CHILD LABOR, POVERTY AND SCHOOLING IN GHANA AND KENYA: A COMPARATIVE ANALYSIS

By

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Introduction

Sub-Saharan Africa has the highest incidence of child labor in the world, according to the International Labour Organisation (ILO) approximately 41% of children 5 to 14 years are actively involved in the labor market (2002). The problem of working children continues to grow in sub-Saharan Africa and must be addressed because Africa's future depends on the survival, protection, and development of its children (Andvig, Canagarajah, and Kielland 2001). Child labor is characterized by low wages, long hours, and in many cases, physical and sexual abuse. Given the large proportion of the population below the age of 18, it is important to understand and address the child labor issue in sub-Saharan Africa. This region's harsh socioeconomic environment has been linked to families sending their children to work instead of school (Bass 2004; Admassie 2002; Bhalotra 2003; Andvig, Canagarajah, and Kielland 2001; Manda et al. 2003).

Despite recent growth, the economies of sub-Saharan Africa have declined since the 1980s and the region continues to have the highest rate of poverty in the world. Some researchers perceive poverty to be the main reason that these children work and not attend school. This perception is due in part to the current geographical distribution of child workers as well as to the economic history of the developed world, which shows that economic development reduced child labor in the long run. 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). Despite the pervasive nature of poverty in sub-Saharan Africa, we find significant differences in child labor participation rates. Previous studies have found that child labor participation rates are highest in East Africa, followed by Central Africa and then West Africa (Bass 2004; Admassie 2002). However,

is poverty sufficient to explain the existence of child labor and this variation between countries? Can children in sub-Saharan Africa be expected to attend school while poverty persists?

Some researchers have argued for comparative analysis in order to better understand the factors that force children into the labor market, the effects of work, and the policies that might be useful in limiting their work (Weiner 1991; Post 2002; Bass 2004). Bass 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). There are similarities and differences in the reasons for, and the conditions of, child labor both within and between countries. Using comparative analysis, this study attempts to highlight and explain child labor and schooling patterns in Ghana and Kenya.

Therefore, using data from Ghana and Kenya, the study investigates the relationship between poverty, schooling, and child labor. Specifically, it attempts to answer these questions: What determines children's participation in school and/or work in Ghana and Kenya? Is child labor concentrated in certain regions and in certain households, and certain children within certain households? Are family resources and poverty equally as determinant of children's activities in both countries?

Child Labor, Poverty and Schooling

At the 2000 World Education Forum in Dakar, governments from around the world including those in sub-Saharan African governments recommitted themselves to achieving universal education. Although overall access to basic education has risen substantially over the last decade in the region, the attainment of universal primary

education remains difficult. UNESCO's Institute of Statistics estimates that about 45 million[1] children of primary school age in sub-Saharan Africa were out of school. Ultimately, households, not governments, make decisions on children's time allocation. Whether or not a child will attend school and/or work will depend on the household they live in and their status within the household.

Many researchers hold the view that household poverty is the main reason children work. Economists have used the "luxury axiom" to explain the relationship between child labor and poverty. According to the luxury axiom, children enter the labor market to ensure their survival and that of their families; therefore, schooling and leisure are luxury goods. These poor households cannot afford to keep children in school and in other non-work activities. It assumes that only when household incomes rise sufficiently will children leave the labor force, implying that child labor will persist as long as scarcity exists.

This relationship appears to have been found in numerous studies. Cross nationally, Fallon and Tzannatos (1998) find that there is an inverse relationship between child labor force participation and per capita GDP. At the micro level, empirical evidence also appears to confirm the relationship. Admassie (2002) asserts that "poverty is the main, if not the most important factor compelling parents to deploy their children into work obligations" (p. 261). In poor households, the struggle to survive makes it very difficult for parents to invest in their children's education. The incidence of child labor falls as the income and resources of households increase (Jensen and Nielsen 1997; Grootaert and Patrinos 1999; Patrinos and Psacharopoulos 1997; Admassie 2002).

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[1] *Children Out of School: Measuring Exclusion from Primary Education* (Montreal: UNESCO Institute of Statistics, 2005).

Further, increases in income are likely to reduce the likelihood of children dropping out of school (Patrinos and Psacharopoulos 1997; Lloyd and Blanc 1996).

Children's schooling competes with other commodities for scarce household resources, which makes access to schooling positively associated with household wealth (Patrinos and Psacharopoulos 1997). The poor have few options when it comes to protecting themselves against loss of income. Children may be sent 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. Baland and Robinson (2000) showed theoretically that households with a lack of credit will choose to send their children into the labor market. Emerson and de Souza (2000) found that child labor perpetuates poverty across generations, a parent who was a child laborer is much more likely to send his or her own child to work.

However, a different school of thought contends that researchers need to look beyond poverty to the policy environment (Weiner 1991; Hiraoka 1997; Post 2002). Hiraoka(1997) argues that "a closer look at the socioeconomic structures in which child labor is embedded seem to suggest that the nature and trend of child labor is not independent of the surrounding structures" (p. 59). 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 maintains that in India the 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" (p. 154). Therefore, to fully understand the 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.

The context: Ghana and Kenya

(INSERT TABLE 1 ABOUT HERE)

Ghana and Kenya are low-income countries with GDP per capita of $407 and $328, respectively. In terms of purchasing power of households difference is more pronounced; the GDP per capita in purchasing power parity is $1,900 in Ghana and $1,000 in Kenya. Poor governance, world commodity prices and structural adjustment policies have influenced their growth trajectories. The GDP per capita annual growth rate was 0.3% between 1975 and 2002 in both countries. However, between 1990 and 2002, Ghana's per capita GDP grew by 1.8%, while in Kenya it shrank by 0.6%. Between 1984 and 1999, about 40% of Ghanaians lived below the income poverty line, and about 42% of Kenyans faced the same predicament. From Table 1 we can see that Ghanaians live longer, have lower infant mortality rates, consume more calories, and have greater access to arable land. Furthermore, a greater proportion of Ghanaians have access to improved water and sanitation facilities. Figure 1 shows the different trends in the per capita GDP for the two countries. Ghana shows a general upward trend, whereas Kenya's is virtually stagnant. The data paint a picture of greater overall poverty in Kenya than in Ghana.

(INSERT FIGURE 1 ABOUT HERE)

Schooling has become more costly and less rewarding in sub-Saharan Africa (Odaga and Heneveld 1995). The poor economic performance and structural adjustment programs forced governments to cut social spending and introduce cost-sharing in education and health care. The governments of Ghana and Kenya have embarked on the providing education in contrasting ways. Figure 2 shows the enrollment trend for primary and secondary school enrollment between 1985 and 2000, it shows higher levels of

primary school enrollment in Kenya. At the secondary school level Kenya compared to Ghana shows increasing enrollment.

(INSERT FIGURE 2 ABOUT HERE)

History shows a consistently significant commitment by the government of Kenya in the provision of education. Table 2 shows that public education expenditure as a percentage of GNP was higher in Kenya by at least 2.3 percentage points. Furthermore, public education expenditure on primary and secondary education in Kenya was about 60% and 18%, respectively, compared to about 25% and 30% in Ghana. Prior research by Buchmann (1996) found that the Kenyan government had enacted policies that have "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). These policies included a free primary school milk program in 1979, the introduction of the 8-4-4 (8 years of primary school, 4 years of secondary school and 4 years of university) system in 1985, and the 1987 double intake by public universities. The introduction of the 8-4-4 system meant that the number of students eligible to enter university rose from about 10,000 to over 85,000. The implementation of these policies meant that the government had to continue to allocate more resources to education to cover the increased costs.

(INSERT TABLE 2 ABOUT HERE)

In Kenya, a major feature of the education system is its community financing or self-help. This movement is known as *Harambee*, which means in Kiswahili "let us pull together." The Harambee movement, which began in the 1960s and continues today, symbolizes the ideas of joint effort, self-responsibility, and self-reliance. Researchers

argue that Harambee schools are a double-edged sword, increasing enrollment but exacerbating the inequality of education in Kenya (Buchmann 1999; Bray and Lillis 1988; Mwiria 1990; Eshiwani 1993). Mwiria (1990) argues that despite their questionable quality, Harambee schools provide a chance for many Kenyans who might not otherwise acquire a secondary education, and improve the recipients' chances of more upward mobility than if they received no education. Bradshaw and Fuller (1996) support Mwiria's assertion, saying: "Harambee schools provided a crisp symbol of opportunity and modernity to a population that has historically associated education with upward mobility" (p. 77). The Harambee movement has been operating alongside government development programs since 1963 and has helped mobilize resources for development purposes. The movement has provided opportunities when the state has been unable to deliver, making education available to a significantly larger proportion of the population. Despite efforts at reforming the education sector problems are persistent; schools and public universities lack facilities, teachers are poorly remunerated, school strikes are frequent.

