International Journal of Social Science & Human Behavior Study– IJSSHBS
Volume 2 : Issue 2 *[ISSN : 2374-1627]*
Publication Date: 19 October, 2015

Poverty and Child Labour among Households in Nigeria

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Abstract **- The study focused on the relationship between poverty and child labour in Nigeria. One thousand, one hundred and sixty household respondents were drawn from Kaduna State, a State which is mid-way to the relatively poor North and relatively rich South. Randomized sampling technique dominated the sampling procedure. Inferential and descriptive statistics are adopted for the analysis. The mean values of age, household size, years spent in school, farming experience, farm size and income are 46.65 years, 7.0, 6 years, 25.84 years, 1.23 ha and N 58,419 (US$ 343.64) respectively. About 55% of the population live in absolute poverty as per consumption poverty measured by the head count index. The depth of poverty, severity of poverty and welfare gap in the study area were 0.266, 0.156 and 0.386 respectively. About 21% and 7% of the children engage in unpaid family business and work for wage respectively. Age, gender, education, household type and poverty gap are significant determinants of child labour. Definite measures like poverty reduction interventions – improvement in access to education facilities, water supply and energy sources, improvement in employment and anti-child labour campaign are urgently required.**

***Keywords*: Poverty, and child-labour, households in Nigeria**

I. Introduction

The international labour organization (1) define child labour as work that deprives children of their childhood, their potential and their dignity which is harmful to their physical and mental development i.e. it is physically, socially or morally dangerous and harmful to children and interferes with their schooling by depriving them of the opportunity to attend school or obliging them to leave school prematurely, or requiring them to attempt to combine schooling attendance with excessively long and heavy work. The POLL, child labour special edition conducted in the first week of November 2003 showed that eight out of ten Nigerians i.e. 80% respondent to the poll, agreed that there is a high prevalence of child labour in the country. However, any work done by child becomes hazardous if it is done for more hours (2). Nigeria is the 6th oil producing nation in the world; the poor constitute about 70% of the Nigerian population in spite of its oil wealth. A recent report by the united nation development (UNDP) shows Nigeria as the 26th poorest nation in the world (3). With the vast mineral & human resources, many Nigerians live on less than $1 a day. Although Poverty has no geographical boundary, it is experienced in the north, west, south and east, it is also found in the rural as well as urban areas of Nigeria and the incidence of poverty in Nigeria is higher in the rural areas than in urban centers.

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Poverty in Nigeria is experienced irrespective of gender, social status, age and location. According to International labour organization report – 2002 about 352 Million Children are estimate to work on full or part time basis round the world and almost all of them in poor countries. It is also noted that all work done by the child in labour is targeted in destroying the feature of child, but children or adolescents' participation in domestic work could be deemed as positive in situation where these activities do not affect their health and personal development or interfere with their schooling. These activities include helping their parents around the home, assisting in a family business or earning. These activities contribute to the welfare of their families; they provide them with skills and experience, and help to prepare them to become productive members of the society.

Recently, CNN 2003 (Cable National Network) world child labour index featured Nigeria amongst the top ten worst countries for child labour. Poverty has been identified as the root cause of the escalating issue of child labour in Nigeria. This was also disclosed in a report (a poll conducted) by NIPOLLs limited, an opinion polling and research organization established by the current Finance Minister of Nigeria Mrs. Ngozi Okonjo Iweala, NIPOLLS reports are used as a representation of Nigerian public opinion. The 2007 report focused social and economic issues and analysed the causes and remedies for the growing social problem that has seen the Nigerian child abandoning school at their formative year to becoming social miscreant later in life. The focus of this study, therefore, is to analyse the relationship between poverty and child labour among households in Kaduna State, Nigeria. The specific objectives of the study are to:

i. examine the socio-economic characteristic of the respondents;
ii. examine the poverty status of the respondents;
iii. build the child labour index of the respondents; and
iv. determine the effect of socio-economic factors on child labour.

The following null hypotheses were formulated and tested:

(i) Socio-economic factors do not significantly influence child labour.
(ii) Child labour is not significantly related to poverty status among the respondents.

