Country Report

Educational Inequalities Among Children and Young People in Ethiopia

Tassew Woldehanna and Mesele Araya

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Young Lives

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About Young Lives

Young Lives is an international study of childhood poverty, following the lives of 12,000 children in four countries (Ethiopia, India, Peru and Vietnam) over 15 years. **www.younglives.org.uk**

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Summary

Designed constitutionally, the Ethiopian education sector has been one of the most important pro-poor sectors over recent years, with a percentage of public education spending to total government spending of 21 per cent, and to GDP 4 per cent in 2012/13. As the result of this, school enrolment (Grades 1-12) doubled from about 10 million students in 2002/3 to over 20 million in 2013/14. Coupled with the public educational expenditure, the government has also made a number of policy changes in different areas of the sector. Examples include the introduction of the "O" class programme and non-formal preschool service called the Child-to-Child delivery system aiming to address marginalised children who have little or no access to preschool education. Additionally, targeting better access, equity, efficiency and quality, some other reforms were introduced in line with the latest two Education Sector Development Programmes (2005/6-2009/10 and 2010/11- 2014/15). Of note is the General Education Quality Improvement Program, designed to support quality improvements for all primary and secondary schools, and the expansion of higher education, particularly at university level, where the number of public universities increased from eight in 2008/9 to 31, with more than 0.62 million students, in 2013/14.

Yet, in spite of the unprecedented enrolment at all levels, the education sector still resembles a pyramid, with varying degrees of access for different groups, where nine out of ten children of appropriate age are enrolled in primary education, two out of ten in secondary education and only one out of ten at university. There could be several reasons that explain the pyramid shape of the sector, and the disparity among various groups of individuals in particular. This paper analyses the educational inequalities that may exist among different groups of children and young people in Ethiopia using Young Lives longitudinal data collected over four rounds of surveys, for two cohorts of children born in 2001-02 (the 'Younger Cohort') and in 1994-95 ('Older Cohort').

This longitudinal data is of a quality that enables us to track the trajectory of educational access, learning opportunities and outcomes over time and at times to make a comparison between the two cohorts for the same age. We identify disparities that exist between children of urban and rural households, children of the 'rich' versus the 'poor', being male versus female, children of least educated versus more educated mothers, and children in different regions compared to those who reside in Addis Ababa. We also formed groups of least vulnerable and most vulnerable children using factor analysis, by combining the categorical variables of maternal education, household's wealth index and orphan status of the children. Using these grouping variables, we organised the analysis over four stages of development: early childhood, middle childhood, adolescence and early adulthood.

The results indicate that access to education during early childhood is very limited, where only 24.90 per cent of the Younger Cohort and 13.44 per cent of the Older Cohort had the chance of attending preschool education. This figure hides considerable disparities by group. For instance, while the enrolment rate for urban children of the Younger Cohort is about 57.93 per cent, it is only 3.36 per cent for children in rural areas. Gaps by household's wealth index quintiles (55.14 percentage points) and degree of vulnerability (77.09 percentage points) and regional location in reference to Addis Ababa are also very large. Gender is the only variable that doesn't show a significant differential gap in this regard. Also, nearly three-quarters of the children who attended preschool were in fee-charging private kindergartens, indicating that preschools are inaccessible for the children of the poor. In terms of outcomes,

it seems that the level of learning at an early age is very low, with the average percentage of correct score in PPVT test (a measure of receptive vocabulary) as low as 11.65 per cent for the Younger Cohort, with considerable disparities by many of the grouping variables, except gender. Educational progress is also very slow during middle childhood. As result of poverty and associated lack of early learning opportunities, 54.33 per cent of the Younger Cohort and 64.35 per cent of the Older Cohort were behind the expected grade at the age of 12, with substantial disparities by the grouping variables. Besides being overage at school, about 5 per cent for the Younger Cohort and 3 per cent for Older Cohort had dropped out of school by the age of 12. Furthermore, the percentage of overage and dropout rates for the Older Cohort did not show improvement during the adolescence period, but jumped to 65.39 per cent and 9.47 per cent, respectively. This may imply that, although there are considerable differences by groups, school failure starts early in Ethiopia. The percentages of correct scores at age 15 from the mathematics (17.26 per cent) and reading (20.14 per cent) tests are also not particularly encouraging. These scores may imply that the education system is not equipping children with the required academic knowledge and skills that go with the expected grade levels.

Early adulthood is a period when the young people of the Older Cohort are expected to complete their secondary education and join an institution of higher learning. However, this was not the case for the majority, with 40.22 per cent no longer in the education sector, while another 45.37 per cent were still at secondary level or below with an overage attendance. Only 14.1 per cent of young people had joined institutions of higher learning, with substantial disparities by the grouping variables, in favour of children of urban areas, children of the rich, children of educated mothers and those living in Addis Ababa. The implication is that school progress is very slow, caused by a number of poverty-related factors, such as early pregnancy – which was observed for about 5 per cent of the young people by the age of 19.

To complement the analysis, we also analysed the supply side of the education sector using data from the 2013 Young Lives School Survey of Grades 4 and 5 and data of educational expenditure supplied by the Ministry of Education. Analysis of the school data shows that the majority of the school teachers at the Grade 4/5 level are diploma and high school certificate holders, which might be one of the supply-side factors for the poor educational outcomes at primary level in particular and at the other educational levels in general. The distribution of public financing to education skews in favour of higher learners, where the per-student recurrent spending at university is 26 times that of primary education and 10 times that of secondary education. Such disparities in educational spending may also result in poor educational outcomes at primary level, due to material shortage to students – limited salary options and other related issues.

Overall, although the education system has expanded rapidly, affording access to millions of children who would not have had such an opportunity at the beginning of the Young Lives project in 2002, smooth progression and completion of general, further and higher education remain attainable by only the children of the rich, of educated mothers, of least vulnerable groups, of urban households, and in particular, those residing in Addis Ababa. Recent ‘remarkable’ progress in the sector came from a terribly low base and improvements should be lauded, but many gaps remain to be closed through equitable and inclusive educational policies. An important mechanism will be a revision of public education spending policies, to transfer funds from the higher- to lower-levels in the system; to the levels at which so many of the children from the lowest income quintile and with the least family support are still unable to move beyond.

1. Introduction

For much of the twentieth century, access to education in Ethiopia was scant, and if it existed at all, it was unequal and skewed in favour of urban and affluent families. Such an educational landscape implies that there had been a low level of equality of opportunity in the sector for decades. However, the 1990s were a turning point in which education was put in perspective and designed constitutionally in such a way that every citizen has an equal right of access and opportunity. For the last two decades, education has been at the centre of the country's development strategy and recently started to be seen as one of its success stories, with school enrolment (Grades 1-12) rising from below 10 million in 2002/3 to over 20 million in 2013/14, and higher education enrolment rising from around 0.18 million to more than 0.62 million over the same period (MoE 2013/14). Yet, in spite of such unprecedented enrolment at all levels, there is still a long way for the country to go to address major policy concerns in the sector. In this study we look at the inequality aspect, taking socio-economic backgrounds of children and young people into account to try to identify the major obstacles in the way forward, using data gathered over four rounds of the Young Lives study into the Younger and Older Cohorts. Educational inequality in this case is the difference in access, learning opportunities and outcomes, experienced by children and young people from different groups. The Young Lives data allow us to track the dynamics of educational opportunities and outcomes over time and at times to make a comparison between two different cohorts at the same age. We first present a brief description of the Ethiopian education system before proceeding to the Young Lives survey data.

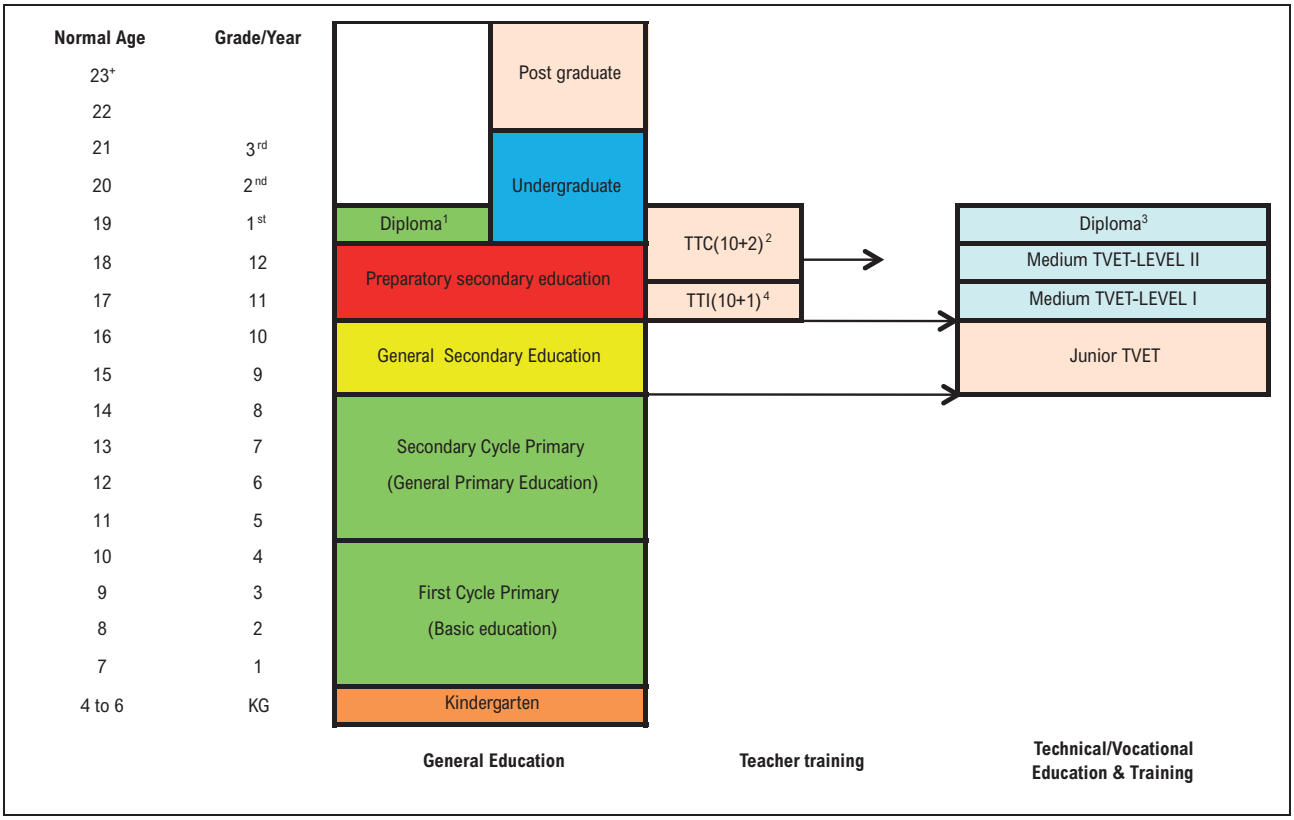
2. Background of the education system in Ethiopia