While the Kenyan government made efforts to signal the importance of education, the Ghanaian government struggled to keep children in school in the face of structural adjustment policies. The government cut spending significantly during the 1980s as part of economic restructuring (Glewwe and Illias 1996; Akyeampong and Furlong 2000; Dei 2004). Glewwe and Ilias (1996) note that "real spending on education declined at an average *annual* rate of 17 percent between 1980 and 1983" (p. 397). The reduction in resources resulted in a loss of confidence in the education system as quality declined (Glewwe and Illias 1996; Dei 2004; Akyeampong and Furlong 2000; World Bank. 1996).

Glewwe and Ilias (1996) and Norton, Bortei-Doku et al (1995) found evidence to support the hypothesis of decline in quality of education in Ghana, in that older Ghanaians scored higher on math and English tests than younger Ghanaians. Norton et al. found that of the approximately 42,000 students who sat the senior secondary school examination, about 1,000 passed. Furthermore, the World Bank (1996), citing a 1994 USAID study of a class six students, also found that "only three percent of pupils tested attained satisfactory scores for English, and merely 1.5 percent for mathematics" (p. 5) on criterion-referenced tests. This decline in quality ultimately led to a decline in demand for schooling as basic skills of school leavers declined. Lavy (1996), citing previous studies, argues that the very low returns to primary education in Ghana can be explained by the low achievement scores. He points out that "a primary diploma does not lead to the accumulation of any significant amount of human capital; the market consequently treats this level of schooling as no schooling" (p. 312).

When the Ghana Core Welfare Indicators Questionnaire (CWIQ) Survey 1997/8 asked children why they were not attending school, it found that over 50% regarded school as "useless, uninteresting, and expensive" (Canagarajah and Xiao 2001). Another World Bank (1995) study asserted that "the major concern of most community members and teachers canvassed . . . was with issues of quality rather than access" (p. 52). The girls were more affected by the lack of confidence in the education system because poor families gave priority to boys (World Bank. 1996; Glewwe and Illias 1996). The decline in financial commitment by the government of Ghana led to the decline in trained primary school teachers from about 80% in 1974 to about 50% in 1983 (Akyeampong and Furlong 2000). The reduction in resources resulted in a loss of confidence in the

education system as quality declined. The World Bank (1995) noted that "the major concern of most community members and teachers canvassed in our study was with issues of quality rather than access" (p. 52). Lower enrollment is evident in Ghana despite offering FCUBE.

The differences in socioeconomic indicators and the educational policies across the two countries create unique environments that impact school and work decisions. We would expect the households in both Ghana and Kenya to make educational decisions based on their perceived costs and benefits. The costs and benefits, and how they are weighed across these different countries, is investigated in this study.

Data and Methodology

The data for Ghana used in this study is from the Statistical Information and Monitoring Programme on Child Labor (SIMPOC), the statistics and monitoring unit of the ILO's International Programme on the Elimination of Child Labor (IPEC). The survey was specifically designed to collect information on the different aspects of working children within the framework of IPEC. It covered children between 5 and 17 years in households. A nationwide representative sample of 10,000 households was selected, out of which 9,889 households containing 47,955 people were interviewed. The sample has 17,034 children between 5 and 17 years. It consists of 8,163 girls and 8,871 boys. School in Ghana starts at age 6; therefore, the study used children between 6 and 17 years, reducing the sample to 15,743 children.

The data for Kenya was drawn from the Multiple Indicator Cluster Survey (MICS). MICS is a household survey program that UNICEF developed to assist member states in collecting data to monitor the condition of children and women. The data are

used to assess progress towards the goals of the World Summit for Children (1990) at two points, mid-decade and end-decade. The first round of MICS (mid-decade) was conducted in1995/1996 in more than 100 countries, and the second round (end-decade) of surveys was conducted in 2000. The MICS data for Kenya has a sample size of 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, I used children between 6 and 17 years, reducing the sample to 15,788 children.

There is no evidence in the literature on the household's decision-making process. Therefore, the way that researchers model the supply of child labor depends 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. 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, and sequential decision-making requires the sequential probit model.

The literature has looked at simultaneous and sequential decision-making processes (Post 2002; Grootaert and Patrinos 1999). Grootaert and Patrinos used both models and found similar results. Furthermore, Tim Liao in his book, *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, i.e., the estimation 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 only.
2. Child attends school and works in the labor market.
3. Child neither attends school nor works in the labor market.
4. Child works in the labor market full time.

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 full time, relative to the probability the child attends school only. The variables used in the models were defined in the same way to make it easier to compare results.

The choice of variables is based on previous research on child labor and schooling. 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 are the children's characteristics that have an impact on school and/or work participation. The number of siblings, gender of the head

of household, education of the head of household, 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 SIMPOC and UNICEF.

A Profile of Ghanaian and Kenyan Children's Activities

This section presents descriptive statistics of children's activities. They focus on the relationship between poverty, child labor, and schooling disaggregated by age and gender. The data reveal that nearly all children participate in domestic work. In Ghana, over 90% of children perform housekeeping chores compared to about 68% in Kenya. Therefore, housekeeping was excluded from the definition of work during the analysis.

Ghana

Table 3 presents the participation rates in school and work by region. The northern regions of Northern, Brong Ahafo, Upper West, and Upper East have the highest proportion of children working or reporting they neither worked nor attended school. The Northern region has about 50% of the children reporting they worked fulltime or neither worked nor attended school compared to about 16% in Western and Ashanti regions. These northern regions also have the highest proportion of children in the lowest quintiles. About 38 and 44% of children in the Upper East and Upper West region, respectively, reported they were in the poorest category. Furthermore, less than 1.3% of children in the two regions were reported to be in the richest category. About 30% of children in the Western, Volta and Eastern regions reported they combined work and school. The data show a clear difference in household wealth between the north and south

of Ghana. The northern areas have been neglected from colonial times and continue lag behind in infrastructure (Moyi, 2006)

(INSERT TABLE 3 ABOUT HERE)

Table 4 presents children's allocation of time between work, school, and other activities. About 22% of children aged 10 to14 reported they combine work and school. The proportion of children attending school full-time declines from about 70% for 6 to 9-year-olds to about 40% for 15 to 17-year-olds. Of children aged 10 to 14 years, about 7% of girls and about 6% of boys reported neither work nor school compared to about 12% for children. The neither work nor school category is higher in the 6 to 9 and 15 to 17 year ranges. The number of children who work full time increases as they get older. There is a large decline in school attendance after the age of 14; at this age children are expected to be making the transition from basic education (6 years of primary school, 3 years of junior secondary school) after taking an exit exam to enter senior secondary school.

(INSERT TABLE 4 ABOUT HERE)

A previous study of Ghana found an effect of religion on girls' work (Bhalotra 2003), that is, Christian girls work significantly fewer hours on average than girls who practiced traditional religion. Girls who practiced traditional religion worked less than Muslim girls (Bhalotra 2003). The proportions who have never attended school are highest among those practicing traditional religion, about 60% of girls and 55% of boys. Gender differences exist in school attendance; however, the gender gap is smallest among Christian children.

Different rates of poverty may explain the differences in school and work participation rates by religion. Muslims are largely found in the poorer northern areas of the country. About 33% of Christian children live in households in the two lowest expenditure categories, compared to about 39% for Muslim children, 58% for children practicing traditional religion, and about 51% of children reporting no religion. In the multivariate section, the study tested the effect of religion on children's allocation of time after controlling for poverty and other household characteristics.

(INSERT FIGURE 3 ABOUT HERE)

Children in the richest category have the highest school attendance rates, and the lowest rates for full-time work, combining work and school and those reporting neither work nor school. There is an upward trend in fulltime schooling by expenditure category. The poorest children have the lowest school participation rates and the highest rate of children reporting neither work nor school. Participation in school full-time increases with expenditure categories, whereas those reporting neither work nor school declines, and working full time has no consistent pattern (Figure 3).