II. Methodology

The study was carried out in Kaduna State, Nigeria. The State was selected to strike a balance between the relatively poorer north and relatively richer south. The population of the study consists of all resource-poor households. However, because of the enormous nature of the population, a sample size of 1160 was selected using a multi-stage sample technique. The Zonal classification of the Kaduna State Agricultural Development Project was adopted to divide the State into four (4) zones. In the first stage, two (2) zones were purposively selected, one from the north and the other from the south based on relative increased existence of child labour. In the second stage, two Local Government Areas were also purposively selected in each zone based on relative increased existence of child labour. In the third stage, four (4) communities were randomly selected. Fourthly, a sample frame was developed for each of the four communities using a proportional allocation of 4% across board and a sample of 1160 was obtained.

The primary data were used for this study. The primary data were collected using a well structured questionnaire, copies of which were distributed to the 1160 respondents selected for the study.

Both descriptive and inferential statistics were used to analyze the data. Descriptive statistics such as frequency distribution, percentages and mean were used for the analysis of objectives i and iii. The P-alpha measure of poverty and the Food Energy Intake (FEI) method were adopted for the analysis of objective ii. regression analysis was used for the analysis of objective iv while Pearson Correlation coefficient was used for the analysis of objective v. Hypothesis i was analysed using correlation coefficient while hypothesis ii was analysed using the result of the regression analysis.

Estimation of poverty line

The FEI method was adopted in estimating the poverty lines for this study. This was done in two stages. The first stage was to run a regression of the cost of a basket of commodities consumed by each household in the sample over the calorie equivalent as represented in equation 1:

$$LogE = a + bC + \varepsilon \quad \text{.....(1)}$$

where E is food expenditure and C is calorie consumption and ε is the error term.

To derive the values for the variables in this equation, the following steps were taken. First, the total value of food expenditure (E) was obtained by summing the value of consumption from own product. This was converted to its per capita value by dividing it by the household size. The calorie equivalent C was obtained by summing the calorie equivalent of the food items listed for each household.

The next stage was to calculate the cost of the basket of commodities by estimating equation 2:

$$Z = e^{(a+Rb)} \text{..... (2)}$$

where e is natural constant (2.71829), R is the recommended daily allowance of calorie intake. This gives the food poverty line or the cost of acquiring the recommended daily allowance (RDA) of calories, which for the study is, 2,900, the minimum energy intake requirement recommended by FAO (4,5).

Poverty measures

The next stage after the estimation of poverty line is to express overall poverty in a single index.

Poverty gap measures

$$Total\ Poverty\ Gap\ (TPG) = \sum_{i=1}^{q}(z - y_i) \text{.. (3)}$$

where z is the poverty line, q is the number of households below the poverty line, y_i is the food expenditure of the ith household.

$$Average\ Poverty\ Gap\ (APG) = \frac{TPG}{N} \text{..(4)}$$

where TGP is the total poverty gap, N is the total sample population.

$$Normalized\ Poverty\ Gap(NPG) = \frac{APG}{z} \text{...(5)}$$

where AGP is the average poverty gap, z is the poverty line.

$$Average\ Expenditure\ Shortfall\ (AES) = \frac{TPG}{q} \text{.(6)}$$

where TGP is the total poverty gap, q is the number of households.

$$Normalized\ Expenditure\ Shortfall(NES) = \frac{AES}{z} \text{.. (7)}$$

where AES is the average expenditure shortfall, z is the poverty line.

P-alpha poverty measures (Foster-Greer-Thorbecke Index)

Foster *et al*. (6) proposed a family of poverty indices based on a single formula capable of incorporating any degree of concern about poverty through the poverty aversion parameter α. This is the so called P-alpha measure of poverty or the poverty gap index. The index is defined as:

$$P_a = \frac{1}{N}\sum_{i=1}^{q}\frac{(z-yi)^a}{z} \ldots(8)$$

where z is the poverty line, q is the number of households below the poverty line, N is the total sample population, y_i is the per capita expenditure of the household, and α is the Foster *et al*. (6) parameter, which takes the value 0, 1 and 2, depending on the degree of concern about poverty. The quantity in parentheses is the proportionate shortfall of expenditure or income below the poverty line. By increasing the value α, the aversion to poverty as measured by the index is increased. For example, where there is no aversion to poverty α = 0, the index is simply:

