

Determinants of Child Labour Exploitation and its Impact on Their Educational Achievement in South Western Ethiopia: The Case of Jimma Town

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ABSTRACT

This study aimed to identify determinants of child labour exploitation and its impact on children's educational achievement in Jimma town. The study utilized a cross sectional data collected from 196 sample child labourers and interview is also made with the supervisor of children's right protection office and other concerned staffs. Primary data from child labourers were collected through structured questionnaire. For identifying the determinants of child labour OLS estimation technique was used. Two- limit tobit model was employed for estimating the determinants educational achievement which is proxied by cumulative grade point average (CGPA). Result from OLS estimation indicates that child labour exploitation is associated with age of the child, household size, monthly income of child's parent, sex of the child, educational level of child's father and parents of the child who takes debit among others. In addition, tobit estimator result shows that children's educational achievement is significantly determined by age of the child, monthly income of child's parent, educational level of child's father, marital status of the household head and total working hours of the child per week. To this end, the study suggests strengthening school based financial support and creating awareness in the community about the detrimental effect of child labour exploitation on their physical and mental wellbeing and off course the long lasting solution to curb the problem of child labour and promote human capital accumulation is overcoming poverty level.

Keywords: *Child labour; Children's educational achievement; OLS; Two-limit tobit model*

1. Introduction

Children constitute the most vital base of human resource endowment. They are the most valuable future citizens of the country. However, they face different pressure that potentially

harms their social, physical, psychological, and behavioral developments. Hence, more attention is now paid to the issues of children in the world (Temesgen, 2015).

Child labor is participation of child in any exploitive and full time work to sustain oneself or add to family income. However, all work done by children is not child labor, rather when the work interferes with moral, physical, mental, educational, spiritual and social development of a child (Musandrire, 2010). The most extreme forms of child labor exploitation involves children being enslaved, separated from their families, exposed to serious hazards and illness for themselves on the street of large cities often at a very early age. Whether or not particular forms of “work” can be called “child labor exploitation” depends on the children’s age, the type and hours of work performed, the condition under which it is performed and the objectives pursued by individual countries. Child labor perpetuates poverty by depriving children of education and subsequently renders these children without the skills needed to secure the future of their countries (ILO, 2013).

Child labour exploitation in developing countries especially in sub Saharan Africa and South Asian continues to be a controversial issue (Mahendra, 2013). Child labour in these countries affects school performance as children miss important lessons and fall behind academically (Ravinder, 2009). Because of the severity of the problem, elimination of child labor becomes one of the sustainable development goals (SDGs) under goal 8 (target 8.7) by 2025.

According to the ILO (2013), 168 million children worldwide are engaged in child labour. Of these 168 million children, 85 million are engaged in what the ILO deems “hazardous work.” The sub-Saharan African region has the second highest number of child laborers in the world with about 59 million engaged as child labour in 2012. Children aged 5 to 17, or 21.4 percent, are involved in child labor while 10.4 percent are engaged in hazardous work. Only one out of five children involved in child labor is paid for his or her work. The majority of children in child labour perform unpaid family work.

Ethiopia is the one among the 10 countries listed as worst forms of child labor in 2012. About 60 percent of children in Ethiopia are engaged in some form of child labor. Many of these children work in the mining industry which poses the biggest dangers for child labourers. Many parents in impoverished countries such as Ethiopia push their children to work out of necessity.

Unable to sustain their families on their own income, the parents feel that they have no choice but to push their children into child labor (Matt, 2014).

Like other developing African countries, child labour is severe in Ethiopia. Children's below the working age are exploited for the sake of earning minimum wage for their long hour working. This indicates the severity of child labor in the country at cost of schooling (Beliyou, 2003).

Much of the recent concern over child labour stems from the beliefs that it has detrimental effects on human capital formation. This in turn has a long term impact on economic growth and development. It is a general consensus that human capital accumulation is the way out from poverty and hence to ensure economic growth and development. Education is believed to have a special place in such struggles. The problem is that if children are compelled to start work at their early ages and toil for longer hours means that their ability to attend school is seriously impaired (Bisrat,2014).

