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DETERMINANTS OF CHILD LABOUR AMONG RURAL FARMING HOUSEHOLDS IN KWARA STATE, NIGERIA

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ABSTRACT
The persistence of child labour is a barrier to the achievement of the global Sustainable Development Goals (SDGs) set for 2030 to eradicate poverty, provide decent quality learning for all children up to secondary school level, reduce inequality and create decent jobs. The study assessed the determinants of child labour among rural farming households in Kwara state, Nigeria. Primary data was obtained through multistage random sampling of 378 rural farming household heads from six (6) Local Government Areas (LGAs) out of 12 in Kwara State, Nigeria through field surveys. The tools of analysis were descriptive statistics, Foster-Greer-Thorbecke (FGT) index, Tobit regression model and Kernel density estimation. The result revealed that economic factors driven by poverty are the most important reasons for child labour. The result also showed that the bulk of child labour engaged in family farm labour (46.1%), domestic servants (10.0%) and hired labour (8.1%). The pooled results indicated that the determinants of child labour among rural households include age (0.302), marital status (0.087), adjusted household size (-0.219), cultural factor (0.007) and occupation (0.361) were statistically significant at different level of probability. The result obtained signified that household heads depend largely on child labour earning to supplement their income from agricultural production. Legislation must spell out the chores children could render to the family with special attention to age groups. Governments need to ensure that all children have access to basic education as a front-line response to child labour.
Keywords: Child labour, education, interventions, poverty

INTRODUCTION
Child labour remains endemic in many of the developing countries thereby representing an obstacle to Sustainable Development Goals (SDGs).These goals include the eradication of poverty, provision of decent quality learning for all children up to secondary school level, reduced inequality and the creation of decent jobs (United Nations General Assembly, 2015). According to Guarcello, Lyon and Valdivia (2015), Quattri and Watkins (2016) child labour keeps children out of school, hinders effective learning and denies children the opportunity to acquire knowledge and skills they need to escape poverty, which also their countries will need to drive inclusive growth and human development. The symptoms of child labour include loss of freedom, violation of rights, source of vulnerability and constraint on learning. In addition to exposure to risk of injury, these children are denied the chance to acquire what Sen (1994) describes as 'human capabilities' - the knowledge, skills and competencies needed to expand choice and extend opportunity.

Nigerian population has increased from about 60 million in 1963 to 88.5 million in 1991 (National Population Census, NPC, 1963 and 1991) and to a recent estimated figure of over 184 million in 2016 (NPC, 2016). This implies that Nigeria is experiencing rapid population and many poor rural families are struggling for a better life in rural and urban areas. This drives rural households to engage their wards to work in order to supplement family incomes.

Globally, an estimated 246 million children are engaged in child labour. More than 70% (172 million) of these children work in hazardous conditions including working in mines, chemicals and pesticides in the agricultural sector or with dangerous machinery. They are also employed as domestic servants in homes, hired farm labour, debt bondage, bus conductors and begging. The vast majority of working children (over 70%) work in the agricultural sector and it is pertinent to note that sub-Saharan Africa has an estimated 48 million child workers (United Nations International Children's Emergency Fund, UNICEF, 2016). The International Labour Organisation (ILO, 2013) estimates that about 25% of Nigeria's 80 million children under the age of fourteen are involved in child labour (Lana, 2014).

The definition of child labour is not simple because it includes three difficult concepts, which are "child", "work" and "labour". Child labour refers to children working in contravention of ILO standards contained in Conventions 138 and 182, which stated that all children below 12 years of age working in any economic activities, those aged between 12 and 14 engaged in more than light work, and all children engaged in the worst forms of child labour contravene ILO labour standards. ILO reports (2013) also opined that if a child's work does not hinder children's schooling or do not affect their health physically and mentally, then it is generally not categorised as child labour. For instance, helping parents at home, looking after siblings or working for pocket money after school hours and during holidays cannot be classified as

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child labour. Although child work is considered a part of children's training to be responsible adults, child labour is exploitative (ILO reports, 2013).

Child labour is a complex issue and various factors behind the labouring predominate in different contexts. To be able to combat child labour in the study area, the underlying causes must be understood. Considering the growing importance of child labour among the rural households in the study area, the study examined factors that determine child labour among rural households in Kwara State Nigeria and to what extent has this improved the well-being of the households.