Throughout much of the twentieth century, Ethiopia was one of the countries in the world with very low enrolment rates in education. However, following a regime change in the early 1990s, education was placed at the centre of Ethiopia's development policy and designed constitutionally in such a way that every citizen has the right to equal access to education that is free from religious influence, political partisanship or cultural prejudices (FDRE Constitution 1995). The 1995 FDRE Constitution specifically states that it is the State's obligation, within available means, to allocate resources in providing basic education for all, including to physically and mentally impaired citizens. To do this, ensured by the constitution, the Ministry of Education has considerable authority and responsibility over the education sector. But, given the federal system of governance in Ethiopia (nine regional states and two city administrations), education is also a shared responsibility of these regional and district authorities (especially since the district-level decentralisation of the public sector in 2002). Also, unlike the Derg's proclamation (pre-1991) which prohibited private schools, the current constitution encourages the establishment of private institutions of learning, ranging from kindergarten to tertiary levels.

The structure of the current education system is based on the 1994 Education and Training Policy (ETP) and follows a KG-8-2-2 format. Figure 1 depicts this structure, along with specific ages and levels of grades. At the base of the structure is preschool education

provided by kindergarten, where children aged 4-6 can attend for one to three years, depending on the availability of the programme in their area and their family's economic status. Preschool education in Ethiopia is not compulsory and neither has, until 2011, any budget been allotted by the government towards this sub-sector. It has rather been operated by kindergartens owned by private actors, NGOs, communities and faith-based organisations (recent policy changes by the government on this sub-sector are discussed below). As preschool education is not compulsory for all, there is no official certification for it and nor is a test needed for a child to enter primary education.

Figure 1. *Structure of the Ethiopian education system*



1 Diploma/Advanced Diploma – two or three years of study offered by engineering and technological institutes, health and commercial institutions, agricultural colleges.

2 Three years of study at teacher training college aiming to certify for teachers of primary school.

3 Commerce, technology, agriculture, military training (two or three years).

4 One year of study at a teacher training college aiming to certify for teachers of preschool.

Primary education has an official starting age of 7 years old and lasts eight years, in two cycles. While the first cycle (Grades 1–4) deals with basic literacy and numeracy, the second cycle (Grades 5–8) aims to provide general education to prepare students for further general secondary education. Automatic promotion is common in the first cycle, but to promote to the next grade level after Grade 4, each student has to score on average half of the maximum marks (100) required in each class of study. Primary education is free in public schools, and there has been an effort from the government, over the last decade or so, to universalise it. This has, though, not been accompanied by enforcement and consequences on families who don't have their children enrolled. As Ethiopia is a multilingual nation and being aware of the pedagogical advantage of children learning in their mother tongue, the 1994 Education and Training Policy document allows over 20 local languages to be used as mediums of instruction up to Grades 4, 6, or 8 depending on the conditions in each region. However, in Article 4.5, the policy document further states that Amharic (the working language of the Federal Government) is taught as a language of countrywide communication, whereas English is given as a subject from Grade 1 in all regions so that it will serve as a medium of instruction for secondary and higher education (FDRE 1994).

At the end of Grade 8, students are required to pass a regional examination to join secondary school. If they don't pass, they are given one more chance to repeat the year and sit another exam, but this is not the case at Grades 10 and 12, where students are only allowed to take national exams once as a regular student. Secondary education in Ethiopia consists of two years of general secondary (Grades 9-10 and ages of 15 and 16) and two years of preparatory secondary education (Grades 11-12 and ages 17 and 18). In public schools, both general secondary education and preparatory programmes are free, but not compulsory (UNESCO 2015).[5]

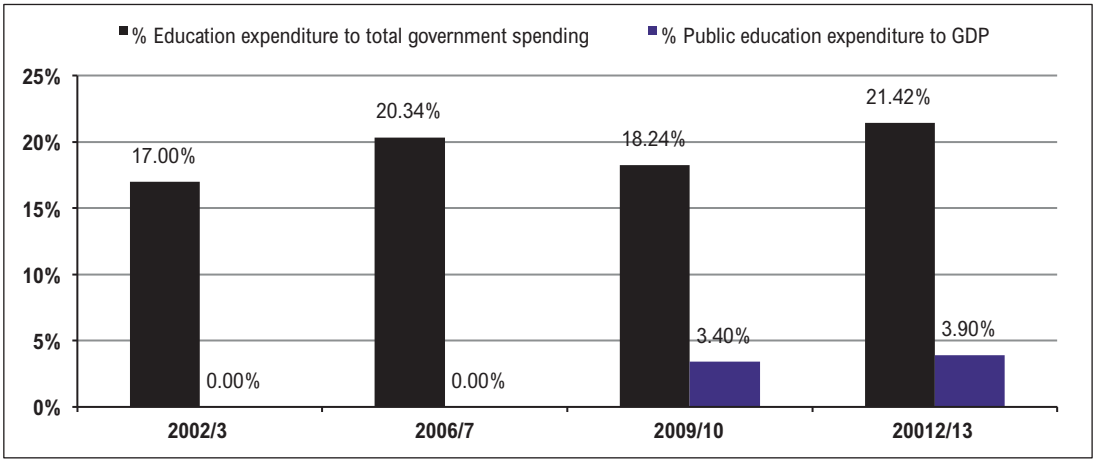
In the current system, the first national learning assessment, known as the Ethiopian General Secondary Education Certificate Examination (EGSECE), is given at Grade 10 to certify completion of lower secondary education and to select students that qualify for preparatory secondary education. This implies that lower secondary education is a critical stage, where students' future careers will depend on the one-time academic score at Grade 10: whether to be placed in technical and vocational education and training (TVET, ranging from Level 1 to Level 5), teacher training colleges (TTC, 10+1 and 10 +3) or in preparatory programmes. While TVET programmes train students in more practical works that help them enter into middle-skilled jobs at the end of the training, the TTC (10+1, Certificate) and TTC (10+3, Diploma) programmes from teacher training colleges provide training for preschool and primary school teachers.

For those who make their way to upper secondary education, the preparatory programme gives them the chance to choose study fields (natural sciences versus social sciences stream). After two years of attendance, a second national examination called the Ethiopian Higher Education Entrance Certificate Examination (EHEECE) is given at Grade 12, based on which they will be placed in institutions of higher learning either for undergraduate programmes at university level or for diploma programmes in teacher training colleges (12+2) and other similar diploma programmes based on their results and interests. Ideally, education at university level in all fields is research oriented so that it helps students become problem-solving professional leaders in their fields of study and in overall societal needs (MoE 2010).

5 According to UNESCO (2015), there is a need from the Ethiopian Government for a universal completion of lower secondary school to be a goal in the post-2015 framework.

In terms of public investment, over recent years education has been one of the most important pro-poor sectors, to which the government has been allocating a significant budget. For example, in real terms, education accounted for roughly 20 per cent of total government spending from 2006/7 to 2012/13. In terms of GDP, its proportion has increased between 2009/10 and 2012/13 from 3.4 per cent to nearly 4 per cent (Figure 2).

