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Child labor and school attendance in Kenya

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Sub-Saharan Africa has the highest incidence of child labor in the world and estimates show that it continues to grow. This paper examines the causes and magnitude of child labor in Kenya. Unlike previous studies that examined child labor as only an economic activity, this paper includes household chores. Including household chores is important because majority of child labor takes place within the household. The paper finds that socioeconomic status and structure of the household have a strong effect on child labor. Also, a large proportion of working children attend school. If the consequence of working is to hinder educational attainment, then policymakers need to focus to this dimension of educational inequality: Between students who combine work and school and those who do not.

Key words: Kenya, child labor, school attendance, sub-Saharan Africa.

INTRODUCTION

Sub-Saharan Africa has a large number of working children. United Nations Children's Emergency Fund (UNICEF) estimates approximately 37% of children 5 to 14 years are actively involved in the labor market (UNICEF, 2007). The proportion of children working has continued to rise in the region. Child labor participation rates are highest in East Africa, followed by Central Africa and West Africa (Admassie, 2002; Bass, 2004). Child labor is characterized by low wages, long hours, and in many cases, physical and sexual abuse.

The growing number of working children in sub-Saharan Africa had been linked to many factors including, economic stagnation, poverty, war, famine, orphanhood, and the rapid spread of HIV/AIDS (Admassie, 2002; Andvig et al., 2001; Bass, 2004; Bhalotra, 2003; Manda et al., 2003). Many researchers argue that poverty is the main reason children work (Admassie, 2002; Andvig et al., 2001; Baland and Robinson, 2000; Grootaert and Patrinos, 1999; Jensen and Nielsen, 1997; Manda et al., 2003; Patrinos and Psacharopoulos, 1997). In a 1998 policy paper, the World Bank described child labor as "one of the most devastating consequences of persistent poverty" (Fallon and Tzannatos, 1998: v). Others blame deficient economic and educational policies for child labor (Hiraoka, 1997; Post, 2002; Weiner, 1991). Despite a growing body of research, there are still many unanswered questions. For example, what factors account for the wide variation in child labor rates in sub-Saharan Africa?

To better understand child labor, more country studies will be needed; Bass (2004) argues, "it is vital to consider how the work of children in one part of Africa is similar to the work of children in another, and to find similarities in their varied contexts that allow us to understand them as a whole" (p. 6).

Therefore, this paper seeks to answer the following questions: What determines children's participation in work and/or school in Kenya? Is child labor concentrated in certain regions and in certain households?

THE CONTEXT: KENYA

National economic and social policies shape household life and the experiences of children. In Kenya, despite government efforts, poverty has continued to rise, especially in the last 18 years. The government of Kenya estimates that the population living in poverty has risen from about 48.8% in 1990 to about 55.4% in 2001 (Republic of Kenya 2004). The 2004 Poverty Reduction Strategy Paper (PRSP) estimates that between 1997 and 2001, a further 2.5 million people were living below the poverty line. The PRSP presents dismal statistics, "Illiteracy rates increased as enrolment rates in primary school declined during the 1990s. Life expectancy declined from 57 to 47 years between 1986 and 2000, while the situation in infant and child mortality and HIV/AIDS worsened" (Republic of Kenya, 2004: 9). The majority of the poor in Kenya live in rural areas or in

urban slum settlements with limited access to productive resources and social services.

Since independence, successive governments had laid great emphasis on education as a way to combat poverty resulting in a rapid expansion of education in Kenya. Enrollment rates have fluctuated in the last 20 years. In the 1980s, the gross primary school enrollment rate had reached about 115%; however, the rate fell to about 90% in 1999 (Bedi et al., 2004; Kimalu et al., 2001), the decline was partly due to the formal cost-sharing system introduced in 1988 (Bedi et al., 2004). In 2003, enrollments once again surged with the introduction of free primary education policy. The government of Kenya has consistently allocated a significant proportion of its resources to education. According to Buchmann (1999), the Kenyan government had enacted policies that “signaled greater educational opportunities for all Kenyan children and sent the message that the government was taking steps to create an even more meritocratic educational system” (p. 63).

