty Incidence increases. The inability of the improvement in literacy rate to transform into reduction in poverty incidence can be traced to high rate of unemployment in the country. The increase in

Literacy rate couldn't be transformed into increase in GDP. Since education is not an automatic passport out of poverty in a country like Nigeria coupled with increase in population.

Infant mortality rate (IMR): The model depicts a negative relationship between Infant Mortality Rate and Poverty Incidence in Nigeria, which is inconsistent with a priori expectation. It is observed from the data that as Infant Mortality Rate reduces down the years, the poverty level has been relatively increasing. (Oshelowo 2010) while observing the trend of some indicators concluded that although there is reduction in Infant Mortality Rate while Poverty Incidence got to its peak in 2009. The reduction in IMR down the years could be traced to a possible improvement in maternal education, wider immunization coverage, better primary health care services etc. Although the global target is 30/1000 live births, if the current trend is sustained, Nigeria can be close to it by 2015.

Life expectancy rate (LER): The analysis suggest a negative relationship between the Poverty Incidence and the Life Expectancy Rate which is consistent with the a priori expectation. The data from the international community and agencies show a higher life expectancy rate than 47 years.

Per capita income: in line with expectation, the coefficient of the PCI suggests that it has a negative relationship with Poverty Incidence. As income per household increases, poverty level reduces. From the findings of Oshelowo (2010) per capita income in Nigeria has been relatively increasing in a period, where poverty incidence has been increasing.

Trade Openness: From the model, as trade openness increases, poverty rate increases. This is however not consistent with the expectation but the components of imports and exports should be such that will be beneficial to the economy.

The model equally shows that if all the variables are taken care of, there will still be poverty incidence in Nigeria. The dimension of poverty in Nigeria is numerous, they include that of; Food and shelter, Education, Vulnerability to ill health, Natural disasters and epileptic power supply. Until these dimensions are recognized individually, the various programs could continue to be futile. There are other variables which are not included in this research which is revealed by adjusted R squared value that are responsible for poverty incidence in this nation.

5. Conclusion/Recommendation

Based on the findings and discussions above, it can be concluded that; poverty level in Nigeria cannot be reduced by increase in literacy rate, literacy is not the solution to poverty in Nigeria because education is not a passport to wealth as depicted by continual increase in unemployment rate from 13.1% in year 2000 to 21.1% in 2010 (World bank database, 2011) despite increase in literacy rate. The implication of this is that even if the goal of increasing literacy rate is achieved, there will not be a corresponding reduction in poverty level. The goal of reduction in infant mortality rate can be achieved by 2015 because concerted efforts have been made to educate mothers, provide immunization, basic health facilities and so on. The most alarming thing is that this does not reduce poverty rate in Nigeria based on the data that was used in this work. This paper shows that as life expectancy rate increases, poverty level reduces and the data actually shows that Nigeria is making progress in this aspect. It is therefore recommended that; programs that promote longevity should be embarked upon because the longer people live; the more productive they become which will translate to growth and reduction in poverty. In the same vein, an increase in per capita income will reduce poverty level drastically but increase in globalization being captured by trade openness will trigger poverty which is in line with the findings of Osundina and Osundina (2013) where they concluded that the compositions of export should be such that finished goods should be encouraged where labor in the economy will be utilized and income of households will increase and poverty level will reduce. The composition of import goods also should be such that raw materials should be encouraged. The overall result shows that; millennium development goals indicators have a significant ($p = 0.0000$) effect on poverty level in Nigeria therefore, the nation is on the right track of reducing poverty, also there is a significant correlation between millennium development goals and poverty index in Nigeria.

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