Child Labour, Education and the Principle of Non-Discrimination

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Executive Summary

UNICEF estimates that out of the 115 million children out of school, 62 million of them are girls. Many of these children work but traditional indicators of child labour often underestimate the amount of girls' work because they ignore household chores. The human rights principle of non-discrimination requires that all work by children – whether of a domestic nature or not – be considered equally in the analysis of child labour. This paper presents estimates of child labour in Sub-Saharan Africa that include household chores and thus reveal the discrimination against girls. The authors also investigate to what extent participation in child labour leads to lower school attendance and increased repetition and dropout rates, and whether child labour affects girls and boys differently.

The data in the study was collected in MICS and DHS household surveys from 18 African countries. 60 percent of children aged 7 to 14 years in the sample are attending school and 38 percent are engaged in child labour. 20 percent of all children are combining school attendance and child labour. A regression analysis shows that household wealth and education of the mother are the most important determinants of school attendance. Children from wealthier households and children of mothers with a formal education are more likely to attend school. In the majority of the countries in the study, boys, urban residents, and children not engaged in labour also have an increased probability of school attendance.

Resumen Ejecutivo

UNICEF calcula que unos 115 millones de niños no asisten a la escuela, y de ellos, 62 millones son niñas. Muchos de estos niños y niñas trabajan, pero los indicadores tradicionales del trabajo infantil por lo general no tienen suficientemente en cuenta el volumen del trabajo de las niñas porque dejan de lado las labores domésticas. El principio de no discriminación inspirado en los derechos humanos requiere que en los análisis del trabajo infantil se tenga en cuenta todo trabajo realizado por niños, se trate o no de labores de índole doméstica. Los cálculos estimados sobre el trabajo infantil en África subsahariana que se ofrecen en este estudio incluyen esas tareas domésticas y, por lo tanto, revelan la discriminación de las niñas. Los autores investigan también en qué medida el trabajo infantil determina tasas más bajas de asistencia a la escuela y aumenta las tasas de repetición de grados y de deserción escolar, así como si el trabajo infantil afecta de manera diferente a las niñas y los niños.

Los datos contenidos en el estudio fueron recabados por medio de Encuestas agrupadas de indicadores múltiples y de Encuestas de Demografía y Salud (DHS) que se llevaron a cabo en 18 países africanos. Un 60% de los niños de 7 a 14 años de edad de la muestra asisten a clases, y el 38% participan en el trabajo infantil. Un 20% de todos los niños asiste a la escuela y trabaja. Un análisis de regresión demuestra que los principales factores determinantes de la asistencia a clase de los niños y niñas son el nivel de ingresos de sus respectivas familias y el grado de educación de sus madres. Los niños y niñas provenientes de hogares con mayores recursos y los hijos de mujeres con un mayor nivel de instrucción siempre muestran una mayor propensión a ir a la escuela. En la mayoría de los países considerados en el estudio, los niños varones, los niños que viven en zonas urbanas y los que no trabajan también tienen mayores probabilidades de asistir a la escuela.

Résumé

L'UNICEF estime que 115 millions d'enfants ne vont pas à l'école, dont 62 millions de filles. Un bon nombre de ces enfants travaillent, mais les indicateurs habituels du travail des enfants sous-estiment souvent le nombre de filles qui travaillent, ne tenant pas compte des travaux ménagers. Le principe de non-discrimination, qui est un droit de l'homme, exige que tous les travaux effectués par des enfants – qu'ils soient domestiques ou non – soient pris en considération sur un pied d'égalité, lorsqu'on analyse le travail des enfants. La présente étude donnent des estimations du travail des enfants en Afrique subsaharienne qui comprennent le travail ménager et qui révèlent donc la discrimination à l'encontre des filles. Les auteurs recherchent aussi dans quelle mesure le travail des enfants fait baisser le taux de fréquentation scolaire, augmente celui de redoublement et celui d'abandon de l'école. Les auteurs se demandent en outre si le travail des enfants affecte différemment les garçons et les filles.

Les données rassemblées dans cette étude proviennent d'enquêtes en grappes à indicateurs multiples et d'enquêtes démographiques et sanitaires effectuées dans 18 pays africains. Dans l'échantillon, composé d'enfants âgés de 7 à 14 ans, 60 pour cent de ces enfants vont à l'école et 38 pour cent sont obligés de travailler, alors que 20 pour cent de la totalité des enfants vont à l'école tout en travaillant. Une analyse économétrique indique que le niveau économique du ménage et l'éducation de la mère constituent les facteurs déterminants de la fréquentation scolaire. Les enfants issus d'un ménage aisé et ceux dont la mère a bénéficié d'un enseignement scolaire ont toujours plus de chances d'aller à l'école ; c'est également le cas, dans la majorité des pays étudiés, des garçons, des habitants des villes et des enfants qui ne sont pas obligés de travailler..

Child Labour, Education and the Principle of Non-Discrimination

Elizabeth D. Gibbons, Friedrich Huebler, and Edilberto Loaiza[1]

1 The Human Rights Framework for Analysing Child Labour and Education
1.1 International conventions against child labour: standards and reality

As early as 1921, when the International Labour Organisation (ILO) passed the first Minimum Age Convention, the world has attempted to protect children's right to an education and to prevent any child labour which would prejudice their school attendance.[2] The ILO's Minimum Age Convention 138 of 1973[3] set the standard for the minimum age for admission to employment as 15 years, or in special cases where economic and educational facilities are insufficiently developed, 14 years; light work not harmful to the child or prejudicial to his or her attendance at school is permissible after age 12. Since 1990, with the entry into force of the Convention on the Rights of the Child,[4] the child's right to be protected from "any work that is likely to be hazardous or to interfere with the child's education" (Article 32) and his or her right, on an equal, non-discriminatory basis to "primary education compulsory and available free to all" (Article 28) have gained the status of internationally recognised norms, while imposing an obligation on the 192 states parties to the Convention to realise these rights for the children under their jurisdiction.[5] In 2000, children were provided further protection through the entry into force of ILO Convention 182,[6] which was ratified by 150 countries as of May 2004.[7] Convention 182 prohibits the worst forms of child labour, defined as all forms of slavery and similar practices; child prostitution and pornography; illicit activities (in particular the production and trafficking of drugs); and work that is likely to harm the health, safety or morals of children.

However, as is well known, many governments have thus far failed to realise these rights for their children. For 2002, the United Nations' Children's Fund (UNICEF)

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[1] Invaluable inputs to this paper were received from Anna-Karin Irvine, Meredith Slopen and Radhika Gore of the Global Policy Section, Division of Policy and Planning, UNICEF. The views expressed in this paper are those of the authors and do not necessarily represent the views of UNICEF. This paper was originally prepared for a conference organized by the Center for Human Rights and Global Justice, New York University School of Law, and appeared in the volume: *Human Rights and Development: Towards Mutual Reinforcement*, edited by P. Alston and M. Robinson, Oxford University Press, 2005, based on the conference.

[2] "Children under the age of fourteen years may not be employed or work in any public or private agricultural undertaking, or in any branch thereof, save outside the hours fixed for school attendance. If they are employed outside the hours of school attendance, the employment shall not be such as to prejudice their attendance at school." Article 1 in: ILO. 1921. *C10: Minimum age (agriculture) convention.* http://www.ilo.org/ilolex/cgi-lex/convde.pl?C010 (accessed 17 May 2004).

[3] June 26, 1973, 1015 U.N.T.S. 297, *entered into force* June 19, 1976 (Convention 138).

[4] G.A. res. 44/25, annex, 44 U.N. GAOR Supp. (No. 49) at 167, U.N. Doc. A/44/49 (1989), *entered into force* Sept. 2, 1990.

[5] UNICEF. 2000. *First call for children: World declaration and plan of action from the World Summit for Children, Convention on the rights of the child.* New York: UNICEF.

[6] 38 I.L.M. 1207 (1999), *entered into force* Nov. 19, 2000 (Convention 182).

[7] Database of International Labour Standards. http://www.ilo.org/ilolex/cgi-lex/ratifce.pl?C182 (accessed 17 May 2004).

estimated that 121 million children were out of school, 65 million of them girls.[8] In 2002, the ILO estimated that, worldwide, 211 million children aged 5 to 14 years were economically active, 111 million of them in hazardous work.[9] In fact, since this figure only counts children working in economic activities and excludes those working in household chores (which if excessive, can also affect school attendance), the number of working children in the world is likely to greatly exceed this estimate. For these millions of children, their rights to education, to a childhood protected from work detrimental to their development, and to human dignity, are all being violated. This is a scandal for the 21st century, a harvest of ignorance and lost potential which mortgages the future of these children and their countries.

1.2 Implications of a human rights approach to development

Since 1996, when UNICEF adopted a Mission Statement whereby the Organisation in all its work is "guided by the Convention on the Rights of the Child and strives to establish children's rights as enduring ethical principles,"[10] it has struggled to understand and apply a human rights approach to development in its programmes of cooperation. Learning is continuous, but to date we have seen, amongst other effects of the rights approach, that UNICEF is driven, beyond the utilitarian principle of the greatest good for the greatest number of children, to give attention to those children and vulnerable members of society living at the margins of the mainstream, and to push for services to reach the "last 10 percent" of the un-reached. As a corollary, applying the principles of universality and non-discrimination pushes UNICEF to direct the state's attention and resources to marginalised children and their families. This includes children engaged in child labour. Likewise, application of human rights principles has led UNICEF into actions which identify, advocate for, and support communities of ethnic and racial groups suffering from discrimination, and to seek gender equity in all its actions. This means that the gender dimension of child labour has to be visible, as a prelude to being understood and acted upon.

Applying the principle of indivisibility of human rights has led to programmes which incorporate the inter-relatedness of causes and are increasingly inter-sectoral in content, addressing the rights of the whole child. This has particular relevance for programmes simultaneously seeking to increase school attendance and decrease child labour, acting through a complex nexus of interacting factors. Thus, the rights approach to child labour calls for a profound analysis of the causes contributing to child labour, and a multi-sectoral response to the problem: provision of accessible, affordable and quality education; interventions aimed at increasing household income of poor families; reform and implementation of laws on minimum age of employment, truancy, teachers' minimum qualification and mandatory teaching hours; birth registration (without which it is impossible to establish whether a child is old enough to attend school or to work); and civic education aimed at all levels of society to promote and respect the fulfilment of child rights, and ensure that law enforcement effectively suppresses the demand for child labour.

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[8] UNICEF, *The State of the World's Children 2004* (New York: UNICEF, 2004) 7.
[9] ILO, *Every Child Counts: New Global Estimates on Child Labour* (Geneva: ILO, 2002) 20.
[10] UNICEF, *The Mission of UNICEF*, UN Doc.E/ICEF/1996/AB/L.2.

Overall, applying human rights principles derived from the Convention on the Rights of the Child has resulted in a shift in the mix of strategies under-girding UNICEF's development work:

a) Increased support to *capacity building* of the state, its policies and its institutions, so as to enable it to better meet its obligations to the citizenry.
b) Considerable *widening of partnerships*, well beyond the state, into civil society organisations at all levels, and greater clarity on the importance of community capacity building and citizen empowerment.
c) A deeper causal analysis for non-realisation of rights, leading to a better understanding of the interrelationship of causes impeding children's growth and development, and to *programmes which address structural causes of inequity*. Prior to adoption of the human rights approach, structural causes of children's problems — including poverty, which is often at the root of child labour — were taken as a given and not subject to change through programme action.
d) A much higher investment by UNICEF programmes in *advocacy* with (for example) parliaments to change discriminatory laws and to increase budgets for social development, with international financial institutions and with power brokers in general.
e) A considerable *decrease in direct support to service delivery*, (except in situations of humanitarian emergency) as this is the state's duty, to which UNICEF contributes indirectly through capacity building of its institutions, through empowering communities to demand the quality services to which they have a right, and to know how they can hold state agents accountable for poor services.

1.3 Education as a preventive strategy against child labour

Stimulated by the Oslo International Conference on Child Labour in 1997, UNICEF, with support of seven partners,[11] developed the Global Child Labour Programme, whose most important sub-programme was "Education as a Preventive Strategy against Child Labour." Implemented in 30 countries between 1999 and 2002, the programme used a multi-sectoral, child rights approach to implementing four components: provision of quality, relevant and affordable education; improvement in family economies; raising of awareness in and respect for children's rights; and the enforcement of child labour laws. All four components were to be implemented at policy, institutional, school and community level.