CHILD LABOR

Defining child labor

There is no universally accepted definition of child labor. Definitions are varied and ambiguous. Child labor is a complex phenomenon; the 1997 State of the World's Children (UNICEF, 1997: 24) captures this complexity: “[Child labor] takes place along a continuum. At one end of the continuum, the work is beneficial, promoting or enhancing a child's physical, mental, spiritual, moral or social development without interfering with schooling, recreation, and rest. At the other end, it is palpably destructive or exploitative.”

This statement raises important questions: At what point does child labor become a social problem? When do we cross the line from beneficial to harmful? Clearly there are extreme forms of child work that are unacceptable – child prostitutes, bonded laborers, and child soldiers – and should not be tolerated under any circumstances. However, there are other types of work like household chores, farm work that need to be closely examined to determine their impact on children. For example, household chores may promote social development for some children but at the same time may be exploitative and destructive for other children. Child work is further complicated when the same type of work may be beneficial and harmful to the same children. For example, agricultural work may be beneficial in terms of providing income and improving nutrition but if children are taken out of school during planting or harvesting the work becomes harmful because it is hindering their education.

Child labor is a complex phenomenon that is difficult to define. Definitions tend to be either too broad or too

narrow. A broad definition of child labor may include aspects of child work that are beneficial, while a narrow definition may exclude harmful child activities. By defining child labor as an economic activity researchers fail to capture the large number of children contributing to the upkeep of the household at the expense of school and social development.

ILO defines child laborers as (1) children between 5-11 years of age who are economically active; (2) children between 12-14 years of age who work in an economic activity for 14 or more hours per week, and (3) children between 12-17 years of age engaged in hazardous work. The definition of child labor used by the ILO is derived from two conventions, Convention 138 on the Minimum Age for Admission to Employment and Work, which sets the minimum working age at 15 years (14 years for some developing countries), and Convention 182 on the Worst Forms of Child Labor, which focuses on the worst forms of child labor. The main assumption is that work that does that does not interfere with children's schooling or affect their health is positive. Although ILO makes this distinction between child work and child labor, ILO survey data measure whether a child is engaged in economic activity. This is a narrow definition because it excludes domestic chores. Majority of working children participate in domestic chores - they fetch water, cook, clean, farm, and take care of their younger siblings (Reynolds, 1991).

UNICEF has a broader definition of child labor. It defines child labor as work that exceeds (1) 1 h of economic labor or 28 h of domestic labor for children, 5 – 11 years; (2) 14 h of economic labor or 28 h of domestic labor for children, 12 – 14 years, and (3) 43 h of economic labor for children, 15 – 17 years. This definition expands the ILO definition but also has limitations. The definition assumes 28 h of domestic chores per week do not interfere with school attendance. 28 h of domestic chores for a child age 6 seems too high and is likely to impact schooling. The number of hours children work is an important indicator of the intensity of child work, but it is also useful to know the time of day/night children work to determine its impact on schooling.

The definition of child labor continues to be the greatest obstacle to the study of children at work. Despite its limitations, the UNICEF definition is more inclusive and a significant improvement from the ILO definition. UNICEF noted, and rightly so, that child labor happens along a continuum then we cannot exclude household chores because it may be harmful to children if they fail to attend school, work long hours, engage in physically demanding tasks, or experience abuse.

A brief review of child labor

The most common explanation for the child labor is poverty. The poverty hypothesis assumes child labor is inevitable in poor households; they cannot survive without children's income contribution. These households

are vulnerable to income shocks and cannot afford to keep children in school and in other non-work activities. This vulnerability forces them to send children to work to reduce the potential impact of loss of family income due to poor crop yields, job losses, the death of a breadwinner, etc. Therefore, school and other non-work activities are viewed as luxury activities, only consumed when incomes rise sufficiently to cover household costs (Basu and Van, 1998; Bonnet 1993; Jensen and Nielsen, 1997).

Admassie (2002: 261) asserts that “poverty is the main, if not the most important factor compelling parents to deploy their children into work obligations.” Fallon and Tzannatos (1998: v) describe child labor as “one of the most devastating consequences of persistent poverty”. The incidence of child labor decreases as the income and resources of households increase (Admassie, 2002; Grootaert and Patrinos, 1999; Jensen and Nielsen, 1997; Patrinos and Psacharopoulos, 1997). Emerson and de Souza (2000) also observed that child labor perpetuates poverty across generations; parents who were child workers have a higher probability of sending their children to work.

