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**Children's educational completion rates and dropouts in the
context of Ethiopia's national poverty reduction strategy**

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***Contributed* paper prepared for presentation at the International
Association of Agricultural Economists Conference, Gold Coast, Australia,
August 12-18, 2006**

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Abstract

A combination of quantitative and qualitative method was used to analyse the determinants of school completion/dropout of children from primary education. A Cox box proportional hazard model was used analyse the survival of children in primary education. The findings have important implications for the formulation and revising Ethiopian Poverty Reduction Strategy Paper.

While the policy focus of the 1996-initiated ESDP and the SDPRP (2002-5) on increasing educational access for all has been broadly successful, children from poor and/or highly indebted families still face significant constraints because they have to contribute to household survival through paid and unpaid work. It is therefore imperative to increase efforts to improve the livelihood options of the poor, including greater income generation opportunities, particularly in rural areas and for women. However, such strategies need to be child sensitive. For instance, income generating opportunities for women should simultaneously be accompanied by community childcare systems in order to prevent older children from shouldering their mother's childcare burden.

Keywords: education; children; Ethiopia; PRSP; poverty; survival analysis.

JEL Classification: A2; D1; J2;

1. Introduction

The major development objectives of the Ethiopian government are to reduce poverty and improve primary school enrolment (SDPRP, 2002). However, to date education performance indicators show that only access-related targets (gross enrolment of 65 per cent by 2004/05) have been achieved. Gross and net primary enrolment rates increased from 45 and 21 per cent in 1995/96 to 61 and 34 per cent in 1999/00 and to 74 and 38 per cent in 2004 (Ministry of Finance and Economic Development (MoFED, 2005). However, primary school dropout rates in 1999/00 almost doubled in 2003/04 from 9 per cent to 19 per cent. Although this figure declined again to 12 per cent in 2004/05, it fell well short of the 2004/5 target of 4.2 per cent.

To our knowledge, there are no country-level studies that examine the determinants of dropout rates or assess the impact of the new Ethiopian educational policy on education outcomes. In order to address this lacuna, this paper addresses the following specific research questions:

- 1 What is the relative importance of individual child, family and school characteristics in determining grade completion and dropouts in primary school?
- 2 To what extent are the components of the Education Sector Development Programme (SDPRP) consistent with the determinants of children's primary school completion rates identified in this paper?
- 3 What policy implications are raised with a view to contributing to debates around the revised SDPRP (2006-10)?

We used Young Lives survey data children and their households collected by the Ethiopian *Young Lives* Project in 2002. The data were collected from 20 sentinel sites in five regions in 2002: Addis Ababa, Oromia, Tigray, Amhara and SNNP, which together comprise the majority of the Ethiopian population (96 per cent). Forty per cent of the children were from urban areas and the remaining 60 per cent from rural areas.

The paper uses quantitative and qualitative techniques to analyse school completion/dropout rates. We used a Cox proportional hazard model to analyse the determinants of school attainment or completion rates. We estimated a hazard model for numbers dropping out of school, conditional on current enrolment of children in school.

Qualitative research was carried out in five of the twenty *Young Lives* sites in February and March 2005 to complement the quantitative findings. One site from each of the five regions represented in the *Young Lives* sample was selected, four of which are rural and one urban. A combination of focus group discussions, semi-structured in-depth interviews and key informant interviews were carried out in each site over a four-week period.

The paper is organised as follows: Section 2 presents the quantitative and qualitative research results.. Summary of the findings and concludes with policy implications for the second phase of the Ethiopian poverty reduction strategy is provided in section 3.

2. Results and discussion

This section weaves together the results of the multivariate and qualitative analyses of the determinants of school attainment and school performance to provide as comprehensive picture as possible (result of the survival analysis is presented in Table 1).