In 2003, the programme was evaluated.[12] The experience showed that it *is* relevant to use education as a main entry point for the targeted children (i.e., those engaged in child labour), but there was only partial effectiveness in interventions. The evaluation concluded that education can only be an adequate alternative to child labour if it is accessible, affordable, of good quality, non-discriminatory, safe, and linked with

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[11] These funding partners were Finland, Luxembourg, the Netherlands, Norway, Sweden, the ILO, and the World Bank.

[12] UNICEF, *Education as a preventive strategy against child labour: Evaluation of the cornerstone programme of UNICEF's global child labour programme*, Evaluation Working Paper (New York: UNICEF, 2003).

other programmes in an integrated way. This finding reinforces the multi-sectoral approach to development problems, as derived from the human rights principle of indivisibility. However, the complexity of the determinants and the inter-relationship between child labour and education were such that predictive factors, favouring the abandonment of child labour and enrolment in school, were difficult to identify. The present study attempts to fill this gap by analysing the constraining effect of child labour on school attendance and achievement.

Overall, the programme failed to systematically collect and synthesize quantitative data which could have helped to further explain the inconclusive results. However, the programme confirmed that there is not invariably an inverse relationship between school attendance and child labour, as many other factors determine whether a child will or will not attend school. Furthermore, the programme "focused on working children, children who have never been to school, and children at risk of dropping out of school to join the workforce. ... Except for an intended link to girls' education, there was no particular attention to girls at work."[13] To that degree the programme failed to address the gender dimensions of child labour, perhaps because the tools for assessing the extent of household chores did not exist, and because there are, to date, no internationally accepted definitions of child labour that include the tasks disproportionately carried out by girls, as well as the corresponding indicators to measure and report the existing empirical evidence.

2. Overcoming the Discrimination Against Girls in Analyses of Child Labour
2.1 Existing data sources for assessing child labour

The vast majority of studies on child labour limit themselves to analysing time spent in economic activity (whether inside or outside the home); they do not take into account time spent on household chores. Since girls are almost always more likely to be occupied in household chores than are boys, this way of analysing the extent of child labour, and its impact on schooling, is significantly biased against girls. Non-discrimination is a key human rights principle; it is important to develop an "equalizing" indicator of child labour, so that its impact on girls access to education, and school attainment, is made visible in similar terms as the effect of child labour on boys.

UNICEF has been able to collect data on the time children spend in household chores through its Multiple Indicator Cluster Survey (MICS). The MICS is a household survey developed by UNICEF to fill data gaps in areas critical to the survival of children. The methodology was developed in collaboration with the World Health Organization (WHO), UNESCO, the United Nations Statistics Division, MEASURE (USAID), the London School of Hygiene and Tropical Medicine, and the United States Center for Disease Control and Prevention (CDC). Specifically, MICS was developed to obtain data on key indicators for assessing progress towards the goals of the World Summit for Children for the year 2000. The end-decade MICS (MICS2) collected data for 63 of the 75 *Indicators for Monitoring Progress at End-Decade*.[14] MICS2 drew heavily on

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[13] *Ibid* 49.

[14] The World Summit for Children adopted 27 goals with 75 related indicators. The goals and indicators are listed in Appendix 1 to: UNICEF, *End-decade assessment: Indicators for assessing progress globally*, UNICEF Executive Directive CF/EXD/1999-03, New York, 23 April 1999.

experiences with the mid-decade MICS, which was conducted around 1995, and the subsequent mid-decade MICS evaluation.

By 2001, 65 developing countries had carried out MICS2 studies. The studies were conducted between 1999 and 2001 by government agencies (mostly Statistical Offices and Ministries of Health) with the technical and financial support of UNICEF. The MICS2 model questionnaire includes 19 core modules and 4 optional modules to obtain information for households, household members, women 15 to 49 years of age, and children under five years of age. Since the main objective of MICS2 was to help countries fill data gaps, not all modules were necessarily included in a country's questionnaire. With the data from the surveys, the respective governments completed country reports that documented the progress toward the end-decade goals defined at the World Summit for Children. The results are presently being used by national governments to define priorities regarding women and children for the period 2000-2005.[15] UNICEF used the results to prepare the report *We the Children* that the UN Secretary-General presented at the Special Session for Children in May 2002,[16] the accompanying statistical review,[17] and the outcome document, *A World Fit for Children*.[18] The survey data also helped define UNICEF's medium-term strategic plan for the period 2000-2005.[19]

The MICS surveys collected information on the number of hours children aged 5 to 14 years spent working for others (paid or unpaid); working for the family, whether on a farm or in a business (paid or unpaid); and on the time spent in household chores such as cleaning, fetching water, laundry, or child care. However, due to limitations of the methodology, it was not possible to collect data on the kind of work children engaged in. Thus, MICS data cannot be used to analyse the worst forms of child labour (bonded labour, prostitution, drug trafficking, etc.).

A further source of data are the Demographic and Health Surveys (DHS) that are conducted by Macro International with funding from the U.S. Agency for International Development (USAID). As a result of coordination between USAID and UNICEF, some countries implementing DHS surveys decided to include the child labour module from the MICS.[20]

2.2 Creating an equalizing indicator between girls and boys: The role of household chores in the measurement of child labour

Because MICS and DHS provide data on household chores it is possible to apply the principle of non-discrimination by making the extent of girls' engagement in child labour visible. A study by Friedrich Huebler and Edilberto Loaiza of UNICEF's Strategic Information Section compared the rates of child labour with and without

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[15] MICS documentation and results can be obtained at a dedicated UNICEF Web site, www.childinfo.org.

[16] UNICEF, *We the Children: Meeting the promises of the World Summit for Children* (New York: UNICEF, 2002).

[17] UNICEF, *Progress since the World Summit for Children: A statistical review* (New York: UNICEF, 2001).

[18] United Nations, *A world fit for children*, UN Doc. A/S-27/19/Rev. 1. (New York: UN, 2002).

[19] UNICEF, *Medium-term strategic plan for the period 2002-2005*, UN Doc. E/ICEF/2001/13, November 7 (New York: UNICEF, 2001).

[20] Documentation and survey data can be obtained at the DHS Web site, www.measuredhs.com.

household chores in 25 countries from Sub-Saharan Africa.[21] To ensure that the extent of girls' labour is not underestimated, UNICEF includes household chores in excess of four hours per day in calculations of child labour. Household chores of less than four hours per day are, for the sake of argument, not considered harmful to the child's development, and hence are not counted as child labour. Of course, depending on the chore, one could question this assertion; four hours a day carrying heavy buckets of water could certainly be both physically detrimental to the child, and prevent him or her from attending school.[22] Even though with a minimum measure of four hours household chores per day, the extent of child labour may be underestimated, without some arbitrary cut-off, almost all children could be considered to be engaged in child labour.

The inclusion of at least 28 hours per week of household-chores in UNICEF's definition of child labour creates, however imperfectly, an "equalizing indicator" between boys and girls, and expands the usual ILO definition of child labour as follows:

Indicator	Definition
1. Child labour (with household chores)	Ages 5-11: at least (a) one hour of economic activity or (b) 28 hours of household chores per week.
	Ages 12-14: at least (a) 14 hours of economic activity or (b) 28 hours of household chores per week.
2. Child labour (without household chores)	Ages 5-11: at least one hour of economic activity per week.
	Ages 12-14: at least 14 hours of economic activity per week.

The study of 25 African countries by Huebler and Loaiza indeed shows that once household chores are included, the disparity in child labour rates for boys and girls narrows by more than half, as illustrated by table 1.

Table 1: Child labour in Sub-Saharan Africa, 25 countries, children 5-14 years

	Without Household Chores	With Household Chores
Total Child Labour	25.3%	30.8%
Girls	23.6%	30.2%
Boys	27.0%	31.5%
Difference boys-girls	3.4%	1.5%

Source: Friedrich Huebler and Edilberto Loaiza, *Child Labour and school attendance in Sub-Saharan Africa: Empirical evidence from UNICEF's Multiple Indicator Cluster Surveys*, Working Paper (New York, UNICEF, 2002).

When household chores are taken into account, the estimate of child labour among girls is increased by more than one quarter, from 23.6 percent to 30.2 percent. In contrast, the estimate of child labour among boys is increased by one sixth, from 27.0 percent to 31.5 percent. The gap between boys' and girls' child labour falls from 3.4 percent, to 1.5 percent. Thus, despite its imperfections, the UNICEF indicator of child labour, which includes household chores, contributes to a better visibility and understanding of gender

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[21] Friedrich Huebler and Edilberto Loaiza, *Child Labour and school attendance in Sub-Saharan Africa: Empirical evidence from UNICEF's Multiple Indicator Cluster Surveys*, Working Paper (New York, UNICEF, 2002).

[22] Researchers at the joint ILO-UNICEF-World Bank project "Understanding Children's Work," based at UNICEF's Innocenti Research Centre in Florence, are currently engaged in studies to determine at what threshold the number of hours of household chores becomes detrimental to school attendance and achievement.

disparities in child labour. As such, its use allows policy makers to better apply the human rights principle of non-discrimination.

3. Does Participation in Child Labour Significantly Constrain School Attendance and Achievement?
3.1 Data coverage and analytical model

The present study, stimulated by the ambiguous results of the UNICEF programme "Education as a preventive strategy against child labour," seeks, through analysis of household survey data, to understand quantitatively (a) the extent to which child labour is, in and of itself (i.e., independent of other factors) preventing school attendance and contributing to repetition and dropout rates, and (b) the extent to which other factors may influence the realisation of children's right to education. The present study covers the 18 countries listed in table 2, which is a reduced sample from that in the study by Huebler and Loaiza.[23] For 14 countries, data from MICS surveys was used and for the remaining four countries, DHS data was used.

Table 2: Data sources and country population

Country	Survey	Year	Population in 2000 (1,000)
Burundi	MICS	2000	6,267
Central African Rep.	MICS	2000	3,715
Comoros	MICS	2000	705
Congo (DRC)	MICS	2000	48,571
Côte d'Ivoire	MICS	2000	15,827
Gambia	MICS	2000	1,312
Guinea-Bissau	MICS	2000	1,367
Kenya	MICS	2000	30,549
Lesotho	MICS	2000	1,785
Malawi	DHS	2000	11,370
Mali	DHS	2001	11,904
Niger	MICS	2000	10,742
Senegal	MICS	2000	9,393
Sierra Leone	MICS	2000	4,415
Somalia	MICS	1999	8,720
Swaziland	MICS	2000	1,044
Tanzania	DHS	1999	34,837
Uganda	DHS EdData	2001	23,487

Population figures from: United Nations Population Division, *World Population Prospects: The 2002 revision* (New York: United Nations, 2003).

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[23] In some of the 25 Sub-Saharan African countries in the earlier study, surveys were conducted during a period of school vacation, which means that no concurrent data on child work and school attendance was available. In these countries it is thus not possible to evaluate the trade-off between school attendance and child labour.

We use the same definition of child labour as the earlier study, whereby household chores of 28 hours or more per week are included, in order to introduce an equalizing indicator and make girls' work as visible as boys' work. Our working hypothesis is that being engaged in child labour invariably constrains school attendance. To test this, we want to investigate the extent to which child labour, together with other socioeconomic factors such as gender and wealth, is a significant factor constraining school attendance and educational attainment among children 7 to 14 years of age.[24]

For the purpose of this study we define a child to be in school if he or she was attending either primary or secondary education at the moment of the survey. Children in preschool or in non-standard schools are counted as not attending school. A child is considered to have dropped out from school if he or she was attending school the year before the survey and is not currently attending. Similarly, a child is considered to be a repeater if, at the moment of the survey, the grade of school attended is the same as during the year before the survey. Repetition and dropout rates are taken as proxies for educational achievement, although it is recognised that such measures cannot fully reflect school performance. Since the surveys represent a point in time, they cannot account for the cumulative effect of child labour on attainment over time.