Figure 2. *Percentage of public education expenditure to total government spending and GDP (in real terms, 2010/11 constant prices)*

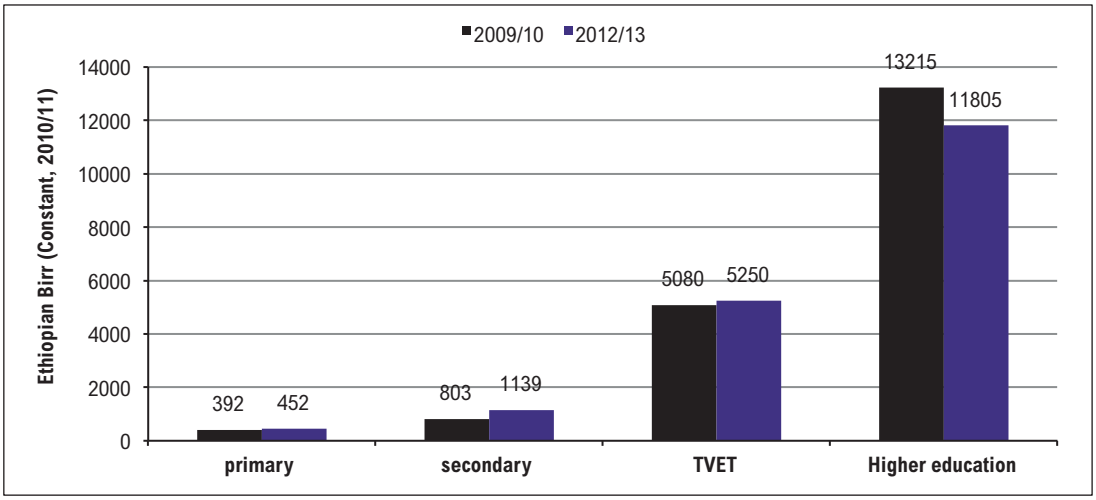


Source: MoE (2006/7, 2012/14)

However, despite such high public education spending, there are disparities by sub-sector, where the per-student recurrent spending at university level as of 2012/13 is 26 times that of primary education and 10 times that of secondary education (Figure 3). The same is also true with capital expenditure, where higher education, mainly universities, accounts for almost 80 per cent of the education capital budget.[6] Such disparities may lead to a low quality of education at primary public schools.

6 By capital budget, we mean the educational spending, other than the recurrent fund, used for the construction of new universities, such as the construction of the second and third generation of universities. We call Ethiopian universities first, second and third generation universities, based on their year of construction.

Figure 3. *Per-pupil recurrent expenditure in real terms (Ethiopian Birr)*[7]



Source: MOFED Boost data, EMIS data

Policy changes during the Young Lives study include important reforms in the preschool sub-sector. In the 1994 Education and Training Policy (ETP), it is clear that only kindergarten was mentioned as a way to prepare children for formal schooling (see Figure 1). But, given that the preschool landscape is unequal and mainly concentrated in urban areas, with little access for poor and rural children, in 2008 the Government of Ethiopia, in collaboration with UNICEF and the Child–to–Child Trust, designed a non-formal preschool service called the Child–to–Child delivery system, where fifth or sixth graders play with their younger siblings and neighbourhood children, supervised by qualified teachers and with some adult training. The playing becomes learning as the younger child gets to know how, for example, to count, differentiate colours and identify letters before joining primary school (see UNESCO 2015, 19-26, for more details) However, the quality and adequacy of this service are still uncertain.

The major change in the preschool sector that received an overwhelmingly favourable response from local governments is the "O" class programme (MoE 2013/14, 23) (though quality is still uncertain). The "O" Class is part of the 2011 Ethiopia's Early Childhood Care and Education (ECCE) framework developed at inter-ministerial level and intended to benefit vulnerable and disadvantaged children in the year before they join Grade 1, who do not have access to kindergarten, by annexing to public primary schools. The "O" class children are coached by selected teachers to prepare them for their first grade. This implies that since 2011 preschool education in Ethiopia has been provided through three modalities: kindergarten, "O" Class programme and Child-to-Child initiative (see Figure A1 for enrolment rate by type of preschool in 2013/14). It has also become clear that the Government of Ethiopia has recently been involved in the sub-sector largely in developing curriculum, providing supervisory support, and training teachers through the TTC 10+1 programme (see Figure 1).

Aiming to promote better access, equity, efficiency and quality, some other educational reforms were also introduced in line with the latest two Education Sector Development Programmes (2005/6- 2009/10 and 2010/11-2014/15). For instance, supported by the World

7 Exchange rate as of July 2011 was 17.04 Birr per US$1.00, but the Birr devalued to 21.27 Birr per US$1.00 as of 15 February 2016.

Bank, the Government of Ethiopia has been implementing the General Education Quality Improvement Program since 2008. This programme was designed to support quality improvements for all primary and secondary schools by incorporating a number of educational reforms, such as: (i) curriculum, textbooks assessment, examinations and inspection; (ii) Teacher Development Programme (TDP); (iii) School Improvement Plan (SIP), including school grants; (iv) management and capacity building; (v) improving the quality of learning and teaching using information and communications technology (ICT); and (vi) programme coordination, monitoring and evaluation, and communication. The reform by the Teacher Development Programme (TDP) at primary level was accompanied by: (a) increasing the one-year certificate course to a three-year diploma course after Grade 10 at teacher training colleges; (b) introducing a special practicum programme for pre-service teacher training; (c) establishing an English Language Improvement Programme (ELIP); and (d) creating an opportunity for Higher Diploma Programme (HDP) for those who solely had a teachers' certificate (see Abebe and Woldehanna 2013; World Bank 2005, for more details).

As part of the Fourth Education Sector Development Programme (2010/11-2014/15), the Government of Ethiopia in 2010/2011 also introduced an ambitious plan called Integrated Functional Adult Literacy (IFAL) to reach 95 per cent of illiterate adults in the country. To implement this programme, regional states were required to design relevant curriculum and develop learning materials along with the establishment of inter-sectoral boards at various administrative levels. In spite of these efforts, it is yet not known to what extent this programme has achieved its target to date (MoE 2013/14).

Regarding the tertiary sector, higher education in Ethiopia has a relatively short history, with the first state university (Addis Ababa University) established in the 1960s. But following the introduction of the 1994 Education and Training Policy, higher education in Ethiopia has undergone major quantitative and qualitative changes. Particularly, Proclamation No. 351/2003 of higher education dramatically changed the structural and functional components of the higher education system, where the number of universities increased to eight by 2008. Supported by another university law (Higher Education Proclamation No. 650/2009), 13 universities became fully functional as a second generation of universities, while other 10 universities were established as a third generation between 2010 and 2014. There are now 31 public universities, with enrolment of 627,453 in 2013/14, up from 185,213 in 2002/03. The government is further looking to open an additional 10 public universities in the next few years. In parallel to this, there has also been expansion of private universities and colleges as vested by the Higher Education Proclamations No. 351/2003 and 650/2009. Although, they account for only 15 per cent of the 627,453 higher education enrolment in 2013/14, there are now more than 50 private universities and colleges around the country that are accredited by the Federal Ministry of Education. While quality of education at primary and secondary private schools is perceived to be better than at public schools, the opposite is the case in higher education, where educational provisions in private universities and colleges are usually considered low quality and remain a policy concern (Bauduy 2008; MoE 2013/14).

Technical and vocational education and training (TVET), which emphasises marketable and entrepreneurial skills of young people by delivering education that is 80 per cent based on practice and 20 per cent on theory, has also seen a huge increase over the last decades (Shaorshadze and Krishnan 2012). TVET Proclamation No.391/2004 in partiular created favourable ground for the establishment of private TVETs that are able to increase the numbers and diversify the training offered. As a result, the number of TVETs (both public and

private) increased by more than two and half times over 2002/03 to 2013/14, from 153 to 437. In line with this, the number enrolled rose from 72,162 in 2002/03 to 238,884 in 2013/14, with an additional 170,160 students in teacher training colleges in teaching certificate and diploma programmes. There are, however, claims of considerable competency deficits in many privately trained TVET students, ultimately resulting in the closure of some centres in recent years (MoE 2013/14).

One recent change in the higher education system is associated with the ratio of university placement by fields of specialisation, where more emphasis is given to science and technology (S&T) over social sciences and humanities (SHS). To be able to produce capable citizens well-equipped with skills preferred for Ethiopia's development, the government of Ethiopia has recently made a considerable adjustment to the ratio of students studying under the two streams. The share of S&T to SHS changed from 58:42 in 2008/09 to 70:30 in 2014/15. However, despite substantial budget allocation towards the higher education sector, especially towards the establishment of new generation universities, the government's financial support for students is to the completion of secondary education and related training, with increased cost-sharing at higher levels of education. This came with the Higher Education Cost-sharing Council of Ministers Regulation No. 91/2003, which states that there is a cost-sharing financing mechanism between government and students enrolled in public universities. The costs are mainly related with boarding and lodging and a minimum 15 per cent of tuition fees. This is to be collected in the form of a graduate tax by entering into a written contractual agreement with the university so that students will repay their cost-sharing debts in instalments after graduation/entering the labour market. This has resulted in considerable doubts from the wider community that this educational financing mechanism may lead to a quasi-market in the education sector and students from disadvantageous background being disproportionately affected (Gidey 2010).

It is important to also look at enrolment rates, and Table 1 presents data from the Ethiopian Education Statistics Abstract published yearly by the Ministry of Education. In 2002/03 out of the estimated 6.06 million children of the appropriate age group (ages 4–6), only 123,057 (2 per cent) were reported to have accessed pre-primary education, across 1,067 kindergartens. But this figure jumped to a net enrolment rate of 24.2 per cent in 2013/14 as the result of the big push from the government in launching the "O" Class programme and Child-to-Child initiative. The increase was especially related to the "O" Class as it was said to have had a widespread response from local governments, achieving over 1 million children enrolled in the first year of implementation (MoE 2013/14). The Child-to-Child strategy also had a large contribution towards this sub-sector, reaching close to 0.3 million children as of 2013 (MoE 2013/14) (see Figure A1). But, it is important to mention that in spite of the recent massive government effort to expand access in the preschool sub-sector, this latest net enrolment rate of 24 per cent is very low by any comparison and a significant number of preschool children still do not have access to any form of early education programmes in many parts of the country.