$$P_o = \frac{1}{N}q = \frac{q}{N} = H \quad \text{.....(9)}$$

which is equal to the head count ratio. This index measures the incidence of poverty. If the degree of aversion to poverty is increased, so that α = 1, the index becomes:

$$P_1 = \frac{1}{N}\sum_{i=1}^{q}\frac{(z-y_i)^1}{z} HI \ldots (10)$$

Here the head-count ratio is multiplied by the income gap between the average poor person and the line. This index measures the depth of poverty; it is also referred to as "income gap" or "poverty gap" measure.

Although superior to P_0, P_1 still implies uniform concern about the depth of poverty, in that it weights the various income gaps of the poor equally. P_2 or income gap squared index allows for concern about the poorest of the poor by attaching greater weight to the poverty of the poorest than that of those just below the line. This is done by squaring the income gap to capture the severity of poverty:

$$P_2 = \frac{1}{N}\sum_{i=1}^{q}\frac{(z-y_i)^2}{z} \ldots (11)$$

This index satisfies the Sen-Transfer axiom, which requires that when income is transferred from a poor to a poorer person, measured poverty decreases.

Multiple Regression Model

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + U$$
.....(12)

Where:

Y= child labour index (daily hours worked)
α = constant term
β_1- β_7 = Regression coefficients
X_1 = age (years)
X_2 = sex (female = 1; 0 otherwise)
X_3 = Number of children
X_4 = Education (years)
X_5 = Household type (Farming household = 1; 0 otherwise)
X_6 = Land holding (hectares)
X_7 = poverty status (poor = 1; 0 otherwise)
U = Error term.

The definition of child labor in this study include domestic work that consists of chores done inside the house as well as work done for the household but outside the home such as livestock grazing, collection of goods for household use, e.g. firewood, fodder and other forest products.

Child labour is expected to have a positive relationship with age. This is because as a child grows older he or she becomes more vulnerable to being used for domestic work as well as work done for the household but outside the home.

Child labour is expected to have a negative relationship with gender. This is because the presence of female adults in a household helps reduce child labor more than the presence of male adults or other children.

Child labour is expected to have a negative relationship with education. This is because the decision to send a child to work is closely linked to whether they are sent to school.

Child labour is expected to have a positive relationship with poverty. This is because the root cause of child labor is extreme poverty which forces the parents to employ their children for some extra money for daily living.

Correlation Coefficient

$$r = \frac{\sum(y-\bar{y})(x-\bar{x})}{\sqrt{\sum(y-\bar{y})(x-\bar{x})}} \ldots \ldots\ldots\ldots\ldots\ldots(13)$$

Therefore,
r = correlation co-efficient
y = poverty gap
x = child labour (income from child hawking)

III. Results and Discussion

Socio-economic Characteristics of Respondents

The summary statistics of the socio-economic characteristics of the respondents is presented in Table 1. The result shows that age of the respondents ranged from 20 years to 75 years, with mean age of 47 years. This suggests that most of the farmers in the study area are within the economically active age bracket.

The household size of the respondents ranged from 1 to 15, with a mean of 7 members. This result suggests that farmers in the studied area have moderate number of household members, which could serve as source of family labour in farm operations. According to URT (7) and Niels-Hugo and Dorte (8) households with large family size are more likely to be poor compared to those with small family size.

The number of years spent in school among the respondents ranged from 0 to 20 years, with a mean of 6 years. This means that the study area is dominated by the educated class with at least primary education. The World Bank (3) report shows that basic education especially primary and lower secondary education helps in reducing poverty by increasing productivity of the poor, reducing fertility and hence improving health, and by equipping people with the skills they need to participate fully in economic and social activities. An educated household head is expected to impact on household's per capita expenditure positively.

The farming experience of the respondents ranged between 1 and 45 years, with a mean farming experience of 25.84 years. This result suggests that the farmers have long farming experience and may have increased the probability of child labour in the household.