Kenya

The majority (63%) of working children reported they worked at home helping on the farm. Less than 11% of children report any work outside the home. Table 6 presents the participation rates in work and school by province. With the exception of Nairobi and Eastern provinces, over 28 % of children reported they combined work and school. In Western province the proportion combining work and school was is as high as 45%. Coast, Nyanza, Rift Valley, and Western provinces have at least 50% of their population in the two lowest wealth quintiles.

(INSERT TABLE 6 ABOUT HERE)

Labor force participation rates increase as children get older; these rates differ by gender. The proportion of children working full time, reporting neither work nor school, and those combining work and school increases with age, while full-time school participation decreases. The rates for girls working full time increase from 0.5% for 6 to 9-year-olds to about 17% for 15 to 17-year-olds, compared to boys whose rate rises from 0.7% to about 14% (Table 7).

(INSERT TABLE 7 ABOUT HERE)

There is a considerable difference in children working full time between those aged 15 to 17 and those younger than 14. School participation rates for both boys and girls are lowest among children ages 15 to 17, suggesting an early exit from school. This may be due partly to the Kenya Certificate of Primary Education (KCPE) national exams that children take at the end of primary school at about age 14. Many children may be unable to continue to secondary school and hence enter the labor market (Bedi, Kimalu et al 2004).

The level of full-time school participation and combining work and school are closely linked to the level of household wealth. The proportion of children who go to school rises progressively with wealth. There is little variation among those who work full time. About 47% of children in the poorest households attend school full time compared to about 83% in the richest households. About 4% of children in the wealthiest quintile combine work and school compared to over 40% in the two poorest quintiles (Figure 4). Next, I present the findings of the multivariate logistic regression analysis to help us understand household choices in Ghana and Kenya.

(INSERT FIGURE 4 ABOUT HERE)

Multinomial Logistic Regression Analysis

The tables report the relative risk ratios for each variable in the model and their standard errors. The relative risk ratio (RRR) is the ratio of the probability of choosing one outcome category over the probability of choosing the reference category (school full-time). The dependent variable has four categories: school full-time (base category), work and school, work full-time, and neither work nor school. 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 full time. 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. (Tables A1and A2 in Appendix A.)

Ghana

Table A1 presents the findings for select variables from 6 models. The findings indicate that in Ghana, as children get older they are more likely to work full time as opposed to attend school full-time. The results in Model 1 indicate that girls are significantly more likely than boys to work full time or to report neither work nor school. In Model 2, with the introduction of an interaction between female and foster variable, gender differences are no longer statistically significant. The results suggest that the gender difference depends on the child's relationship to the head of household. Foster girls are more likely than daughters of the head of household to work full time, a finding supported by Model 3. By contrast, the estimates for foster boys are not statistically

significant, suggesting there is no difference in the treatment of foster boys and sons of the head of household (Model 4).

Dummy variables for religion also suggest differences in time allocation. Compared to Christians, Traditionalist children are more likely to work full time, combine work and school, and report neither work nor school as opposed to attending school full time. The results also indicate that Muslims are more likely than Christians to work, combine work and school, or to report neither work nor school. The estimates for those who claim no religion indicate that they are less likely than Christians to combine work and school and to report neither work nor school.

Household socioeconomic status is measured by a household's membership in one of five expenditure categories. The RRR estimates indicate that the children in the households in the second expenditure category are more likely to work full time and less likely to combine work and school than those in the poorest category. The results also indicate that children in the wealthiest households are significantly less like to work, combine work and school, or to report neither work nor school. Children in the richest households are less likely to work full time than children in the poorest households. The poorest households are more likely to report neither work nor school than those in the other four categories. This suggests that poverty increases the probability that a child will neither work nor attend school.

Dummy variables were included to capture regional differences in school and work opportunities. Children in the Northern region of Ghana are less likely to attend school than those in all other regions. For example, children in the Greater Accra region are about 90% less likely to work full time than those in the Northern region. Children in

the Western, Central, Volta, and Eastern regions are more likely to combine work and school than those in the Northern region. Conversely, children in Ashanti, Upper East, and Upper West regions are less likely to combine work and school than those in the Northern region.

Results From Kenya

The estimates of the multinomial logistic regression model for Kenya are given in Table A2. The models show that as children get older they are substantially more likely to be full-time students and substantially more likely to combine work and school. The estimates also suggest that as children get older they are more likely to report neither work nor school and less likely to be in school full-time. The RRRs for the female variable show that girls are less likely to work full time and combine work and school than boys. The results also suggest that foster children are more likely to report neither work nor school as opposed to being in school full-time. The foster effect is greater for girls than for boys; foster girls are 5 times more likely to work than attend school full time compared to 1.7 times for foster boys.

Household socioeconomic status is measured by a household's membership in one of five wealth quintiles. Children in Q3, Q4, and Q5 are less likely than children in Q1 (the poorest quintile) to be full-time workers, combine work and school, and neither work nor attend school as opposed to full-time students. The estimated RRRs show significant differences by wealth quintile in all models. The findings indicate that there is no statistical difference between children in Q1 and Q2 in all categories, except in Models 3 and 5.

Dummy variables were included to capture regional differences in school and work opportunities. Regional estimated RRRs give no clear pattern on children's time

allocation. Children in the Western province are more likely than Nyanza children to work full time and combine work and school as opposed to being full-time students. Children in Nairobi and Rift Valley provinces are less likely to combine work and school and more likely to report neither work nor school than children from Nyanza province.

Ghana and Kenya: Comparative Analysis

The study tested and graphed the probability that a child will attend school full time, combine work and school, work only or be idle, according to each wealth quintile. The predicted probabilities of each activity, in each country, in each wealth/expenditure category, and in each age group are presented in Figures B1 - B6. (see Appendix B) The predicted probabilities show that as children get older, the probability of their full-time school attendance declines. The predicted probabilities show that in Ghana and Kenya, wealth and expenditure differences between households determine children's time use. The probability of full-time school attendance increases with wealth and expenditure. Children in Q1 are least likely to attend school, whereas those in Q5 have the highest probability of full-time school attendance. Compared to Kenya, the effect of wealth on school attendance is weaker in Ghana. The difference in the probability of full-time school attendance between the quintiles is greater in Kenya than in Ghana. In both countries, there is a significant drop in the probability of full-time school attendance after the age of 14.

The probability of combining work and school is greater in Kenya for children in all quintiles. Therefore the probability of being in school – full time combined with work – is greater in Kenya, but the effect of wealth is negligible. Figures B3 and B6 indicate that the probability of school attendance is higher in Kenya than in Ghana, if we include

children who combine work and school. With a lower probability of combining work and school, Ghanaian children have a greater probability of full-time work.

The analysis highlights three significant differences between the two countries. First, although household socioeconomic resources in both countries can account for the school attendance differences, it is the probability of combining work and school that is significant. The probability of combining work and school is associated with household socioeconomic status in Kenya, but not in Ghana. There are a large proportion of children combining work and school in Kenya. What is the impact of this on welfare of children in Kenya? Previous research has found that school attendance reduces the likelihood to children getting involved in the worst forms of child labor. A previous study found that the type of work may explain this difference (Moyi 2006). In Ghana, 57% are engaged in the agricultural sector compared to about 73% in Kenya. Agricultural work is seasonal, making it easier for children to work and still attend school. Children working as street vendors, kayayos, and domestic workers are more likely to spend long hours away from home, making it difficult for them to attend school. For example, kayayos in are mainly children from the poor northern areas of Ghana who migrate to urban areas in search of a better life.

Second, the differences in the probability of full-time school attendance are much greater in Kenya than in Ghana. Children in Q5 are 70% less likely than children in Q1 to work full time than attend school full time in Kenya compared to 50% in Ghana. The large income disparity in Kenya is evident from the probability of fulltime school attendance. The Harambee schools are widespread and have increased the access to

schooling in Kenya despite their questionable quality. The quality of Harambee schools makes it difficult for the poor to succeed in school.

Third, foster boys in Ghana do not face a significant disadvantage like the girls; however, foster children in Kenya face significant disadvantages in school attendance. In Ghana about 23 % (3,616) of children between 6-17 years reported they were foster children. Of these foster children, 53 % were girls and 47 % boys. In Kenya about 17% (2,739) of children between 6-17 years reported they were foster children. Of these foster children, about 54% were girls and 46% were boys. In both countries over 50% of the fostered children are girls and they are the most disadvantaged.

