

Absolute poverty in Nigeria: an analysis of the future trend

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Abstract: The persistent increase in absolute poverty has become worrisome to both the government and the people of Nigeria. Using a Time series simple linear forecasting model this paper examines the trend in absolute poverty in Nigeria and made forecast of what the rate of absolute poverty vis-à-vis the nation's population would be between the year 2001 and 2010. The result obtained indicate that by the year 2010, 129.6 million people out of the projected 137.8 million people would be poor if certain policy measures such as sound fiscal and monetary policies, increase in employment, heavy investment in agriculture, development and promotion of the informal sector activities, good governance and fight against corruption are not taken into consideration.

Keywords: Nigeria, absolute poverty, future trend.

INTRODUCTION

Since the mid 1980s the rate of poverty in Nigeria has been on the increase. For instance, in 1982 the rate was 28.1% and by 1996 it has risen to about 65.6% (FOS 1999). Some of the reasons behind this persistent increase include among others; the effects of the global economic crisis witnessed in the early 1980s, the negative effects of Structural Adjustment Programme (SAP) introduced in 1986, political instability, bad governance, corruption, and the collapse of public infrastructures (Aikoye, 1994; Faruqee, 1994).

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The consequences of this increase in poverty include among others; increase in the number of destitutes, beggars, prostitutes, and paupers. Poverty appears to have also led to increase in the rate of crime in the society, increase in child labour, child abandonment and abuse, increase in infant, child and maternal mortality rates and reduction in life expectancy of most adult. For instance, the rate of crime in the country has been on the increase with cases of crimes and offences reported to the police increasing from 253,098 in 1995 to 258,655 in 1996, while in 1998 the infant mortality rate was 114 per 1000 live birth and maternal mortality rate was 10 per 1000 live births in the same year. An under-five mortality rate of close to 190 per 100,000 live births and 54 years as life expectancy at births were all registered in 1998. These figures when compared with other developing countries like Malaysia¹ provide a pathetic situation (CBN, 1998, FOS, 1998).

Although several attempts have been made to reduce the rate of poverty in the country. At one time dishing out of emergency aid, heavy investment in infrastructure services, rapid industrialisation, heavy support for integrated rural development and urban projects were embarked up on. But unfortunate little or no successes were achieved from these measures since the rate of poverty continues to increase.

The aim of this paper therefore is to examine what the rate of poverty will be in the next 10 years (between the year 2001 and 2010) if renewed efforts are not put in place by the government to reduce it.

In the next section a conceptual overview of poverty and the trend of poverty in Nigeria are examined. Section three provides the data source and methodology used in determining the future trend of poverty in Nigeria. Section four discusses the results. The intervention measures and conclusion are contained in the last section.

¹ With per capita income growth of more than 4% a year in 1980-1995, Malaysia reduced income poverty from 29% to 13% and lowered its Gini Coefficient from 0.49 in 1980 to 0.45 in 1993. The income of the poorest 20% has increased from \$431 in 1970 to \$1,030 (1985 PPP\$). Wage employment grew at more than 8% a year in 1970-92, and unemployment has fallen from 80% to 4%. A look at the country's human development Indicators, life expectancy is 72 years, adult literacy is 85%, primary enrolments are 91%, infant mortality has come down in the past 20 years from 30 per 1,000 live births to 11 and more than 88% of Malaysians have access to safe water and health services (UNDP 1999).

CONCEPTUALIZATION OF POVERTY

POVERTY: DEFINITION AND MEASUREMENTS

According to the World Bank (1999) poverty is hunger; lack of shelter; being sick and not being able to go to school; not knowing how to read; not being able to speak properly; not having a job; fear for the future; losing a child to illness brought about by unclean water; powerlessness; lack of representation and freedoms.

Sanyal (1991) and Schubert (1994) saw poverty as either absolute or relative or both. Absolute poverty is that which could be applied at all times in all societies such as the level of income necessary for bare subsistence; while relative poverty relates to the living standard of the poor to the standards that prevail elsewhere in the society in which they live.