Previous studies by [(Udry, 2003), (Priyambada et al., 2005), (Sakurai, 2006)] shows that Child labour is rooted in poverty and its relation to education is often considered two sides of the same coin. It is a result of current poverty and a cause of continued poverty for the children who sacrifice their education in order to work. It interferes with the human capital development of children by either forcing children to drop out of schools or making learning process in schools ineffective. Poverty and the need of poor families for income are the most important factors that push children to engage in working activities (Gebremedhin, 2013) and educational achievement is significantly affected by child work load (Yibeltal et al., 2014).

As far as our understanding concerned, only some researchers have been conducted their researches at national level and studies at local context are scanty. (Gebremedhin, 2013) and (Temesgen, 2015) conducted their research on the effect of child labour on education at Mekelle and Jimma towns respectively. Both of them employee cross sectional data which was analyzed by descriptive statistics. But in this study more weight is given for econometric ways of analysis. Besides, future price expectations and parent's debit were included in our analysis as explanatory variables that no one dealt previously.

Although some studies try to explain about child labor exploitation, they did not show the detailed determinant/ factors of child labor exploitation broadly at the local context. Therefore,

this research is a novel in that it is an initial study that assesses the determinants of child labor exploitation and its impact on their educational achievement in Jimma town and the main purpose of this study is to identify the factors that determine child labour hour and the impact of child labour exploitation on child school achievement which is measured by semi-annual cumulative result (proxied by cumulative grade point average (CGPA)). Above all, econometric model is not formulated before for cross sectional data in developing countries.

Finally, since studies which have been done previously assessed the determinants of child labour exploitation and its impact on education separately; this study will bring and combine the different determinants of child labour exploitation and its impact on their educational achievement simultaneously.

Similarly, it is very common to see children's working in Jimma town at the cost of their education and health. Child labour has the potential to undermine economic growth through its impact on child development, wages, and technology adoption (Edmonds, 2015). Hence, it is a must to examine the various determinants of child labor to take immediate and effective measures to eradicate in all its forms. It is, therefore, imperative investigating factors which determine child labour in Jimma town since there is no comprehensive study so far in the area. In addition, it is interesting to examine the effects of child exploitation on his/or her educational achievement. Specifically, the current study aims to address the following questions:

What is the extent of child labor exploitation in the study area?

What are the factors affecting child labour exploitation?

What is the impact of child labor exploitation on their educational achievement?

2. Literature Review

From theoretical front, there two widely discussed theories in relation to child labour. The first one is the Human Capital Theory, which is based on the neo-classical theory of endogenous growth. It assumes that people are productive resource. Hence higher education will lead to higher productivity. Basic proposition behind this theory is that parents make trade-off when allocating their children's time, especially for education and labour. Their decision is based

on family economic and social conditions. Accumulation of human capital is affected by child labour (Schultz, 1961)

The second one is Risk Theory, which asserts that poor household faces shocks and risks such as unemployment, natural disasters affecting income like draught, flood, and war among others. The income shocks could be severe among the household who do not have enough reserve resources to meet such shocks. These household are more likely to supply child labor if they remain unable to borrow to smooth their present consumption need. Literature often points out that in extreme cases household could sell the future hours of their child work to overcome the present income shocks. (Duryea, 1988) concluded that the parent's unemployment reduces the probability of grade advancement among the children. (Jacoby et al, 1997) working on the data of rural India provide evidence that parents withdraw children from school during unexpected decline in crop income.

From empirical perspectives, there are few studies which focus on the determinants of child labour and the educational achievement. For example, according to [(Kelemu et al., 2016), (Assefa, 2002), (Khanam, 2006) (Eshetu and Teferi, 2014), (Solomon et al., 2011), (Mahendra, 2013), and (Gebremedhin, 2013)] the major determinants of child labour exploitations are poverty, migration, death of parents of the child, low level of education of the child's parent, age and gender of the child, price of child's school, household size, disagreement with parents, parental separations, and displacement due to war. (Latif et al. 2016) concludes that less education, need for extra money and lack for poor monitoring by government are important factors and reasons of child labor in Pakistan.