The multivariate analysis presented in this section highlights the factors that influence the likelihood of children working full-time, combining work and school, attending school full-time, and neither working nor attending school. The results for both countries confirm that the socioeconomic status, the presence of children in the household, the relationship to the head of household – particularly for girls; the gender of the head of household, religion, and the place of residence influence children's allocation of time. The results of the analysis also show that there is a strong and systematic effect of region on children's time allocation in Ghana. Children in the Northern region of Ghana are consistently more likely to work full-time as opposed to attend school full-time. However, in Kenya there appears to be no systematic pattern in the effect of province of residence on school attendance.

Summary and Conclusions

This study obtained interesting findings, some that support existing literature and others that question the literature. *What determines children's participation in school*

and/or work in Ghana and Kenya? Is child labor concentrated in certain regions and in certain households, and certain children within certain households? The age of the child is an important factor for determining time allocation; in line with prior research, the findings show that older children are more likely to work full time. The study found that child labor is concentrated in northern regions of Ghana. These regions have a history of neglect from colonial times (Akyeampong and Furlong 2000; Moyi 2006). Children in female-headed households in Ghana are more likely than those in male-headed households to attend school full time than to work full time. Religion is a significant factor determining time allocation for children in Ghana. Muslim and Traditionalist children are more likely than Christian children to work full time than attend school full time. The presence of siblings in the household affects children's time allocation, increasing the likelihood that older children will work. Foster children are disadvantaged especially foster girls.

Are family resources and poverty equally determinant of children's activities in both countries? The study found links between the incidence of child labor and the level of poverty. Poverty is indeed an important factor that explains the level of school participation and/or child labor. The probability of attending school full-time increases by the wealth and expenditure quintile; however, the difference between the poorest and wealthiest quintiles is greater in Kenya. Figures B2 - B6 show that after the age of 9, children in Q1 in Ghana have higher probabilities of attending school full time than children in Kenya. If we consider overall schooling (school full time and combining work and school) we find no wealth effect in Kenya; however, in Ghana the wealth effect is still evident. Combining work and school is closely linked to wealth in Kenya, Figures

B4, B5, and B6 show that the probability of combining work and school decrease by wealth quintiles.

The study finds that the policy environment plays a significant role in influencing household child labor and school participation decisions. The results suggest that children can attend school even when poverty exists. Despite greater overall poverty in Kenya, more children are attending school. However, the school attendance is combined with work for a large proportion of the children in Kenya. The Harambee movement may be seen as a household commitment to schooling ad their willingness to go beyond government efforts to ensure their children attend school. The household commitment to schooling has been consistent even in the face of poverty and poor quality Harambee schools. The proportion combining work and school may be an indication of this commitment to schooling. The impact of combining work and school cannot be determined by this study due to data limitations. Heady (2003) found that work outside the home negatively influences achievement, however, the effect of work at home is less clear. Work is likely to affect school participation, children are likely to struggle to concentrate in class and have limited time for homework and study.

I expected differences in children's time allocation by wealth/expenditure categories. The inequality in education found in the descriptive statistics is confirmed by the multivariate analysis for both countries. However, despite higher levels of poverty Kenya continues to have higher school enrollment.

Directions for Future Research

As in all research, there were limitations to this study. The SIMPOC and MICS data are cross-sectional in nature and as such cannot be used to make any causal

inferences on child labor and schooling. Future studies could include school variables. The inclusion of school variables would allow for an analysis of the effects of distance to school, school quality on school attendance and/or child labor. Prior research on schools found that the supply of quality schooling has a great impact on who attends schools in developing countries (Lavy 1996; Wolfe and Behrman 1984). The potential findings of such a study would highlight the importance of access to schools in combating child labor.

Like child labor, poverty is a complex phenomenon. This study used wealth and expenditure categories as measures of poverty. While many countries have anti-poverty strategies and estimates, they use different definitions of poverty, making comparison difficult. This study used household expenditure categories for Ghana and a wealth index for Kenya, but there is a need to look beyond wealth and expenditure measures to accurately define poverty.

This study found that a significant group of children in Kenya combine work and school. However, there is a need for more analysis on why such a large proportion of children combine work and school in Kenya. It is important to understand the impact of combining work and school on children's grade progression and educational achievement. More research on those combining work and school could inform policy makers as they develop curriculum and schedule school times to accommodate these children. It is important to understand this group because prior research has found that in some households the income generated by children makes possible their school attendance; the children are able to pay their own school fees as well as those of siblings (Patrinos and Psacharopoulos 1997; Psacharopoulos 1997; Bass 2004).

In 2003, the new National Rainbow Coalition government introduced free primary school education in Kenya. According to some researchers, the free primary education resulted in the enrollment of an estimated 1.5 million children who were previously out of school(Vos et al. 2004). This is likely to have a significant impact on child labor. The increase in enrollment has overwhelmed schools in Kenya, resulting in crowded classrooms. Therefore, the impact of free education policies needs to be evaluated in Ghana and Kenya in terms of effects on school quality and educational attainment.

This study has shown the relationship between poverty, child labor, and school attendance by children in Ghana and Kenya. It is clear that poverty is insufficient to explain the relationship between child labor and schooling. Further studies may help us understand this dynamic in these two sub-Saharan African countries, as well as the policies and changes necessary to provide all children in this region with an equal opportunity to gain an education.

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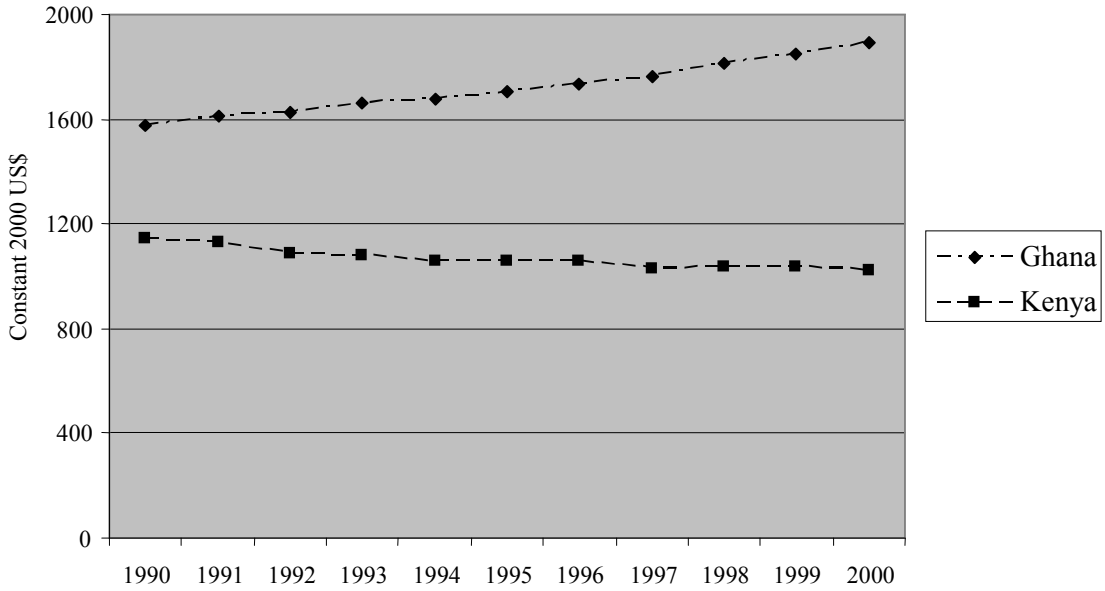
Table 1: ***Socioeconomic Indicators***

	Ghana	**Kenya**
Life expectancy at birth (years) 1970 - 1975	50	51
Life expectancy at birth (years) 1995 - 2000	60	52
Infant mortality at birth (per 1,000 live births) 1970	111	96
Infant mortality at birth (per 1,000 live births) 1998	67	75
Infants with low birth weight (%) 1990 - 1997	8	16
Daily per capita supply of calories 1970	2,242	2,187
Daily per capita supply of calories 1990	2,611	1,976
Population with sustainable access to improved sanitation (%), 1990	43	42
Population undernourished (% total), 1990 - 1992	37	44
Population with sustainable access to an improved water source (%) 1990	54	45
Land use, arable land (% of land area) 2000	17	8

Source: Human Development Report, various years

Figure 1: GDP per capita PPP (1990-2000)
Source: World Development Indicators, various years