Table 1 also shows that the past decade has seen rapid progress towards the goal of universal primary education, the second goal of the MDGs. However, completion rates and quality are said to be very low (MoE 2009/10). Moreover, as mentioned above, although there has been a surge in the absolute number of enrolees in TVETs and higher education over recent years, the enrolment rates are very low (well below 10 per cent) across all institutions of higher learning.

Table 1. *Enrolment rates in preschool, primary, secondary and higher education*

	2002/3	2006/7	2009/10	2013/14
Pre-school	2.00%*	3.10%*	4.80%*	24.20%^
Primary (1-8) (Net)	54.00%^	79.10%^	82.10%^	92.60%^
Lower secondary (9-10) (Net)	8.40%^	14.70%^	16.40%^	20.20%^
Upper secondary (11-12) (Net)	2.40%^	3.00%^	3.50%^	5.50%^
Technical and vocational education training (TVET)	1.71%+	4.09%+	7.01%+	4.26%+
Teacher training college (10+1, 10+3, 12+2))	-	-	2.83%+	3.04%+
Tertiary education university (Gross)	2.50%+	3.60%+	6.20%+	8.10%+

Source: MoE, 2002/3, 2006/7, 2009/10, 2013/14
Notes: net enrolment rate, if there is no any notation on the figures.
^ Net enrolment as reported by Ministry of Education.
* Gross enrolment rates as reported by the Ministry of Education.
+ Gross enrolment rates as estimated by the author from MoE, taking 17-19 years of age range for TVET and 19-23 for higher education (undergraduate and master's levels). Due to lack of clarity on the age ranges and very low number of enrolments in the PhD programme, those rates do not include students enrolled in College of Education and PhD programmes.

Table 2 presents enrolment data broken down by gender and region for 2013/14. It appears that while there is less gender bias in the enrolment of preschool and primary school at the national level, there is still a considerable gender gap in higher education. There is, however, regional disparity even at preschool and primary levels, as participation is still low in regions like Somali and Afar.

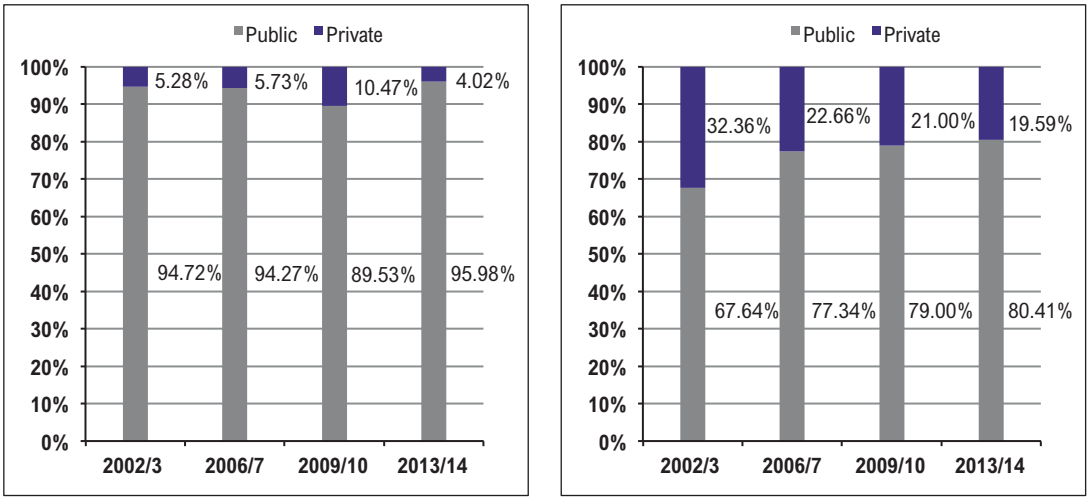
Table 2. *Enrolment in preschool, primary, secondary and higher education by gender and regional location (2013/14)*

	Preschool (Net) (%)	Primary school (Net) (%)	General secondary (9-10) (Net) (%)	Preparatory secondary (11-12) (Net) (%)	Technical and vocational education and training (%)	TTC (10+1, 10+3, 12+2) (%)	Tertiary education university (Gross) (%)
Average	24.2	92.6	20.2	5.5	4.26+	3.04+	8.1+
Gender							
Boys	23.7	95.1	19.6	5.5	4.79+	3.56	11.8+
Girls	24.7	90.1	20.9	5.5	4.41+	2.52	4.7+
Region							
Tigray	62.8	99.5	50.3	10.4	3.79+		
Afar	4.5	60.1	1.9	1.3	1.13+		
Amhara	28.2	97.3	19.8	5.5	4.28+		
Oromiya	13.7	84.8	15.9	3.2	2.65+		
Somali	1.2	117.7	4.3	3.2	-		
Benishangul	21.7	83	17.4	5.8	-		
SNNPR	30.4	94.3	21.9	5.3	-		
Gambella	22.5	119.8	21.0	6.0	1.73+		
Harari	56.1	88	29.0	10.6	-		
Addis Ababa	98.3	136.2	63.0	33.5	11.29+		
Dire Dawa	29.0	77.5	19.0	8.1	14.13+		

Source: MoE (2013/14).
Notes: + Gross enrolment rates and own estimation from MoE, 17-19 years of age for TVET and 19-23 for higher education age group (undergraduate and master's levels).

Figure 4 shows the share of private school and percentage of enrolment by residence area in primary education over time. It appears that the proportion of private school does not seem to change, whereas the share of urban in primary education seems to be shrinking, implying that there has been an expansion of rural schools and greater access to many rural areas over time. For the secondary education trend, see Figure A2.

Figure 4. *Enrolment in primary education (1-8) by type of school and residence area*



Source: MoE, 2002/3, 2006/7, 2009/10, 2013/14.

One clear achievement of the education system is the trend in literacy over the last two decades (after 1994, which is the beginning of the current education and training policy). In 1996, only 25 per cent of the population was literate, but this increased to 46.7 per cent in 2011 (Table 3). Literacy continues to increase in both rural and urban areas, and for both males and females. The increase in literacy is partly because of an increase in enrolment in primary education. There remain some considerable differences in literacy rates between men and women, though the gap narrowed in rural areas in 2011. On average, just under half of the population are literate, 56 per cent of males and 38 per cent of females. The gap between rural and urban residents is more striking; 78 per cent of urban residents over 10 years old reporting that they can read, compared to only 40 per cent of rural residents. The proportion of rural women who can read is only 30 per cent, which represents a considerable increase since 2004, and a great improvement since the first Welfare and Monitoring Survey (WMS) in 1996, where fewer than 10 per cent of rural women could read. However, there is still a gap to close, as the current rate of literacy for rural women is around the same as it was for rural men 15 years ago, and it is less than half the rate of urban literacy.

Table 3. *Literacy rates, by location and gender over time (%)*

	1996	1998	2000	2004	2011
National					
Male	34.8	36.4	39.7	49.9	56.2
Female	16.9	17.2	19.4	26.6	37.6
Total	25.8	26.6	29.2	37.9	46.7
Rural					
Male	27.9	28.8	32.8	43.4	49.7
Female	8.4	8.8	11	18.7	30
Total	18.3	18.8	21.7	30.9	39.7
Urban					
Male	77.5	81	81.8	86.2	87.6
Female	56.7	59	60.6	64.4	69.6
Total	65.7	69	69.9	74.2	77.9

Source: MoFED, 2008, 2013

Table A1 shows the trend in literacy by region of residence. In 2000, there was huge discrepancy in literacy rate among regions, ranging from 19 per cent and 24 per cent in Afar and Somali, respectively, to 79 per cent and 55 per cent in Addis Ababa and Dire Dawa. The literacy rate increased between 2000 and 2011 in all regions, but in 2011, the literacy rate was still highest in Addis Ababa City Administrative (87 per cent) followed by Dire Dawa (64 per cent) and Harari (60 per cent). The lowest literacy rate was observed in Somali region (30.5 per cent). The rates in other regions ranged from 47 per cent in Benishangul Gumuz to 59 per cent in Gambela. The factors behind such regional differences could be due to the incidence of poverty in some of the regions, as historically some regions were disadvantaged in terms of social infrastructure. It is, however, important to mention that regions with lower literacy rate in 2000 have seen faster growth than regions with higher literacy, indicating showing a declining difference among regions in literacy.

Generally, Ethiopia has lately seen improvement in school enrolment, but this has come from a low base and is relative to the pre-1994 period, suggesting that there is a long way for the country to go to develop the education sector. Disparities among regions, overall quality of the education system and differences of school outcomes by various socio-economic backgrounds are still major policy concerns that need thorough analyses. The rest of this paper deals with these educational inequalities.