The farm size of the respondents ranged between 0.2 and 7.5 hectares, with a mean farm size of 1.23 hectares. This result suggests that farming in the studied area is largely dominated by small-scale farmers who are generally accepted to be poor. According to Reddy *et al*. (9), size of the farm influences the welfare of the farmers. They noted that operators of large sized farms enjoy better standard of living compared against their counterparts with small sized farms.

The annual income of the respondents ranged from 0 to 155,000 Naira, with a mean of 58,419 Naira. This annual income is grossly inadequate to make any meaningful economic impact. Low-income farmers can hardly start and expand a business. This is because households with low income are unable to acquire the needed productive resources for their farm production thereby unable to increase their farm income.

TABLE 1: SUMMARY STATISTICS OF THE SOCIO-ECONOMIC CHARACTERISTICS OF THE RESPONDENTS

Variables	Minimum	Maximum	Mean
Age	20.00	75.00	46.65
Household size	1.00	15.00	7.00
Number of years spent in school	0.00	20.00	6.00
Farming Experience	1.00	45.00	25.84
Farm size	0.20	7.5	1.23
Annual income	0.00	155000	58419

Source: Field Survey, 2014.

Poverty Status among the Respondents

Consumption poverty as measured by the head-count index is 0.5463 (Table 2). This implies that 54.63% of the population was living in absolute poverty as defined by local cost of living.

The depth of poverty, severity of poverty and welfare gap in the study area was 0.2657, 0.1562 and 0.3864 respectively. Todaro and Smith (10) reported that poverty is more pronounced among households who are predominantly engaged in agricultural occupation.

The results further indicate that the coefficient of variation of household food expenditure among the poor was 0.3752. This indicates that household food expenditure varied widely among the poor in the study area, suggesting that there was poverty inequality among the respondents.

TABLE 2: POVERTY STATUS OF THE RESPONDENTS

POVERTY INDEX	VALUE
Total poverty gap (Naira)	236117
Average poverty gap (Naira)	1215.34
Average expenditure shortfall (Naira)	1526.48
Normalised expenditure shortfall (Naira)	0.3584
Poverty incidence (Po)	0.5463
Poverty depth (P_1)	0.2657
Poverty severity (P_2)	0.1562
Welfare gap (P_1/Po)	0.3864
Coefficient of variation (CV_p)	0.3752

Child Labour Index

Table 3 shows the distribution of daily hours worked in various activities. "Domestic work" refers to the first two rows of Table 3. In this Table a child is described as "working" if he/she is engaged in any of the four activities listed in Table 3.

The result in Table 3 shows that 41.72% and 30.26% of the children are involved in domestic chores and domestic labour outside household respectively. Furthermore, 30.92% and 29.95% of daily hours of work was devoted to domestic chores and domestic labour outside household respectively. On the average, 0.04 hour and 0.05 hour is spent by a child on domestic chores and domestic labour outside household respectively. This result implies that domestic work is by far the most significant category of child labour among the respondents. Table 3 also shows that girls tend to work more.

TABLE 3: CHILD LABOUR INDEX (DAILY HOURS WORKED)

Activity	Number	Hours	Male		Female	
			Number	Hours	Number	Hours
Domestic chores	484 (41.72)	19.2 (30.92)	219	8.6	265	10.6
Domestic labour (outside household)	351 (30.26)	18.6 (29.95)	152	8.6	199	9.9
Unpaid family business	245 (21.12)	17.2 (27.70)	113	8.0	132	9.3
Work for wage	80 (6.90)	7.09 (11.42)	33	3.48	46	3.61
Total	1160 (100)	62.10 (100)	517	28.669	643	33.44

() Figures in parenthesis are percentages

Effect of Socio-economic Factors on Child Labour

The result in Table 4 shows that the model fits the data fairly reasonably. For example, the coefficient of determination (R^2) is 0.745, suggesting that the model has a high goodness of fit. This indicates that 74.5% variation in child labour is accounted for by variations in the selected socio-economic factors, suggesting that the model has high explanatory power on the changes in child labour among the respondents. The adjusted R^2 also supported the claim with a value of 0.632 or 63.2%. This implies that the selected socio-economic factors explain the behavior of child labour among the respondents at 63% level of confidence. The calculated F-statistic value of 6.574 which is significant at 5% level of significance implies that there is a significant cause-effect relationship between child labour and the selected socio-economic factors.