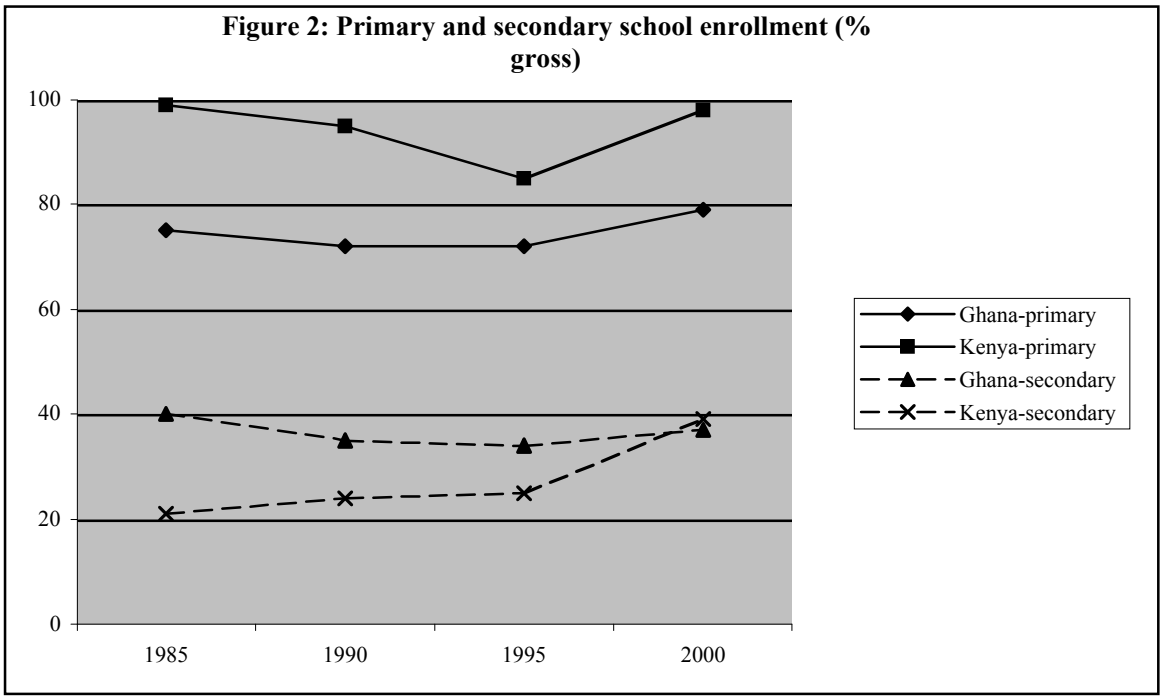


Table 2: ***Education Indicators***

	Ghana	**Kenya**
Public education expenditure as a % of GNP 1985 - 1987	3.4	7.1
Public education expenditure as a % of GNP 1995 - 1997	4.2	6.5
Public education expenditure on primary education as a % of all levels 1985 - 1986	24.5	59.9
Public education expenditure on secondary education as a % of all levels 1985 - 1986	29.5	17.7

Source: World Development Indicators, Human Development Report 2001

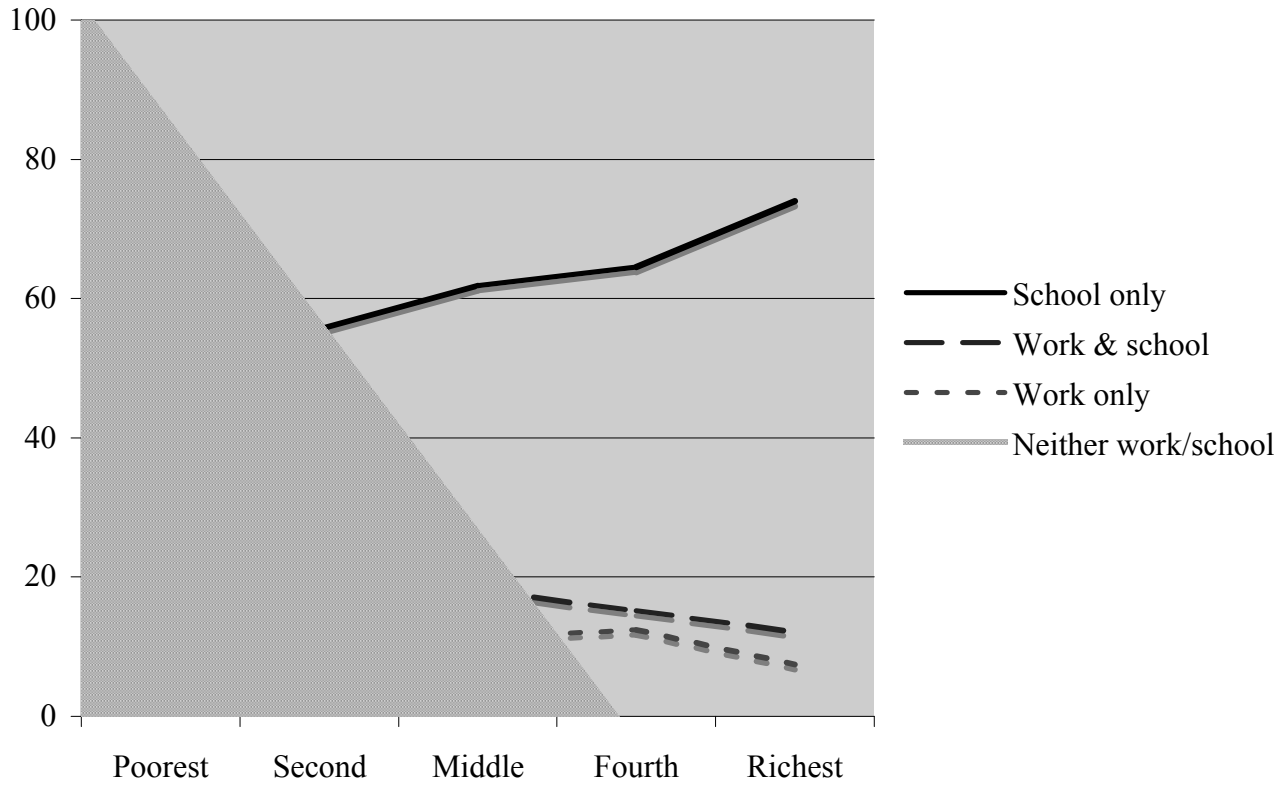
Table 3: ***Participation rates in School and Work by region***

Region	Work only	School only	Work and school	Neither work nor school
Western	8.7	55.5	28.8	7.0
Central	6.8	65.9	18.4	8.9
Greater Accra	5.7	75.9	10.4	8.0
Volta	12.1	47.8	33.3	6.9
Eastern	9.8	52.3	30.6	7.3
Ashanti	7.3	74.4	10.0	8.3
Brong Ahafo	6.9	76.3	7.4	9.4
Northern	29.6	42.2	8.7	19.5
Upper East	22.7	51.2	7.6	18.5
Upper West	16.1	49.8	4.3	29.8
Total	**12.3**	**60.5**	**16.0**	**11.2**

Table 4: ***Participation Rates in School and Work by Gender***

	Age 6 - 9		Age 10 - 14		Age 15 - 17	
Activity	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**
Work only	7.2	7.8	12.0	11.7	27.3	25.1
School only	70.7	69.7	58.7	60.7	41.4	42.3
Work & school	9.1	10.2	22.7	22.2	17.7	21.6
Neither work/school	12.9	12.3	6.6	5.5	13.6	11.0

Figure 3: School and Work Activities by Average Household Expenditure



Poorest – less than 100,000 cedis; second - 101,000 - 200,000 cedis; middle - 201,000 - 500,000 cedis; fourth - 501,000 - 750,000 cedis; richest - more than 751,000 cedis