The poverty argument for child labor has not gone unquestioned. Using data from Ghana and Pakistan, Bhalotra and Heady (2003) found that households with greater land holdings tend to make their children work more. Since large land holdings would mean greater wealth, poverty does not lead to more child labor. Similarly, Edmonds and Turk (2002), using data from Vietnam, found that households with their own business are more likely to send their children to work. A household that owns land or a business has a greater opportunity to use children’s labor.

A different school of thought argues that researchers need to look beyond household poverty to the policy environment (Hiraoka, 1997; Post, 2002; Weiner, 1991). Post and Weiner find that differences in school attendance and child labor rates in Latin America and Asia reflect differences in education policies and national laws. Weiner (1991) maintains that in India, regional variations in child labor and school attendance rates are due to “the belief systems governing the elites and the political coalitions toward the expansion of school education” (Weiner, 1991: 154). Therefore, to fully understand the relationship between child labor and schooling patterns, we need to look at household decisions in the context of socioeconomic, cultural, and political forces that constrain those decisions.

Whether or not a child works depends not only on the income of the household in which they reside but their status within the household. A child’s age, gender, birth order, and relationship to the head of household also affect this decision (CAS and UNICEF, 1999; Lloyd and Blanc, 1996; Lloyd and Desai, 1992; Manda et al., 2003). Older children are more likely to work because they are more physically developed, can obtain higher wages, and face higher schooling costs. On average, girls work more

than boys. Studies have found that female-headed households tend to be poorer than male-headed households. Despite the higher poverty, female headed households have been linked with greater educational participation for children (Lloyd and Blanc, 1996; Lloyd and Desai, 1992).

Child labor cannot be approached separately from the issue of schooling. Patrinos and Psacharopoulos (1997) argue that schooling and child labor are not mutually exclusive activities and could even be complementary activities. The assumption that children either work or attend school is no longer valid. There exists a complex relationship between child labor and education. Working children have been found to pay their own school fees as well as those of siblings (Bass, 2004; Patrinos and Psacharopoulos, 1997; Psacharopoulos, 1997). Even when work does not prevent children from attending school, it may reduce study time or tire the children, reducing concentration and learning. Heady (2003) found that working children had substantially lower reading and mathematics test scores than non-working children in Ghana, even after controlling for innate ability measured by the Raven’s Test.

METHODOLOGY

Data

The data used for this study was drawn from the Multiple Indicator Cluster Survey (MICS). MICS is a household survey program that UNICEF developed to assist member states with collecting data to monitor the condition of children and women. These data are used to assess progress towards the goals set at the 1990 World Summit for Children at two points, mid-decade and end-decade. The first round of MICS (mid-decade) was conducted in 1995/1996 and the second round (end-decade) of surveys was conducted in 2000. A third round of MICS, conducted in 2005 to 2006, is used to monitor progress towards the Millennium Development Goals (MDGs).

The data used in this study was drawn from the second round of the MICS survey. The data includes 8,993 households consisting of 17,159 children between the ages of 5 and 17. It consists of 8,588 girls and 8,571 boys. Kenyan children start school at age 6; therefore the study children used children between 6 and 17 years, reducing the sample to 15,788 children. The MICS questionnaire used three separate questions to collect information on children’s activities: During the past week, did (name) do any kind of work for someone who is not a member of the household? During the past week, did (name) help with housekeeping chores such as cooking, shopping, cleaning, washing clothes, fetching water, or caring for children? During the past week, did (name) do any other family work (on the farm or in a business)? These questions reduce but do not eliminate the likelihood of underestimating the extent of work because child work is not always recognized as work. This example from Reynolds (1991) illustrates this problem, “On being asked what work she had done one morning, a fourteen-year-old girl replied, ‘Nothing’. Yet she had collected water twice from a source over 2 km away; prepared porridge for her own and her young brother breakfast, and washed the plates from the previous evening’s meal” (p. xxviii).

Descriptive analysis: A profile of children’s activities

Why do children work? Parents/guardians were asked the reasons

Table 1. Main reasons children were working.

	Age in years		
	6 - 9	10 - 14	15 - 17
Boys			
Suggestion of parents	31.52	38.43	39.04
Augment household income	6.78	11.46	20.37
Imitating peers	5.34	4.15	5.80
Support self	2.63	5.33	15.17
Help with household chores	71.32	75.53	67.03
Pay school fees	0.54	1.38	1.87
Other	0.04	0.12	0.00
Girls			
Suggestion of parents	29.45	35.14	33.00
Augment household income	5.38	11.32	17.68
Imitating peers	5.00	3.51	2.80
Support self	2.18	5.42	15.04
Help with household chores	76.15	79.46	74.37
Pay school fees	0.75	1.51	2.39
Other	0.52	0.21	0.30

Table 2. Children's activities by age and gender.