Related to the definition of poverty is the measurement of poverty. According to Foster et. al (1984) the most frequently used measurements are: (i) the head count poverty index given by the percentage of the population that live in the household with a consumption per capita less than the poverty line; (ii) poverty gap index which reflects the depth of poverty by taking into account how far the average poor person's income is from the poverty line; and (iii) the distributionally sensitive measure of squared poverty gap defined as the mean of the squared proportionate poverty gap which reflects the severity of poverty (see also Grootaert and Braithwaite, 1998; Ravallion 1996).

Recent studies by United Nations Development Programme (UNDP) advocated the use of Human Development Index (HDI). According to UNDP (1997, 1998) HDI combine three components in the measure of poverty: (i) life expectancy at birth; (longevity); (ii) education attainment and; (iii) improved standard of living determined by per capita income. The first relates to survival-vulnerability to death at a relatively early age. The second relates to knowledge being excluded from the world of reading and communication. The third relates to a decent living standard in terms of overall economic provisioning.

CAUSES AND CONSEQUENCES OF POVERTY

According to United Nations (1995) and World Bank (1990) poverty has various manifestations which include among others: lack of income and

productive resources sufficient to ensure sustainable livelihood; hunger and malnutrition; ill health; limited or lack of access to education and other basic services; increased morbidity and mortality from illness; homelessness and inadequate, unsafe and degraded environment and social discrimination and exclusion. It is also characterised by lack of participation in decision making in civil, social and cultural life.

Yahie (1993) also reiterates that the causes of poverty include: (i) structural causes that are more permanent and depend on a host of (exogenous) factors such as limited resources, lack of skills, locational disadvantage and other factors that are inherent in the social and political set-up. The disabled, orphans, landless farmers, household headed by female fall into this category; and (ii) the transitional causes that are mainly due to structural adjustment reforms and changes in domestic economic policies that may result in price changes, increased unemployment and so on. National calamities such as drought and man-made disaster such as wars, environmental degradation and so on also induce transitory poverty.

As observed by Obadan (1997) the main factors that cause poverty in include among others: inadequate access to employment opportunities; inadequate physical assets such as land and capital and minimal access by the poor to credit even on a small scale; inadequate access to the means of supporting rural development in poor regions; inadequate access to market where the poor can sell goods and services; low endowment of human capital; destruction of natural resources lending to environmental degradation and reduced productivity; inadequate access to assistance for those living at the margin and those victimised by transitory poverty and lack of participation. That is, the failure to draw the poor into the design of development programmes that affect their lives.

Discussing the consequences of poverty Von Hauff and Kruse (1994) highlighted on three major consequences: consequences for those affected, i.e. for the people affected poverty leads to physical and psychological misery caused inter alia by inadequate nourishment, lack of medical care, a lack of basic education and skills and marginalisation in the labour market; (ii) consequences for the national economies of countries affected, arising through the formation of slums in cities, a worsening of ecological problems particularly as a result of predatory exploitation in the agricultural sector and through the failure to use the available human resources; and (iii) consequences for the political and

social development of the countries affected. That is, mass poverty tends to preserve or reinforce the existing power structures and thus also the privilege of a minority of the population. In some cases, this involves corrupt elites. These privileged minorities in the population are not generally interested in structural changes for the benefit of the poor population. As a consequence, mass poverty tends to inhibit the development of democratic structure and a higher level of participation in decision making that affect their lives.

According to Narayan et. al. (2000) most households are crumbling under the weight of poverty. While some households are able to remain intact, many others disintegrate as men, unable to adapt to their failure to earn adequate incomes under harsh economic circumstance, have difficulty accepting that women are becoming the main breadwinners that necessitates a redistribution of income within the households. The result is often alcoholism and domestic violence on the part of men and a breakdown of the family structure. Women in contrast, tend to swallow their pride and go out into the streets to do demeaning jobs, or in fact, to do anything it takes to put food on the table for their children and husbands.

Aku, et al (1997) also observed that with mass poverty there tends to be a general loss of confidence in the constituted authority which generates disrespect and renders government policies ineffective. There tends to be political apathy among contending forces and social disillusion with respect to what the societal objectives are and peoples' responsibilities towards the attainment of these objectives.