Table 6: ***Participation rates in School and Work by province***

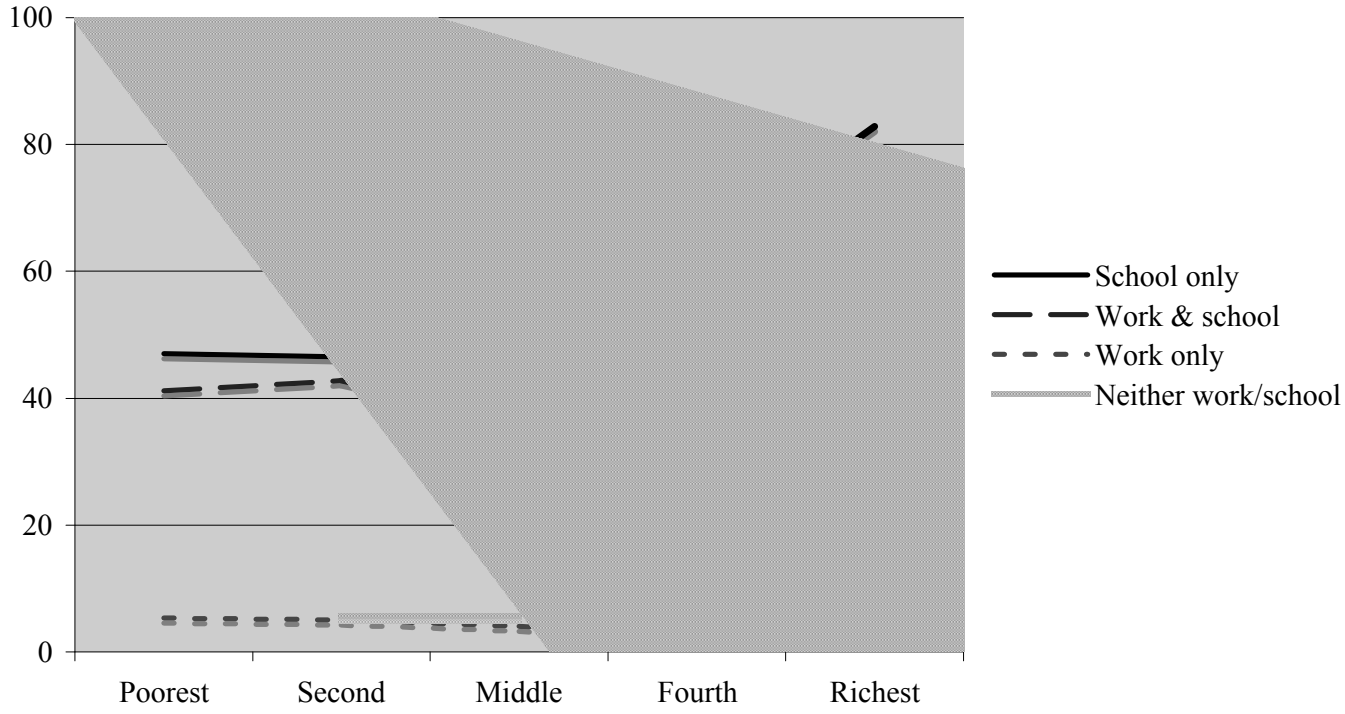
Province	Work only	School only	Work and school	Neither work nor school
Nairobi	3.4	82.8	0.3	13.5
Central	3.9	58.2	32.8	5.2
Coast	4.3	58.1	28.5	9.1
Eastern	4.5	56.7	32.7	6.1
North Eastern*	0.0	82.3	11.3	6.4
Nyanza	4.3	50.0	39.8	6.0
Rift Valley	3.5	56.9	33.7	5.8
Western	6.1	43.0	45.6	5.2
Total	**4.2**	**56.3**	**32.8**	**6.6**

*Small urban sample

Table 7: ***Participation Rates in School and Work by Gender***

	Age 6 - 9		Age 10 - 14		Age 15 - 17	
Activity	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**
Work only	0.7	0.5	2.6	2.4	13.8	16.5
School only	71.6	75.9	50.7	56.6	34.9	39.3
Work & school	25.7	22.1	44.8	38.7	42.2	31.8
Neither work/school	1.9	1.5	2.0	2.4	9.1	12.5

Figure 4: Participation Rates in School and Work by Wealth Quintiles



APPENDIX A: Multinomial Logistic Regression Analysis
Table A1: GHANA

	Model 1			Model 2			Model 3: Girls Model			Model 4: Boys Model			Model 5: 10-14 years			Model 6: 15-17 years		
	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school
Age	0.933	2.310**	0.340**	0.928	2.310**	0.339**	1.048	2.578**	0.340**	0.832*	2.102**	0.336**						
Female	1.224**	0.970	1.266**	1.076	0.961	1.130*							1.211+	1.090	1.376*	1.091	0.817+	1.266+
Foster child	1.314**	0.989	1.386**	0.964	0.964	1.054	1.717**	1.038	1.757**	0.949	0.942	1.030	0.941	0.925	1.682**	1.112	1.036	1.028
Female/foster				1.768**	1.051	1.653**							2.033**	1.065	1.605+	1.644*	1.144	1.339
No. of children	1.130*	1.194**	1.046**	1.133**	1.194**	1.047**	1.109**	1.186**	1.038+	1.160**	1.202**	1.061**	1.129**	1.181**	1.047	1.122**	1.209**	1.014
Female head	0.735**	0.839**	1.072	0.742**	0.839**	1.077	0.759*	1.038	0.923	0.721*	0.678**	1.255*	0.809	0.805*	1.298+	0.846	0.745*	1.087
Religion: Christian omitted																		
Traditional	6.843**	2.327**	5.349**	6.895**	2.327**	5.368**	8.320**	2.431**	5.850**	6.036**	2.278**	4.940**	5.992**	1.772**	5.649**	4.176**	1.617	2.556**
Muslim	1.758**	1.173*	1.478**	1.759**	1.172*	1.473**	1.846**	1.219+	1.705**	1.697**	1.144	1.273*	1.824**	1.031	1.704**	1.569**	1.284	0.720+
No religion	0.906	0.513**	0.773+	0.904	0.513**	0.774+	0.815	0.546*	0.880	1.013	0.502**	0.716	1.199	0.725	0.869	0.623	0.362*	0.426
Expenditure categories: lowest omitted																		
Second	1.646**	1.167	0.754**	1.635**	1.166	0.750**	1.689**	1.299+	0.829	1.589**	1.067	0.689**	1.598**	1.122	0.729+	1.623**	1.229	0.718
Middle	1.077	0.945	0.493**	1.074	0.944	0.492**	1.074	1.027	0.520**	1.073	0.890	0.465**	1.004	0.914	0.428**	1.137	0.909	0.601*
Fourth	1.009	0.680**	0.412**	0.997	0.680**	0.408**	1.099	0.679*	0.457**	0.889	0.692*	0.359**	1.015	0.673*	0.294**	0.817	0.573*	0.483**
Highest	0.533**	0.426**	0.318**	0.531**	0.426**	0.317**	0.513**	0.491**	0.353**	0.527**	0.380**	0.278**	0.524**	0.368**	0.246**	0.575*	0.341**	0.611+
Region: Northern region omitted																		
Western	0.331**	3.321**	0.376**	0.333**	3.316**	0.375**	0.333**	3.344**	0.356**	0.319**	3.371**	0.381**	0.247**	3.014**	0.269**	0.726	3.356**	0.626
Central	0.195**	1.767**	0.418**	0.196**	1.765**	0.419**	0.193**	2.115**	0.345**	0.195**	1.520**	0.498**	0.134**	1.587**	0.403**	0.577*	2.387**	0.956
Greater Accra	0.148**	0.916	0.385**	0.148**	0.914	0.381**	0.165**	1.055	0.302**	0.115**	0.801	0.480**	0.106**	0.863	0.393**	0.379**	0.901	0.779
Volta	0.454**	4.695**	0.349**	0.454**	4.689**	0.348**	0.378**	4.778**	0.229**	0.531**	4.723**	0.506**	0.299**	4.669**	0.203**	0.612*	4.758**	0.633
Eastern	0.439**	4.065**	0.434**	0.442**	4.066**	0.436**	0.305**	3.438**	0.383**	0.606**	4.799**	0.474**	0.288**	3.749**	0.369**	1.002	4.927**	0.755
Ashanti	0.187**	0.799*	0.365**	0.188**	0.798*	0.364**	0.194**	0.886	0.368**	0.178**	0.733*	0.348**	0.148**	0.787	0.354**	0.481**	1.049	0.938
Brong Ahafo	0.136**	0.499**	0.314**	0.136**	0.498**	0.312**	0.116**	0.477**	0.287**	0.153**	0.529**	0.327**	0.122**	0.496**	0.325**	0.307**	0.517*	0.592*
Upper East	0.509**	0.618**	0.576**	0.509**	0.618**	0.574**	0.495**	0.779	0.487**	0.520**	0.521**	0.664**	0.505**	0.537**	0.696+	0.615*	0.330**	0.759
Upper West	0.408**	0.341**	1.073	0.408**	0.341**	1.074	0.363**	0.385**	0.907	0.439**	0.317**	1.241	0.416**	0.241**	1.258	0.479**	0.339**	1.511
N	16,912			16,912			8,107			8,805			6,699			3,156		
chi2	6464.206**			6493.740**			3168.045**			3440.799**			2074.83**			662.66**		