[(Temesgen, 2015), (Yibeltal et al., 2014) and (Assefa, 2002)] found that educational achievement is determined by work load at home, parental income, low rate of school attendance, late coming, lack of active participation in class room activities, lack of doing homework, distance to school and quality of education.

According to (Eduardo G. et al., 2009) students who work both inside and outside of the home experienced a negative impact on their achievement test scores. However, the negative impact was greater for students who only worked outside the house than those who worked both inside and outside the house. Students who work both outside and inside the home have a heavy work load, possibly tire themselves physically, and have less time and energy to devote to their studies

than students who do not work or who only work in one location. Each additional hour that a student works lowers school achievement. Students who work 7 hours or more per day experience the most harm to their school performance, but the harm is modest with at most a 10 percent decrease in their achievement test scores relative to students who do not work.

A study by (Blanco et al., 2008) shows that the levels of children's work are significantly and inversely correlated to the number of years that a child will spend at school. They also observe that the data for both boys and girls and is regardless of grade repetition, resulting in lower levels of human capital accumulation. There is a significant inverse correlation between levels of economic activity of children aged 7-14 and youth literacy rates in the 15-24 age group. This finding suggests that the consequences of child labour can be critical not only in terms of human capital accumulation in general, but also in acquiring key educational basic competencies such as the ability to read and write. The absence of these basic skills will leave youth and adults with very restricted options besides working in low remunerated jobs, recreating the conditions for the perpetuation of poverty, inequality and social exclusion.

(Ray, 2001) examined simultaneous analysis of child labour and child schooling in Nepal and Pakistan for the time period 1981-1990. According to his findings the joint estimation of child labour hours and child schooling experience exertions is the significant rate that child's current school attendance plays in sharply diminishing child labour hours. Rising education level of the adults members in the household and increased public awareness have a highly insignificant positive impact on child schooling and subsequently can play important part in reducing the child's long hours of working.

3. Research Methodology

A cross-sectional study design has been used in order to analyze the various factors of child labour exploitation and its impact on educational achievement in Jimma town. The collected data is analyzed by using both the qualitative and quantitative (econometrics) methods.

3.1. Target Population

The study was conducted on determinants of child labour exploitations and its impact on educational achievement in South Western Ethiopia, particularly in Jimma town. And the target population of the study was child labourers found in Jimma town.

3.2. Sampling Technique and Sample Size Determination

According to Jimma town women and child affair office (2016) there are 40,700 child labourers aged 5-17. In the city there are 17 kebeles (CSA, 2016) and it is not possible for conducting a survey by including all kebeles in the town. To draw representative sample of the population, a multi-stage sampling was used. Firstly three kebeles were selected using purposive sampling. The selection was done depending on the availability of market place where children are participating in labour activities either to help their parents or guardians or earn income for their living, number of population, number of child labourers and the economic condition.

The number of child labourers whose age is 5-17 and at the same time who combine work with school for the three kebeles namely Bauche Booree, Hirmaataa Markaattoo and Hirmaataa Mantiinaa are 2530, 780 and 1385 respectively. The total number of child labourers in the surveyed kebeles adds up 4695. For sample size determination we can use the formula developed by (Yamane, 1967).

$$n = \frac{N}{1+N(e)^2}$$

Where; n = sample size

N = number of child laborers in the study area

e = is the desired level of precision (e = 7% or 0.07)

$$n = \frac{4,695}{1+4,695(0.0049)} = 196$$

Second, after determining the total number of sample respondents in the study area, the next step involves applying proportional stratified random sampling by dividing the given population in to homogeneous subgroups and then determining sample respondents in each of the three selected kebeles by using simple random sampling techniques. At this stage, children whose age is 5-17

and who are engaged in economic or non-economic activities has been selected randomly proportional to their population size. The formula is as follow;

$$n_i = \frac{N_i}{N} * n$$

Where, n_i = sample size of i^{th} kebele, N_i = total child laborers of i^{th} kebele, and N = total number of child laborers in the selected kebele and n = total sample size.