3. Methodology used in this paper

3.1. Data

To examine the nature of educational inequalities among different groups of children and young people in Ethiopia, this study used data from Young Lives surveys collected over four rounds. Young Lives is a longitudinal study of child poverty tracking 12,000 children in four low- and middle-income countries (Ethiopia, India, Peru and Vietnam). The study follows two cohorts of children, born around 1994 (the Older Cohort) and 2001 (the Younger Cohort). As a longitudinal study, information regarding the child and his/her household and community has so far been collected four times, in 2002 (Round 1), 2006 (Round 2), 2009 (Round 3) and

2013 (Round 4). The study also utilised school survey data collected in 2012/13 which offer unique information on Young Lives children's peers, teachers and school characteristics.[8]

3.2. Sample

The sample children were selected from 20 sentinel sites following a three-stage process: first regions, then woreda (districts), and finally Kebele, the lowest level of administrative structure in Ethiopia. Selection in the first stage was purposive as the sentinel sites were chosen such that: (i) districts with food deficit were oversampled so that it was possible to track the impact of poverty on the overall development of the selected children; (ii) the profile of selected districts captures Ethiopia's diversity, in both urban and rural areas; and (iii) the cost of tracking children in the future is manageable.

In Round 1, there were 1,999 children in the Younger Cohort and 1,000 in the Older Cohort. By Round 4, there wer 1,873 Younger Cohort children, and 908 Older Cohort, with attrition rates of 2.2 per cent and 8.4 per cent, respectively (see Table 4).

Table 4: *Number of children by round and cohort*

Cohorts	Round 1 (2002)	Round 2 (2006)	Round 3 (2009)	Round 4 (2013)
Younger Cohort	1999	1914	1886	1874
Older Cohort	1000	980	974	908

3.3 Main grouping variables

The study focuses on educational access, learning opportunities, and outcomes, placing the issue of inequality at its centre from the perspective of the following grouping variables.

1. **Location (urban/rural).** Although access to education at all levels has seen improvement over recent years (relative to pre-1994), it is still important to examine the disparity that may exist between urban and rural areas. While urban areas are believed to be advantaged in terms of access to additional educational services such as private schools, rural areas are assumed to have poor educational facilities. Therefore, to develop better educational policy, it is imperative to explore the disparities that exist between children of urban and rural areas. By Round 4 of the survey, 52 per cent of the children from the Older Cohort were from rural areas, and about 65 per cent of the Younger Cohort (see Table 5).
2. **Gender.** Gender has been an important variable of analysis in many research works in general and in educational inequality in particular. In the case of Ethiopia, although Woldehanna (2016) found that gender is a statistically insignificant determinant of preschool enrolment (in early years of schooling), little is known with respect to enrolment and achievements in primary schools and beyond. Hence, to further understand how educational access, learning opportunities and achievements vary in schools and institutions of higher learning, gender will be part of the analysis. By Round 4 of the survey, girls made up 46.85 per cent of the Younger Cohort and 46.37 per cent of the Older Cohort (see Table 5).

8 For information on the school survey, see Young Lives 2013.

3. **Wealth quintile (Round 1).** Household wealth is believed to have a substantial differential effect on children's educational access, learning opportunities, and outcomes, especially in poor countries like Ethiopia, where more than 80 per cent of the total population live in areas with very limited school facilities (CSA 2013). Hence in an effort to understand the issue of inequality, looking at the existing access, learning opportunities and outcomes in connection to household wealth index will be very insightful. The wealth index in this case is the average value of index constructed from housing quality, consumer durables and accessible services, being calculated as scaled values between 0 and 1. While a value of near to 1 indicates that the child is from an affluent household, an index of close to 0 implies the child is a member of a poor family. Throughout the analysis, we use the index of Round 1 of Young Lives (when the Younger Cohort were around 1 year old and the Older Cohort around 8 years old), by dividing into quintiles and taking the top and bottom quintiles.
4. **Mother's level of education.** Maternal education is also believed to have important implications for children's educational achievements (through several paths, including reducing malnutrition by proper feeding, creating better opportunities as a result of better awareness in sending children to school, etc.). There are some studies conducted in Ethiopia that support this argument. Using the 2000 and 2005 Ethiopian Demographic and Health Surveys, Azeze and Huang (2014) examined the role of maternal education on child's development through several pathways such as maternal knowledge of health, maternal health-seeking behaviour, family planning, and reproductive behaviour. Their results indicate that maternal education works through all paths except health-seeking behaviour. To substantiate this further and how it might have been working with the Young Lives children over the last decade or so, we use maternal education as one of the most important grouping variables throughout the analysis. To do this, we divided the sample into two groups, those whose mothers had completed primary education or above, and those who only have incomplete primary education or below.
5. **Region.** Ethiopia is very large country with more than 90 million residents across 1.1 million square kilometres of land, with nine administrative regions and two administrative cities (of which the capital city, Addis Ababa, with more than 3.2 million residents, is one). Given such geographical landscape, comparisons are made on the differences in children's educational access, learning opportunities, and outcomes among the regions in reference to Addis Ababa, which is assumed to have better social infrastructure and facilities than the other Young Lives regions (Table A2 reports the percentage of rural and urban population of the regions and widely spoken language, including for 'non-Young Lives regions').
6. **Vulnerability.** As the disparity in education may be the result of the combination of two or more of the grouping variables, we tried to reduce some of the observable factors into a single factor and then investigate the inequality based on one factor. In this way, we formed two extreme groups of vulnerability, by combining three independent variables. First, we divided the parent of the children into four categories, by assigning 0 for a child who lost both parents due to death, 1 for a child whose mother is alive, but without father, 2 for a child whose father is alive, but without mother; and 3 if both parents are alive. Second, we classify maternal education into four parts, assigning 0 for mothers with no education at all; 1 for those with only incomplete primary education; 2 for those with complete primary or

incomplete secondary; and 3 for those who have completed secondary level or more. Third, we included the wealth index of the baseline survey dividing into quintiles. We then constructed an index using a factor analysis for each cohort. The indexes explain about 50 per cent of the common variance for the Younger Cohort and 58.82 per cent for the Older Cohort, with factor loadings higher than 0.5 and 0.6, respectively. Lastly, to make the comparison between the two extreme groups, we divided the index into quintiles and considered the bottom quintile as most vulnerable and the top quintile as least vulnerable.

Standard statistical tests have been used throughout in the comparison of group means, to establish whether or not results related to educational inequalities by the grouping variables are statistically significant. Table 5 reports the number of children in each group based on those grouping variables that are considered throughout the analysis.

Table 5. *Number of children in each cohort by the grouping variables*

	Younger Cohort	Older Cohort
Total	1874	908
Residence area		
Urban	648	436
Rural	1226	472
Gender		
Male	996	487
female	878	421
Wealth quintile (R1)		
Top quintile	463	226
Bottom quintile	463	227
Mother's education		
Complete primary or above	287	193
Incomplete primary or below	1587	715
Regional location[9]		
Addis Ababa sites	267	147
Amhara sites	367	176
Oromia sites	392	199
SNNP sites	463	198
Tigray sites	382	186
Extreme groups		
Least vulnerable	278	197
Most vulnerable	524	207

9 As of Round 4 of the survey, two children from the Younger Cohort were residing in Afar region, while another was in Benishangul Gumz-Region; two children of the Older Cohort moved to Afar region and Somalie region by the fourth survey.

4. Educational access, learning opportunities and outcomes of the Young Lives children in Ethiopia

Following those main grouping variables, we present below the educational access, learning opportunities and outcomes of the Young Lives children across four stages of development: early childhood, middle childhood, adolescence and early adulthood.

4.1. Early childhood: the preschool years

Enrolment rate almost doubles between Young Lives cohorts but thanks to private providers, distribution still strongly favours those in urban centres.

Ethiopia has made remarkable progress in extending the coverage of primary education recently. However, preschool education, which is important in its own right to promote the development and learning of children at an early age, had not been given the same attention by the government as other sub-sectors. It was rather left to private actors, non-governmental and faith-based organisations. However, in the last few years the government has started giving preschool education considerable attention and incorporated it into its fourth Education Sector Development Plan (ESDP IV) that ran from 2009/10 to 2014/15 (MoE 2013/14).

Table 6 shows preschool attendance for both cohorts. It appears that the overall preschool participation is very low. There is a large divide between the two cohorts, where the percentage of children ever attended preschool is 25 per cent for the Younger Cohort and 13 per cent for the Older Cohort. The higher participation of the Younger Cohort could be due to the recent government's Child-to-Child strategy which was expected to increase the number of children attending preschool education.