+p<0.10, *p<0.05,**p<0.01

Table A2: KENYA

	Model 1			Model 2			Model 3: Girls Model			Model 4: Boys Model			Model 5: 10-14 years			Model 6: 15-17 years		
	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school	Work only	Work & school	Neither work/school
Age	3.910**	2.759**	0.323**	3.968**	2.758**	0.323**	4.128**	2.691**	0.353**	3.837**	2.868**	0.299**						
Female	0.891	0.762**	0.918	0.653**	0.750**	0.741**							0.556**	0.774**	1.013	0.649**	0.682**	0.698*
Foster child	3.218**	0.864*	3.512**	1.699**	0.819*	2.187**	5.010**	0.845*	4.984**	1.742**	0.860+	2.205**	2.024**	0.876	2.372**	1.261	0.576**	1.444
Female/foster				2.997*	1.086	2.241**							2.456*	0.869	1.213	4.154**	1.262	3.355**
Female head	1.088	0.993	1.230*	1.092	0.994	1.239*	1.324*	1.080	1.200	0.914	0.914	1.273+	1.030	1.010	1.399*	1.060	0.995	1.252
Children (0-3yrs)	1.479**	0.943	1.511**	1.460**	0.942	1.506**	1.685**	0.860*	1.836**	1.256+	1.017	1.265+	1.136	0.920	1.437*	1.705**	0.993	1.759**
Wealth quintiles: Q1 (poor) omitted																		
Q2	0.843	1.046	0.890	0.839	1.046	0.889	0.606**	1.040	0.789	1.153	1.080	0.941	0.556*	1.061	0.755	0.742	0.854	0.858
Q3	0.608**	0.859**	0.687**	0.603**	0.858**	0.685**	0.484**	0.886	0.567**	0.758	0.838*	0.736+	0.528**	0.894	0.570*	0.487**	0.621**	0.665
Q4	0.333**	0.647**	0.465**	0.332**	0.647**	0.468**	0.297**	0.692	0.494**	0.395**	0.600**	0.424**	0.334**	0.628**	0.235**	0.258**	0.542**	0.672
Q5	0.328**	0.192**	0.298**	0.320**	0.191**	0.295**	0.358**	0.142**	0.347**	0.175**	0.232**	0.223**	0.159**	0.207**	0.141**	0.259**	0.229**	0.495*
Province: Nyanza province omitted																		
Western	1.639**	1.365**	0.995	1.640**	1.365**	0.996	0.922	1.416**	0.860	3.164**	1.310**	1.087	2.358**	1.107	0.558	1.267	1.577**	0.580
North Eastern	0.000	1.414	0.445	0.000	1.414	0.494	0.000	0.640	0.976	0.000	2.078	0.294	0.000	0.562	0.000	0.000	0.920	0.628
Eastern	1.345+	0.777**	1.199	1.343+	0.776**	1.197	0.740	0.679**	0.946	2.640**	0.878	1.421+	1.049	0.564**	1.297	1.322	0.774	1.318
Coast	1.327	1.011	1.741**	1.336	1.011	1.746**	1.111	1.134	1.977**	2.005*	916.000	1.672*	1.701	0.828	2.544**	0.887	0.826	1.374
Central	1.086	0.804**	1.069	1.082	0.805**	1.071	0.615+	0.752**	1.009	2.220**	0.878	1.228	1.115	0.583**	1.059	0.939	0.882	0.889
Nairobi	1.066	0.038**	1.555*	1.064	0.038**	1.562*	0.728	0.000	0.276	0.763	0.073	2.641**	0.000	0.000	1.674	1.305	0.000	1.810+
Rift Valley	0.985	0.875*	1.299+	0.977	0.874*	1.295+	0.680+	0.846+	1.372+	1.683*	0.903	1.170	1.034	0.646**	1.307	0.833	0.844	1.358
N	14,233			14,233			7,144			7,176			6,224			2,713		
chi2	5760.192**			5801.700**			3121.655**			2803.860**			1269.610**			791.340**		

+p<0.10, *p<0.05,**p<0.01

APPENDIX B: EXPENDITURE CATEGORIES

Figure B1:Ghana (6 - 9 years)

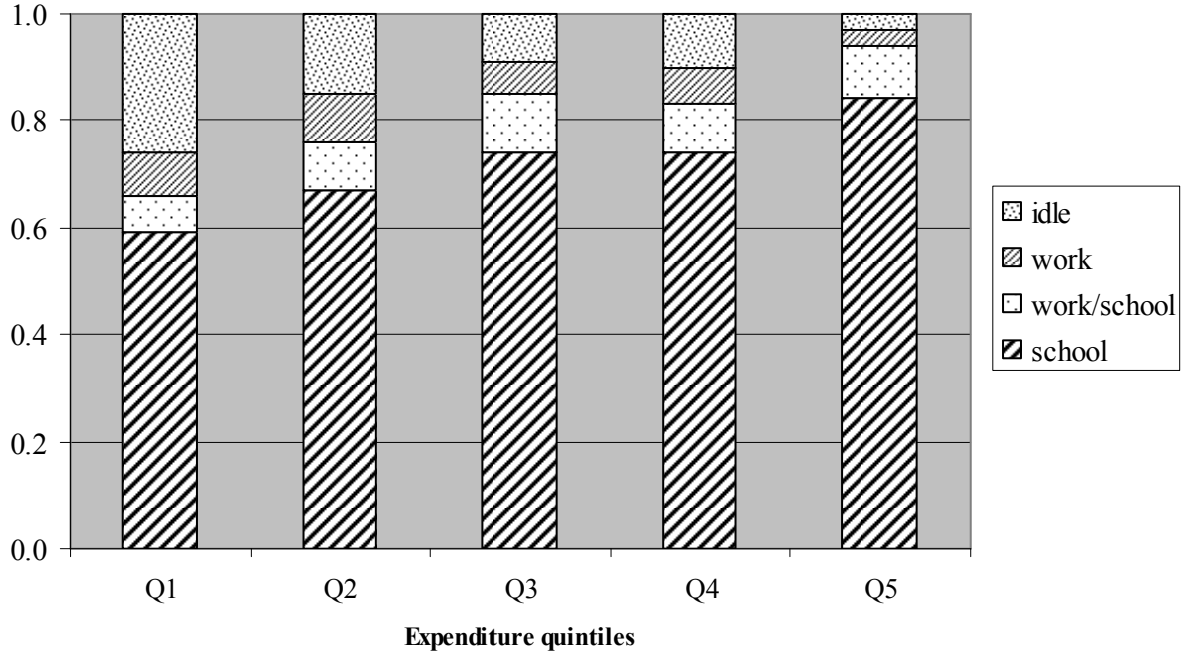


Figure B2: Ghana (10 - 14 years)

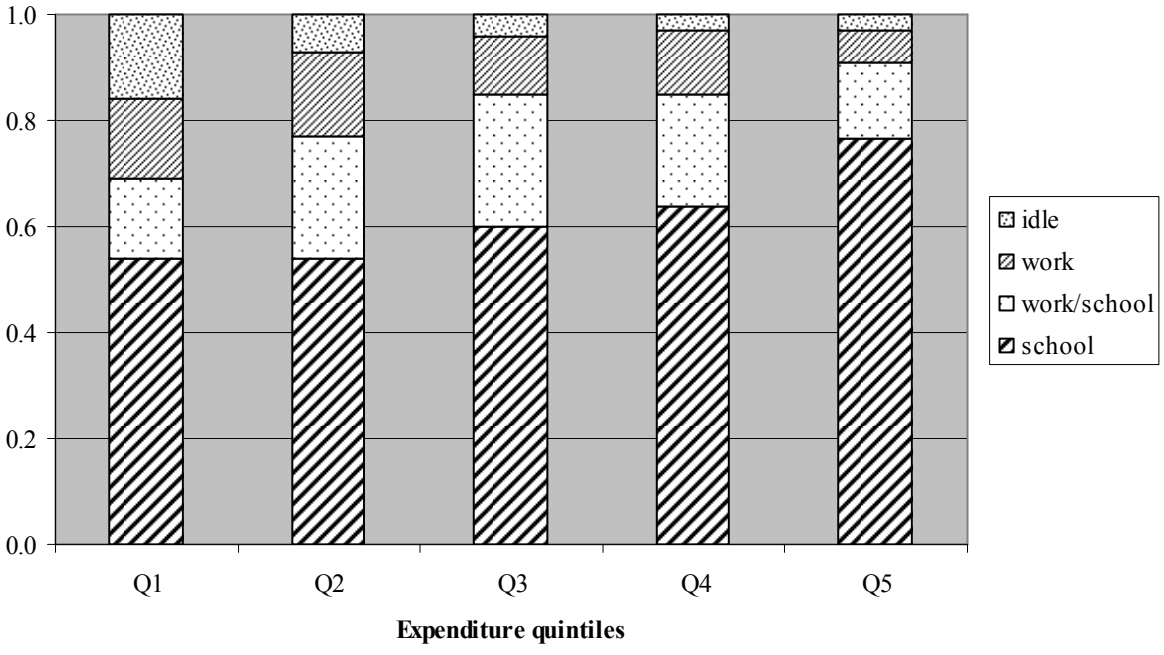


Figure B3:Ghana (15 - 17 years)