Table 1: Determinants of dropouts using full sample (Censored Cox Regression of dropout)

	(1)	(2)
	Hazard ratio	Coefficient
Dummy for Amhara Region	0.594***	-0.521***
	(3.71)	(3.71)
Dummy for Oromia Region	1.009	0.009
	(0.08)	(0.08)
Dummy for SNNP Region	1.020	0.019
	(0.20)	(0.20)
Dummy for Tigray Region	0.699***	-0.357***
	(2.82)	(2.82)
Dummy for urban residence	0.874	-0.135
	(0.98)	(0.98)
Wealth index consumer durable	0.423***	-0.860***
	(2.70)	(2.70)
Male dummy 1 if male and 0 if female	0.847***	-0.166***
	(3.27)	(3.27)
Age of a child	1.016***	0.016***
	(5.34)	(5.34)
HH Size below 5 years old	1.207***	0.188***
	(6.05)	(6.05)
HH Size between the ages of 5 and 15	0.891***	-0.115***
	(5.11)	(5.11)
HH Size above the age of 15	0.905***	-0.099***
	(4.64)	(4.64)
Grades completed by fathers	0.971***	-0.030***
	(3.38)	(3.38)
Grades completed by mothers	0.973***	-0.027***
	(2.75)	(2.75)
Dummy for male HH head	1.054	0.052
	(0.65)	(0.65)
Number of events that decreases the HH welfare	0.975*	-0.025*
	(1.83)	(1.83)
Cognitive Social Capital	1.014	0.014
	(0.42)	(0.42)
Absolute structural social capital	1.001	0.001
	(0.03)	(0.03)
# of organisations providing social support	1.010	0.009
	(0.71)	(0.71)
Citizenship social capital	0.946*	-0.055*
	(1.71)	(1.71)
Dummy for debt	1.166***	0.154***
	(2.88)	(2.88)
Dummy for HH owns or rents land	1.168	0.156
	(1.43)	(1.43)
Dummy for ownership of livestock	1.059	0.057
	(0.83)	(0.83)
Mean distance (km) to public and private primary schools	1.042***	0.041***
	(2.66)	(2.66)
Policy dummy 1 if child was in school before 1997	0.259***	-1.350***
	(24.30)	(24.30)
Observations	3074	3074

*Robust z statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%*

Rural / urban and regional differences. The variable dummy for urban residency was found to have a significant and negative impact on dropout rates, indicating that urban children are less likely to drop out of school compared to rural children. This held true across all regions indicating that much still needs to be done to decrease the probability of rural children dropping out of school – both in terms of improving the availability and quality of schools as well as reducing pressures on children to contribute to labor activities. However, the impact was statistically significant only in the case of urban boys; and did not impact girls' school attainment. This is likely because although girls' school attendance has increased significantly in recent years (from 17% in 1995/96 to 63% in 2004/05 (MoE, 2005), there is still a marked gender gap in urban and rural areas (Welfare Monitoring Survey (CSA, 2005) indicated that net enrolment rate is 33% for rural areas and 77 for urban areas).

Turning to regional differences, the result of the Cox regression on the total sample indicated that children in the Amhara and Tigray regions are less likely to drop out of school. This result is consistent with the results obtained from the qualitative survey in the two regions, which indicate that in Amhara the regional government uses enforcement mechanisms to promote school attendance (e.g. by depriving households of government social services if they do not send their school-aged children to school). In Tigray, parents reported sending their school age children to school as they have become convinced that schooling is an investment in their future livelihood.

Child characteristics. Only two child-specific characteristics emerged as important determinants of school attainment: age and gender. Children's **age** has a significant and positive effect on the probability of a child dropping out of school. Older

children are more at risk of dropping out of school and are less likely to attain more years of schooling compared to their younger counterparts. Our qualitative findings further suggest that if children attend school when they are relatively old (for their grade), it is because parents are less financially capable and/or willing to support their children's education. For example, a father in Tigray noted that older children in poor households typically have a responsibility to support their brothers' and sisters' school attendance. Moreover, even if such children did attend school, they would be more likely to be withdrawn in the case of economic pressures than younger siblings because of their ability to contribute more to household economic production.

Our Cox regression results found that the variable for the child's gender had a significant effect on primary school dropouts, with boys less likely to drop out than girls. Our qualitative results strongly suggested that this gender difference is attributable to traditional distinctions in the way households and communities value girls' and boys' education. Because boys are viewed as future breadwinners not only for their own future children, but also to support their parents in old age, boys' education is valued over that of girls whose primary role is regarded as wives and mothers to support their husbands' family.

Similarly, a female student noted that people's reactions to girls' education, especially when it involves travelling to the nearby town or staying there, is discouraging as educating females is often considered "*as a futile exercise or worthless*". Nevertheless, it is important to point out that while our quantitative data were collected in 2002, the qualitative data from 2005 suggest that important changes are happening largely as a result of new legal and policy developments designed to advance gender equality.