A regression analysis of the data seeks to show the relative weight of six factors in influencing school attendance, grade repetition and dropping out. These factors are: age (7-10 or 11-14 years), gender, area of residence (rural or urban), household wealth (indicated by wealth quintile), mother's or caretaker's education (for more than 9 out of 10 children the caretaker is the mother), and child labour. This is a very simple model that cannot take into account any variable related to access to school (in terms of the non-existence of a school as a reason for non-attendance), to the quality of education (availability of books, materials, or trained teachers, which is known to have a strong influence on parents' preference for work over school), or to the intensity of child labour (beyond the hourly threshold established by the definition above). As previously noted, due to data collection limitations, the extent of worst forms of child labour cannot be analysed. However, the model does have the merit of producing quantitative data, comparable over a large number of countries. By showing the relative weight of each of these factors, analysis of the data should present some considerations for policies aimed at increasing school attendance and eliminating child labour.

3.2 School attendance and child labour: Descriptive statistics

Table 3 and figure 1 summarise the school attendance and child labour rates from the 18 countries in this study.

Table 3: School attendance and child labour in Sub-Saharan Africa (%), children 7-14 years

Category	Attending school	Child labour	School only	School and CL	CL, no school	No school, no CL
Burundi	47.3	28.2	36.0	11.3	17.0	35.7
CAR	49.8	60.8	21.6	28.2	32.6	17.6
Comoros	35.9	29.0	25.7	10.2	18.8	45.3

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[24] Although child labour data for children aged 5 to 14 years is available, we limit the analysis to children 7 years and older because 7 years is the minimum age by which children in all countries are supposed to attend primary school, according to national legislation.

Congo (DRC)	61.7	31.8	48.2	19.3	12.4	20.1
Côte d'Ivoire	61.7	39.0	41.9	19.7	19.3	19.1
Gambia	52.7	21.6	43.5	9.2	12.5	34.8
Guinea-Bissau	43.3	54.7	25.8	17.5	37.1	19.5
Kenya	81.3	28.8	59.6	21.7	7.1	11.6
Lesotho	75.3	20.0	61.4	14.0	6.0	18.7
Malawi	83.4	20.9	66.1	17.3	3.5	13.1
Mali	38.7	40.8	27.7	11.0	29.7	31.6
Niger	30.2	71.8	12.2	17.9	53.8	16.0
Senegal	47.0	39.5	33.2	13.8	25.7	27.3
Sierra Leone	43.2	58.5	19.3	23.8	34.6	22.2
Somalia	13.4	41.9	8.9	4.5	37.4	49.2
Swaziland	77.8	10.1	70.1	7.8	2.3	19.9
Tanzania	51.1	42.4	31.6	19.5	22.9	26.0
Uganda	87.8	43.4	49.2	38.6	4.8	7.4
Male	62.4	37.9	42.8	21.1	16.8	19.3
Female	58.3	38.2	40.1	19.2	19.0	21.7
Total	60.3	38.0	41.4	20.1	17.9	20.5

Notes: Averages are weighted by country population. – School attendance rate for Congo (DRC) is for children 7-14 years, remaining columns for Congo show estimates for children 10-14 years because no child labour data was available for ages below 10 years.

Figure 1: Activity status, children 7-14 years
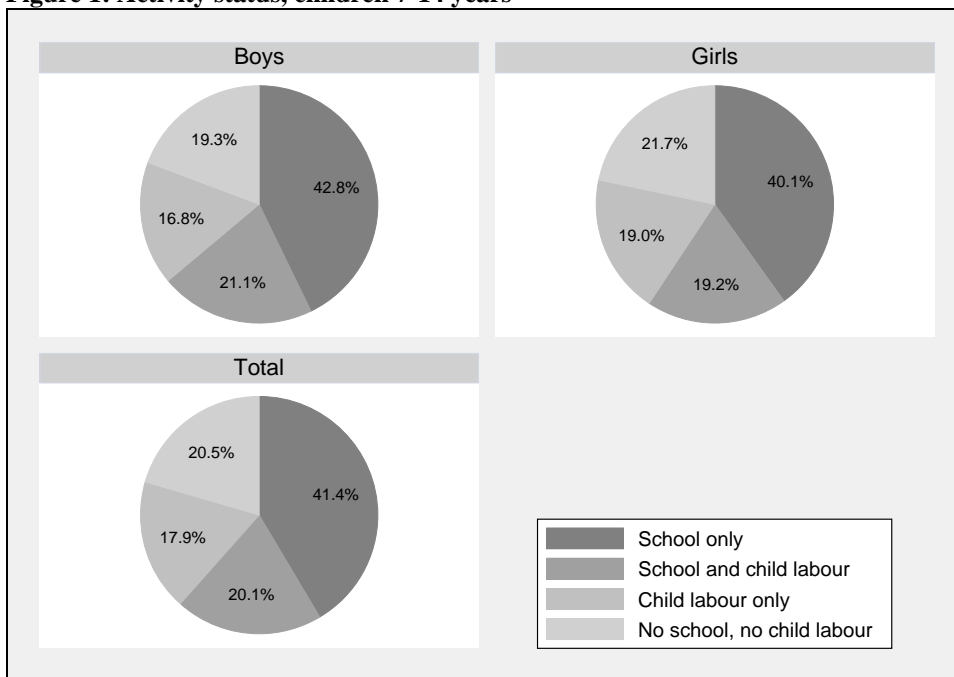
In the sample overall, 60 percent of children 7 to 14 years of age are attending school. It is also evident that for many children, labour is part of their daily lives: 38% of all children are labourers. Among these children, slightly more than half (or 20 percent) also attend school while another 18 percent are only engaged in labour and have their right to education denied. On the other hand, among the non-labouring children, two thirds attend school. In spite of significant overlap between school attendance and child labour, 41

percent of the children attend school only and the remaining 21 percent are neither in school nor working.[25]

Girls attend school less than boys (58 percent compared to 62 percent) but thanks to the inclusion of household chores in the analysis, we are able to see that the share of child labourers among girls is the same as among boys—about 38 percent. Because of their lower attendance rate, girls are more likely to be engaged in child labour only (19 percent compared to 17 percent for boys), or to neither attend school nor do child labour (22 percent compared to 19 percent for boys).

Figure 2 plots the child labour and school attendance rates against each other. We observe that in countries with a high proportion of child labourers, school attendance tends to be low. At the extreme ends of the distribution are Swaziland, with a school attendance rate of 78 percent and a child labour rate of 10 percent, and Niger, with a school attendance rate of 30 percent and a child labour rate of 72 percent. Uganda and Somalia appear to be two outliers. In Uganda, 43 percent of all children are labourers and yet 88 percent of all children are in school. Somalia has the lowest school attendance rate of all countries, with 13 percent, but with a share of 42 percent there are almost as many child labourers as in Uganda.

Figure 2: Child labour and school attendance in Sub-Saharan Africa, children 7-14 years
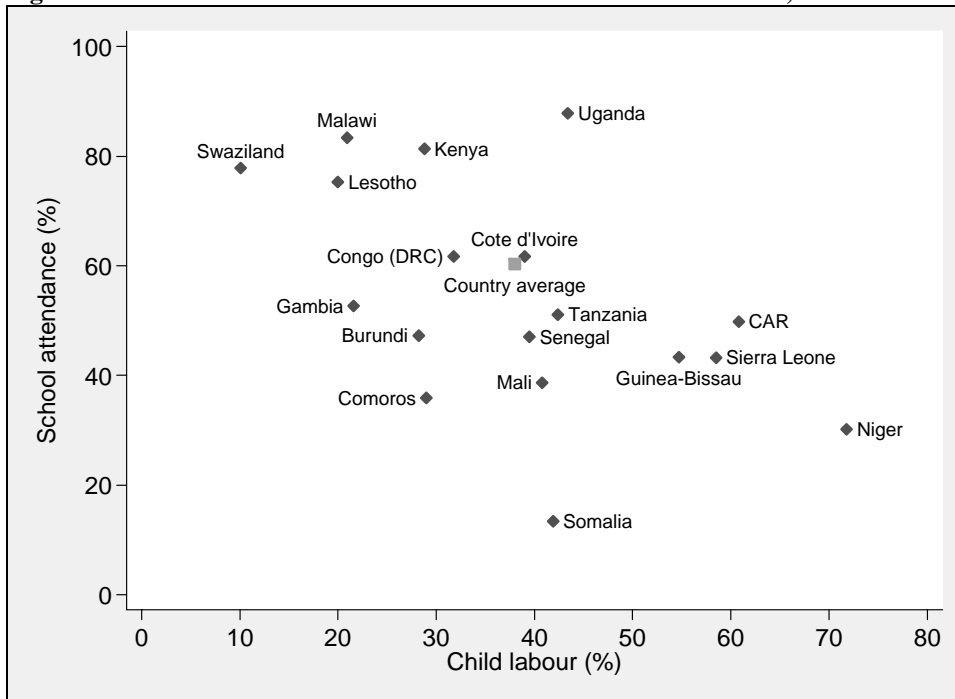
The evidence from table 3 and figures 1 and 2 indicates that child labour is a constraint for school attendance but many other factors can have an effect on the schooling decision for a child. A multivariate analysis is necessary to examine the relative weight of some of the other determinants of school attendance. As a first step, table 4 disaggregates the

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[25] The 21% not in school and not in child labour includes 2% doing light work (1 to 13 hours of economic activities per week among children 11-14), 13% doing 1 to 27 hours of household chores per week, and 6% that are idle (no school and no work at all).

estimates for the activities of children in the 18 countries in our sample by various background characteristics.

Table 4: School attendance and child labour by background characteristics (%), 18 countries in Sub-Saharan Africa, children 7-14 years

Category	Attending school	Child labour	School only	School and CL	CL, no school	No school, no CL
7 years	41.8	29.6	30.0	11.0	18.6	40.4
8 years	53.9	36.6	36.4	17.3	19.3	27.0
9 years	60.4	43.2	36.9	23.7	19.5	19.8
10 years	63.8	47.6	36.3	27.5	20.1	16.1
11 years	68.2	50.2	36.6	31.6	18.5	13.2
12 years	67.4	32.2	50.9	16.4	15.8	16.8
13 years	66.5	34.1	49.4	17.0	17.1	16.5
14 years	65.2	35.8	48.0	17.2	18.7	16.1
7-10 years	54.7	39.9	35.6	21.2	18.7	24.5
11-14 years	66.7	37.7	46.5	20.3	17.5	15.8
Female	58.3	38.2	40.1	19.2	19.0	21.7
Male	62.4	37.9	42.8	21.1	16.8	19.3
Rural	55.5	42.7	35.6	21.4	21.3	21.7
Urban	73.3	24.6	58.6	15.3	9.3	16.7
Poorest quintile	48.8	44.7	31.2	19.4	25.3	24.1
Second quintile	52.1	43.9	33.0	20.3	23.7	23.0
Third quintile	57.1	39.5	38.0	20.6	19.0	22.4
Fourth quintile	65.8	36.4	44.9	22.3	14.2	18.7
Richest quintile	78.4	23.8	61.9	16.7	7.1	14.2
Caretaker no ed.	51.4	40.6	34.4	18.4	22.1	25.1
Caretaker ed.	72.7	33.1	51.4	22.6	10.5	15.5
Total	60.3	38.0	41.4	20.1	17.9	20.5

Note: Averages are weighted by country population.

A number of important observations can be made from table 4. The school attendance rate of girls is 4 percentage points below that of boys. School attendance increases with age, reaching a peak at 11 years and falls again. If the child lives in an urban area, his or her chance of attending school is three in four, compared to roughly one in two, if he or she lives in a rural area.

As one might expect, a child in the richest 20 percent of the population is much more likely to be in school and not working than one in the poorest 20 percent; children from the richest households are approximately twice as likely to be in school only, and the gap between the two groups of children is 31 percentage points. Further, a child from the richest quintile is almost half as likely to be working as a child from the poorest quintile. Children from the poorest quintile have a fifty-fifty chance of not being in school at all, but at the same time it is important to emphasize that even among the richest 20 percent of the population one fifth of all children do not attend school. This could be due to lack of access to schools, even for the richest, poor quality of education (leaving parents to believe school is a waste of time for their children), or simply that in poor countries only the top 5 percent of families have the wherewithal to fulfil their children's right to an education.

The other very striking observation is the role of mother's education as a determinant of school attendance, with 73 percent of children of educated mothers

attending, compared with only 51 percent of children of uneducated mothers.[26]   This shows, in dramatic and incontrovertible terms, the inter-generational payoff from an investment in girls' education.   The potential development gain from that inter-generational pay-off also reinforces the need to understand and address the obstacles preventing girls from attending school today, and hence for non-discriminatory indicators capable of revealing those obstacles.

