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ORIGINAL ARTICLE

Determinants of child labour practices in Ghana

Lucy Twumwaah Afriyie[1] · Bashiru I. I. Saeed[2] · Abukari Alhassan[1]

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Abstract

Aim This study aims to determine the factors associated with child labour practices in Ghana.

Subject and methods Data from the Ghana Living Standards Survey Round 6 (GLSS 6) conducted by the Ghana Statistical Service (GSS) in 2012 was used for the analysis. The target population was children aged 5–17 years. Logistic regression was used to assess the relationship between child labour, as a dichotomous outcome, and a set of possible factors.

Results The result showed that the child's age, gender and current grade, mother living in the household, and region and location of residence were the main factors that scientifically and significantly influence child labour in Ghana.

Conclusion These findings highlight the importance of raising awareness about the dangers of child labour and exploring avenues for its prevention. Our recommendation is that policy-makers should especially target the Ashanti, Brong Ahafo, Eastern, Upper East, Upper West and Volta regions where child labour is rampant.

Keywords Child labour · Logistic regression · Demographic characteristics · Odds ratio

Introduction

Childhood should be the most innocent phase of life where a child is free from all tensions, is fun-loving, plays and learns new things, and is the sweetheart of family members. Nowadays, however, children are learning to use machines and work the entire day to satisfy the needs and wants of their families, leading to a surge in what is termed child labour (Augendra 2008; James and James 2001). The term 'child labour' is often defined as work that deprives children of their childhood, education, potential and dignity and is harmful to their physical and mental development (ILO-IPEC 2013; World Vision International 2014).

✉ Lucy Twumwaah Afriyie
lucytwumwaah@yahoo.com

Bashiru I. I. Saeed
sirbash156@gmail.com

Abukari Alhassan
hassi1972@yahoo.com

[1] Department of Statistics, University for Development Studies, P.O. Box 24, UE, Navrongo, Ghana

[2] Department of Mathematics and Statistics, Kumasi Technical University, P.O Box KS854, Kumasi, Ghana

Child labour has now become a developmental issue and the priority of most national governments and international organizations. It is associated with poverty, inadequate educational opportunities, gender inequality and a range of health risks (Andvig 1998; Asenso-Okyere et al. 2013; ILO-IPEC 2013; Parker 2011). The world's attention to child labour has intensified as a result of the significant increase in developing countries, with many children involved in exploitative and/or dangerous work (ILO-IPEC 2014). In many developing countries with high poverty rates and poor schooling opportunities, child labour is still prevalent (Diallo et al. 2010; ILO-IPEC 2012; Krauss 2013). Around the world, child labour accounts for 22% of the work force in Asia, 32% in Africa, 17% in Latin America and 1% in the US, Canada, Europe and other wealthy nations (Tony 2014). Africa has the highest percentage of children aged 5–17 employed in child labour (ILO-IPEC 2014). In Ghana, about 22% of children in this age group are involved in child labour.

The campaign to protect children against exploitation is based on the principle that for healthy development, children must be allowed to be children, and one way of doing this is to allow them to attend school. Ghana was the first country in the Economic Community of West African States (ECOWAS) to make efforts towards the elimination of the worst forms of child labour (ILAB 2014). As noted by the US Department of Labor in 2010, 'employing a child in exploitative labour deprives the child of its health and education'. Education and

economic development suffer adverse consequences through the interaction of poor health with other determinants of child labour (Fassa et al. 2010). Even though children are employed and contribute to the country's GDP (gross domestic product), they still experience a life of poverty and risk in terms of low income and access to social services (Ghana Statistical Services 2012).

Children's education should not be compromised by work that may also lead to falling standards in education, and they should also not suffer from poor health as a result of child labour. There is broad evidence that all forms of child labour negatively affect children's educational participation and attainment (Allais 2009; Amin et al. 2006; Assaad et al. 2010; Boockmann 2010; Cockburn and Dostie 2007; Levison and Moe 1998). Interestingly, little is known about determinants of child labour in developing countries, especially in Ghana. Hence, the purpose of this article is to contribute to the existing literature on empirical investigation of the factors influencing child labour in Ghana.