METHODOLGY

Kwara State is situated in North Central Nigeria with Ilorin as capital. It is located between latitude 7° 45′ and 9 30′ N and longitude 2° 30′ E and 6°25′ E with a land mass covering about 32,500 square km and a total land size of 3,682,500 ha (Oladimeji *et al.*, 2015a). The state's population and farm families were projected in 2018 to be about 3.4 million and 336,315 respectively representing 3.2% annual growth rate and an average density of 106 persons per square km with majority living in rural areas. The study was carried out in six (6) Local Government Areas (LGAs) namely Asa, Baruten, Edu, Ifelodun, Moro, and Patigi, being predominantly farming areas of Kwara State, Nigeria.

The study is based on primary sources of the data gathered by field surveys in 2017 off farming season through questionnaire and interview. It focused on socioeconomic characteristics of household heads and data on child labour among the households. Three categories of child labour were captured based on the main principles of the ILO convention concerning the minimum age of admission to employment and work are as follows: (i) hazardous work: any work which is likely to jeopardize children's physical, mental or moral health, safety or morals should not be undertaking by children under the age of 16-18. (ii) basic minimum age for work should be after completion of secondary schooling, which is generally 16 years and above, and (iii) light work: children between the age of 13 and 15 years old may do light work as long as it does not threaten their health or hinder their education or vocational orientation and training.

The questionnaire content and face validity were confirmed through reconnaissance survey and National Agency for Prohibition of Trafficking in Persons (NAPTIP) using pretested questions. The reliability estimates for every component of each dimension satisfied the minimum Cronbach alpha levels with calculated alpha coefficient value of 0.70,

The analysis in this paper was based on a multi stage random household survey conducted in six (6) LGAs in 2017 off-farming season. The LGAs were selected being an area with households that have myriads opportunity to child labour based on reconnaissance survey carried out. The villages that have proximity with quarrying and mining sites were listed. Two villages each were randomly selected from the six LGAs. The selected villages were Ogbondoroko, Laduba (Asa LGA); Gwanara, Ilesha Baruba (Baruten), Songahi, Bacita (Edu), Babanla, Igbaja (Ifelodun), Onipako, Beriberi (Moro); and Ellah, Sunkuso (Patigi). From each of the selected villages, 25% of the household heads were selected randomly using ballot technique.

The last stage involved using a Slovian formula adopted by Oladimeji *et al.* (2017) for calculating sample size based on the assumption of 5% expected margins of error, 95% confidence interval and applying the finite population correction factor. The formula was expressed as follows:

$$n_0 = \frac{N}{1+N(e^2)} \quad \text{..... (1)}$$

Where: n_0 is the sample size; e = 0.05; N = total number of respondents. Therefore, 378 household heads were randomly selected using the card method.

Descriptive statistics such as frequency counts, mean, standard deviation, percentages, graphs and tables were used to describe the variables included in the model. Foster-Greer-Thorbecke (FGT) indices were used to determine the influence of income earned with or without child labour on wellbeing of rural farmers given as:

$$P_{ai} = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z-y_i}{z}\right)^{a} \quad \text{..... (2)}$$

Where: P_{ai} is the poverty index for the i^{th} sub-groups, n is the total number of households, Y_i is the per adult equivalent income/consumption expenditure of i-th households, z is the poverty line, q is the number of the sampled household population below the poverty line and α is the aversion to poverty as it ranges from 0 to 2 (Foster, Greer and Thorbecke, 1984).

Tobit regression model was used to determine the factors that influenced child labour among rural households thus:

$$Y_i^* = \sum X_i\beta + \mu_i \quad \text{.... (3)}$$

i= 1, 2..., 378

Where: Y_i = the dependent variable and X_i = Independent variable define in Table 1, β is a vector of unknown co-efficient and μi is an independently distributed error term (Tobin, 1958).

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Table 1: Measurement of variables and *a priori* expectations

Variables	Description and *a priori* expectations
Dependent variable	It is the rank level of child labour participation by the household head. It is left censored at zero for respondents who did not involve his / her wards in child labour. An index of child labour by the household heads was calculated. It is given by share of number of children used as child labour divided by total children for each household head.
Independent	**variables**
Age	Age of the household head in years; *positive*
Marital status	Married/ divorce / widow (er); positive
Household size	Number of dependents per household head; *positive*
Education	Years spent in a formal education by the household head; *negative*
Cultural factor	Custom and norm of the society = 1, 0 otherwise; positive
Occupation	If farming is major occupation of household =1, 0 otherwise; *positive*
Household income	The amount of household income: negative
No of male children	Number of male children in the household; positive
No of female children	Number of female children in the household; negative
Farm size	The size of the farm in ha