For Bauche Booree kebele, $2530/4695*196=106$; For Hirmaataa Markaattoo kebele, $780/4695*196=32$; For Hirmaataa Mantiinaa kebele, $1385/4695*191=58$

Therefore, the total respondent of the three kebeles is the sum of the above sample that is $106+32+58=196$.

3.3. Method of Data Collection

Primarily the structured questionnaire is prepared in English language and converted to local languages where everybody can easily understand each question. To collect data from respondents a trained data collectors, who speak the two languages (English and Amharic) were used in the data collection process and conducted a face to face conversation with the sampled respondents.

3.4. Econometric Model Specification

The aim of this research is to estimate the determinants of child labour exploitation and its impact on educational achievement. There are two models used in this study. The first model is used for investigating the determinants of child labour exploitation in which child labour hours per week is the dependent variable. Child labour hours is chosen because it is assumed the best way to measure the working condition of children and off course used by different researchers like (Kurtikova, 2009) and (Ray, 2001).

Previous studies on determinants of child labour in India and Pakistan by (Kurtikova, 2009) and (Ray, 2001) analyzed the determinants using Ordinary Least Square (OLS) estimation technique. This is because; child labour is measured by child labour hours per week which is a continuous

variable. Though this study uses OLS estimation technique an attempt was made to compare the result from OLS with that of tobit regression results.

Based on previous studies and our common intuitions, we identified a number of independent variables to be included into the first model. Accordingly, the estimable model is specified as follows:

$$Child\ labour\ hours\ (nwhij) = \beta_0 + \beta_1 sexij + \beta_2 ageij + \beta_3 hhsij + \beta_4 mincij + \beta_5 maedu + \beta_6 faeduij + \beta_7 mshhij + \beta_8 brchhhij + \beta_9 debitij + \beta_{10} eshhij + \beta_{11} agehhij + \beta_{12} sexhhidij + \beta_{13} hpeij + \mu_{ij} \dots \dots \dots (1)$$

The second model used in this study was to estimate the determinants of educational achievement which is measured by test scores of children’s in a semester. To analyze the effect of child labour on student’s educational achievement using test score in a semester is preferable [(Shimada, 2010), (Aturupane, 2007), (Eduardo et al., 2009) and (Tassew and Aregawi, 2015)]. Tobit model has been used for estimating the various determinants of educational achievement. Since the students’ scores are censored both from below (minimum possible score) and above (maximum possible score), tobit is an appropriate estimator to apply.

The tobit model is a statistical model proposed by James Tobin (1958) to describe the relationship between a non-negative dependent variable y_i and an independent variable or vector x_i . The tobit model can be described in terms of a latent variable y_i^* . Suppose that y_i^* is observed if $y_i^* > 0$ and is not observed if $y_i^* \leq 0$. Then the observed y_i can be defined as

$$y_i = \begin{cases} y_i^* = \beta x_i + u_i & \text{if } y_i^* > 0 \\ 0 & \text{if } y_i^* \leq 0 \end{cases} \dots \dots \dots (2)$$

$$U_i \sim IIDN (0, \sigma^2)$$

This is known as the tobit model and it is called censored regression model, because it is designed to estimate linear relationship between variables when there is either left or right censoring or both left and right censoring in the dependent variable (Maddala, 2005). Among the different types of tobit model, two-limit tobit model has been used to analyze the determinants of educational achievement which is measured by cumulative result/ average test score which have a minimum and maximum of 0 and 100 respectively. The model then specified as

$$y_i^* = \beta x_i + u_i \quad i = 1, 2, 3, \dots, n \dots\dots\dots(3)$$

y_i^* is the latent variable and x_i and u_i are the set of the explanatory variable and error terms respectively. If we denote y_i the observed dependant variable,

$$\begin{aligned} y_i &= L_{1i} \text{ if } y_i^* \leq L_{1i} \\ &= y_i^* \text{ if } L_{1i} < y_i^* < L_{2i} \dots\dots\dots(4) \\ &= L_{2i} \text{ if } y_i^* \geq L_{2i} \end{aligned}$$

Here L_{1i} and L_{2i} , are the lower and upper limits respectively.