3.3 Regression analysis: Determinants of school attendance

To assess the statistical significance of the findings in the preceding section, a multivariate analysis was implemented for all 18 countries. In the model, the probability of school attendance is assumed to be a function of six factors: the child's age and gender, the place of residence (urban or rural), the wealth of the household, the mother's or caretaker's education, and the child labour status. For each country, the following set of binary variables is created:

Variable	Description
Dependent variable:	
School attendance	1 if the child is attending school, 0 if not
Independent variables:	
Age 11-14 years	1 if the child is 11-14 years old, 0 if 7-10 years old
Male	1 if the child is male, 0 if female
Urban	1 if the household is located in an urban area, 0 if in a rural area
Second quintile	1 if the household is in the second poorest wealth quintile, 0 if not
Third quintile	1 if the household is in the third wealth quintile, 0 if not
Fourth quintile	1 if the household is in the second richest wealth quintile, 0 if not
Richest quintile	1 if the household is in the richest wealth quintile, 0 if not
Caretaker educated	1 if the mother or caretaker has a formal education, 0 if not
Child labour	1 if the child is a labourer, 0 if not

For households in the poorest wealth quintile, all four household wealth variables are equal to 0. We use a probit regression to test the model, with school attendance as the dependent variable.

The results of the regression are presented in table A1 in the appendix. For each country, the table shows the net attendance ratio (NAR), that is the share of all children aged 7-14 years who are in school, as well as the number of observations in the sample.[27] For example, the Burundi sample consisted of 5,166 children between 7 and 14 years, with a net school attendance ratio of 47.3 percent.

Instead of regression coefficients, the marginal effects are listed. The marginal effect is the change in the dependent variable for a one-unit change in the independent variable — from girl to boy (0 to 1) or rural to urban (again 0 to 1), for example. In Burundi, the marginal effect of the variable "Male" on school attendance is 0.092; this means that compared to girls, boys have a probability of attending school that is 9.2

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[26] A mother or caretaker is considered to be educated if she or he has attended any formal education at primary level or higher. Those who attended only preschool or non-standard schools are considered to have no formal education.

[27] In a few cases (Congo, Somalia, Swaziland) the school attendance rates differ from those in table 3. This is because the regressions were run with a reduced number of observations, due to missing values in some of the variables.

percentage points higher. The marginal effect of the variable "Child labour" is -0.104 in Burundi, meaning that the probability of attending school is 10.4 percentage points lower for child labourers compared to non-labourers.

Statistical significance is indicated with asterisks; if a marginal effect has no asterisk the effect of the respective variable on school attendance is statistically insignificant. In the case of Burundi, belonging to a household in the second wealth quintile has no statistically significant effect on school attendance; this means that there is no difference in school attendance between these children and those from the poorest quintile (the reference category for the household wealth variables).

To ease interpretation, the regression results are summarized in table 5. The table counts the countries where each of the independent variables has (a) a positive and statistically significant effect on school attendance, (b) a negative and statistically significant effect, or (c) no statistically significant effect. The last two columns list the mean values of the positive and negative marginal effects, weighted by country population.

Table 5: Summary of multivariate analysis in table A1: determinants of school attendance, children 7-14 years (18 countries, average attendance rate 60.3%)

Variable	Positive and significant*	Negative and significant*	Insignificant	Average marginal effect	
				Positive and significant*	Negative and significant*
Age 11-14 years	**12**	2	4	0.185	-0.030
Male	**10**	2	6	0.120	-0.026
Urban	**11**	3	4	0.079	-0.064
Second quintile	8	1	**9**	0.058	-0.053
Third quintile	**16**	.	2	0.075	.
Fourth quintile	**17**	.	1	0.131	.
Richest quintile	**18**	.	.	0.210	.
Caretaker educated	**18**	.	.	0.170	.
Child labour	1	**10**	7	0.017	-0.092

* Minimum 5% level of significance. – Averages are weighted by country population.

The most striking finding of this analysis is that belonging to the richest household quintile and having a formally educated mother or caretaker have a positive and statistically significant effect on school attendance in all 18 countries. These effects are statistically significant regardless of other variables in the model (age, sex, place of residence, and child labour). Moreover, their marginal effect is substantial. A wealthy child's chances of attending school are increased on average by 21 percentage points (compared to a child from the poorest 20 percent of the population) and the chances of a child with an educated mother by 17 points. Compared to the bottom 20 percent of the population in terms of household wealth, children from the third and fourth wealth quintiles also have a significantly increased probability of attending school.

Almost as striking is that child labour, as a constraining determinant of school attendance, is significant in more than half of all countries (10 of 18). Among these countries, the strongest negative effect of child labour can be observed in Mali and Senegal, where the likelihood of attending school is reduced by 14 percentage points for child labourers. The average among the countries in which child labour has a negative and significant effect on school attendance is -9 points, ranging from -14 points to -4 points in Lesotho. In other words, in and of itself, being a labourer would on average

decrease a child's likelihood of attending school by 9 percentage points, compared to a child who is not working.

In one country, Uganda, the opposite is observed; here child labour has a positive effect on school attendance (+2 points). In the remaining 7 countries, no relationship between child labour and school attendance can be observed. Although child labour should be eliminated because of its violation of children's basic rights, the findings for these 7 countries indicate that doing so, even if possible, would not significantly increase school attendance nationwide.[28] Thus other strategies are required for children to realize their right to education. In the Central African Republic, for example, where child labour is not significantly associated with school attendance, the findings point to the importance of poverty (being in the richest quintile of the population produces a 30 point difference in the levels of school attendance, compared to the poorest quintile), mother's education (20 points difference), gender and place of residence (13 points difference in both cases).

For 11 of the 18 countries we also found that children living in urban areas tend to have greater levels of school attendance. However, in 3 other countries (Côte d'Ivoire, Kenya, and Uganda) this relationship works in the opposite direction, meaning that residents of rural areas tend to have greater levels of school attendance. In the remaining 4 countries the relationship between area of residence and school attendance is statistically insignificant. The average marginal effect for the 11 countries in our sample in which living in an urban area has a positive and significant effect on school attendance, compared with rural residents, is 8 percentage points. Conversely, for the 3 countries in which the opposite is true, there is an average marginal effect of 6 percentage points in favour of rural children. Policy interventions that target urban or rural populations need to be informed by the findings presented here, and tailored to the specific situation.

3.4 The role of gender in determining school attendance

It is frequently argued that, in general, girls tend to attend school less than boys. For the 18 countries in our sample, boys have an attendance rate that is 4 percentage points above that of girls, as shown in table 6. The gender disparity is greatest in the Central African Republic, Côte d'Ivoire, Mali, and Niger, with about 12 percentage points difference between boys' and girls' school attendance ratios.[29] In a few countries, girls are more likely to be in school than boys, including Lesotho (9 points difference) and Tanzania (3 points difference).

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[28] This conclusion does not preclude that child labour may have an effect on school attendance at a sub-national level. Interventions targeted at certain provinces or parts of the population may help increase school attendance.

[29] These countries continue a widespread practice of early marriage, which may contribute to girls' lower school attendance.

Table 6: School attendance in Sub-Saharan Africa by gender (%), children 7-14 years

Country	Total	Male	Female	Male-Female
Burundi	47.3	51.2	43.8	7.4
CAR	49.8	55.7	44.0	11.7
Comoros	35.9	35.5	36.3	-0.8
Congo (DRC)	61.7	66.0	57.6	8.4
Côte d'Ivoire	61.7	67.6	55.3	12.3
Gambia	52.7	56.5	49.2	7.3
Guinea-Bissau	43.3	46.7	39.9	6.8
Kenya	81.3	80.7	81.8	-1.1
Lesotho	75.3	71.0	79.6	-8.6
Malawi	83.4	82.6	84.2	-1.6
Mali	38.7	45.0	32.7	12.3
Niger	30.2	36.2	24.2	12.0
Senegal	47.0	51.1	42.9	8.2
Sierra Leone	43.2	45.9	40.4	5.5
Somalia	13.4	14.2	12.7	1.5
Swaziland	77.8	77.7	78.0	-0.3
Tanzania	51.1	49.6	52.6	-3.0
Uganda	87.8	87.8	87.7	0.1
Total	60.3	62.4	58.3	4.1

Note: Averages are weighted by country population.

The regression analysis confirms that, controlling for all other factors, girls are less likely to attend school than boys in 10 of the 18 countries. In 2 of the other 8 countries (Lesotho and Malawi), boys are at a disadvantage compared to girls, and in the remaining 6 countries being a boy or a girl does not have a significant effect on the likelihood of school attendance (Comoros, Kenya, Somalia, Swaziland, Tanzania, and Uganda).

However, when we examine the regressions to select only countries where there were significant gender disparities in school attendance, we find a much stronger correlation between child labour and school attendance than in the sample as a whole. While overall, in 10 out of 18 countries child labour has a strong negative effect on school attendance, 7 of these 10 countries (Burundi, Congo, Côte d'Ivoire, Gambia, Mali, Niger, and Senegal) are among the 10 countries that also have school attendance rates favouring boys (in the Central African Republic and Guinea-Bissau the impact of child labour on school attendance is not significant, and in Lesotho girls are more likely to be in school). Without further analysis at the country level it is not possible to say with certainty why child labour tends to affect school attendance more in countries with significant gender disparities. We can say, however, that child labour and gender are important determinants of school attendance, as shown in Table 5, although their net effects may be in the opposite direction of the conventional wisdom.

Delving further into the question of gender, we divided the samples for the 18 countries and ran separate regressions for boys and girls. The results for the individual countries are shown in tables A2 and A3 in the appendix, and summaries are presented in tables 7 and 8. In the 9 countries in which child labour has a negative and statistically significant effect on school attendance, a girl engaged in child labour is on average 11 percentage points less likely to attend school (table 7), while a boy in the same

circumstances would be close to 8 percentage points less likely to attend school (table 8), compared to their non-working peers. Moreover, while in three countries (Central African Republic, Comoros, and Uganda) being a boy child labourer has a positive and significant impact on his school attendance (possibly because it gives him both needed financial resources and time-management skills), this is never the case for girls. In other words, the impact of child labour on girls' school attendance, when statistically significant, is always negative and on average more severe than for boys. This gender-differentiated effect is an important finding, one that may have been impossible to observe without the inclusion of household chores in our definition of child labour. The separate regressions also confirm a result from the summary regression shown in table 5: for both boys and girls, having an educated mother or being in the richest 20 percent of the population is not only positively associated with school attendance, it also has the greatest net effects on attendance, compared to other factors like area of residence.

Table 7: Summary of multivariate analysis in table A2: determinants of school attendance, girls 7-14 years (18 countries, average attendance rate 58.3%)

Variable	Positive and significant*	Negative and significant*	Insignificant	Average marginal effect	
				Positive and significant*	Negative and significant*
Age 11-14 years	**10**	4	4	0.175	-0.053
Urban	**9**	4	5	0.148	-0.089
Second quintile	7	1	**10**	0.068	-0.071
Third quintile	**15**	.	3	0.078	.
Fourth quintile	**17**	.	1	0.141	.
Richest quintile	**18**	.	.	0.220	.
Caretaker educated	**18**	.	.	0.178	.
Child labour	.	9	9	.	-0.108

* Minimum 5% level of significance. – Averages are weighted by country population.

Table 8: Summary of multivariate analysis in table A3: determinants of school attendance: boys 7-14 years (18 countries, average attendance rate 62.4%)

Variable	Positive and significant*	Negative and significant*	Insignificant	Average marginal effect	
				Positive and significant*	Negative and significant*
Age 11-14 years	**12**	.	6	0.203	-0.055
Urban	**9**	1	8	0.113	.
Second quintile	6	.	**12**	0.069	.
Third quintile	**14**	.	4	0.089	.
Fourth quintile	**17**	.	1	0.120	.
Richest quintile	**18**	.	.	0.199	.
Caretaker educated	**18**	.	.	0.161	.
Child labour	3	**9**	6	0.026	-0.076

* Minimum 5% level of significance. – Averages are weighted by country population.