	Age in years		
	6 - 9	10 - 14	15 - 17
Boys			
School	97.88	95.17	80.64
Household chores	56.21	70.26	64.51
Farm work	28.69	47.01	55.24
Work outside the home	1.13	3.56	9.28
Family business	1.04	2.56	3.62
Girls			
School	97.62	95.18	72.93
Household chores	66.41	82.76	83.91
Farm work	23.07	40.00	45.22
Work outside the home	1.29	4.16	8.83
Family business	1.58	2.81	4.11

More than one response is possible.

their children were working; Table 1 presents their responses. It is important to note that more than one response was possible from the children. The following were the most frequently cited reasons children worked (1) suggestion of parents, (2), augment household income and (3) assist with household chores. Between 29 and 39% of children reported their parents suggested they work. Household income continues to influence the decision to work. The proportion of children who work to augment household income rises with age. Older children are needed to augment household income because they are able to command higher wages, and are likely to have younger siblings. Between 67 and 79% of children reported the need to help with household chores. As expected, the proportion is higher for girls than for boys. 15% of boys and girls (15 – 17 years) reported they worked to support themselves.

Table 1 shows that majority of the children contributed to the

Table 3. Children's work and school activities by age and gender.

	Age in years		
	6 - 9	10 - 14	15 - 17
Boys			
School	66.89	46.54	31.82
Work and school	31.10	48.77	49.11
Work	0.59	3.35	13.79
Neither work/school	1.41	1.34	5.29
Girls			
School	71.56	51.80	35.00
Work and school	26.22	43.54	39.02
Work	0.92	2.69	19.95
Neither work/school	1.29	1.97	6.03

The category 'school' implies those who reported they attended school but did not qualify to be child workers under the UNICEF definition (household chores for more than 28 h/week).

household by assisting with chores. Therefore we must include household chores in any analysis of child labor in Kenya. The figures in Table 1 also raise an important question. What makes parents "suggest" work to their children? It is possible parents suggested work to augment household income, assist with household chores, or to support themselves. Despite the ambiguity, the responses indicate the continued strong influence of parents in children's time allocation, even the 15 – 17 year olds. Therefore, the parents' socioeconomic status is likely a strong determinant of child labor.

Children reported their activities. The activities included, attending school, assisting with household chores, working on the farm, working outside the home, and working for the family business. Table 2 presents the proportion participating in each of these activities by age and gender. The responses show that many children combine work and school. Over 70% of children attend school; about 95% for children 6 – 14 years. Between 56 and 84% of the children reported they helped with housekeeping chores. Girls were most active in the household, about 77% helped in the household compared to 64% of boys. However, a greater proportion of boys work on family farms, about 42% of boys compared to about 35% of girls. The gender division of labor gets more salient as children get older. Household responsibilities increase with age especially if there are younger siblings (Chernichovsky, 1985; Lloyd and Banc, 1996; Parish and Willis, 1993).

The results in Table 2 showed that many children combine work and school. Table 3 reports the proportion of children who combine work and school by age and gender. Work is defined as (1) 1 h of economic labor or 28 h of domestic labor for children 5 – 11 years, (2) 14 h of economic labor or 28 h of domestic labor for children 12 – 14 years, (3) 43 h of economic labor for children 15 – 17 years. Between 26 and 49% of children combine work and school (Table 3). On average, a greater proportion of boys combined work and school. The proportion combining work and school increases substantially after age 10. Older children are also more likely to report working exclusively. Less than 4% of children under age 14 reported working exclusively compared to between 14 – 20% among the 15 – 17 year olds.

The activities of the children presented in Tables 2 and 3 reveal three important patterns. First, work and school are not mutually exclusive activities. Second, the vast majority of children work in the household, either on the farm or assisting with household chores. Third, less than 10% of Kenyan children work for pay outside the

home. What impact do these patterns have on educational attainment? What can schools do to ensure the working children can continue to attend school?