Materials and methods

Data source and sampling design

The main source of data for this study was the Ghana Living Standards Survey Round 6 (GLSS6) conducted in 2012 by the Ghana Statistical Service (Ghana Statistical Services 2012). This survey was a nationally representative household sample survey. A two-stage stratification design was adopted. Fifteen households from each of the secondary sampling units (SSU) were systematically selected. The total sample size was 18,000 households nationwide, but 16,772 households were finally interviewed, yielding a response rate of 93.2%. Each sampling unit in the target population had a known, non-zero probability of being included in the sample. The 2010 Population and Housing Census (PHC) conducted by the Ghana Statistical Service was used as the sampling frame for the GLSS6 and information was independently collected for children aged 5–17 years. Details of the survey can be obtained from GLSS6 (Ghana Statistical Services 2012).

The main dependent variable analysed in this study was child labour. This binary variable was coded as 1 (child labour) if the child was aged 5–17 years, deprived of the fundamental right to education and worked for more than 32 h a week in hazardous labour conditions. If none of these criteria were satisfied, the variable was coded as 0 (no child labour). The independent variables considered included the child's age, gender, current grade, presence of the father and mother in the household, relationship to the household head, educational grade completed by the father and mother, region and locality of residence.

Model development

A binary logistic regression model was employed to explain empirically the factors influencing child labour in Ghana (Awaworyi and Mishra 2016; Belfield and Kelly 2010; Emran and Shilpi 2012; Mishra and Smyth 2015). Logistic regression was used to model the binary outcome variable, (child labour status, yes/no) and a set of predictor variables. The logistic regression model can be defined as:

$$\log\left[\frac{P(Y=1|X)}{\left(1-P(Y=1|X)\right.}\right]=\alpha+\beta_1X_1+\beta_2X_2+\ldots+\beta_nX_n, \quad (1)$$

where $P(Y=1|X)$represents the probability of a child being involved in child labour, α is the intercept parameter, and β_i is a vector of regression coefficients related to specific independent variables that are typically estimated by the maximum likelihood (ML) method (Aidoo et al. 2013; Hyeoun-Ae 2013).

The selection of variables to be included in the model was based on a forward selection procedure and the Akaike information criterion (AIC). Statistical Analysis System version 9.4 (SAS Institute Inc. Cary, NC, USA) was used throughout. The estimated model was evaluated by performing a likelihood ratio test to determine the significance of the covariates in the model. This test uses the ratio of the maximized value of the likelihood function for the full model (L_1) over the maximized value of the likelihood function for the simpler model (L_0). The likelihood ratio test statistic can be defined as:

$$-2\log\left(\frac{L_0}{L_1}\right)=-2[\log(L_0)-\log(L_1)]=-2(L_0-L_1) \quad (2)$$

For easy interpretation, the estimated model can be converted into probabilities using Eq. (3) described below:

$$P(Y=1|X)=\frac{e^{\alpha+\beta_1X_1+\beta_2X_2+\ldots+\beta_nX_n}}{1+e^{\alpha+\beta_1X_1+\beta_2X_2+\ldots+\beta_nX_n}}, \quad (3)$$

Results and discussions

Descriptive analyses

Table 1 presents the percentage distribution of the subpopulation of children aged 5–17 years. Of 24,116 respondents, 5855 (22%) were involved in child labour. Most of these children (41%) were found to be 5–9 years old and the smallest group (20%) were those aged 15–17 years. This indicates that as age increases, the number of children involved in child labour decreases. The result also showed that the proportion of males (51%) compared with females (49%) was almost equal.