TRENDS OF POVERTY IN LESS DEVELOPED COUNTRIES AND IN NIGERIA

Given some of the causes and consequences of poverty discussed above, the recent trends in the incidence of poverty in the world seem rather alarming. Apart from the 1960s and the 1970s when major economic advances were witnessed the frontiers of poverty were pushed back and the income of even the poorest countries like Niger, Mali and Bangladesh and people within the countries rose. The 1980s witnessed some discrepancies in development in these countries as economic growth deteriorated² with considerable decline in

² For instance, Niger Republic had an annual growth rate of -0.6 between 1998 and 1999 (ADB 2001).

individual's well-being. Between 1980 and 1990 the living standard of the people got worse, such that this decade was classified as the "lost decade" as far as development was concerned. Within this period it was estimated that more than a billion people in the world live in abject poverty most of whom are hungry everyday and with almost the same figure not having access to clean water for drinking, bathing and adequate sanitation. Child mortality in less developed countries is ten times higher than in the developed countries with 7 million people dying every year from preventable diseases. Within the period, poverty took on a new dimension with increasing inequality between the rich and the poor within these countries (World Bank, 1990, 1996).

In 1991, 49% of the populations on South Asia were poor. The figure was 48% in Sub-Saharan Africa, 33% in the Middle East and North Africa, 25% in Latin America and the Caribbean and 11% in East Asia (Courier, 1994). In Nigeria the incidence of poverty was 65.5% in 1996. As indicated in Table 1, this percentage rate represent in absolute term 67 million people out of an estimated population of about 102 million people.

Table 1

Estimated total population and rate of poverty in Nigeria (1980-1996)

Year	Estimated total population (in million)^(a)	Absolute no. pf poor people (in million)^(b)	Percentage (%) that are poor^(c)
1980	64.6	18.1	28.1
1981	66.7	21.3	32
1982	68.4	24.2	35.5
1983	70.6	27.5	39.0
1984	73.0	31.4	43.0
1985	75.4	34.9	46.3
1986	77.9	35.8	46.0
1987	80.4	36.5	45.4
1988	83.1	37.4	45.0
1989	84.9	37.7	44.5
1990	86.6	38.0	44.0
1991	88.5	38.5	43.5
1992	91.3	39.0	42.7
1993	93.5	45.8	49.0
1994	96.2	52.6	54.7
1995	98.9	59.3	60.0
1996	102.3	67.1	65.6

Sources: (a) National Population Commission 1993; Central Bank of Nigeria. *Annual Report and Statement of Account 1996* and Federal Office of Statistics Annual Abstract of Statistics (1980-1996); (b) Computed by the author from (a) and (c); (c) Federal Office of Statistics (FOS) (1999) *Poverty Profile for Nigeria 1980-1996*; and Federal Office of Statistics' National Consumer Survey 1996).

The Nigerian situation also depicts regional variation, for example, within the same period the poverty rate was higher in the northern agro-climatic zone at 40% compared with the middle and southern zones at 38% and 24% respectively (Francis et. al., 1996; FOS 1999). Similarly, Nigeria's rank in the Human Development Index remained low, being the 137th out of 174 countries (UNDP, 1998).

DATA SOURCE AND METHODOLOGY

DATA SOURCE

Time series data for the period 1980 to 1996³ on the rate of population and the rate of poverty in Nigeria were used. The data were obtained from the National Population Commission; Central Bank of Nigeria Annual Report and Statement of Account for the year 1996; Federal Office of Statistics (FOS) (1999) Poverty Profile for Nigeria 1980-1996; and Federal Office of Statistics' National Household Consumer Survey (1980-1996).

THE MODELS

In this study the future outlook model is used. Following Freund and Williams (1970) and Hoel and Jessen (1977) the future outlook model is a model used in examining the likely setting of a particular variable in the future in order to guide policy makers on the type of policy instruments to put in place for the variable to move in a predetermined direction (see also Arosanyin, 2000).

In specifying the model for this study two sets of models were used. The first model examined the expected total population from which those that are expected to be poor in the next 10 years are drawn.