Child labor had been linked to the household socioeconomic status. Tables 4 and 5 present the work and school participation rates by two measures of socioeconomic status: Wealth quintiles and the education level of the head of household (measured by the number of years of schooling). Children attending school exclusively increases with socioeconomic status. This pattern is more pronounced when we measure socioeconomic status using wealth quintiles, about 46% in Quintile 1 compared to about 83% in Quintile 5 (Table 4). A similar pattern is evident in for children combining work, about 47% in Quintile 1 compared to about 8% in Quintile 5. Table 5 indicates that children in a household with an uneducated head are about 3 times more likely to work or report they are idle. The tables show a large gap in exclusive school attendance between the poorest and the wealthiest. About 83% of children in Quintile 5 attend school exclusively compared to only 46% in Quintile 1. If attending school exclusively encourages educational attainment, then the government must address this issue urgently.

About 68% of Kenyans live in rural areas (Kenya National Bureau of Statistics, 2010). Rural areas have higher levels of poverty, and inadequate basic services like piped water, electricity, health facilities, roads, and schools. Table 6 reports children's activities in rural and urban areas. About 45% of rural children combine work and school compared to about 7% of urban children. It is important to note that about 10% of urban girls reported working exclusively compared to less than 2% of the boys. Whether these girls are domestic servants, from rural areas, working in urban households cannot be determined by MICS data.

The descriptive statistics presented here show the magnitude and characteristics of child labor in Kenya. Children reported they worked for three main reasons: Responded to parent's suggestion, augment household income, and assist with domestic chores. About 50% of children reported various work activities. Majority of these working children also attended school. These children who combined work and school were mainly found in rural areas. The data presented indicate four options available to children. Attend school exclusively, combine work and school, work exclusively, or neither work nor attend school.

MULTIVARIATE ANALYSIS

The way that researchers model the supply of child labor depends in part on their view of the child labor decision-making process. The two aspects of this process are whether all options are considered simultaneously or sequentially. With sequential decision-making, the household head will first decide whether to send the child to school. After a choice is made, the head decides whether to send the child to work. Conversely, with simultaneous decision-making, the head chooses from a number of work and school options for the child. In this study the options are: School only, work and school, work only, neither work nor school. Previous researchers have explored these factors as part of either simultaneous or hierarchical decision-making processes. Simultaneous decision-making requires the use of a multinomial logistic model, whereas sequential decision-making requires the sequential probit model.

The literature has looked at simultaneous and sequential decision-making processes (Grootaert and Patrinos, 1999; Post, 2002). Grootaert and Patrinos used both models and found similar results. Furthermore, Liao (1994) in *Interpreting Probability Models* argues, "Sometimes we are not sure if the categories are ordered or sequential in the response. If unsure, a multinomial logit model should be used" (p. 48). In sequential models, the probabilities derived are conditional on previous choices, that is, the estimation

Table 4. School and work participation by wealth quintiles (Q1 poorest quintile).

	Wealth quintiles				
	Q1	Q2	Q3	Q4	Q5
School	45.54	42.18	50.03	60.41	82.53
Work and school	46.64	50.68	43.32	32.99	8.01
Work	5.69	5.27	4.67	3.75	5.73
Neither work/school	2.12	1.86	1.97	2.85	3.73

Table 5. School and work participation by the number of years of schooling of the head of household.

	None	1 - 8 (years)	9+ (years)
School	37.93	51.19	61.40
Work and school	41.38	41.76	33.47
Work	10.34	4.92	3.55
Neither work/school	10.34	2.12	1.58

Table 6. School and work participation in place of residence.

	Urban	Rural
Boys		
School only	84.99	45.38
Work and school	6.55	47.32
Work only	1.68	5.42
Neither work/school	6.79	1.89
Girls		
School only	77.26	51.78
Work and school	7.72	41.36
Work only	9.46	5.25
Neither work/school	5.56	1.61

will depend on the ordering of options. Given the lack of empirical evidence on the ordering, the sequential model may not be suitable because it requires a clear preference ordering of options (Grootaert and Patrinos, 1999).

Therefore, this study assumed simultaneous decision-making and used a multinomial logistic model. This model is similar to a logistic regression model, except that the probability distribution of the response is multinomial instead of binomial. The $n-1$ multinomial logit equations contrast each of categories 1, 2 ... $n-1$ with category n , while the logistic regression equation is a contrast between two options. If $n = 2$, the multinomial logit model reduces to the logistic regression model. Households face a choice between discrete options, and through their decisions, try to maximize utility. The households are assumed to choose between four mutually exclusive activities:

1. Child attends school and does not work.
2. Child attends school and works.
3. Child neither attends school nor works.
4. Child works and does not attend school.