Table 1 Distribution of child labour among other related variables

Variable	Child labour	Not child labour	Percentage of child labour
Total	5855	18,261	22
Age (years)			
5–9	1651	8283	41
10–14	3037	6374	39
15–17	1167	3604	20
Gender			
Male	3212	9096	51
Female	2643	9165	49
Child's education			
No basic education	2580	7726	44
Primary	1558	4910	27
Junior high school (JHS)	1150	1982	20
Senior high school (SHS)	436	3012	7
Tertiary	131	631	2
Father living in household			
Yes	3970	11,754	62
No	1885	6507	38
Mother living in household			
Yes	4569	14,508	78
No	1286	3753	22
Relationship to household head			
Son/daughter	4589	14,304	77
Other	1266	3957	23
Father's education			
No formal education	5035	14,575	81
Formal education	820	3686	19
Mother's education			
No formal education	5438	16,640	92
Formal education	417	1621	8
Region			
Ashanti	523	1914	10
Brong Ahafo	812	1628	10
Central	177	1894	9
Eastern	720	1626	10
Greater Accra	116	1706	8
Northern	772	2540	14
Upper East	775	1552	10
Upper West	1011	1860	12
Volta	527	1684	9
Western	422	1857	9
Locality of residence			
Urban	975	7535	48
Rural	4880	10,726	52

Most of the children involved in child labour lived in rural areas (52%). This could be attributed to the fact that records of non-formal sectors are limited; cheap labour is available, and there is also a lack of infrastructural facilities in rural areas compared with urban centres. Many these children were found in the three northern regions of Ghana: Northern (14%) and Upper West (12%) followed by Upper East (10%). The majority of these children (78%) were engaged in child labour

and were living in their mother's household; around 62% of the children's fathers lived in the same household. About 44% of the children were found to have no basic education while 81% of fathers had no formal education.

Logistic regression models specification

A binary logistic regression model was fitted to the set of available independent variables to assess the factors influencing child labour. A chi-square test and predictor variable selection procedure were performed to determine the significant variables for the final model. The best model was the one with the minimum AIC value. A parameter estimate, odds ratio and 95% confidence intervals for the logistic regression model are presented in Table 2. Overall significance (goodness of fit) was tested using a likelihood ratio test. The null and fitted models were examined and the results indicated that the fitted model was satisfactory (Table 2).

Results

Results from the logistic regression model suggested that child labour was significantly associated with child age. Specifically, compared with the 5–9-year-old age category, children older than 9 years were more likely to be engaged in child labour. This likelihood significantly increased by 157% for children aged 10–14 and by 83% for children aged 15–17 years. However, the latter was only marginally significant. This result agrees with Abou (2014) and Grootaert (1998) who suggested that the probability of involvement in child labour is greater when children are younger and decreases as they get older. On the other hand, studies by Blunch and Verner (2000) and Dumas and Lambert (2008) contradict these results since they found that households send older children to the labour market and the younger ones to school.

In addition to age group, gender was significantly associated with child labour practices. Specifically, the likelihood of being involved in child labour was 9% less for females compared with male children. This result may be influenced by the fact that as very young children generally constitute a burden to the family, older ones, particularly girls, might have to spend more time on housework than males if there are younger children present. The finding agrees with other studies (Basu et al. 2010; Bradley 1993; Emerson and Souza 2007; Fassa et al. 2000; Mistiaen 2013; Smits and Gunduz-Hosgor 2006; Tatek and Sharon 2011; Webbink et al. 2012).

Child academic involvement was also associated with child labour practices. The results from the model suggested that the likelihood of child labour practices increased by 2, 25 and 130% for children with primary, no basic and junior high school (JHS) education, respectively, compared with those with tertiary education while the likelihood of child labour practices decreased by 21% for children with a senior high school (SHS) education. Although Free Compulsory Universal Basic Education (FCUBE) is in place in Ghana, some parents and guardians reluctantly send their children to school because of lack of enforcement of the legal requirement.