Table 6. *Average attendance of preschool education*

Ever attended preschool	Younger Cohort		Older Cohort	
	Number	%	Number	%
No	1,436	75.10	786	86.56
Yes	476	24.90	122	13.44
Total	1,912	100.00	908	100.00

However, the table hides considerable differences by the main grouping variables. Table 7 reports the percentage of children who attended preschool for both cohorts by each group, and highlights the large divide in access to preschool by many of the grouping variables. For example, 57.93 per cent of children from the Younger Cohort residing in urban areas attend preschool, while only 3.36 per cent of the children living in rural areas do so. Specifically, if we look at the degree of vulnerability, there is about 77 percentage point gap between the two extreme groups. Similarly, with more than 27 percentage point of difference between the

least vulnerable and most vulnerable groups, the differential access for the Older Cohort is also large across all the grouping variables except gender.[10]

Table 7. *Percentage of preschool attendance at age 5 by cohort*

Grouping variables	Younger Cohort (%)	Older Cohort (%)
Average	24.90	13.44
Residence area		
Urban	57.93	25.23
Rural	3.36	2.55
Gap (%)	54.57	22.68
Gender		
Boys	26.21	13.14
Girls	23.42	13.78
Gap (%)	2.29	-0.64
Wealth quintile (R1)		
Top quintile	57.01	32.74
Bottom quintile	1.87	1.32
Gap (%)	55.14	31.42
Mother's level of education		
Complete primary or above	24.90	22.28
Incomplete primary or below	15.41	11.05
Gap (%)	9.49	11.23
Regional variation in reference to Addis Ababa		
Addis Ababa	94.29	59.85
Amhara	10.44	0.55
Gap (%)	83.85	59.3
Oromia	14.03	5.76
Gap (%)	80.26	54.09
SNNP	22.76	14.90
Gap (%)	71.53	44.95
Tigray	2.34	0.00
Gap(%)	91.95	59.85
Extreme groups		
Least vulnerable	79.1	33.15
Most vulnerable	1.91	5.80
Gap (%)	77.09	27.35

Table 8 reports enrolment rates in preschool at age 5 by type of kindergarten, disaggregated by group. If we look at the grouping variables, there are clear differences in the enrolment by type of preschool. For example, in urban areas,[11] the percentages of children attending private, community and public preschools respectively account for 76 per cent, 11 per cent and 13 per cent. However, in rural areas it is the opposite, as 79 per cent of the children attended community owned preschools, with only 10 per cent in private and less than 10 per cent in public preschools. This implies that a huge disparity exists between urban and rural households in attending privately owned preschools. The other group of children showing a huge positive gap are those whose households ranked at the top of wealth index, having higher maternal education, and located in Addis Ababa. In particular, the gap by family

10 The gender differential effect on preschool enrolment is insignificant for both cohorts (with t=1.2784 and P=0.2013, for the Younger Cohort; and t=0.2795 and P=0.7799, for the Older Cohort).

11 Pearson's chi-squared test, $\chi 2$ =132.6581 and P=0.000.

wealth is large and significant,[12] where a majority of the children from households with higher levels of income attended private preschools, while those from lower income levels were predominantly in community preschools run by NGOs and religious institutions. This may suggest that private preschools are inaccessible for children of the poor. This is much clearer if we look at the two vulnerability-based extreme groups, where the gap in attending private schools is 63.64 percentage points in favour of the least vulnerable, while the opposite is the case in community schools, where the attendance of the most vulnerable group is higher by 45.45 percentage points. In terms of gender, there is a similar pattern of attendance across all types of pre-primary provision, where most of the children attended privately owned preschools, followed by community and public preschools. The gender differential effect on the type of preschool attended is statistically insignificant.[13]

Table 8. *Distribution of attendance rate (%) to pre-school type at age 5 (2006)*

Younger Cohort	Private	Community	Public	Other
Average Younger Cohort	70.8	16.39	12.6	0.21
Residence area				
Urban	76.03	10.96	13.01	0
Rural	10.53	78.95	7.89	2.63
Gap (%)	65.5	-67.99	5.12	-2.63
Gender	69.43	18.87	11.32	0.38
Male				
Female	72.51	13.27	14.22	0
Gap (%)	-3.08	5.6	-2.9	0.38
Wealth quintile (R1)				
Gap (%)	-3.08	5.6	-2.9	0.38
Top quintile	79.37	6.99	13.63	0
Bottom quintile	16.67	58.33	16.66	8.33
Gap (%)	62.7	-51.34	-3.03	-8.33
Mother's education				
Complete primary or above	79.74	7.49	12.78	0
Incomplete primary or below	62.65	24.5	12.45	0.4
Gap (%)	17.09	-17.01	0.33	-0.4
Regional gap in reference to Addis Ababa sites				
Addis Ababa sites	79.55	11.74	8.71	0
Amhara sites	37.5	7.5	55	0
Gap (%)	42.05	4.24	-46.29	0
Oromia sites	68.52	29.63	1.85	0
Gap (%)	11.03	-17.89	6.86	0
SNNP sites	68.81	24.77	5.51	0.92
Gap (%)	10.74	-13.03	3.2	-0.92
Tigray sites	0	11.11	88.89	0
Gap (%)	79.55	0.63	-80.18	0
Extreme groups				
Least vulnerable	83.64	4.55	11.81	0.00
Most vulnerable	20.00	50.00	20.00	10.00
Gap (%)	63.64	-45.45	-8.19	-10.0

12 Pearson's chi-squared test, $\chi 2$=126.8958 and P=0.000.

13 Pearson's chi-squared test, $\chi 2$ =4.2570 and P=0.372.

With respect to early test achievement, to avoid the difficulties of local language translation in the administration of the tests, it is important to report only the percentage of correct PPVT tests administered in one language. In this case Amharic is widely spoken across the regions and Young Lives sentinel sites. For instance, nearly half (45 per cent, n= 836) of the Younger Cohort used Amharic language during the PPVT test in Round 2 of the survey.

Table 9 presents the percentage of correct PPVT scores administered in Amharic. The average percentage of correct PPVT scores is as low as 11.65 per cent, but there are clear differences by many of the grouping variables. For example, children from urban areas scored a higher percentage of correct scores compared to their rural counterparts, 14.14 per cent and 7.80 per cent, respectively. The same is true for the children of the rich relative to those at the bottom of wealth quintile. Large gaps are also observed between children of educated mothers and less or uneducated mothers. Regional variations are also large. Least vulnerable children also scored twice as highly of those from the most vulnerable groups. Bu, the gap observed between boys and girls is statistically significant marginally at 5 per cent level of significance.[14]

The percentage of correct CDA scores regardless of language administration (as this is assumed to be less influenced by language translation issues) is presented in the second column. The disparities in the percentage of correct score by many of the grouping variables are similar to that of PPVT test except for gender, where the two-side mean comparison of t-test[15] shows no statistically significant difference between the mean scores of boys and girls.

Table 9. *Percentage of correct raw scores in PPVT[16] and CDA tests at age 5, Younger Cohort (2006)*

	% of PPVT (Amharic language)	% CDA (regardless of local language)
Average	11.65	54.93
Residence area		
Urban	14.14	63.22
Rural	7.80	49.40
Gap (%)	6.33	13.81
Gender		
Male	12.12	55.25
Female	11.12	54.58
Gap (%)	1.00	0.66
Wealth quintile (R1)		
Top quintile	15.42	67.38
Bottom quintile	7.58	48.79
Gap (%)	7.84	18.59
Mother's level of education		
Complete primary or above	15.81	68.26
Incomplete primary or below	10.0	52.46
Gap (%)	5.81	15.80

14 Two-sample t-test with equal variance shows t=2.0218 and p=0.0435).

15 Two-sample t-test with equal variance shows t=0.7202 and p=0.4712).

16 Throughout the analysis, all test scores are presented as a percentage of correct answers over total possible score.

	% of PPVT (Amharic language)	% CDA (regardless of local language)
Regional variation in reference to Addis Ababa		
Addis Ababa sites	15.96	70.72
Amhara sites	8.04	47.13
Gap (%)	7.92	23.59
Oromia sites	11.6	55.99
Gap (%)	4.36	14.73
SNNP sites	13.35	53.80
Gap (%)	2.61	16.92
Tigray Sites	-	51.53
Gap (%)		19.19
Extreme groups		
Least vulnerable	15.90	68.94
Most vulnerable	7.43	47.96
Gap (%)	8.47	20.98

Note: No Amharic version of the PPVT test in Tigray sites.

4.2. Middle childhood: primary school

Almost all children can now begin primary school – but paths begin to diverge on entry, with large differences in available resources and learning outcomes between grouping variables.

Primary school in Ethiopia has an official entry age of seven and duration of eight grades. However, children could be behind their expected grade even at primary level as a result of poverty and an associated lack of early learning opportunities. In this section, we present data related to overage at school to examine where exactly the children are in terms of learning opportunities (grades) and what accounts for the inequalities observed by group.

Table 10 presents the percentage of students overage at school for 8 and 12 year olds. The results show that there are large inequalities for both cohorts that are linked with residence area, family wealth, mother's level of education and regional location. The percentage of overage for the Younger Cohort especially showed a large increase over time, where it rose from 19.54 per cent at age 8 to 54.33 per cent at age 12. The large average increase in percentage of overage between the two rounds may be an indication of high grade repetition and possibly dropouts. But such overage is not limited to the Younger Cohort. At the age of 12 the average percentage of overage is even higher for the Older Cohort (64.35 per cent). It is also evident that children of the rich progressed better than children of poor families. The gaps from the wealth index and mothers´ education have important implications; while the average gap decreases, the gap between groups increases. In terms of regional location, the gaps between Addis Ababa and SNNPs are the highest for both cohorts at the ages of 12, with 47.33 and 27.87 percentage points of difference, respectively. However, the gap seems small between Addis Ababa and Tigray region. There are also small inequalities associated with gender, where the gaps are statistically insignificant.[17]