3.5 Child labour, repetition, and dropout

The analysis in the previous section showed that in our sample of 18 countries in Sub-Saharan Africa child labour had no effect on school attendance in 7 countries, in one country the effect was positive, and in the remaining 10 countries the effect on attendance was negative. In addition, we found that the effect of child labour on girls' school attendance was substantially greater than the effect on boys' attendance. In this section

we examine the effect of child labour on academic performance. Could it be that child labourers who manage to attend school are too tired to learn? If this is so, then one would expect that children repeating a grade or dropping out of school would be disproportionately those engaged in child labour. As a recent study from Ghana and a review of similar studies by the ILO have shown, work has a detrimental effect on learning achievements in the key areas of language and mathematics.[30]

To test the hypothesis that children engaged in labour would have higher repetition and dropout rates, the survey data was further analysed. Table 9 lists the attendance rates among children aged 7 to 14 years in the current and previous year, the share of repeaters, and the dropout rate. On average, 13 percent of the children in school are repeaters, with a range of 1 percent in Tanzania to 36 percent in Comoros. Of the children who were in school during the year preceding the survey, 5 percent had dropped out by the time the surveys were conducted. The dropout rate ranges from 1 percent in Mali to 28 percent in Comoros.

Table 9: Levels of school attendance, repetition and dropout in Sub-Saharan Africa (%), children 7-14 years

Category	Attending school	Attended school last year	Repeaters	Dropouts
Burundi	47.3	40.0	23.8	4.3
CAR	49.8	48.2	33.9	5.6
Comoros	35.9	41.4	36.4	27.5
Congo (DRC)	61.7	57.1	20.9	10.2
Côte d'Ivoire	61.7	56.8	13.3	1.9
Gambia	52.7	45.1	3.6	1.6
Guinea-Bissau	43.3	34.5	16.5	4.9
Kenya	81.3	70.9	9.4	2.1
Lesotho	75.3	62.3	10.0	3.7
Malawi	83.4	75.6	29.9	2.2
Mali	38.7	34.6	10.4	1.3
Niger	30.2	25.5	8.8	3.5
Senegal	47.0	46.7	14.5	14.1
Sierra Leone	43.2	30.1	11.1	8.4
Somalia	13.4	10.4	3.3	13.1
Swaziland	77.8	68.1	13.2	6.4
Tanzania	51.1	39.8	0.9	1.9
Uganda	87.8	75.8	10.9	1.7
Total	60.3	52.9	13.0	5.1

Note: Averages are weighted by country population.

In Table 10, the data is disaggregated by various background characteristics. Young children, boys, and rural children are more likely to repeat a grade. The dropout rate falls from age 7 to age 11 and then rises again. Girls and rural children are in greater danger of dropping out than boys and urban children. However, with the average dropout rate at 5 percent, there is on average less than one point difference between girls and boys, between urban and rural children, and between children aged 7 to 10 and 11 to 14 years.

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[30] C. Heady, *What is the effect of child labour on learning achievement? Evidence from Ghana*, Innocenti Working Paper No. 79, (Florence, Italy: UNICEF 2000). P.Orazem and V. Gunnarsson, *Child labour, school attendance and academic performance: A review*, ILO/IPEC working paper (Geneva: ILO, 2003)

Both the repetition and dropout rate fall with increasing household wealth. Children with a formally educated mother or caretaker are less likely to repeat a grade or drop out of school. Finally, child labour is associated with higher repetition and dropout rates.

Table 10: School attendance, repetition and dropout for 18 countries in Sub-Saharan Africa (%), children 7-14 years

Category	Attending school	Attended school last year	Repeater	Dropout
7 years	41.8	21.7	23.4	6.8
8 years	53.9	38.5	16.7	4.8
9 years	60.4	50.3	14.8	4.5
10 years	63.8	57.9	12.9	4.5
11 years	68.2	63.7	11.9	4.2
12 years	67.4	65.8	10.2	4.8
13 years	66.5	67.0	11.0	5.7
14 years	65.2	66.8	11.6	6.3
7-10 years	54.7	41.6	15.7	4.7
11-14 years	66.7	65.8	11.1	5.3
Female	58.3	51.2	12.8	5.3
Male	62.4	54.6	13.2	4.8
Rural	55.5	47.8	14.5	5.4
Urban	73.3	67.0	9.3	4.5
Poorest quintile	48.8	41.0	15.6	6.4
Second quintile	52.1	44.5	15.0	6.4
Third quintile	57.1	49.9	14.1	5.8
Fourth quintile	65.8	58.6	12.9	4.8
Richest quintile	78.4	71.4	9.3	3.2
Caretaker has no formal ed.	51.4	44.7	14.1	6.6
Caretaker has formal ed.	72.7	64.1	12.5	3.8
No child labour	65.3	58.3	11.8	4.3
Child labour	55.9	50.7	13.2	6.7
Total	60.3	52.9	13.0	5.1

Note: Averages are weighted by country population.

To test whether these findings are statistically significant, we run probit regressions with repetition and dropout as the dependent variables. The set of explanatory variables is the same as in the regressions for school attendance.

Variable	Description
Repetition	1 if the child is repeating a grade, 0 if not
Dropout	1 if the child dropped out of school, 0 if not

Complete regression results for each country are shown in tables A4 and A5 in the appendix. Table 11 summarises the results for grade repetition from table A4.[31] The most important determinant of repetition seems to be age: in 11 of 17 countries children 11 to 14 years old are less likely to repeat a grade than children 7 to 10 years old; the average marginal effect is -7 percentage points. This is not surprising, given that young children (most of whom will not have benefited from preschool education) have to adapt to the

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[31] The summary table for grade repetition excludes Somalia because of unreliable regression results for this country.

rhythm and demands of school. The data may also show the existence of a selective process which tends to promote students with higher abilities. However, in 3 countries the net effect of age is reversed: in Mali, Niger, and Senegal older children are more likely to repeat a grade.

The other explanatory variables are insignificant in the majority of countries. Increasing household wealth reduces the likelihood of repetition, but this effect is mostly limited to children from the richest quintile, and here only in 8 countries. Having an educated caretaker reduces the repetition rate in 6 countries, on average by 3 percentage points. Children from urban areas are less likely to repeat a grade in 5 countries and the average marginal effect is relatively strong with -6 percentage points.

Table 11: Summary of multivariate analysis in table A4: determinants of grade repetition, children 7-14 years (17 countries, average repetition rate 13.0%)

Variable	Positive and significant*	Negative and significant*	Insignificant	Average marginal effect	
				Positive and significant*	Negative and significant*
Age 11-14 years	3	**11**	3	0.047	-0.072
Male	4	1	**12**	0.017	-0.020
Urban	1	5	**11**	0.075	-0.064
Second quintile	.	2	**15**	.	-0.046
Third quintile	1	1	**15**	0.100	-0.044
Fourth quintile	.	4	**13**	.	-0.045
Richest quintile	.	8	**9**	.	-0.051
Caretaker educated	1	6	**10**	0.053	-0.031
Child labour	4	3	**10**	0.028	-0.023

* Minimum 5% level of significance. – Averages are weighted by country population.
Note: Somalia is excluded from this table because of unreliable regression results; marginal effects near 1 for the third, fourth, and richest wealth quintile would strongly skew the mean values.

The evidence for child labour is mixed. As table 11 shows, child labour has a significant net effect on grade repetition in 7 of 17 countries. However, in three of these countries (Malawi, Senegal, and Uganda), children who worked were on average 2 percentage points less likely to repeat a grade than the average child. In the countries where child labourers are more likely to repeat a grade (Comoros, Guinea-Bissau, Mali, and Swaziland), the average marginal effect is 3 percentage points.

We can conclude that in most countries the likelihood of repeating a grade is not significantly associated with changes in the independent variables included in the model used in the present study. It would also seem that, contrary to our prior expectations, being a child labourer does not automatically affect school performance, or at least not so dramatically that the child cannot pass his or her end-of-year exams. At the same time, we also need to recognize that household wealth and education of the primary caretaker have significant net effects on grade repetition in more than one third of the countries in our sample; for school attendance, as will be recalled, these factors had a significant effect in all countries studied.

The regression results for school dropout, presented in table A5 in the appendix, are similarly mixed. In the majority of the 18 countries, the determinants included in our model have no effect on the probability of dropping out. On the other hand, we find that children with educated caretakers are less likely to drop out in 8 countries, with an average marginal effect of -3 percentage points. In 7 of 18 countries, children from the richest household quintile are less likely to drop out; compared to children from the

poorest quintile their dropout rate is 5 percentage points lower. The effect of the area of residence on the dropout rate is ambiguous. The marginal effect is statistically significant in only 7 countries, and among those we observe a positive effect in 4 countries and a negative effect in 3 countries. In 5 countries, younger children are more likely to drop out than older children, and in one country, they are less likely to drop out.

The results for child labour as a determinant of dropping out are clearer than they were for repeating a grade. Child labour increases the probability of dropping out of school in 8 countries, with an average marginal effect of 3 percentage points. In one country, the Central African Republic, being a child labourer lowers the probability of dropping out, but only by 1 percentage point.

Table 12: Summary of multivariate analysis in table A5: determinants of dropping out of school, children 7-14 years (18 countries, average dropout rate 5.1%)

Variable	Positive and significant*	Negative and significant*	Insignificant	Average marginal effect	
				Positive and significant*	Negative and significant*
Age 11-14 years	5	1	**12**	0.013	-0.031
Male	1	1	**16**	0.050	-0.031
Urban	4	3	**11**	0.037	-0.052
Second quintile	1	2	**15**	0.062	-0.019
Third quintile	.	3	**15**	.	-0.015
Fourth quintile	1	6	**11**	0.042	-0.033
Richest quintile	.	7	**11**	.	-0.054
Caretaker educated	.	8	**10**	.	-0.034
Child labour	8	1	**9**	0.029	-0.010

* Minimum 5% level of significance. – Averages are weighted by country population.

In summary, it is fair to say that in one third to half of all countries, we observed significant net effects on dropping out of school that can be associated, though not uniformly or predictably, with age, place of residence, household wealth, mother's education, or child labour. Once again we see that any policy aimed at school dropouts or repeaters must be designed for each country individually.

4. Conclusions and Policy Recommendations
4.1 The human rights principle of non-discrimination applied to statistical analyses

The gender-differentiated impact of child labour revealed by this study confirms the importance of applying the human rights principle of non-discrimination to analyses of the nexus between school attendance and child labour. A universally recognized and applied gender-equalizing indicator of child labour, such as that used here on an experimental basis, must take household chores into account. The human rights approach to analysis of issues in human development aims to reveal, as a prelude to appropriate policy responses, who's rights are not being fulfilled and why. This demands a more refined approach to statistical analysis, requiring investigators to:

a) Use household survey data: Survey data can provide more accurate information than administrative records. Survey data can be disaggregated and analyzed at various levels, which helps reveal discrimination. Surveys are a good (perhaps the best) tool to collect information on child labour; however they are unlikely to capture hidden

child labour (this includes the worst forms of child labour: prostitution, bonded labour, drug trafficking).

b) Use appropriate indicators: Indicators developed with the idea of revealing discrimination provide a more accurate picture. Deciding what indicators to use requires an understanding of prevailing cultural, ethnic and gender patterns which may produce discrimination. A child labour indicator that considers household chores shows that girls work as much or more than boys. This indicator also reveals that girls fall into stereotypical roles assigned to women by traditional society (cook, caretaker of children, etc.).

c) Propose new data collection methods: Current indicators based on available data may hide existing discrimination. Equality in school attendance rates, for example, does not mean that there is no discrimination: teacher attitudes may mean that girls are not given as much opportunity to participate in class as boys, reducing their learning achievement. Our analysis showed that child labourers are more likely to drop out, but we do not know if child labourers who stay in school perform worse or the same as their non-working peers. Thus, we need data on school achievement but existing data is insufficient. The Program for International Student Assessment (PISA), which was begun in 2000, provides data on reading, mathematical and scientific literacy of 15-year-olds in school but these surveys are mostly implemented in OECD countries where child labour is less widespread than in Africa and other parts of the world.[32]

However, even when all these measures to reveal discrimination are considered, we are often left with a result which will only show statistical averages within a larger population. A weak link between child labour and education at the country level may hide stronger relationships between the two variables in certain areas of the country or among minority populations, which cannot always be identified because the survey data may not be representative at a lower level. Thus, even in countries where child labour is not a statistically significant constraint to school attendance, it still may prevent large numbers of children from enjoying their right to education. More refined analysis will always be required to determine who those children at the margins actually are, and whether they are statistically invisible due to discrimination, poverty or other factors. The human rights principle of universality means that ultimately, all children must have their rights fulfilled. Policy makers cannot be satisfied with averages which hide disparities.