³ This is the year data on poverty rate in Nigeria was last made available by the Federal Office of Statistics.

The model is formulated thus:

Model A1

$$TPop = f(t_1) \dots\dots\dots (1)$$

When transformed into a linear equation, Model A1 then becomes:

$$TPop = \beta_0 + \beta_1 (t_1) + U \dots\dots\dots (2)$$

And Model A2

$$TPop = f(t_1) + (t_1^2) \dots\dots\dots (3)$$

When transformed into a linear equation, Model A2 then becomes:

$$TPop = \alpha_0 + \alpha_1 (t_1) + \alpha_2 (t_1^2) + U \dots\dots\dots (4)$$

Where:

TPop = the expected total population of Nigeria

β_0 and α_0 = the intercepts

$\beta_1, \alpha_1, \alpha_2$ = the parameters

t_1, t_1^2 = the coded time variables in the regression model

U = the error term

The second model relates to the expected trend in absolute poverty drawn from the total population of Nigeria. The model is formulated thus:

Model B1

$$APov = f(t_2) \dots\dots\dots (5)$$

When transformed into a linear equation, Model B1 then becomes:

$$APov = \beta_0 + \beta_1 (t_2) + U \dots\dots\dots (6)$$

And Model B2

$$APov = f(t_2) + (t_2^2) \dots\dots\dots (7)$$

When transformed into a linear equation, Model B2 then becomes:

$$APov = \alpha_0 + \alpha_1 (t_2) + \alpha_2 (t_2^2) + U \dots\dots\dots (8)$$

where:

APov = the expected absolute poverty rate drawn from the total population of Nigeria.

β_0 and α_0 = the intercepts

β_1, α_1 and α_2 = the parameters

t_2 and t_2^2 = the coded time variables in the regression model.

U = the error term.

Note that Models A2 and B2 are second degree polynomial equations which are parabolic in nature. These equations are necessary because trends cannot always be described adequately by means of straight lines. Moreso, a parabolic trend will not only provide numerical values for the constants α_0 , α_1 , α_2 but curves that will provide the best possible fits (Freund and Williams, 1970).

As earlier stated, a time series data between 1980 and 1996 is used with the mean year of 1988. The degree of accuracy of the future trend of the models is evaluated by use of Theil inequality co-efficient (U) defined as:

$$U = \frac{\sum \sqrt{\frac{1}{n} (P_i - A_i)^2}}{\sqrt{\frac{1}{n} \sum P_i^2 + \sqrt{\frac{1}{n} \sum A_i^2}}}$$

where:

P_i = predicted value of the dependent variable

A_i = the actual value of the dependent variable

The values that the inequality co-efficient assumes lies between 0 and ∞ is $0 \leq U \leq \infty$,

thus stipulating that the closer the value of the result to zero the better the forecasting power of the future outlook model (Theil, 1971).

EMPIRICAL RESULTS AND INTERPRETATION

The empirical results of the future trend of the models are shown in Table 2.

Table 2:
Empirical results of the future trend of the models

Variable	TPop		APop	
	Model A1	Model A2	Model B1	Model B2
Intercept	82.48	82.15	37.94	35.8
t-ratio	(613.3)	(413.3)	(33.7)	(22.6)
Time t_1	2.31	2.31	2.36	2.37
t-ratio	(84.1)	(85.9)	(10.33)	(11.03)
Time t_2		0.01		0.086
t-ratio		(1.99)		(1.75)
R ²	0.97	0.98	0.87	0.89
Adj. R ²	0.96	0.97	0.86	0.88
F	7083.6	3694.7	106.85	62.38
U	0.05	0.02	0.06	0.05

As indicated in Table 2, the t-ratio and F-statistic are significant at 95% confidence interval (i.e., 0.05). For the purpose of forecasting the future trend of the total population from where the absolute poverty rate is determined Model A2 is preferred to Model A1 because: (i) it has a higher R² (0.98) than A1 which has an R² of 0.97; and (ii) the test for forecast accuracy shows that Model A2 has a Theil inequality co-efficient closer to zero (0.02) than Model A1 (0.05).