Children with JHS education may be in the transition from childhood to adolescence and characterized by physical changes that can be associated with extra costs that their parents cannot afford, so they may feel compelled to send the child to work to raise money to contribute to unavoidable expenditures. Moreover, children in JHS education are mostly day students, with free weekends during which they can theoretically work. Peer pressure could be another driving force. Poor households with larger sizes sometimes also send these children to work to supplement their income.

Studies by Drusilla et al. (2002) suggest that as children grow older and acquire skills, the cost of schooling rises. This is particularly the case for adolescents; also, they are able to perform physically demanding tasks as they approach maturity. Becker (1993) and Webbink et al. (2012) argue that lower levels of child labour can be expected in areas with a higher level of education since schooling is a prerequisite to acquiring human capital and better labour market opportunities.

Child labour practices were also found to be associated with the presence of the father and mother in the household. The likelihood of a child being involved in child labour practices increased by 5% when the father was not present in the household, whilst the probability increased by 12% when the mother was not present. However, the former was not significant at the 5% level. This result is as expected since parents, particularly mothers, will not be happy to see their young children compromising their education and health for work. This result is in agreement with findings from previous studies (Andvig 1998; Huisman and Smits 2009).

The results also suggest that children who are not biologically related to the household head have less likelihood of being involved in child labour compared with those children who are biologically related to them. However, this result was not significant and disagrees with findings from other studies (Andvig 1998; Huisman and Smits 2009; Lloyd and Desai 1992) that showed that foster children are more likely to be involved in child labour because they are not living in households with their parents.

Neither the father's nor mother's education was significantly associated with child labour practices. Results did show, however, that children whose father or mother had a formal education were less likely to be involved in child labour by 6 and 7%, respectively. Although this result was not significant, it was expected since parents who have some level of formal education themselves know the value of its possible returns, and so will make efforts to prevent their children from engaging in child labour (Grootaert 1999; Ray 2000). This finding is in agreement with other studies (Drusilla et al. 2002; Grootaert 1999; Ray 2000), which concluded that the more educated a

Table 2 Parameter estimates, *P* value, odds ratio and 95% confidence interval (CI) of logistic regression model for child labour

Predictor	Estimate	P value	Odds ratio	95% CI	
Age group (years)					
5–9	Reference	–	–	–	–
10–14	0.43	<0.001	2.57	2.26	2.93
15–17	0.09	0.053	1.83	1.54	2.17
Gender					
Male	Reference	–	–	–	–
Female	−0.04	0.053	0.91	0.84	1.00
Child's education					
No basic education	0.05	0.298	1.25	0.97	1.59
Primary	−0.14	0.008	1.03	0.81	1.31
Junior high school (JHS)	0.66	< 0.001	2.30	1.76	3.00
Senior high school (SHS)	−0.40	< 0.001	0.79	0.58	1.08
Tertiary	Reference	–	–	–	–
Father living in household					
Yes	Reference	–	–	–	–
No	0.02	0.629	1.05	0.86	1.28
Mother living in household					
Yes	Reference	–	–	–	–
No	0.11	0.025	1.25	1.03	1.52
Relationship to household head					
Son/daughter	Reference	–	–	–	–
Other	−0.05	0.429	0.91	0.71	1.16
Father's education					
No formal education	Reference	–	–	–	–
Formal education	−0.07	0.144	0.87	0.73	1.05
Mother's education					
No formal education	Reference	–	–	–	–
Formal education	−0.07	0.160	0.86	0.70	1.06
Region					
Ashanti	0.21	0.118	1.21	0.76	1.92
Brong Ahafo	0.72	< 0.001	2.01	1.27	3.18
Central	−1.07	< 0.001	0.34	0.18	0.61
Eastern	0.49	0.002	1.60	0.97	2.65
Greater Accra	−1.13	< 0.001	0.32	0.18	0.55
Northern	−0.16	0.293	0.84	0.51	1.36
Upper East	0.35	0.038	1.39	0.83	2.32
Upper West	0.36	0.010	1.41	0.88	2.26
Volta	0.22	0.1964	1.22	0.73	2.05
Western	Reference	–	–	–	–
Locality of residence					
Urban	Reference	–	–	–	–
Rural	0.47	< 0.001	2.56	1.99	3.30
Constant	−1.54	< 0.001	–	–	
Goodness-of-fit statistics					
Akaike information criterion (AIC)	7,994,099				
Likelihood ratio	50,835				
-2LogL	7,994,053				
P value	< 0.001				
Score	25.27				
Wald test statistic	26.06				