4.2 Limitations of survey data and child labour indicator

In addition to inherent difficulties of applying the human rights principle of non-discrimination to statistical analyses in general, the weak results with regard to child labour for some countries in this study may at least partly be due to the way child labour is measured. The data from the MICS and DHS surveys does not tell us exactly what kind of work children do, only whether they work for a family farm or business, for someone who is not a member of the household, or whether they are engaged in domestic

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[32] OECD, *Literacy skills for the world of tomorrow: Further results from PISA 2000* (Paris: OECD, 2003).

work. Tending cows for one's parents, perhaps accompanied by friends, and working long hours on a cacao plantation far away from home both carry the same weight in our analysis.[33] Yet, these two activities are likely to have a different impact on a child's physical and mental well-being. If we find that child labour has no statistically significant effect on school attendance and achievement in a country, then this is perhaps due to the fact that the children engage in relatively light forms of labour.[34] If such work does not interfere with children's education it would be less cause for concern from a human-rights perspective, even though there could be other implications, such as the child's reduced enjoyment of the right to recreation, which is integral to his or her human development.

4.3 Some reasons why children in Sub-Saharan Africa are not attending school

The main conclusion to be drawn from this study of 18 countries in Sub-Saharan Africa is that the strongest determinants of school attendance are, overwhelmingly and without exception, household wealth and mother's education. This finding clearly indicates that in order to increase the levels of school attendance, policies should focus on poverty reduction, for example through income transfers to poor families. This would allow parents to forgo the contribution of their children to household income, were the latter attending school instead of working. The effect of household wealth is clearly seen in figure 3, which plots child labour and school attendance rates for the poorest and richest 20 percent of the population in 18 countries. Children from the poorest households are more likely to work and less likely to be in school than children from the richest households.

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[33] Both activities are child labour, as long as they meet the minimum threshold of one hour per week for children aged 5 to 11 years, and 14 hours per week for children aged 12 to 14 years.
[34] The authors thank Craig Scott of York University for bringing this point to our attention.

Figure 3: Child labour and school attendance in Sub-Saharan Africa, by household wealth, children 7-14 years
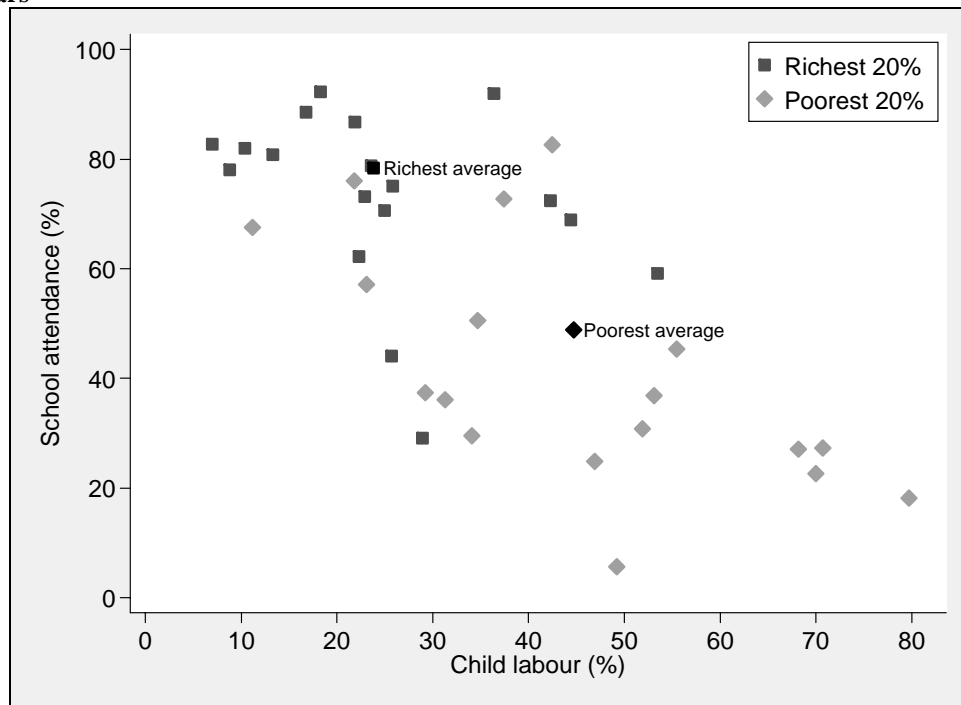
Note: Each country is represented by two points, one for the richest and one for the poorest household quintile.

Similarly, the findings related to mother's education indicate that educating the mothers and caretakers of the future will lead to increased levels of school attendance. This finding should give renewed vigour to the international community's commitment to reach gender parity in primary school by 2005.[35]

The second conclusion to be drawn from the present study is that child labour is one of the major factors constraining school attendance for the majority of the countries analysed. For 10 of 18 countries, being engaged in child labour adds on average 9 percentage points to the probability that a child will not attend school. It is important to mention also that the probability of not attending school is disproportionately skewed against girls. For girls, the marginal effect of child labour on school attendance (-11 percentage points) is, in relative terms, 40 percent higher than the marginal effect of child labour on boys' school attendance (-7 percentage points). Considerably more research is required to understand why this should be. One hypothesis could be that the countries with high gender disparities are also those with the least developed economic and social infrastructure. The absence of such infrastructure, such as rural electrification, community water systems, preventive health services and preschools, all increase the time which girls' must spend on household chores, thus limiting time available for attending school.

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[35] Target 4 of the Millennium Development Goals, adopted at the UN Millennium Summit in 2000, aims to "eliminate gender disparity in primary and secondary education, preferably by 2005 and in all levels of education no later than 2015" (UNDP, *Human Development Report 2003*, New York: Oxford University Press, 2003).

However, it is also important to mention that the net effects of child labour on school attendance were not statistically significant in 7 countries. Our original hypothesis, that child labour invariably constrains school attendance, has thus been proved false. This study shows that there are other factors besides time spent working that prevent children from realizing their right to education; these factors need to be identified on a case by case basis to ensure that policy interventions are appropriate. Such factors can include the quality of education, the physical access to schools, the child's nutritional and health status as well as cultural barriers. More research is especially required to determine the causes of apparently anomalous results. For example, of particular concern is the finding that around one in five children from the richest 20 percent of the population are not attending school, even though household wealth is the strongest determinant of school attendance.

With more than half of all child labourers also attending school, we expected that due to less time available for studying, they would be more prone to repeat grades or drop out of school, compared to their non-working peers. With regard to repetition, this hypothesis is true for 4 countries, but the opposite is observed in 3 other countries. For the remaining 10 countries, the marginal effects are not significant, which would also appear to indicate that time spent in child labour does not affect school performance enough to keep the child from being promoted to the next grade. One must also keep in mind that with the MICS and DHS data it is not possible to show if this result would hold over time because the surveys only show the relationship between labour and repetition at one moment in time.

Finally, for 8 countries child labour increases the probability of dropping out of school by 3 percentage points on average. On the other hand, in one country, the Central African Republic, children involved in child labour tend to have dropout rates that are on average 1 percentage point lower than among non-labouring children. In the remaining 9 countries, child labour was not significantly associated with the probability of dropping out of school. Thus, the conventional wisdom that child labour significantly increases the probability of dropping out of school has been proved true for only half of the countries in the sample. This confirms the need for much more sophisticated causal analyses when designing policy responses to the problem of retention in school. Attention must be paid, for example, to the structure of the local economy (which could be a "pull" factor on children's participation in the labour market), the legal framework (including the age until which schooling is compulsory), the minimum age of employment, and the minimum age of marriage.[36]

4.4 Policy recommendations

Based on the results presented in this study, several recommendations for policy can be made.

a) The importance of using a human rights lens when analyzing the data has been confirmed. The human rights approach to statistical analysis is a useful tool for getting at the causes of violations of each child's right to education, revealing discriminations on

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[36] These ages can be inconsistent. Niger, for example, the country with the lowest rate of school attendance in the study (with the exception of Somalia), has a school-leaving age of 16, a minimum employment age of 14 and no legally-established minimum age of marriage.

the basis of gender and poverty. Better indicators, more refined survey methodologies and deeper analyses are needed to identify the scope of the child labour problem and who is affected, and its relationship with school attendance and achievement. A universally accepted "gender equalizing" indicator of child labour must be created.

b) The present study, by demonstrating that the relationship between child labour and education is not a simple or predictable one, has also confirmed that a holistic, multi-sectoral development approach, consistent with the principle of indivisibility of rights, is needed to address both issues. Only through a multi-sectoral response will all children be enabled to enjoy the rights laid down in the Convention on the Rights of the Child.

c) Poverty reduction strategies must be vigorously pursued as an integral response to poor school attendance, given that in all 18 countries in the study, poverty was a constraining factor on school attendance for both boys and girls.

d) The mother's education as a determinant for assuring a child's school attendance reinforces and gives renewed impetus to the Millennium Development Goals for gender equity in schools by 2005, and universal primary education for girls and boys by 2015. Countries must invest in girls' education over the long-term.

As with most of the research in social sciences, the analysis in the present study leaves unanswered many questions about the determinants of school access and achievement. The reality is perhaps as complex and diverse as the analysed countries. Overall, the study establishes that there is an intricate nexus of factors that influence whether a child attends school or not, and child labour is but one of them. Even though most parents want education for their children, some may perceive school as irrelevant, since they see that children end up doing the same work as their peers who have dropped out of school and are seen as getting a head start in the labour market. Other factors affecting school attendance and achievement can include teachers' and administrators' attitudes, biased and irrelevant curricula, discriminatory and abusive treatment of children such as corporal punishment and sexual abuse, or deprived conditions (poor infrastructure, no books, poorly prepared teachers). In reality, the lack of respect for children's rights within the school, along with the poor quality of education itself, can drive children out of the system and into child labour. To what extent this may be so is a topic for further research.

Appendix: Regression results

Table A1: Multivariate analysis (probit regression): marginal effects of the determinants of school attendance in 18 sub-Saharan countries, children 7-14 years

	Burundi NAR 47.3	CAR NAR 49.8	Comoros NAR 35.9	Congo (DRC) NAR 67.5	Côte d'Ivoire NAR 61.7	Gambia NAR 52.7	Guinea-Bissau NAR 43.3	Kenya NAR 81.3	Lesotho NAR 75.3
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	0.136**	0.050**	0.084**	0.015	-0.034**	0.089**	0.148**	0.112**	0.139**
	(9.56)	(7.38)	(6.50)	(1.10)	(3.89)	(6.93)	(11.02)	(15.40)	(13.26)
Male	0.092**	0.134**	-0.006	0.114**	0.141**	0.091**	0.109**	-0.011	-0.092**
	(6.43)	(20.04)	(0.44)	(10.46)	(15.98)	(7.22)	(8.57)	(1.49)	(8.81)
Urban	0.102**	0.134**	0.108**	0.034*	-0.029*	0.075**	0.295**	-0.091**	-0.031
	(3.23)	(15.78)	(6.39)	(2.10)	(2.53)	(4.74)	(16.58)	(5.59)	(1.88)
Second wealth quintile	0.022	0.128**	0.019	-0.053**	0.091**	0.087**	0.019	0.055**	0.089**
	(0.91)	(12.02)	(0.95)	(3.14)	(6.95)	(4.93)	(0.90)	(5.76)	(6.28)
Third wealth quintile	0.057*	0.146**	0.073**	0.016	0.106**	0.115**	0.051*	0.063**	0.141**
	(2.35)	(13.74)	(3.64)	(0.95)	(8.10)	(6.17)	(2.43)	(6.48)	(10.15)
Fourth wealth quintile	0.139**	0.241**	0.083**	0.113**	0.177**	0.223**	0.162**	0.105**	0.190**
	(6.20)	(21.10)	(4.07)	(6.73)	(12.02)	(11.35)	(7.32)	(10.24)	(13.55)
Richest wealth quintile	0.204**	0.304**	0.095**	0.212**	0.243**	0.310**	0.252**	0.087**	0.234**
	(8.50)	(25.44)	(4.37)	(10.47)	(15.26)	(13.50)	(9.41)	(5.75)	(15.85)
Caretaker has formal ed.	0.165**	0.199**	0.097**	0.211**	0.218**	0.126**	0.218**	0.163**	0.146**
	(9.86)	(28.17)	(6.18)	(17.97)	(21.52)	(6.04)	(11.28)	(18.55)	(8.21)
Child labour	-0.104**	0.002	0.013	-0.068**	-0.105**	-0.053**	-0.025	-0.062**	-0.040**
	(6.55)	(0.34)	(0.92)	(5.78)	(10.98)	(3.39)	(1.77)	(7.63)	(3.09)
Observations	5166	24780	5858	7671	13055	6697	7448	11206	6827