Perhaps, most significant among these is the Family Law reform of 2001 (implemented in 2002) which banned marriage under the age of 18. Traditionally, parents have been eager to marry off their female children early, not only for economic reasons but also for the sake of family pride associated with female chastity. Because girls are commonly subject to sexual assault, abduction and rape in public spaces, parents preferred to have their daughters drop out of school early and get married, in order to protect the family honour.

While our Cox regression result and descriptive analysis (using *Young Lives* data collected in 2002) show that dropout rates are higher among girls than boys in primary education, our qualitative assessment (conducted in 2005) and national data (CSA, 2004) found that dropouts from primary school are higher among boys than among girls due to greater pressures to be involved in productive work to support the family economy. Because of gender discriminatory labour markets, higher remuneration for boys and a traditional gender division of labour where boys are more involved in agricultural than domestic work (although not exclusively), there are increasingly greater incentives for parents to take their sons, rather than daughters, out of school.

Family characteristics. Parental education, household composition, household wealth and exposure to shocks, as well as maternal social capital, all emerged as important family-level determinants of school attainment.

Parental education. The Cox regression results indicated that the variable “years of schooling” of both parents significantly and negatively affects the probability of their children dropping out of school: children of educated parents are more likely to stay in school than their counterparts. However, if we disaggregate the estimation by children’s gender and by rural / urban location, higher levels of maternal education only have an

impact on rural children and girls, whereas fathers' educational levels are important regardless of location and the sex of the child. Disaggregating the estimation by female- and male-headed households shows that children from both male- and female-headed households are equally less likely to drop out from school when the mothers' education level increases.

Some respondents in our qualitative interviews noted that the correlation between parental education and lower dropout rates was because educated parents were more supportive of education and gave children more time to study, and because of the linkages between education and wealth.

Interestingly, however, overall our qualitative research suggested that parental commitment to their children's education was at least as significant as parental educational achievement in promoting school attainment.

Reasons behind parental commitment to education varied. They included a sense of economic necessity and security in old age, pressure from local authorities, a desire to provide their children with opportunities that the parents were denied and a sense of moral responsibility.

For many parents, there are important linkages between education, morality and personal development. Parent's commitment to education is also related to a sense of moral responsibility: that allowing children to go to school is a parental duty and is the most valuable inheritance a child can receive.

Family composition. The Cox regression indicated that the likelihood of a child dropping out of school is significantly and negatively associated with the number of older siblings in the household (above 5 years of age) and the number of household members

over 15 years of age. This suggests that older siblings and adult members substitute for each other's household labour or provide complementary support through cost savings and/or improved learning. However, the effect of older siblings is not statistically significant for children from female-headed households and for urban areas. Conversely, a child's likelihood of dropping out of school is significantly and positively associated with the number of children under five years old in the household, suggesting that older children may be required to take care of children and be under pressure to contribute to household income, thus, increasing the likelihood of children dropping out of school. In the qualitative research, parents talked about sending some children to work in order to meet household needs and support the education of other siblings.

Household wealth. Household wealth is included in our regression as a proxy for a household's poverty status. The results indicated that children of wealthier households are less likely to drop out of school than their counterparts from poorer households. Disaggregated estimates also showed that the wealth effect is significant for both boys and girls and urban and rural children. Conversely, the dummy for debt was significant and positive, indicating a greater probability of a child from a credit-constrained household dropping out of school than their counterparts.

In general, the qualitative findings were consistent with the quantitative results and support the "poverty hypothesis". Economic constraints frequently emerged as an important barrier to school attainment. The impact of economic constraints is not always immediate but cumulative, and can eventually lead to children dropping out.

Similarly, seasonal demands for child labour have an impact on school attendance. This is especially true during harvest time when there is a considerable spike in dropouts,

particularly among boys, that may be either temporary or permanent.

Dummies for land and animal ownership were found to have positive but insignificant effects on school dropouts in all Cox regression results, except for female-headed households and land ownership in rural areas. In other words, the effect of land ownership has significant and positive effects on children's school dropout rates – but only for children from rural areas and from female-headed households where there is higher demand for child labour. This is linked to greater pressures on the household for labour to complete all necessary agricultural work.