Non-parametric analysis such as stochastic dominance or Kernel density analysis was used to explore how child labour participation depends on income level of the household (Deaton, 1997). The aim of Kernel density estimation (KDE) is to find the Probability Density Function (PDF) for a given data set by smoothing the around values of PDF. The conditional distribution of the child labour probabilities was plotted against the poverty index using normal kernel. The KDE is thus given as follows:

$$\hat{f}_h(x) = \frac{1}{n}\sum_{i=1}^{n} \frac{1}{h} K\left(\frac{x-x_i}{h}\right) \quad \text{.... (4)}$$

Where: H = is a bandwidth, n = number of data points, K(.) = kernel density and X = independent variables. The t-statistic model was used to test hypothesis that additional income realized from child labour by households has no significant influence on per capita income of households that participated in child labour in the study area.

RESULT AND DISCUSSION

Descriptive statistics of socioeconomic factors

Table 2 describes the socioeconomic characteristics of rural farming households involved in child labour. The mean age of respondents was 45.6 years with a minimum and maximum of 20 and 73 years respectively and standard deviation of 11.9 years. Male rural household heads (89.2%) outweighed the female counterpart (10.8%). The presence of female-headed households could be attributed to a number of reasons such as death of male heads, migration and divorce.

Table 2: Socioeconomic characteristics of rural farming household heads (n = 378)

Variables	Distribution	F	%	Mean	Min.	Max.	Stdev
Age (years)	20 - 29	54	14.29	45.6	20	73	11.9
	39 - 39	79	20.9				
	40 - 49	142	37.57				
	49 and above	103	27.25				
Sex	Male	339	89.2	-			
	Female	41	10.8				
Marital status	Married	326	86.2	-			
	Divorced	37	9.8				
	Widow (er)	15	4				
Household size	1- 5	43	11.4	9.8	20	75	3.8
(persons)	6 - 10	109	28.8				
	11 - 15	156	41.3				
	16 and above	70	18.5				
Level of education	Nil	101	26.7	4.9	0	15	10.5
(years)	Primary	143	37.8				
	Secondary	105	27.8				
	Tertiary	29	7.7				
Average children /	Male	6.7	47.5	-			
Household head	Female	7.4	52.5				
Farm size (ha) *	0.1- 1.0	78	22.7	1.8	0.6	11	1.8

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	1.1-2.0	136	39.7
	2.1-3.0	80	23.3
	>3	49	14.3

* indicates that the sample size is not equal to 378
Field survey, 2016/2017

The result of household size in Table 2 showed that the average number of persons per household was approximately 10 which could affect the amount of farm and non-farm labour, determine the food and nutritional requirements of household and often affects poverty status and household food security. The result of the analysis of the years of schooling of respondent shows that the educational status is largely skewed towards the informal education as about 64.6% of the pooled rural households either had only primary schooling or did not have formal schooling, while only 7.7 percent attended tertiary school. Therefore, literacy rate was very low among the rural households sampled with mean year of schooling of 4.9 years below 2015 UNDP mean education index of 5 years for Nigeria.

Figure 1 depicts the reasons for households' involvement in child labour. The result revealed that poverty status (34.2%), economic hardship (28.3%) and self-actualization (17.2%) constituted the major reasons (80%) for involvement in child labour. The rate of child labour in the study area implies that households in poor conditions wish to get out of poverty and therefore find it necessary to earn additional income. According to the poverty theory, it is most common for children to work because families need to increase their household income. Johansson (2009) opined that children in the developing countries are the cheapest workforce to be found as they have no education and not so many employment options. This makes them perfect employees for wealthy households or greedy employers. The study therefore found child labour to correlate partly to the child labour in the study area. Studies have demonstrated that the most notable reason for child labour is poverty (Johansson, 2009, Lana, 2014, Oladimeji *et al.*, 2015a).