Probit regressions: * significant at 5%; ** significant at 1%

	Malawi NAR 83.4	Mali NAR 38.7	Niger NAR 30.2	Senegal NAR 47.0	Sierra Leone NAR 43.2	Somalia NAR 13.7	Swaziland NAR 78.1	Tanzania NAR 51.1	Uganda NAR 87.8
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	0.053**	-0.002	-0.015	-0.023*	-0.006	0.054**	0.027*	0.430**	0.083**
	(8.71)	(0.25)	(1.13)	(2.55)	(0.34)	(5.59)	(2.46)	(25.83)	(12.00)
Male	-0.016**	0.148**	0.147**	0.096**	0.073**	0.013	-0.001	-0.026	0.001
	(2.70)	(17.95)	(11.63)	(10.89)	(5.02)	(1.33)	(0.12)	(1.56)	(0.14)
Urban	0.036**	0.119**	0.208**	0.076**	0.121**	-0.019	-0.022	0.038	-0.053**
	(3.10)	(9.37)	(9.27)	(5.92)	(6.31)	(1.55)	(1.03)	(1.45)	(3.56)
Second wealth quintile	0.020*	0.027*	0.030	0.010	0.023	0.001	0.091**	0.012	0.005
	(2.31)	(2.06)	(1.38)	(0.72)	(0.99)	(0.05)	(6.46)	(0.47)	(0.46)
Third wealth quintile	0.033**	0.055**	0.030	0.070**	0.105**	0.081**	0.109**	0.102**	0.043**
	(3.91)	(4.15)	(1.48)	(5.00)	(4.50)	(4.06)	(7.21)	(3.86)	(4.60)
Fourth wealth quintile	0.080**	0.144**	0.029	0.167**	0.172**	0.151**	0.108**	0.175**	0.070**
	(9.66)	(10.67)	(1.36)	(10.22)	(7.33)	(6.40)	(6.51)	(6.76)	(7.58)
Richest wealth quintile	0.108**	0.332**	0.228**	0.247**	0.286**	0.250**	0.089**	0.332**	0.085**
	(11.40)	(19.60)	(9.36)	(13.28)	(10.54)	(9.44)	(4.23)	(11.02)	(8.06)
Caretaker has formal ed.	0.123**	0.240**	0.240**	0.268**	0.249**	0.095**	0.120**	0.127**	0.060**
	(19.47)	(16.72)	(10.25)	(21.44)	(12.68)	(8.00)	(9.48)	(7.24)	(8.71)
Child labour	-0.003	-0.143**	-0.102**	-0.135**	0.010	-0.016	0.001	-0.117**	0.017*
	(0.37)	(16.69)	(7.05)	(14.83)	(0.60)	(1.56)	(0.05)	(6.64)	(2.51)
Observations	13886	15567	5787	14309	5119	4599	5434	4179	8627

Probit regressions: * significant at 5%; ** significant at 1%

Note: Data for Congo (DRC) is for children 10-14 years of age.

Table A2: Multivariate analysis (probit regression): marginal effects of the determinants of school attendance in 18 sub-Saharan countries, girls 7-14 years

	Burundi NAR 43.8	CAR NAR 44.0	Comoros NAR 36.3	Congo (DRC) NAR 62.4	Côte d'Ivoire NAR 55.3	Gambia NAR 49.2	Guinea-Bissau NAR 39.9	Kenya NAR 81.8	Lesotho NAR 79.6
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	0.114** (5.81)	0.003 (0.32)	0.069** (3.72)	0.004 (0.22)	-0.070** (5.25)	0.065** (3.68)	0.118** (6.30)	0.102** (10.10)	0.139** (10.12)
Urban	0.128** (2.87)	0.174** (14.55)	0.075** (3.08)	0.046 (1.94)	-0.026 (1.53)	0.078** (3.56)	0.284** (11.55)	-0.119** (5.18)	-0.077** (3.49)
Second wealth quintile	-0.019 (0.57)	0.092** (5.85)	0.021 (0.72)	-0.071** (2.80)	0.111** (5.38)	0.072** (2.85)	0.053 (1.65)	0.059** (4.55)	0.062** (3.44)
Third wealth quintile	0.037 (1.08)	0.141** (9.14)	0.086** (2.97)	-0.032 (1.28)	0.103** (5.08)	0.119** (4.57)	0.079* (2.56)	0.074** (5.54)	0.109** (6.13)
Fourth wealth quintile	0.118** (3.79)	0.235** (13.88)	0.109** (3.70)	0.126** (4.98)	0.193** (8.49)	0.225** (8.03)	0.211** (6.44)	0.102** (7.26)	0.163** (9.13)
Richest wealth quintile	0.190** (5.65)	0.311** (17.94)	0.105** (3.38)	0.239** (7.79)	0.243** (9.88)	0.302** (9.33)	0.330** (8.66)	0.104** (5.26)	0.196** (10.28)
Caretaker has formal ed.	0.166** (7.36)	0.215** (21.48)	0.092** (4.06)	0.247** (14.29)	0.235** (15.90)	0.163** (5.72)	0.217** (8.14)	0.141** (11.52)	0.130** (5.64)
Child labour	-0.132** (5.95)	-0.019 (1.86)	-0.015 (0.72)	-0.065** (3.82)	-0.140** (10.12)	-0.068** (3.14)	-0.016 (0.78)	-0.095** (8.22)	-0.007 (0.41)
Observations	2706	12378	2842	3890	6248	3526	3719	5600	3419

* significant at 5%; ** significant at 1%

	Malawi NAR 84.2	Mali NAR 32.7	Niger NAR 24.2	Senegal NAR 43.0	Sierra Leone NAR 40.4	Somalia NAR 12.9	Swaziland NAR 78.2	Tanzania NAR 52.6	Uganda NAR 87.7
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	0.038** (4.57)	-0.025* (2.19)	-0.049** (2.96)	-0.063** (5.04)	-0.025 (1.11)	0.029* (2.15)	0.023 (1.46)	0.418** (17.56)	0.062** (6.46)
Urban	-0.010 (0.65)	0.082** (4.81)	0.291** (9.78)	0.083** (4.68)	0.108** (4.04)	-0.038* (2.18)	-0.031 (1.06)	0.024 (0.67)	-0.070** (3.33)
Second wealth quintile	0.025* (2.22)	0.019 (1.07)	0.021 (0.74)	0.021 (1.04)	0.000 (0.01)	0.003 (0.09)	0.083** (4.08)	0.049 (1.32)	0.017 (1.24)
Third wealth quintile	0.036** (3.11)	0.040* (2.23)	0.074** (2.63)	0.111** (5.50)	0.120** (3.53)	0.089** (3.14)	0.105** (4.85)	0.041 (1.11)	0.069** (5.45)
Fourth wealth quintile	0.092** (8.14)	0.138** (7.44)	0.035 (1.25)	0.208** (8.90)	0.206** (6.06)	0.183** (5.23)	0.117** (4.92)	0.180** (4.93)	0.087** (6.99)
Richest wealth quintile	0.103** (8.02)	0.346** (14.79)	0.178** (5.54)	0.285** (10.81)	0.330** (8.46)	0.243** (6.39)	0.068* (2.29)	0.334** (7.97)	0.094** (6.60)
Caretaker has formal ed.	0.128** (14.69)	0.275** (13.97)	0.228** (7.38)	0.291** (16.33)	0.222** (7.93)	0.074** (4.41)	0.090** (5.04)	0.125** (5.16)	0.067** (6.98)
Child labour	-0.007 (0.68)	-0.120** (10.47)	-0.119** (6.62)	-0.132** (10.29)	0.036 (1.60)	0.000 (0.03)	0.011 (0.42)	-0.147** (5.87)	0.008 (0.86)
Observations	7162	7938	2920	7187	2523	2211	2666	2087	4390

* significant at 5%; ** significant at 1%

Note: Data for Congo (DRC) is for girls 10-14 years of age.

Table A3: Multivariate analysis (probit regression): marginal effects of the determinants of school attendance in 18 sub-Saharan countries, boys 7-14 years

	Burundi NAR 51.2	CAR NAR 55.7	Comoros NAR 35.5	Congo (DRC) NAR 72.8	Côte d'Ivoire NAR 67.6	Gambia NAR 56.4	Guinea-Bissau NAR 46.7	Kenya NAR 80.7	Lesotho NAR 71.0
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	0.161** (7.83)	0.099** (10.42)	0.101** (5.51)	0.023 (1.25)	-0.001 (0.06)	0.113** (6.07)	0.172** (9.10)	0.124** (11.83)	0.138** (8.77)
Urban	0.073 (1.63)	0.090** (7.61)	0.140** (5.97)	0.020 (0.91)	-0.025 (1.64)	0.072** (3.13)	0.301** (11.85)	-0.055* (2.41)	0.018 (0.74)
Second wealth quintile	0.063 (1.86)	0.158** (11.24)	0.017 (0.60)	-0.036 (1.66)	0.074** (4.61)	0.100** (4.08)	-0.005 (0.17)	0.050** (3.64)	0.119** (5.38)
Third wealth quintile	0.075* (2.18)	0.151** (10.55)	0.060* (2.16)	0.058** (2.72)	0.107** (6.51)	0.107** (4.07)	0.032 (1.14)	0.053** (3.76)	0.175** (8.15)
Fourth wealth quintile	0.158** (4.98)	0.243** (16.15)	0.059* (2.09)	0.098** (4.48)	0.156** (8.42)	0.217** (7.94)	0.124** (4.11)	0.109** (7.36)	0.219** (10.05)
Richest wealth quintile	0.216** (6.36)	0.291** (18.02)	0.086** (2.85)	0.180** (6.84)	0.238** (11.80)	0.313** (9.61)	0.175** (4.57)	0.065** (2.85)	0.275** (12.10)
Caretaker has formal ed.	0.164** (6.64)	0.176** (18.08)	0.103** (4.73)	0.174** (11.11)	0.198** (14.60)	0.086** (2.83)	0.218** (7.83)	0.185** (14.74)	0.164** (6.09)
Child labour	-0.073** (3.23)	0.024* (2.43)	0.042* (2.07)	-0.071** (4.39)	-0.066** (5.09)	-0.036 (1.62)	-0.036 (1.78)	-0.028* (2.38)	-0.068** (3.54)
Observations	2460	12402	3016	3781	6807	3171	3729	5606	3408

* significant at 5%; ** significant at 1%

	Malawi NAR 82.6	Mali NAR 45.0	Niger NAR 36.2	Senegal NAR 51.1	Sierra Leone NAR 45.9	Somalia NAR 14.4	Swaziland NAR 78.0	Tanzania NAR 49.6	Uganda NAR 87.9
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	0.071** (8.00)	0.020 (1.61)	0.021 (1.08)	0.016 (1.30)	0.012 (0.53)	0.076** (5.58)	0.031* (1.98)	0.448** (19.04)	0.104** (10.48)
Urban	0.093** (5.57)	0.152** (8.25)	0.114** (3.42)	0.065** (3.56)	0.133** (4.90)	0.001 (0.03)	-0.011 (0.34)	0.050 (1.30)	-0.034 (1.58)
Second wealth quintile	0.013 (1.08)	0.035 (1.87)	0.043 (1.31)	0.002 (0.12)	0.047 (1.47)	-0.001 (0.03)	0.098** (5.05)	-0.024 (0.66)	-0.007 (0.48)
Third wealth quintile	0.030* (2.41)	0.068** (3.62)	-0.005 (0.16)	0.034 (1.77)	0.097** (3.02)	0.066* (2.38)	0.113** (5.38)	0.175** (4.62)	0.015 (1.11)
Fourth wealth quintile	0.067** (5.58)	0.145** (7.61)	0.023 (0.74)	0.133** (5.83)	0.141** (4.34)	0.115** (3.65)	0.100** (4.30)	0.168** (4.56)	0.051** (3.71)
Richest wealth quintile	0.115** (8.30)	0.315** (13.10)	0.271** (7.64)	0.214** (8.21)	0.245** (6.49)	0.249** (6.77)	0.114** (3.87)	0.334** (7.64)	0.076** (4.93)
Caretaker has formal ed.	0.116** (12.71)	0.199** (9.67)	0.241** (7.06)	0.243** (13.93)	0.273** (9.93)	0.115** (6.90)	0.148** (8.31)	0.129** (5.05)	0.052** (5.35)
Child labour	0.004 (0.40)	-0.159** (12.75)	-0.079** (3.51)	-0.139** (10.71)	-0.017 (0.76)	-0.028 (1.91)	-0.007 (0.27)	-0.086** (3.46)	0.026** (2.69)
Observations	6724	7629	2867	7122	2596	2388	2768	2092	4237

* significant at 5%; ** significant at 1%

Note: Data for Congo (DRC) is for boys 10-14 years of age.