Where y_i = the observed cumulative result of students

y_i^* = the latent variable which is not observed

β = vector of unknown parameters

x_i = vector of independent variable affecting cumulative result

Table 1: Definition of variables used for the two models

Variables used in the analysis	Their definition
TWH	Total working hours of child labourers per week
CMR	Cumulative results of child labourers per semester (average)
HHS	Household size
AGE	Age of the child
AGHH	Age of the household head
MINC	Monthly income of the child's parent
SEX	1 if the child is male; 0 otherwise
SEXHH	1 if the household head is female; 0 otherwise
MAEDU	a categorical dummy for the level of education attained by child mother's (1 if illiterate; 2 if primary school completed; 3 if secondary school completed; 4 if above secondary school
FAEDU	a categorical dummy for the level of education attained by child father's (1 if illiterate; 2 if primary school completed; 3 if secondary school completed; 4 if above secondary school
BRCHH	1 if the child is not biologically related with the head of the household; 0 otherwise
MSHH	a categorical dummy for marital status of the household head (1 if single; 2 if married; 3 if divorced; 4 if widowed)

ESHH	1 if the household head is employed; 0 otherwise
DEBIT	1 if the parents of the child take debit; 0 otherwise
HPE	1 if the child works because of expecting higher price in the future; 0 otherwise

Where β 's are parameters of and μ_{ij} is an error term of the model.

4. Results and Discussion

4.1. Descriptive Statistics

A Sample of 196 child laborers who combine work with school were selected randomly for this study. Out of the total respondents 80 (40.82%) are females and 116 (59.18%) are males. The data shows 161 (82%) of them are working for wage while 35 (18%) are working without having a paid wage as they are working for helping their parents in work place.

Table 2 (see annex I) contains information about the type and extent of work that children participate in the study area. As represented by the table above 39 (19.9%) of the respondents' were working as a street vendors followed by working in household chores 34 (17.35%) and as shoe shine 26 (13.27%). Children's working in wood work, garage and shop keepers have the same percentage share that is 18 of them are working in each working category taking 9.18% and the same is true for those working in taxi conducting and in cart driver category which accounts 5 (2.55%). The remaining lottery seller and those working in café and restaurant accounts 7 (3.57%) and 3 (1.53%) respectively. From this information we can deduce that most of the participants in labor activities are male as it compared with female. When we see their participation in each work category most of males are working as a shoe shine and wood work, while most of females are working as a street vendors and household chores respectively.

As it is clearly shown from the above frequency distribution table (see annex II), 73 (37.24%) % of the respondents are working for 21-35 hours per week followed by 36-50 hours per week accounting 59 (30.10%) of the total respondents'. About 28 (14.29%) of them are working 51-65 and 5-20 hours per week and the remaining 8 (4.08%) are working for 66-75 hours per week which highly interferes with their education. This hour is even almost double of ILO maximum restriction of child labour hour for children's under the age of 18 i.e. 43 hours per week. The

mean working hour of the child per week is 36.46939 with minimum of 5 and maximum of 72 hour.

Table 3(see annex III) shows that respondents semester average cumulative result. Most of the respondents' 94 (47.96%) of them reported that their semester average score is below half (50) and the reason for these low score is participation of in labour activities. About 47 (23.98%), 30 (15.31%), 16(8.16%) and 9 (4.59%) of the children reported their semester average score as satisfactory, fair, very good and excellent respectively. The mean of their semester score is 56.43 while the minimum and maximum test scores are 30 and 99 respectively.

4.2. Econometric Analysis

The estimation of labour hour equation has been done by using both OLS and Tobit estimators for comparison purpose. However, the second model i.e. determinants of child school achievement has been estimated by using two-limit tobit estimator. The result of each of the two models is presented here under.