Table 7. Multinomial logistic regression results.

	Model 1			Model 2		
	Work	Work and school	Neither work/school	Work	Work and school	Neither work/school
Age	1.780**	1.187**	1.396**	1.783**	1.186**	1.399**
Female	0.962	0.814**	0.760+	0.963	0.817**	0.762+
Child of head of household	0.209**	1.180*	0.497**	0.207**	1.234**	0.495**
Female head of household	1.118	0.941	0.973	1.135	0.936	1.001
Education of the head of household ¹						
1-8 Years	0.691**	1.104+	0.604**	0.689**	1.086	0.614**
9+ years	0.482*	1.113	0.162**	0.480*	1.069	0.163**
No. of children (0-3 years)	1.806**	0.961	1.614**	1.865**	0.967	1.560**
Rural	0.817	4.145**	0.318**	0.746	2.999**	0.380**
Wealth quintiles ²						
Q2	1.096	1.109	0.844	1.088	1.102	0.884
Q3	0.728+	0.807**	0.886	0.688*	0.843*	0.876
Q4	0.445**	0.601**	0.645	0.416**	0.632**	0.638
Q5	0.354**	0.173**	0.632	0.342**	0.197**	0.580+
Province ³						
Western				1.667**	1.516**	0.608
North eastern				1.100	1.175	0.782
Eastern				1.753**	0.946	0.967
Coast				1.539+	1.108	1.288
Central				1.258	0.942	1.072
Nairobi				1.213	0.329**	1.505
Rift Valley				1.321	0.986	1.364
N	9973			9973		
chi ²	3098.370**			3204.259**		

+p<0.10, *p<0.05; **p<0.01. ¹ Reference education level: Head of household with no education; ² Reference quintile: Q1 (poorest); ³ Reference province: Nyanza.

In the multinomial logistic model, the reference group was the children who attend school only. Therefore, the estimates indicate the effect of the explanatory variable on the probability that the child combines school and work, reports neither work nor school, or works in the labor market without attending school, relative to the probability the child attends school and does not work. The variables used in the models were defined in the same way to make it easier to compare results.

The choice of independent variables was based on previous research on child labor and schooling. The study measured household socioeconomic status using five dummy variables for wealth. The dummy variable Q1 indicated the poorest households, while Q5 the wealthiest households. The literature highlights the children's, household, and community characteristics that influence child labor and school participation. Age, gender, and the relationship to the head of household and the children's number of siblings, gender of the head of household, and education of the head of household, have impact on school and/or work participa-

tion. The income of the household, employment status of the mother, and the place of residence are some household characteristics that may impact school and/or work participation. In order to generalize the conclusions about each country's 6 to 17-year-olds, in the analysis, the study used the population and sample weights provided by UNICEF.

MULTIVARIATE RESULTS

The results from our multinomial regression analysis are presented in Tables 7 to 9. The dependent variable has four categories: School exclusively (base category), work and school, work exclusively, and neither work nor school. The tables present the relative risk ratios for each variable in the model. The relative risk ratio (RRR) is the

Table 8. Multinomial logistic regression results.

	Model 3: Girls model			Model 4: Boys model		
	Work	Work and school	Neither work/school	Work	Work and school	Neither work/school
Age	1.766**	1.184**	1.365**	1.761**	1.189**	1.425**
Female						
Child of head of household	0.123**	1.233+	0.420**	0.520**	1.329**	0.643
Female head of household	1.295	1.062	1.307	1.032	0.828*	0.751
Education of the head of household ¹						
1-8 years	0.744	1.094	1.002	0.494**	1.048	0.369**
9+ years	0.548+	0.94	0.407	0.158*	1.167	0.000
No. of children (0-3 years)	2.144**	0.857*	1.437	1.532**	1.054	1.750*
Rural	0.450**	2.340**	0.440*	1.757	3.783**	0.399*
Wealth quintiles ²						
Q2	0.906	0.954	0.529	1.258	1.276*	1.316
Q3	0.637+	0.781*	0.614	0.762	0.906	1.102
Q4	0.380**	0.603**	0.729	0.500**	0.661**	0.552
Q5	0.264**	0.147**	0.716	0.388*	0.249**	0.458+
Province ³						
Western	1.339	1.982**	0.433	3.046**	1.474**	0.681
North eastern	0.000	0.771	1.417	0.000	1.883	0.245
Eastern	1.292	1.098	0.801	3.237**	1.033	1.043
Coast	1.903+	1.631**	1.067	2.072+	0.975	1.450
Central	1.387	1.246+	0.884	2.396**	1.111	1.067
Nairobi	1.385	0.628	0.900	0.696	0.168**	2.413+
Rift Valley	1.325	1.134	1.480	1.998*	1.069	1.077
N		4979			4994	
Chi ²		1709.876**			1648.144**	