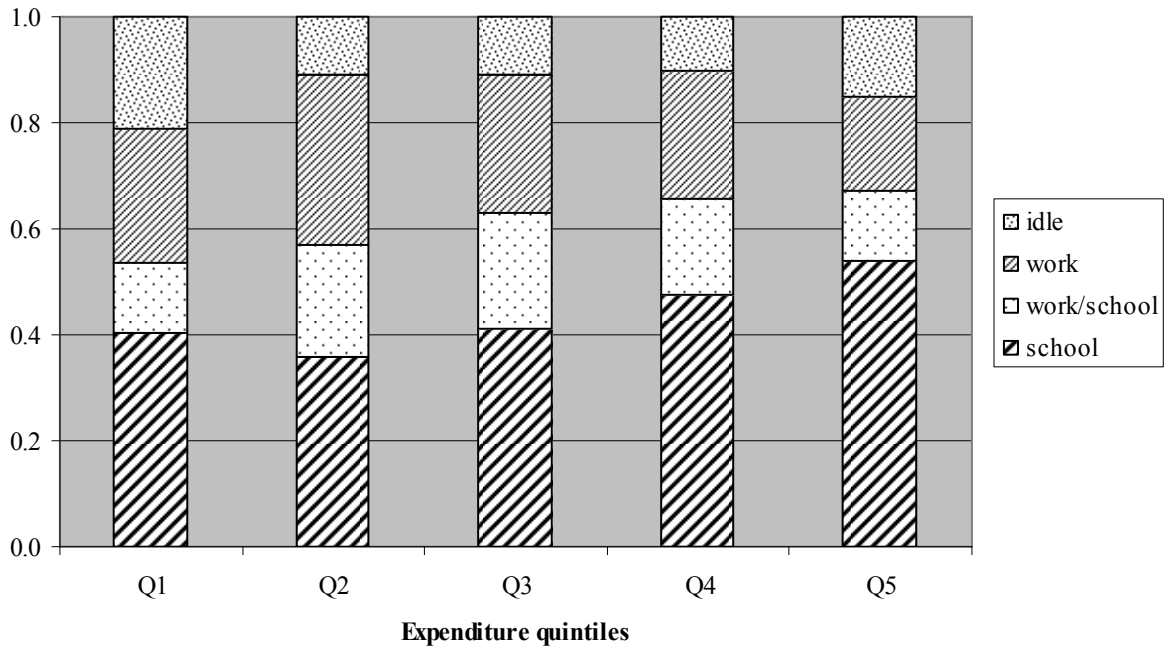


Figure B4: Kenya (6 - 9 years)

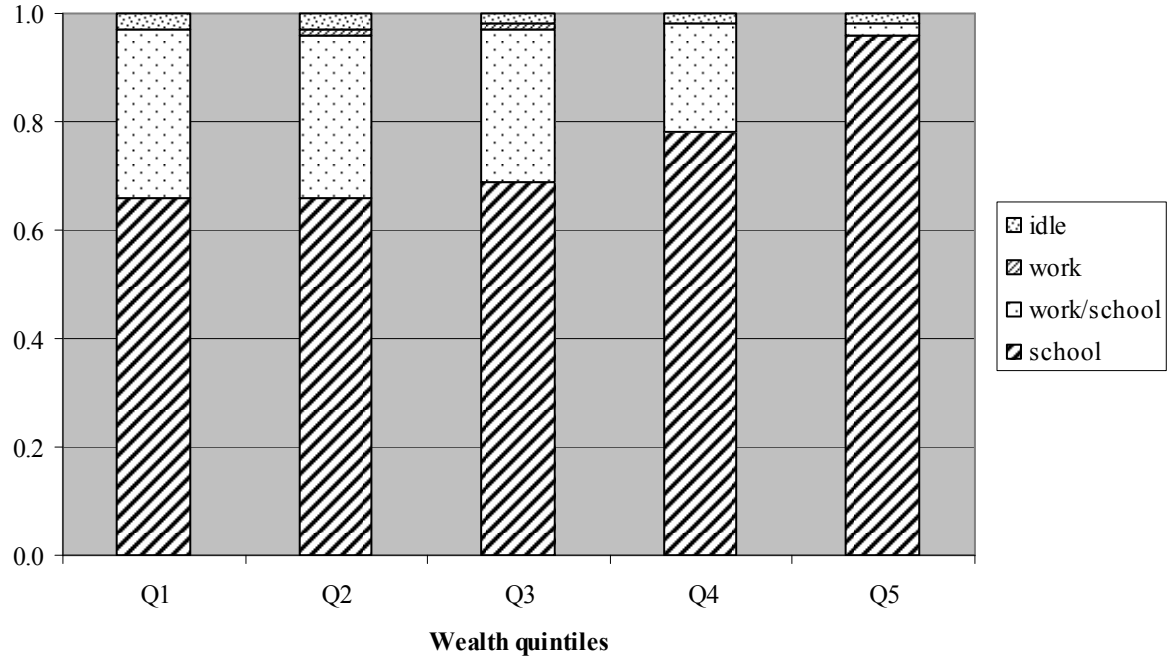


Figure B5: Kenya (10 - 14 years)

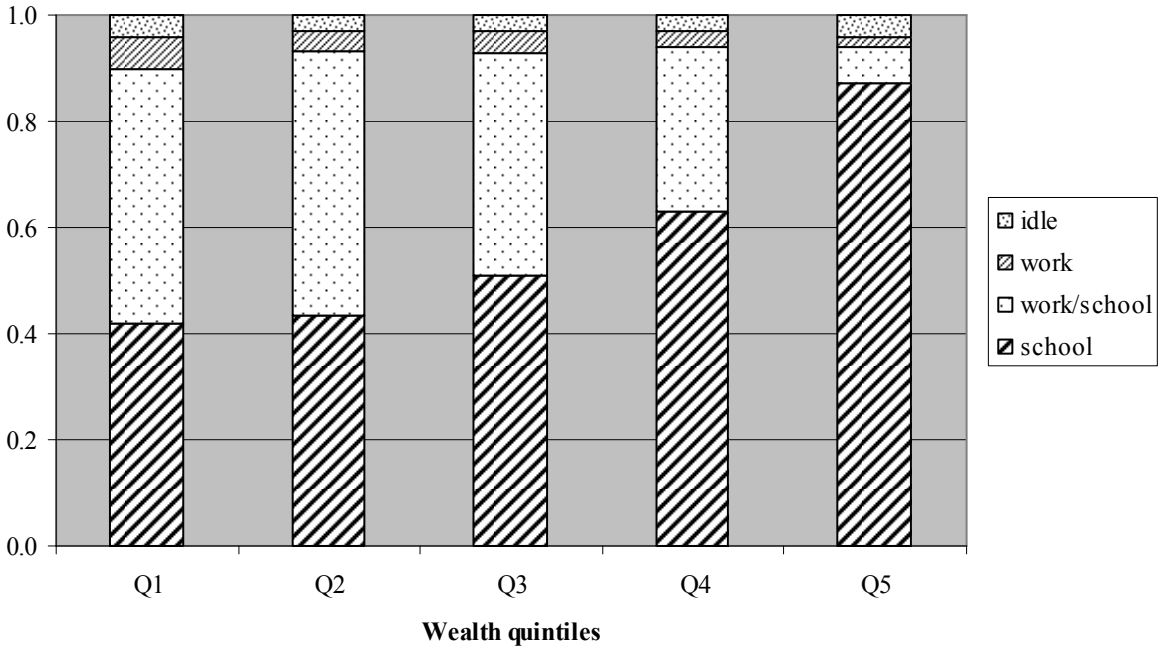


Figure B6: Kenya (15 - 17 years)