4.2.1. Determinant of Child Labor Exploitation

After having comparison between OLS and Tobit for estimating the determinants of child labour exploitation OLS result is presented here below as long as both of the models have nearly the same output.

4.2.2. OLS Estimation Result and Discussions

Prior to running OLS estimation, the model is checked for the existence of data problems mainly multicollinearity, hetroskedasticity, normality and omitted variable bias. After doing this procedure the final output or result is presented as follows.

Table 2: Estimation Result of Ordinary Least Square method

Dependent variable (Total working hour per week)	Coefficients	Standard error	T	p> t
Dummy for female child	3.990812**	1.993025	2.00	0.047
Age of the child	1.10534*	0.4098644	2.70	0.008
Household size	1.483161*	0.4271158	3.47	0.001

Income	-0.0007814**	0.0003899	-2.00	0.047
Mother's education (reference = above secondary school)	-	-	-	-
Illiterate	1.403785	5.942311	0.24	0.814
Primary school completed	-0.1667073	5.752828	-0.03	0.977
Secondary school completed	-0.2851573	6.06059	-0.05	0.963
Father's education (reference = above secondary school)	-	-	-	-
Illiterate	-7.277006**	3.529195	-2.06	0.041
Primary school completed	-8.223797*	3.392914	-2.42	0.016
secondary school completed	-1.471877	3.880505	-0.38	0.705
Marital status of the household head (reference = married)	-	-	-	-
Single household head	3.248912	3.741093	0.87	0.386
Divorced household head	2.893699	2.386803	1.21	0.227
Widowed household head	1.070333	3.941833	0.27	0.786
Dummy for child who is biologically related with the head	-3.106842	2.154626	-1.44	0.151
Dummy for child's parent who have debit	7.825869**	3.801668	2.06	0.041
Dummy for unemployed household head	1.797819	4.271627	0.42	0.674
Age of the household head	0.0443563	0.0881919	0.50	0.616
Dummy for female household head	2.407952	2.212804	1.09	0.278
Dummy for child's who expect higher price in the future	4.278006	3.399594	1.26	0.210
_cons	13.77422	9.193865	1.50	0.136

Number of ob. 196

R-squared = 0.3371

Adj R-squared =0.2655

F(19, 176) = 4.71

Pro >F = 0.0000

Root MSE = 12.78

Source: Authors' estimations (2017)

Note: () and (**) shows the significant level of the variables at 1% and 5% respectively.*

As shown in Table 2, sex of the child and monthly income of the child's parent are statistically significant at 5%. This implies that female children are more participant in labour activities than

their male children. This finding is in sharp contrast with the finding by Mahendra (2013). Similarly, age of the child and household size are found to be significant at 1% level of significance. The negative coefficient of parents' income shows that as parents' income increases children spend few hours on child labour. . This finding is consistent with the finding by Solomon et al., (2011) who find negative association between parents' income and child labour participation.

The positive coefficient of age implies that older children work for more hours than younger ones. Household size found to have positive and significant effect on child labour hour. The positive association between household size and total child labour hours implies that as family size increases, parents would be unable to finance the required expenditure which might push their children to work at the cost of schooling. Interestingly, our results are consistent with the findings by (Mahendra, 2013) and (Kausar, 2010) who found positive effect of household size on child labour hour per week.

Educational level of child's father is significant at 5% and has negative impact on child labour hour. In addition, children who are from family who are in debt have more probability of being engaged in child labour. This has an indication that parents who are debit send their children to work more than parents who are not in debit.

4.2.3. Child Labour and Educational Achievement

Cumulative result per semester (average test score) is the dependent variable for the second model. Two-limit Tobit mode has been used for the estimation of the model. However, this model has a limitation, because it does not have test option for detecting hetroskedasticity which is the problem in cross sectional data. If this problem is not detected there should not be constant variance for residuals which result inconsistent estimators so that it has to be corrected before running other tests.