The number of negative shocks experienced by a household was found to have a significant and negative effect on child dropouts, which appears counter intuitive. One possibility is that the occurrence of shocks is linked to the receipt of food or other types of aid. However, the qualitative research indicated that children had been forced to drop out of school as a coping mechanism in the face of frequent droughts and economic shocks.

Social capital. Social capital variables emerged as having a mixed effect on the duration of schooling in the regression analyses. While the impact of cognitive social capital (feelings of trust and belonging to one's community) and structural social capital (membership of social organisations) were found to be insignificant overall, citizenship (involvement in collective action to address a social problem) was found to reduce the likelihood both overall and in urban sites of children dropping out of school.

Community and school factors. The regression results found that school proximity and the educational policy changes since 1996 have had a significant impact on school completion rates, while the qualitative results suggest that policy shifts in the

SDPRP and ESDP II have also had an impact.

The probability of a child dropping out of school increases as the distance to the nearest private or public school increases. The risks of sexual assault and violence en route to school were also mentioned by a large number of respondents in the qualitative research as a key reason for withdrawing their daughters from school after the first primary cycle.

Turning to policy changes, a dummy variable for policy change revealed that children enrolled after 1996 are less likely to drop out than children enrolled before 1996. The same effect was found in separate estimates for boys and girls. The qualitative results confirmed this overall positive trend but because the research took place over two years later, it was able to reveal more of the impacts of policy changes since the second ESDP in 2002. In particular, the importance of affirmative action measures to increase girls' enrolment and work towards the Millennium Development Goal (MDG) 3 on gender equality and MDG 2 on universal education for all school children were highlighted, as were the effects of the community mobilisation efforts to increase school enrolment and stem dropouts. In other words, efforts to address gender equality in the education sector are not just a matter of political rhetoric, but have been translated into comparatively successful and innovative programmes at the grassroots level.

3. Summary, conclusions and policy implications

Our findings have important implications for the formulation and revising Ethiopian Poverty Reduction Strategy Paper.

While the policy focus of the 1996-initiated ESDP and the SDPRP (2002-5) on

increasing educational access for all has been broadly successful, children from poor and/or highly indebted families still face significant constraints because they have to contribute to household survival through paid and unpaid work. It is therefore imperative to increase efforts to improve the livelihood options of the poor, including greater income generation opportunities, particularly in rural areas and for women.

However, such strategies need to be child-sensitive. For instance, income-generating opportunities for women should simultaneously be accompanied by *community childcare systems* in order to prevent older children from shouldering their mother's childcare burden. If *credit programmes* are encouraging the purchase of livestock, community cattle-keeping mechanisms need to be encouraged to reduce pressures on children to drop out of school to attend to additional household livestock. Other policy solutions could include the introduction of targeted *conditional cash transfer programmes* that enable poor households to send their children to school by offsetting the costs involved.

Proposals to replace the *shift system* with a full-day school system need to take into account the demands of seasonal agriculture. Moreover, there is still much scope for *expanding the availability* of schools to poor and isolated communities.

Boys are already performing better than girls at the age of eight, suggesting that the current concern about girls' education is well-placed, and that existing programmes need to be evaluated, and then expanded or intensified. The SDPRP only explicitly mentions measures to address girls' low enrolment rates at the secondary, and not the primary, school level, and does not include any specific targets related to gender equity in its poverty reduction target indicators. It will be important for the second round of the

SDPRP to incorporate gender-specific target indicators at all school levels. Given that girls' attendance was significantly influenced by safety concerns concerted measures are clearly needed to reduce their vulnerability in unsupervised public spaces. The widely reported positive impact on girls' education of the Family Law ban on early marriage and initiatives to tighten the implementation of the anti-sexual violence regulations suggest that these efforts should be continued and related laws rendered consistent.

Improving educational enrolment now will have a positive spill-over effect on subsequent generations. Adult education programmes should also be considered as part of a comprehensive approach to achieving universal primary education for all by 2015.

The government and donors alike need to be cautious about romanticising the notion of "community empowerment and participation", especially when it is often used as a euphemism for monetary contributions, and could lead to civic resentment towards education and increasing dropout rates over time. While communities may be able to subsidise the cost of new school infrastructure by contributing their labour and local materials, funds for purchasing books and other educational materials should be provided by government and donors.

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