17 Two-sample t-test with equal variance shows t=0.8779 and p=0.3801).

Table 10. *Percentage of overage at ages 8 and 12 by cohort*

	Overage at age 8 (2009)-YC	Overage at age 12 2013)-YC	Overage at age 12 (2006)-OC
Average	19.54	54.33	64.35
Residence area			
Urban	14.95	39.09	49.75
Rural	20.58	65.24	74.27
Gap (%)	-5.63	-26.15	-24.52
Gender			
Male	17.69	54.62	64.67
Female	19.08	54.08	64.02
Gap (%)	-1.39	0.54	0.65
Wealth quintile (R1)			
Top quintile	15.18	32.08	43.75
Bottom quintile	21.34	83.25	81.31
Gap (%)	-6.16	-51.17	-37.56
Mother's level of education			
Complete primary or above	18.58	36.24	55.56
Incomplete primary or below	19.72	57.67	67.88
Gap (%)	-1.14	-21.43	-12.32
Regional variation in reference to Addis Ababa			
Addis Ababa sites	12.03	25.56	38.46
Amhara sites	19.42	54.83	60.42
Gap (%)	-7.39	-29.27	-21.96
Oromia sites	28.98	72.89	66.33
Gap (%)	-16.95	-47.33	-27.87
SNNP sites	20.55	83.74	80.74
Gap (%)	-8.52	-58.18	-42.28
Tigray sites	8.33	20.05	64.68
Gap (%)	3.70	5.51	-26.22
Extreme groups			
Least vulnerable	26.26	35.07	40.10
Most vulnerable	59.35	74.50	78.26
Gap (%)	-33.09	-39.43	-38.16

Similar to that of early childhood (see Table 8), it is also important to examine where the children attended school during middle childhood. Table 11 shows the attendance rate in private school at ages 8 and 12 for both cohorts. Only small percentages of the children attended private schools during middle childhood, indicating that participation in private schools is very limited in Ethiopia at primary level. Although more of the Younger Cohort were in private schools than the Older Cohort as of age 12, their percentage had declined from that at age 8. This could be due to the fact that the fees charged by private schools could be unaffordable for many Young Lives children as they progress through grades. There also are considerable gaps by residence area (urban or rural), wealth quintile, maternal education and region. What is more, more than 99 per cent (not reported here) of the most vulnerable group attended public schools. This may also imply that private schools are inaccessible for most vulnerable children, while more than one-fourth of the least vulnerable group from the Younger Cohort and about 15 per cent from the Older Cohort were in private schools.

Table 11. *Attendance rate (%) in private school at ages 8 and 12 by cohort*

	Attendance rate at age 8 (2009)-YC	Attendance rate at age 12 (2013)-YC	Attendance rate at age 12 (2006)-OC
Average	10.92	6.39	4.09
Residence area			
Urban	25.64	14.91	9.30
Rural	0.88	0.00	0.37
Gap (%)	24.76	14.91	8.93
Gender			
Male	10.71	6.85	4.06
Female	10.71	5.89	4.13
Gap (%)	0.00	0.96	-0.07
Wealth quintile (R1)			
Top quintile	39.37	25.41	15.26
Bottom quintile	1.00	0.83	0.00
Gap (%)	38.37	24.58	15.26
Mother's level of education			
Complete primary or above	41.02	23.78	9.96
Incomplete primary or below	5.41	3.03	1.78
Gap (%)	35.61	20.75	8.18
Regional variation in reference to Addis Ababa			
Addis Ababa sites	44.49	21.21	13.99
Amhara sites	0.53	0.30	0.00
Gap (%)	43.96	20.91	13.99
Oromia sites	0.52	1.84	1.09
Gap (%)	43.97	19.37	12.90
SNNP sites	16.14	9.89	6.52
Gap (%)	28.35	11.32	7.47
Tigray sites	1.04	1.15	0.52
Gap (%)	43.45	20.06	13.47
Extreme groups			
Least vulnerable	3.60	26.97	15.26
Most vulnerable	0.57	0.42	0.54
Gap (%)	3.03	26.55	14.72

All the above discussions are concerned with opportunities and access to education or progress through grades once at school. But to substantiate the results further, we need to look at test achievements during middle childhood as well.

Table 12 reports the percentage of correct scores in mathematics and reading for both cohorts at age 12. However, it is important to mention that as the tests for the two cohorts are not exactly the same, we cannot straightforwardly compare the average scores. For example, the numbers of items in mathematics administered was 28 for the Younger Cohort and 10 for the Older Cohort. The reported test scores are arithmetic means and converted into percentage of correct answers over total possible score. In both tests large gaps are observed by residence area, household wealth index, maternal education, degree of vulnerability and regional location for both cohorts. Although there seems a considerable difference in reading score from the Older Cohort in favour of girls, the gaps are small, especially for the Younger Cohort.

Table 12. *Percentage of correct scores in mathematics and reading tests at age 12 (2013)*

	Younger Cohort at age 12		Older Cohort at age 12	
	Mathematics	Reading	Mathematics	Reading
Average	37.17	76.14	54.42	75.31
Residence area				
Urban	48.58	87.13	63.42	84.26
Rural	28.05	68.38	48.04	69.16
Gap (%)	20.52	18.75	15.38	15.10
Gender				
male	37.09	75.76	55.76	73.63
female	37.32	76.57	53.05	77.05
Gap (%)	-0.23	-0.81	2.71	-3.42
Wealth quintile (R1)				
Top quintile	53.60	92.72	67.19	88.02
Bottom quintile	26.56	58.21	42.44	60.82
Gap (%)	27.04	34.51	24.75	27.20
Mother's level of education				
Complete primary or above	53.24	94.76	60.23	83.67
Incomplete primary or below	33.85	72.76	52.27	72.12
Gap (%)	19.39	22.00	7.97	11.55
Regional variation in reference to Addis Ababa				
Addis Ababa sites	56.57	95.13	69.93	88.11
Amhara sites	34.73	87.33	49.72	82.80
Gap (%)	21.84	7.80	20.21	5.31
Oromia sites	33.97	69.57	45.80	76.14
Gap (%)	22.60	25.56	24.13	11.97
SNNP sites	32.17	53.54	49.74	64.73
Gap (%)	24.41	41.59	20.19	23.38
Tigray sites	33.15	85.53	61.47	71.14
Gap (%)	23.42	9.60	8.46	16.97
Extreme groups				
Least vulnerable	54.16	94.76	68.34	86.97
Most vulnerable	25.25	62.65	43.39	63.68
Gap (%)	28.91	32.11	24.95	23.29

Notes: For the Younger Cohort, there are 28 and 24 items in mathematics and reading tests, respectively. For the Older Cohort, there are 10 items in mathematics tests.

Furthermore, what is important to deal with during this middle childhood period is the proportion of children who dropped out of school and the challenges they face as result of the differences in socio-economic status (grouping variables).

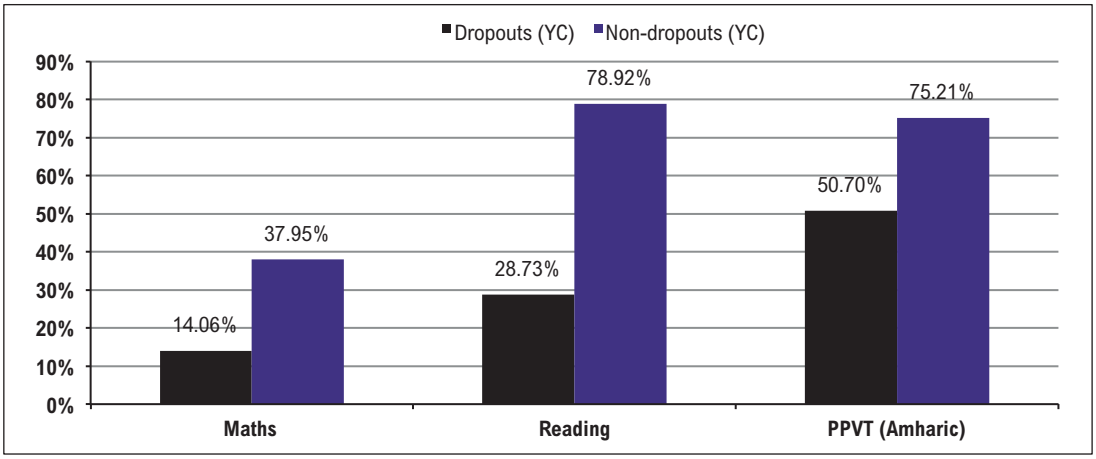
Table 13 reports the rates of dropout for both cohorts, and the results show huge gaps, where children from rural areas, from an economically disadvantaged family, with less educated mothers, living outside Addis Ababa, and members of most vulnerable groups face higher dropout rates in both cohorts. Here gender also seems to have importance, as boys experienced higher dropout rates in both cohorts. The reasons for gender-based dropout rate differences may be put down to the need for boys in many rural areas of Ethiopia to undertake farm activities and cattle herding compared to girls at this age (Frost and Rolleston 2013; Young Lives 2013)

Table 13. *Rate of dropout of school at age 12 (%) by cohort*

	Younger Cohort (at age 12)	Older Cohort (at age 12)
Average	4.78	2.62
Residence area		
Urban	1.56	2.03
Rural	7.07	3.05
Gap (%)	-5.54	-1.02
Gender		
male	6.22	3.31
female	3.18	1.92
Gap (%)	3.04	1.39
Wealth quintile (R1)		
Top quintile	0.27	1.04
Bottom quintile	6.96	3.78
Gap (%)	-6.69	-2.74
Mother's level of education		
Complete primary or above	0.00	2.82
Incomplete primary or below	5.66	2.60
Gap (%)	-5.66	0.22
Regional variation in reference to Addis Ababa		
Addis Ababa sites	1.12	0.00
Amhara sites	7.54	1.10
Gap (%)	-6.42	-1.10
Oromia sites	2.81	7.58
Gap (%)	-1.69	-7.58
SNNP sites	3.05	2.13
Gap (%)	-1.93	-2.13
Tigray sites	8.66	1.54
Gap (%)	-7.54	-1.54
Extreme groups		
Least vulnerable	0.00	0.00
Most vulnerable	9.06	6.72
Gap (%)	-9.06	-6.72

The test scores of dropouts and non-dropouts for the Younger Cohort are presented in Figure 5. As expected, there are huge gaps between percentages of correct scores in all three tests by dropouts. For instance, non-dropout children scored 23.89 percentage points higher than those who dropped out of school. The gaps in the reading and PPVT tests are even higher, to the extent of 50.19 and 24.51 percentage points difference.