Since, Tobit model does not have robust option in stata for solving the problem of hetroskedasticity we have to follow <http://www.stata.com/support/faqs/stat/tobit.html> website, which was recommended by James Hardin, stata corporations (Jemal, 2011). Likewise, for this analysis the same procedure is applied. This website tells us to use interval regression for solving hetroskedasticity problem of the Tobit model. As it was explained there to run interval regression

new dependent variable should be generated from the existing one for getting similar results with the Tobit regression. Using the new generated dependent variable it is simply adding robust option while performing interval regression for solving heteroskedasticity problem. Prior to running interval regression, the model is checked for the existence of data problems mainly multicollinearity and omitted variable bias. After doing this procedure the final output or result of interval regression is presented as follows.

Table 3: Regression result for educational achievement

Interval regression Number of obs = 196
Wald chi2 = 55.35
 Log pseudolikelihood = -805.95288 Prob > chi2 = 0.0000

Dependent variable (cumulative result)	Coefficients	Standard error, (r)	Z	p> z
Total working hour	-.1600849***	0.0980881	-1.63	0.103
Dummy for female child	-0.760423	2.224069	-0.34	0.732
Age of the child	1.1160527**	0.5207647	2.23	0.026
Household size	-0.0077377	0.4796072	-0.02	0.987
Mother's education (reference = above secondary school)	-	-	-	-
Illiterate	-0.1865272	8.206215	-0.02	0.982
Primary school completed	-1.368748	8.241677	-0.17	0.868
Secondary school completed	-2.222619	8.305177	-0.27	0.789
Father's education (reference = above secondary school)	-	-	-	-
Illiterate	1.388893	3.597779	0.39	0.699
Primary school completed	8.464138**	3.906315	2.17	0.030
Secondary school completed	4.274637	4.3937744	0.97	0.331
Marital status of the household head (reference = married)	-	-	-	-
Single household head	2.10719	4.126051	0.51	0.610
Divorced household head	-5.116781**	2.632465	-1.94	0.052
Widowed household head	4.554516	5.015121	0.91	0.364
Income	.0011748*	0.0004843	2.43	0.015

Our empirical result shows that educational achievement is positively associated with age of the child, monthly income of child's parent, educational level of child's father. However, marital status of the household head and total working hours of the child per week are negatively associated with the child's educational achievement. Furthermore, we find that child labour hour has a negative impact on his/or her educational achievement. Accordingly, we conclude that child-labour negatively affects child educational achievement in primary schools. Thus, the most appropriate measure to reduce child labour is poverty reduction, provision of education and heightening campaigns against child-labour.

Based on our study, we identified major factors affecting child labour exploitation and its impact on their educational achievement in Jimma town. Based on the findings, we suggest that

- ✓ The government should provide subsidies and credit facility for the poor, and to strengthen poverty reduction program to achieve its goal of achieving quality education for all.
- ✓ In addition we suggest that the government should strengthen family planning programs to limit family size in a household.
- ✓ The government should limit itself focus not only at a very early age but also, until they fully enjoy their child hood stage.

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Annexes

Annex I: Displays the type of works that children participate

The type of work that children's engaged	Respondents			
	Male	Female	Total respondents	Percentage
Wood work	17	1	18	9.18
Garage	16	2	18	9.18
Taxi conducting	5	0	5	2.55
Shoe shine	26	0	26	13.27
Café and restaurant	3	0	3	1.53
Household chores	16	18	34	17.35
Street vendors	8	31	39	19.9
Shop keepers	9	9	18	9.18
Cart drivers	5	0	5	2.55
Lottery selling	4	3	7	3.57
Others	10	13	23	11.73
Total	119	77	196	100

Source: Own survey (2017)

Annex II: Children's working hours per week

Hours per week	Frequency	Percentage
5-20	28	14.29
21-35	73	37.24
36-50	59	30.10
51-65	28	14.29
66-75	8	4.08
Total	196	100

Source: Own survey (2017)

Annex III: Displays Children's Average Score

Average score	Frequency	Percentage
<50	94	47.96
50-59	30	15.31
60-79	47	23.98
80-89	16	8.16
90-100	9	4.59
Total	196	100

Source: Own survey (2017)