The result in Table 4 shows that at 5% level of significance, the hypothesis that socio-economic factors do not significantly influence child labour among the respondents is rejected, suggesting that there is a significant cause-effect relationship between child labour and the selected socio-economic factors.

The result of the study showed that at 5% level, age, household type, land size holding and poverty have positive and significant influence on child labour in the study area. On the other hand, gender, number of children and education have negative and significant influence on child labour in the study area.

Table 4 further shows that child labor increases with age, the effect being particularly pronounced for girls. Older girls are made to work more (probably for sibling care). The significant negative relationship between child labour and gender shows that the presence of female adults in a household helps reduce child labor more than the presence of male adults or other children. Child labour decrease with education. School attendance (or conversely child labour) of children in a low developing country may be explained by

poverty, and also by the low quality of schooling that may lead households to substitute work for schooling (11). Child labour increases with land holding. Child labour increases with household type, suggesting that child labour is predominant in agrarian society where poverty is more pronounced.

TABLE 4: REGRESSION RESULTS OF THE DETERMINANTS OF CHILD LABOUR AMONG THE RESPONDENTS

Variable	Coefficient	Standard error	t-ratio
Constant	0.651	0.746	0.873
Age	0.409	0.201	2.03**
Gender	-0.306	0.153	-2.00*
Number of children	-0.279	0.203	-1.37
Education	-0.242	0.087	-2.80**
Household type	0.197	0.065	3.03**
Land	0.383	0.261	1.47
Poverty gap	0.425	0.137	3.10**
R	0.863		
R Square	0.745		
Adjusted R Square	0.632		
Durbin Watson	2.214		
F-value	6.574**		

**t-ratio is significant at 1%
*t-ratio is significant at 5%
**F-ratio is significant at 1%

Child labour increases with poverty. The root cause of child labor is extreme poverty which forces the parents to employ their children for some extra money for daily living. The decision to send a child to work is closely linked to whether they are sent to school. Parents in poor households may be less likely to enroll their children in schooling even though the long-run impact of schooling may deter them from future poverty. Poor parents are forced to send their children to work instead of school. Poverty reduction is the key to reducing child labor.

IV. CONCLUSION AND RECOMMENDATIONS

Conclusion

The study showed that the respondents were living in absolute poverty. Children work as a result of household poverty in the study area. There was poverty inequality among the respondents. Furthermore, domestic work was by far the most significant category of child labour among the respondents, child work is found to emerge both as a survival strategy and also as socialization process. Child work plays both complementary and substitution roles to adult labour, but the girl child tends to work more than the boy child counterpart.

The study also showed that there is a significant cause-effect relationship between child labour and socio-economic factors. Age, household type, land size holding and poverty had positive and significant influence on child labour in the study area. On the other hand, gender, number of children and education had negative and significant influence on child labour in the study area. Child labour increases with age. The presence of female adults in a household helps reduce child labor more than the presence of male adults or other children. Child labour decrease with education. Child labour increases with land holding and household type, suggesting that child labour is predominant in agrarian society where poverty is more pronounced. Poverty was highly responsible for child labour in the study area.

The study further showed that there is a significant positive correlation between child labour and poverty, implying that the higher the poverty status of a household the higher the incidences of child labour in a household.

Recommendations

There should be support to community based initiatives in rural areas by considering the special needs of the vulnerable groups like orphans, widows and elders. Specific micro-finance programs should target the poor in rural areas especially women, youths and the unemployed. The government should provide some compensation to poor parents for sending their children to school.

Finally, possible policy interventions for eradicating child labour, like poverty reduction interventions, improvement in access to education facilities, water supply and energy sources, improvement in future employment and anti-child labour campaigns are urgently required. And there should be budgetary allocations for social programs for vulnerable groups to alleviate possibilities of child labour. Definite measures should be taken to alleviate poverty in order to reduce incidences of child labour in the study area.

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… improvement in access to education facilities, water supply and energy sources, employment and anti-child labour campaign are urgently required.