+p<0.10; *p<0.05; **p<0.01; ¹ Reference education level: Head of household with no education; ² Reference quintile: Q1 (poorest); ³ Reference province: Nyanza.

ratio of the probability of choosing one outcome category over the probability of choosing the reference category (school exclusively). A value of RRR that is greater than 1 indicates that an increase in the predictor variable will lead to an increase in the child being involved in that activity relative to the child being in school exclusively. For example, in Model 1, the variable, “Number of children (0-3 years)”, has a RRR of 1.806; this means that the greater the number of children under age 3, the higher the probability that children in that household will work instead of going to school. Conversely, a value of RRR that is less than 1 indicates that the predictor variable will lead to a decrease in the child being involved in that activity relative to being in school full-time. For example, in Model 1, the variable, “Child of the head of

household”, has a RRR of 0.209; this means that a biological child of the head of household has a lower probability of working exclusively compared to a non-biological child of the head.

Table 7 presents the results of Models 1 and 2; these are general models that include children 6 – 17 years. In Model 1, age, gender, relationship to the head of household, education of the head of household, the wealth of the household, and the number of young children, influence the children’s activities. Biological children of the head of household have a lower probability to working exclusively and reporting neither school nor work; however, they have a higher probability of combining work and school. Rural children are four times likely to combine work and school than their urban

Table 9. Multinomial logistic regression results.

	Model 5: 10-14 years			Model 6: 15-17 years		
	Work	Work and school	Neither work/school	Work	Work and school	Neither work/school
Age						
Female	0.870	0.830**	1.048	1.001	0.813+	0.572*
Child of head of household	0.185**	1.207+	0.625	0.215**	1.530*	0.430**
Female head of household	1.156	0.881+	1.237	1.048	0.945	0.658
Education of the head of household ¹						
1-8 Years	0.832	1.055	0.837	0.674*	1.068	0.579*
9+ years	0.214	1.390+	0.284	0.440*	0.644	0.128**
No. of children (0-3 years)	1.741*	0.915	1.353	1.870**	1.026	1.622*
Rural	0.671	2.864**	0.324*	0.609+	3.027**	0.325**
Wealth quintiles ²						
Q2	0.546	1.083	0.606	1.117	0.997	1.211
Q3	0.728	0.877	0.738	0.482**	0.629*	0.751
Q4	0.369**	0.630**	0.475	0.333**	0.516**	0.591
Q5	0.121**	0.195**	0.476	0.332**	0.226**	0.443
Province ³						
Western	2.527**	1.208+	0.961	1.278	1.747**	0.266+
North eastern	1.300	0.582	0.900	0.000	1.109	0.283
Eastern	1.559	0.670**	0.748	1.764*	1.050	1.230
Coast	1.779	0.928	1.415	1.388	1.039	1.216
Central	1.344	0.649**	0.896	1.201	1.224	1.117
Nairobi	1.222	0.203**	0.912	1.402	0.501	2.921*
Rift Valley	1.092	0.682**	1.314	1.258	1.041	1.350
N		4588			1890	
Chi ²		912.863**			577.128**	

+p<0.10; *p<0.05; **p<0.01; ¹ Reference education level: Head of household with no education; ² Reference quintile: Q1 (poorest); ³ Reference province: Nyanza.

counterparts. Given that majority of children work in agriculture and contribute to household labor, this is an expected finding. Children from wealthier households have a lower probability of working exclusively and combining work and school. However, there is no statistical difference between children from Quintiles 1 and 2. Model 2 in Table 7 controls for the province of residence, but there is no systematic pattern between the provinces.