For the forecast of absolute poverty in Nigeria Model B2 is used because: (i) it has a higher R² (0.89) than Model B1 (0.87) and a Theil inequality co-efficient that is closer to zero (0.05) than Model B1 (0.06).

Given the above situation, Model A2 and B2 become the forecasting tools with 1988 as the mean year. Table 3 therefore provides the projected absolute poverty rate based on the projected total population of Nigeria.

The projection simply shows that as the population of the country rises from 113.8 million people in the year 2001 to 137.8 million people in 2010, the number of people that will be poor will also rise from 81.2 million people in the year 2001 (i.e. 71% of the projected total population) to 129.0 million people in the year 2010 (i.e. 94% of the projected population). To check this expected trend the government and policy makers must put in place measures that would prevent an escalation of the poverty situation in the future.

Table 3:

Projected total population and projected absolute poverty rate in Nigeria between 2001 and 2010 - (in million)

Year	Projected Total Population	Projected Absolute Poverty (in million)	Projected Poverty Rate (%)
2001	113.8	81.2	71.3
2002	116.4	85.8	73.6
2003	119.0	90.7	76.1
2004	121.6	95.7	78.6
2005	124.3	101.0	81.2
2006	126.9	106.3	83.7
2007	129.6	111.9	86.
2008	132.3	117.6	88.8
2009	135.1	123.5	91.4
2010	137.8	129.6	94.0

Source: author's computation.

INTERVENTION MEASURES AND CONCLUSION

Policy measures aimed at preventing the occurrence of this projected poverty rate should include stable macro economic policies and economic growth. For instance, sound fiscal and monetary policies will create a hospitable climate for private investment and thus promote productivity. Long term economic growth will encourage high level investment through saving, and lower the rate of inflation which in the long run would provide a stable framework for long term planning that encourage saving, investment and effect the development of resources for poverty reduction.

A stable economic growth that emphasises on labour-intensive strategy is also essential since it will reduce poverty through two channels: (i) by increasing employment and improving the opportunities for productive activities among the poor; and (ii) if associated with increase productivity it will improve wages and under most circumstances the poorest segments of the society will see an improvement in their life conditions.

The government should also re-focus its attention on the development of the agriculture sector (which has been neglected for the oil industry); provide

more and improve on the existing infrastructure services; intensify research and technological efforts on the agricultural sector where the bulk of the poor are found; provide more credit facilities to be channelled through informal credit associations and micro finance institutions; and provide social services such as quality health care services, clean water and good sanitation to the people.

Other measures should include institutional development (most especially the development and promotion of informal sector activities); capacity building through training, technical assistance and research, information flow and consultative processes; participatory development (which involves the inclusion of all stakeholders in the development decision that affect their lives); decentralization of government activities which allows for efficient and equitable service delivery and greater participation in development process; good governance (which encompasses accountability, transparency, responsibility and participation in the development process; fight against corruption which inhibit development since resources that are meant for the people are usually diverted for personnel use); and environmental management and sustainability.

The implementation of these measures will not only help reduced the existing and expected poverty rate in Nigeria but would help improved and enhance further economic growth with consequential effect of improving the standards of living of the Nigerian people in the years to come.

Resumo: O persistente aumento da pobreza absoluta na Nigéria alcançou um patamar inquietante tanto para o governo quanto para o povo. Usando modelos de séries de tempo linear simples, este trabalho examina a tendência em pobreza absoluta na Nigéria e faz previsão da taxa de pobreza absoluta em que a população estaria entre os anos 2001 e 2010. O resultado mostra que antes de 2010, da população estimada em 137.8 milhões de pessoas, 129.6 milhões estariam na pobreza absoluta se alguma medida de política fiscal e monetária, diminuição da taxa de desemprego, investimento pesado em agricultura, desenvolvimento e promoção de atividades de setores informais, além de boa governação e combate à corrupção não for tomada.

Palavras-chave: Nigéria, pobreza absoluta, tendência futura

ACKNOWLEDGEMENT

The writer acknowledged the contribution of Dr. G.T. Arosanyin of the Department of Economics, University of Ilorin, Ilorin, Nigeria for providing the needed guide and for his comments which were useful.

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