Table A4: Multivariate analysis (probit regression): marginal effects of the determinants of grade repetition in 18 sub-Saharan countries, children 7-14 years

	Burundi Repeaters 23.8	CAR Repeaters 33.9	Comoros Repeaters 36.4	Congo (DRC) Repeaters 17.4	Côte d'Ivoire Repeaters 13.3	Gambia Repeaters 3.6	Guinea-Bissau Repeaters 16.5	Kenya Repeaters 9.4	Lesotho Repeaters 10.0
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	-0.093**	0.002	-0.066**	-0.064**	0.013	-0.020**	-0.072**	-0.040**	-0.092**
	(4.67)	(0.22)	(2.86)	(4.51)	(1.60)	(2.94)	(4.72)	(5.84)	(9.19)
Male	0.001	-0.014	0.007	0.005	0.003	0.017*	0.005	0.012	0.025**
	(0.07)	(1.56)	(0.29)	(0.48)	(0.36)	(2.56)	(0.31)	(1.89)	(2.71)
Urban	-0.041	-0.013	0.022	-0.079**	-0.005	0.002	-0.035	-0.049**	-0.040**
	(1.18)	(1.17)	(0.77)	(5.28)	(0.45)	(0.28)	(1.54)	(3.89)	(3.40)
Second wealth quintile	-0.056	0.028	-0.023	0.001	-0.008	0.018	0.021	-0.012	-0.011
	(1.62)	(1.60)	(0.58)	(0.07)	(0.54)	(1.76)	(0.56)	(1.27)	(0.68)
Third wealth quintile	-0.010	0.005	-0.008	-0.025	-0.013	-0.007	0.100**	-0.003	-0.008
	(0.29)	(0.32)	(0.20)	(1.39)	(0.94)	(0.72)	(2.66)	(0.28)	(0.49)
Fourth wealth quintile	-0.037	-0.022	0.061	-0.007	-0.013	-0.008	0.041	-0.006	0.006
	(1.21)	(1.26)	(1.65)	(0.39)	(0.87)	(0.78)	(1.16)	(0.65)	(0.40)
Richest wealth quintile	-0.030	-0.076**	-0.023	-0.037	-0.045**	-0.010	0.072	-0.031*	-0.009
	(0.92)	(4.26)	(0.60)	(1.76)	(2.92)	(0.88)	(1.93)	(2.00)	(0.57)
Caretaker has formal ed.	-0.023	0.053**	-0.079**	-0.009	0.001	-0.018	0.009	-0.028**	-0.065**
	(1.10)	(5.71)	(3.06)	(0.74)	(0.15)	(1.85)	(0.50)	(3.46)	(3.49)
Child labour	-0.022	0.011	0.123**	0.021	0.002	-0.001	0.042*	0.007	0.008
	(0.99)	(1.22)	(4.70)	(1.69)	(0.19)	(0.09)	(2.47)	(0.99)	(0.67)
Observations	1976	11560	1814	4827	7013	2877	2595	7688	4082

Probit regressions: * significant at 5%; ** significant at 1%

	Malawi Repeaters 29.9	Mali Repeaters 10.4	Niger Repeaters 8.8	Senegal Repeaters 14.5	Sierra Leone Repeaters 11.1	Somalia Repeaters 3.1	Swaziland Repeaters 13.3	Tanzania Repeaters 0.9	Uganda Repeaters 10.9
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	-0.164**	0.036**	0.051**	0.055**	-0.097**	-0.004	-0.033**	-0.005	-0.078**
	(18.06)	(4.30)	(4.01)	(5.83)	(5.81)	(0.51)	(2.89)	(1.56)	(9.97)
Male	0.005	-0.020*	-0.016	-0.007	-0.022	0.000	0.027*	0.002	0.016*
	(0.59)	(2.36)	(1.22)	(0.78)	(1.50)	(0.04)	(2.38)	(0.68)	(2.15)
Urban	-0.085**	0.019	0.024	0.025	-0.033	0.009	0.075**	-0.005	-0.042**
	(5.76)	(1.58)	(1.32)	(1.94)	(1.85)	(1.06)	(3.22)	(1.73)	(3.10)
Second wealth quintile	0.026	-0.006	-0.047*	-0.027	0.055	0.983	-0.032*	0.006	0.001
	(1.76)	(0.38)	(2.30)	(1.54)	(1.44)	(.)	(2.04)	(0.95)	(0.07)
Third wealth quintile	-0.026	0.014	-0.025	-0.010	0.005	0.948**	-0.044**	0.003	-0.005
	(1.83)	(0.86)	(1.24)	(0.62)	(0.15)	(8.22)	(2.71)	(0.54)	(0.43)
Fourth wealth quintile	-0.052**	0.000	-0.054**	-0.034	0.041	0.838**	-0.047**	-0.006	-0.038**
	(3.71)	(0.01)	(2.68)	(1.92)	(1.36)	(8.02)	(2.72)	(1.12)	(3.34)
Richest wealth quintile	-0.120**	-0.016	-0.062**	-0.050**	-0.015	0.628**	-0.065**	0.008	-0.038**
	(8.12)	(0.93)	(2.68)	(2.60)	(0.49)	(7.67)	(3.11)	(1.33)	(3.00)
Caretaker has formal ed.	0.003	-0.026*	0.023	-0.036**	-0.033*	-0.011	0.003	0.005	0.011
	(0.37)	(2.45)	(1.38)	(3.38)	(2.08)	(1.50)	(0.19)	(1.76)	(1.52)
Child labour	-0.022*	0.019*	-0.000	-0.028**	0.026	-0.010	0.051**	0.001	-0.021**
	(2.07)	(1.97)	(0.02)	(2.73)	(1.60)	(1.34)	(2.61)	(0.49)	(2.77)
Observations	10505	5250	2007	5600	1488	388	3467	1809	6489

Probit regressions: * significant at 5%; ** significant at 1%

Notes: Data for Congo (DRC) is for children 10-14 years of age. – The results for Somalia are unreliable, possibly due to a small sample size. Somalia is therefore excluded from the summary in table 11.

Table A5: Multivariate analysis (probit regression): marginal effects of the determinants of dropping out in 18 sub-Saharan countries, children 7-14 years

	Burundi Dropouts 4.3	CAR Dropouts 5.6	Comoros Dropouts 27.5	Congo (DRC) Dropouts 10.0	Côte d'Ivoire Dropouts 1.9	Gambia Dropouts 1.6	Guinea-Bissau Dropouts 4.9	Kenya Dropouts 2.1	Lesotho Dropouts 3.7
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	0.002 (0.23)	0.005 (1.26)	0.000 (0.01)	0.003 (0.25)	0.003 (1.08)	0.001 (0.21)	-0.007 (0.87)	0.006* (2.05)	0.018** (3.22)
Male	0.000 (0.05)	0.005 (1.16)	0.050** (2.84)	-0.031** (3.86)	0.001 (0.46)	-0.005 (1.16)	-0.007 (0.90)	0.002 (0.54)	0.007 (1.28)
Urban	0.013 (0.69)	-0.011* (2.19)	0.034 (1.57)	0.048** (4.24)	-0.001 (0.21)	0.003 (0.55)	-0.045** (3.34)	0.015* (2.13)	-0.002 (0.22)
Second wealth quintile	-0.005 (0.35)	-0.015* (2.25)	0.062* (2.04)	-0.012 (0.93)	-0.003 (0.68)	0.008 (1.05)	0.039 (1.82)	0.001 (0.33)	-0.008 (1.02)
Third wealth quintile	-0.014 (1.11)	-0.009 (1.31)	0.014 (0.49)	-0.018 (1.52)	-0.003 (0.59)	-0.005 (0.81)	0.011 (0.57)	-0.014** (3.57)	-0.016* (2.18)
Fourth wealth quintile	-0.017 (1.50)	-0.029** (4.32)	-0.011 (0.38)	-0.054** (4.68)	-0.004 (0.73)	0.003 (0.45)	0.021 (1.13)	-0.010* (2.46)	-0.020** (2.68)
Richest wealth quintile	-0.025* (2.05)	-0.024** (3.30)	0.034 (1.12)	-0.095** (7.31)	-0.010 (1.93)	-0.012 (1.76)	0.023 (1.15)	-0.009 (1.53)	-0.032** (3.99)
Caretaker has formal ed.	-0.015 (1.66)	-0.014** (3.16)	-0.055** (2.74)	-0.040** (4.33)	-0.002 (0.52)	0.014 (1.93)	-0.014 (1.47)	-0.005 (1.41)	-0.016 (1.64)
Child labour	0.053** (5.00)	-0.010* (2.24)	0.016 (0.78)	0.043** (4.76)	0.005 (1.46)	0.000 (0.01)	-0.015 (1.62)	0.023** (5.91)	0.020** (2.72)
Observations	2065	12262	2560	5346	7186	2929	2740	7840	4250

Probit regressions: * significant at 5%; ** significant at 1%

	Malawi Dropouts 2.2	Mali Dropouts 1.3	Niger Dropouts 3.5	Senegal Dropouts 14.1	Sierra Leone Dropouts 8.4	Somalia Dropouts 13.0	Swaziland Dropouts 6.4	Tanzania Dropouts 1.9	Uganda Dropouts 1.7
	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)	Marg. effect (z stat.)
Age 11-14 years	0.014** (5.75)	0.006* (2.11)	0.041** (5.33)	-0.031** (3.93)	-0.009 (0.64)	0.015 (0.51)	0.009 (1.14)	0.012 (1.94)	0.005 (1.71)
Male	0.004 (1.89)	-0.003 (1.23)	-0.002 (0.31)	0.014 (1.81)	-0.011 (0.85)	-0.005 (0.17)	-0.003 (0.33)	-0.008 (1.63)	-0.001 (0.38)
Urban	-0.007 (1.77)	-0.001 (0.19)	0.004 (0.42)	-0.069** (6.18)	-0.008 (0.50)	0.110** (2.98)	-0.004 (0.29)	0.007 (0.96)	0.015* (2.19)
Second wealth quintile	-0.004 (1.51)	-0.002 (0.40)	0.006 (0.38)	0.002 (0.13)	-0.031 (1.14)	0.186 (1.35)	-0.031** (3.10)	0.005 (0.59)	0.002 (0.42)
Third wealth quintile	-0.002 (0.52)	0.006 (1.18)	-0.003 (0.26)	-0.006 (0.45)	-0.046 (1.90)	0.191 (1.60)	-0.027* (2.57)	-0.011 (1.45)	0.003 (0.69)
Fourth wealth quintile	-0.010** (3.33)	-0.004 (0.86)	0.042* (2.35)	-0.013 (0.90)	0.020 (0.78)	0.094 (0.89)	-0.036** (3.16)	0.002 (0.21)	-0.006 (1.32)
Richest wealth quintile	-0.014** (4.13)	-0.007 (1.35)	0.010 (0.73)	-0.041* (2.50)	-0.012 (0.47)	0.015 (0.15)	0.009 (0.59)	-0.003 (0.28)	-0.010* (2.08)
Caretaker has formal ed.	-0.016** (6.64)	-0.007 (1.82)	-0.018* (2.25)	-0.100** (9.81)	-0.040** (2.82)	-0.007 (0.23)	-0.005 (0.59)	-0.008 (1.53)	-0.015** (4.72)
Child labour	0.008** (2.97)	0.001 (0.28)	0.014* (2.01)	0.041** (4.75)	-0.007 (0.47)	-0.000 (0.00)	0.006 (0.46)	0.018** (3.12)	0.005 (1.81)
Observations	10731	5320	2084	6512	1653	494	3718	1844	6610

Probit regressions: * significant at 5%; ** significant at 1%

Note: Data for Congo (DRC) is for children 10-14 years of age.