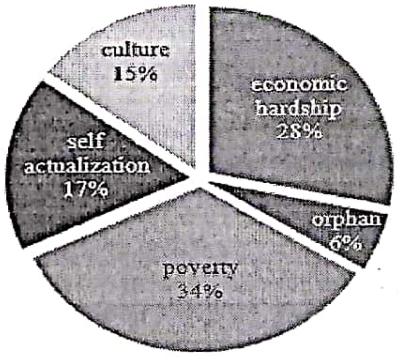


Fig 1: Reasons for households' involvement in child labour

Result in figure 1 also revealed that about 28.3% of respondents' household engaged in child labour due to economic hardship. Contrary to the findings of Johansson (2009), the result found child labour as a contribution to the family earning as majority of the children contributed their earnings to help the household economy. The findings on economic hardship is comparable with studies of Oladimeji *et al.* (2015 a and b) and Quattri and Watkins, 2016.

The study also showed that 17.2% of children who participated in child labour did on volition that is, not enforced by the parents (figure 1). The principal argument of the theory about child labour as a means of self-actualization is that many children would want to work even if they did not have to. This is in line with finding in the study area as 17.2% of the children are willing to be involved in child labour. Quattri and Watkins, (2016) opined that children working because they want to establish certain independence is another indicator of the self-actualization theory. Thus, the result showed that poverty, economic hardship and self-actualization are the most important reasons for households' involvement in child labour in the study area.

Results in Figure 2 indicate households by activities participated as a child labourers. The results showed that the children of the sampled rural households were involved in child labour as

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family labour (46.1%), domestic servants (10%) and hired farm labour (8.1%).

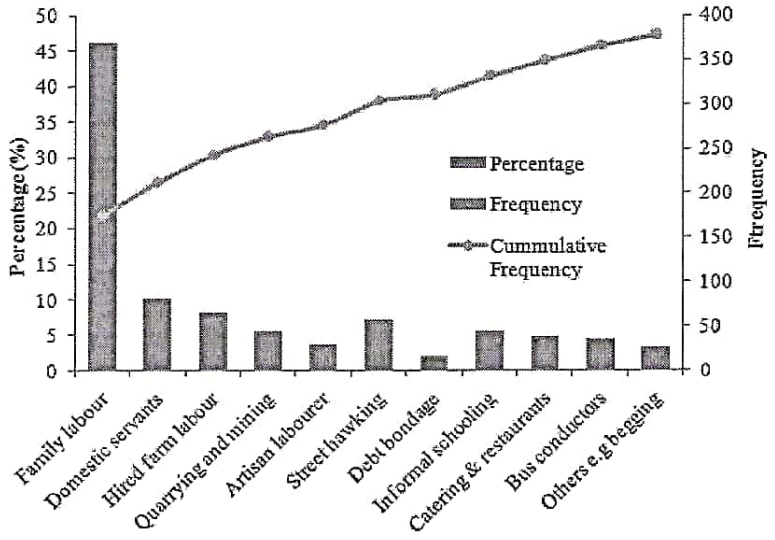


Figure 2: Distribution of households by activities participated as child labour

The family-contribution theory is found to be partly correlating to the child labour in the study area. The implication of these findings were also similar to what Lana, (2014) and Oladimeji *et al.* (2015 a) pointed out that the rural farming households have diversified oriented economy and have developed capacity to cope with increasing vulnerability associated with farming. Consequently, the rural economy is not based only on Agriculture but rather on a diverse array of activities and enterprise as evidence in Figure 2 (Reardon *et al.*, 2001).

Poverty profile of rural household involved in child labour based on income

The result in Table 3 indicates 59.8% of sampled household heads fell below poverty line of ₦39,385.7 per person per year without their extra earning from child labour while 46.0% met a threshold of ₦47,006.8 when the income from their child labour engagement were included. Thus, one hundred and seventy two (172) household heads earned at most ₦50,000 per person per year without including their income from child labour and had poverty incidence of about 45.5% but 145 respondents fell to the same income group and the poverty incidence was reduced to 38.4% when extra earnings from child labour were included.

Table 3: Per capita household income (Naira) per month through child labour

Range	F	%	P_0	P_1	P_2	Share of poverty	
Without extra income (Naira)							
10,000 - 50,000	172	45.5	0.85	0.20	0.03	154	65.5
50,001 - 100,000	110	29.1	0.63	0.13	0.02	47	20.0
100,001 – 150,000	69	18.3	0.57	0.08	0.01	21	8.9
>150,000	27	7.1	0.29	0.05	0.00	13	5.5
Mean	59,078.5						
2/3 (poverty line)	N39,385.7	59.8					
1 USD per day		62.1					
With extra income (Naira)							
10,000 - 50,000	145	38.4	0.74	0.18	0.01	139	69.5
50,001 - 100,000	120	31.7	0.59	0.09	0.00	28	14
100,001 – 150,000	81	21.4	0.50	0.07	0.00	25	12.5
>150,000	32	8.5	0.21	0.01	0.00	8	4
Mean	N71,006.8						
2/3 (poverty line)	47,337.9	46.0					
1 USD per day		52.8					
t-value with and without	1.57^{ns}						

Po= headcount index, P_1 =poverty gap index, P_2 = squared poverty gap; using FGT formulae;

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However, it is pertinent to note that the t-value (1.57) in Table 3 indicates there is no statistically significant difference between income of respondents with and without child labour. The result is comparable with studies of Johansson (2009) and Lana (2014) on effect of child labour in developing countries.