Table 8 presents Models 3 and 4 that examines the determinants of children's activities by gender. The impact of age and the relationship to the head of household are similar for boys and girls. However, the education level of the head of household has a stronger impact for boys than girls. The other measure of socioeconomic status, wealth quintiles, shows a strong impact of wealth on work and school. Children in

Quintiles 1 and 2 have a higher probability of working compared those from Quintiles 3 – 5. The descriptive statistics indicated that girls are more likely to assist with household chores; therefore, it is not surprising that the presence of children (0 – 3 years) increases probability of girls working. Another gender difference can be seen with the variable rural. Girls in rural areas are 2.3 times more likely to combine work and school than their urban counterparts compared to 3.7 times for boys.

Descriptive statistics and the multivariate results presented in Tables 7 and 8 show that older children are more likely to work than attend school exclusively. Older children are more physically mature and can take on more tasks. These tasks may be part of socialization of the children; they take on more tasks to prepare them for their adult roles. Older children working outside the home can command higher wages. Table 9 presents the

findings by age group. The impact of young children in the household, rural residence, education of the head, and wealth are stronger for 15 – 17 year old children. Differences in the work/school activities by the level of education of the head of household are not statistically significant for children 10 – 14 years. However, for children 15 – 17 years, the more the years of schooling for the head of household, the lower the probability of working exclusively and neither working nor schooling. Children in households with no education are more likely to work or report neither work nor school than attend school exclusively. These findings indicate that the impact of household socioeconomic status gets larger as children get older. The direct and indirect costs of schooling increase substantially as children progress through school. The transition from primary to secondary school happens at about age 14.

DISCUSSION AND CONCLUSIONS

Using UNICEF data, this paper contributes to the child labor discussion by examining magnitude and characteristics of child labor in Kenya. Child labor continues to grow in sub-Saharan Africa. As the region strives for universal education, the need to understand child labor and its impact is critical. However, research on child labor is hampered by its complexity. Because of this complexity, child labor is difficult to define and examine. This paper uses an expanded definition, proposed by UNICEF that includes household chores. Including household chores is important because majority of working children participate in domestic chores (Reynolds, 1991).

Why are children working? Children reported working for three main reasons: Augment household income; assist with household chores; parent's suggestion. The vast majority of child work takes place within the household. Parents/heads of households have a big impact on children's work activities. It is plausible that parents suggested children work to augment household income and to assist with household chores. Over 70% reported working to assist in the household. Despite the large proportion working within households, we do not know enough about the consequences to children. At what point do household chores interfere with schooling? Do the type of household chores matter?

The data analysis showed higher child labor rates among older children, rural dwellers, and those of lower household socioeconomic status. The years of education of the head of household and wealth of the household have an impact on child labor. Although poor children have a higher probability of working than wealthier children, poverty does not fully explain child labor in Kenya. Most significantly, the results suggest that the reduction of poverty will not eliminate child labor. Children of all socioeconomic levels in Kenya participate in work.

The analysis also found that work and school are not mutually exclusive; about 45% of children combined work and school. Only about 5% reported working without attending school. Using two household surveys each from Chile, Mexico, and Peru, Post (2002) also found many child workers in schools. What are the policy implications of this? Policies that lower costs of schooling, such as the free primary education introduced in Kenya in 2003 are based on the assumption that schools offer quality education. According to the Government of Kenya, the free primary education policy increased enrolment by about 2.3 million, from 5.9 million in 2002 to 8.2 million in 2007 (Republic of Kenya, 2008).

The Government of Kenya acknowledges that, despite eliminating school fees, about 1 million children are still out of school and pressure for children to supplement household income remains high (Republic of Kenya, 2008). The data in this study show that there are a significant number of children who combine work and school. The educational outcomes may suffer and the likelihood of their dropping out of school is very high. What measures can schools take to ensure that working children continue to attend and complete school? Work does not appear to hinder enrollment, but it may negatively impact educational achievement. Given the large proportion of children in Kenya, does combining work and school reduce their vulnerability to the worst forms of child labor? Does work motivate these children to attend school? Does their type of work determine their level of school attainment? Despite many children combining work and school, we do not know enough about these children (Post, 2002). It is important to understand the impact of combining work and school. More research could inform policy makers as they develop curriculum and schedule school times to accommodate these children.

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