parent is, the more likely a child will be to attend school rather than work. Other existing studies (Edmonds 2003; Martin 2013; Thijs 1997; Togunde and Carter 2006) also show that a lack of education in parents is associated with premature employment of their children and that parental preferences influence how education is valued. Parents who have reached a certain educational level expect their children to attain at least the same level (Breen and Goldthorpe 1997).

In Ghana, children in the Ashanti, Brong Ahafo, Eastern, Upper East, Upper West and Volta regions were more likely to be involved in child labour compared with the Western region, whilst those in the Central, Greater Accra and Northern

regions were less likely to be involved in child labour practices. Similarly, the residential locality of the child was significantly associated with child labour practices. Children in rural areas were about 60% more likely to be involved in child labour compared with children living in urban areas. This finding agrees with conclusions in the existing literature (Diallo 2001; Grootaert 1998), which argue that rural areas favor child labour because of a lack of educational infrastructure. Webbink et al. (2012) also confirmed that in urban areas the road and transport infrastructure is generally better and the state influence stronger, and there may therefore be more pressure on parents to send their children to school. According to ILO-IPEC (2006), 60–70% of child labour worldwide takes place in rural areas. The differences between localities could be due to variations in the economic activity, socio-cultural environment and distance to the nearest school.

The variables of the relationship to the head of household, the father living in the household, educational grade completed by the father and grade completed by the mother were not significant predictors of child labour, but were retained in the final model to control for possible fluctuations.

Conclusion and recommendation

The world's attention to child labour has grown in line with a significant increase in the level of child labour in developing countries including Ghana, where the situation is not be underestimated. Hence, this study seeks to explore the contributing factors associated with child labour practices in this country. The previous literature on child labour has been extended by shedding light on the factors influencing it. Furthermore, our findings highlighted the importance of raising awareness about the dangers of child labour and exploring avenues for its prevention. The findings show that some factors influencing child labour in Ghana include the child's age and gender and grade, the mother living in the household, and region and locality of residence.

The findings indicate the need for the Ministry of Gender, Child and Social Protection, as the leading government agency, and other stakeholders, such as NGOs, to embark on education, intervention and enforcement programmes to stop child labour practices. These initiatives should focus more on people in rural centres where poverty levels are known to be high. In addition, rules should be implemented together with law enforcement agencies such as the police and violators should be apprehended and sanctioned to dissuade other perpetrators.

Moreover, the Ghana Education Service should place emphasis on upholding FCUBE throughout the country, but especially in the Brong Ahafo, Eastern, Upper West, Upper East and Volta regions, where child labour prevalence is high and education levels are particularly poor. The very low priority given to education in the national budget, with parents being asked to pay for PTA (Parent Teacher Association) and other fees, and the economic compulsions that force parents to send their children to work rather than school (Hilson 2010) must also be urgently addressed.

Interpretation of the findings are limited in this analysis because it is difficult to determine whether they reflect general differences that hold true for all places at any point in time or whether they are unique to certain situations. Future research would be of benefit to explore whether child labour changes over time in an historical context.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Informed consent The study used a data set that is available online in the public domain; hence, there was no need to seek ethical consent to publish the results in this study.

Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

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