Figure 3 shows the non-parametric kernel density estimates of poverty index of the rural farming household heads, visually examining the relationship between the predicted probabilities (poverty) and the probability of child labour participation. Using a standard Epanechnikov kernel and a bandwidth of 0.05, the result revealed that the overwhelming majority of households fall below the poverty line, but a long right tail reflecting positive skewness in the poverty index in the study area. However, it is sufficient to note that more of the child labour participants fall under the poverty line than those of the households that did not participate. The cumulative distribution function (CDF) of kernel density estimation in figure 3 stochastically dominated the CDF of normal density.

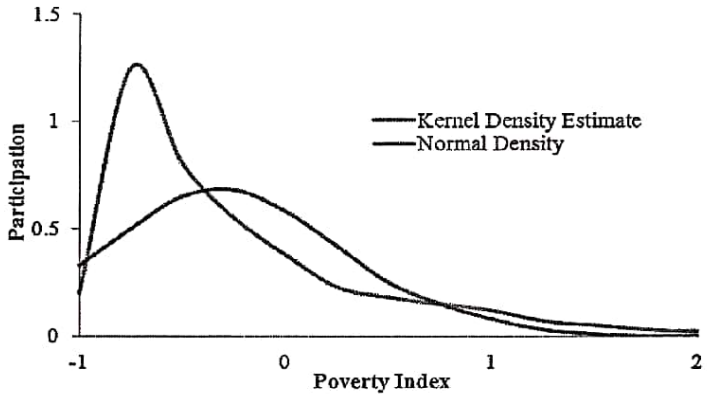


Fig 3: Level of poverty of households involved in child labour

Determinants of factors affecting child labour among rural farming households

The result of Tobit regression model in Table 4 revealed that the coefficient of age (-0.302) had a positive relationship with child labour, thus suggesting that the older household heads are likely to involve their wards in child labour. This is as expected, since it is believed that old people tend to have large household size and are less productive (Oladimeji *et al.*, 2015a). The positive and significance of coefficient of marital status (0.087) implied that child labour depends on whether the respondent is married, divorced, or widowed. Some of the respondents that were divorced or widowed may incur extra burden of sole sponsorship of their children and this could trigger child labour among these categories of respondents. The result in Table 4 also revealed that household size was found to be negative (-0.219) which signified an inverse relationship with child labour. This result is expected because the less the household size, the less expenditure incurred at home hence the less the households are involved in child labour. Household income had negative influence which indicates that the less the income of the household heads, the greater the probability of the households' involvement in child labour. The results also showed that male household members were more exposed to agricultural activities, which was the predominant activity in the study area. These findings are comparable with studies of Johansson, (2009), Lana, (2014) and Oladimeji *et al.* (2015a and b).

Table 4: Tobit estimates of determinants of child labour among rural farming households

Variables	β	SE	t-value	P > (t)

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Variables	β	SE	t-value	P > (t)
Probability > Chi^2	0.000			

Field survey, 2016/2017,note: t-value; ***; **; * indicates 1%; 5% and 10% level of significant

CONCLUSIONS AND RECOMMENDATIONS

The study revealed that age, marital status, household size, household income and number of male children were the major determinants of child labour among rural farming households. The result also showed that poverty status, economic hardship and self-actualization constitute the major reasons for involvement in child labour. Governments need to ensure that all children have access to basic education as a front-line response to child labour to achieve SDGs Goal 1: end extreme poverty including hunger, SDG Goal 4: ensure effective learning for all children and youth for life and livelihood and SDG Goal 5: achieve gender equality, social inclusion, and human rights. Policy interventions must enlighten rural household heads on children spacing and upkeep. Relevant agencies such as National Agency for Prohibition of Trafficking in Persons (NAPTIP) should be strict with monitoring children that work during the school hours.

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