Figure 5. *Percentage of correct scores in maths, reading and PPVT tests at age 12 (Younger Cohort) by dropouts*



In addition to the longitudinal data of the Young Lives study, it is also imperative to utilise school survey data to examine how the Young Lives children perform in comparison to their school pears.

Table 14 presents some schooling activities and outcomes for both Young Lives and non-Young Lives students from the 2012/13 school survey. It appears that many of the children started their education at the age of 7. This is in line with the official starting age of primary school. But the challenge is that the children walk on average more than 20 minutes to reach their primary school on time. The percentage repeating grade is also very high, 19.59 per cent and 24.50 per cent for Young Lives and non-Young Lives children, respectively. About 17.75 per cent of the total children had also dropped out of school at least once by the time of the school survey. This figure is a little higher than we found for the Younger Cohort at the age of 12 (see Table 13). What is worse is that about 7.98 per cent of the Young Lives children had never had their homework checked by their teachers. This may be an important indicator of the low education quality observed in many primary schools, perhaps serving as an indicator of teacher motivation. Child labour also seems to be more pervasive, where about 5 per cent of the surveyed children had to spend more than four hours working for pay on a usual school day, while many others participate in household chores and family responsibilities.

Table 14. *Schooling activities and outcomes for Young Lives and non-Young Lives children*

	Young Lives child	Non-Young Lives child	Total
Number of children	549 (4%)	13,175 (96%)	13,724 (100%)
Average age (years) during the survey	10.83	11.61	11.58
Average age of starting school	6.52	6.89	6.88
Average walking time to school (min)	19.07	22.182	22.05
Percentage of those who repeated a grade	19.59%	24.50%	24.29%
Percentage of those who previously dropped out of school at least once	10.84%	18.05%	17.75%
Percentage of students whose homework never checked or marked by teachers	7.98%	11.13%	11%
Percentage of those who spend more than four hours working for pay on a usual school day	2.43%	4.59%	4.50%

Source: Young Lives School Survey (2013)

In a self-proclaimed developmental state like Ethiopia, which is characterised by huge public investment over a range of social services, resource distributions among schools are also expected to be proportional. Table 15 presents some of the resources needed in schools, such as electricity, laboratory facilities, piped water, and sports fields. It appears that government schools in rural areas have fewer resources than their urban counterparts. The differences are especially large in terms of piped water, electricity, and laboratory facilities. Moreover, although there has been a common perception that resource availability in private primary schools is better than in government schools, the current data show little difference between private and urban government schools. Even private schools have fewer laboratories than rural and urban government schools.

Table 15. *Percentage of schools with the following characteristics (2013)*

	Private (%)	Government (urban) (%)	Government (rural) (%)
Electricity	100	91.16	61.99
Laboratory	23.52	85.14	54.98
Piped water	94.11	94.78	53.87
Sports fields	88.23	90.76	90.77

Source: Young Lives School Survey (2013)
Notes: Resources and facilities from community and quasi-public (partly financed by public) schools are not reported as the number of respondents was too few.

In addition to school facilities, it is also important to assess the basic characteristics of teachers working in the surveyed schools. As shown in Table 16, a majority of the teachers are non-degree holders, especially in rural public schools, where almost all the teachers only have post-secondary certificate and diploma (TTC 10+1, TTC 10+3 and TTC 12+2) levels. However, in spite of their educational level, many of them reported that they participated in improving their teaching skills and professional development, provided by the Ethiopian Ministry of Education. Missing classes is also found to be much higher in government schools, but somewhat lower in private schools.

Table 16. *Percentage of teachers with the following characteristics (2013)*

	Private	Government (urban)	Government (rural)
Attended university	14.29%	7.06%	1.09%
Years of experience	5.5	15.38	9.626
Participated in teaching skill upgrading*	52.38%	85.1%	95.00%
Completed a continuing professional development	57.14%	73.83%	91.67%
Received English language improvement programme	14.29%	30.47%	16.00%
Member of teacher union	19.05%	89.45%	92.75%
Missed school more than 5 days in this academic year	17.80%	40.89%	26.77%

Source: Young Lives School Survey (2013)
Notes: * skill upgrading here refers to whether the teachers changed their education status either from teaching certificate (TTC, 10+1) to diploma, from diploma (TTC, 10+3) to degree level, or from advanced diploma (12+2) to degree level.

4.3. Adolescence: from primary to secondary school

There are difficult transitions from abundant primary to few secondary schools, and slow progress towards further education among the Young Lives sample.

After completing Grade 8, children in Ethiopia are expected to join lower secondary schools (Grade 9). This should happen around the age of 15. However, this educational transition is not easy for many of the children for a number of reasons. Therefore, it is important to examine the rate of dropping out, and the percentage of overage for those who are still at primary school, while they were supposed to join lower secondary school by the age of 15.

Table 16 reports the proportion of children from the Older Cohort who dropped out, those who were overage but still at school, and the percentage of those who were enrolled in private schools at age 15. It appears that about 10 per cent of the children dropped out of school by the age of 15. This is similar to the figure reported from the school survey, but much higher than that seen during middle childhood. This might imply that a number of children are not able to progress through grades as expected. This is also confirmed by the high percentage of Young Lives children that are overage (65.39 per cent). This implies that only one-third of the children are able to move to lower secondary school at the proper age. The disparities in dropping out are also noticeable by grouping variables, except for gender and mothers' level of education. The gaps are particularly large by wealth, degree of vulnerability and regional location (being very high for Amhara region (12.04 per cent)). Unlike in middle childhood, the small gap by gender may imply that girls are also wanted to work at home, especially when some household members face health problems such as malaria and typhoid, which forces girls to drop out due to extended absenteeism (Young Lives 2013).

Table 16 also shows the enrolment rates in private schools for the Older Cohort at age 15. This average enrolment rate is also similar to that of the middle childhood, where considerable differences exist according to many of the grouping variables. For instance, none of the children from the bottom wealth quintile attended private school. It is also important to note that more than 90 per cent of the children were in public schools, while few were in community schools (schools run by NGOs and religious institutions). There are also noticeable differences by residence area, maternal education and regional location in this regard.

Table 16. *Percentage of dropout and overage at schools and attendance rate in private schools at age 15 (Older Cohort)*

	Dropout rate by age 15 (%)	Over age at age 15 (%)	Attendance in private school at age 15 (%)
Average	9.47	65.39	4.09
Residence area			
Urban	3.73	57.96	8.33
Rural	13.51	70.69	0.57
Gap (%)	-9.78	-12.73	7.76
Gender			
Male	10.87	63.21	3.66
Female	8.00	67.65	4.17
Gap (%)	2.87 *	-4.44 **]	-0.51
Wealth quintile (R1)			
Top quintile	2.65	53.68	15.26
Bottom quintile	14.29	73.06	0.00
Gap (%)	-11.64	-19.38	15.26
Mother's level of education			
Complete primary or above	8.00	57.60	9.96
Incomplete primary or below	10.18	68.05	1.78
Gap (%)	-2.18 ***	-10.45	8.18
Regional variation in reference to Addis Ababa			
Addis Ababa sites	3.42	47.26	12.41
Amhara sites	12.04	62.43	0.00
Gap (%)	-8.62	-15.17	12.41
Oromia sites	10.50	68.34	1.61
Gap (%)	-7.08	-21.08	10.80
SNNP sites	8.94	78.97	6.33
Gap (%)	-5.52	-31.71	6.08
Tigray sites	11.00	62.63	0.52
Gap (%)	-7.58	-15.37	11.89
Extreme groups			
Least vulnerable	2.12	50.53	14.44
Most vulnerable	15.05	72.55	0.54
Gap (%)	-12.93	-25.02	14.386

Notes: * T-test: t=-1.5356 and p=0.1274, implying that the gender gap is almost zero at the age of 15.
** T-test: t=-1.450 and p=0.1474, implying that the gender gap is almost zero at the age of 15.
*** T-test: t=-1.000 and p=0.3145, implying that mother's educational level is also statistically insignificant to explain the dropout gap at the age of 15.

Table 17 presents achievements in mathematics and reading. The disparities in results are in line with the scores achieved during middle childhood, where children residing in rural areas, those from the bottom of wealth index, whose mothers are less educated, those growing up outside Addis Ababa, and those classified as the most vulnerable group had a much lower percentage of correct scores in both tests. The implication here is that latter educational outcomes are more explained by disparities in earlier periods, where once gaps in educational accesses and opportunities are created in early and middle childhood periods, it becomes difficult to close these gaps later. Gender also shows a statistically significant differential effect in the mathematics test at 5 per cent level of significance in favour of boys,

but not in the reading (Cloze).[18] It also seems that the gaps in reading (Cloze) are higher than the gaps in mathematics by all the grouping variables, except for boys and girls.

Table 17. *Percentage of correct scores in mathematics and reading (Cloze) tests at age 15 (2009), Older Cohort*

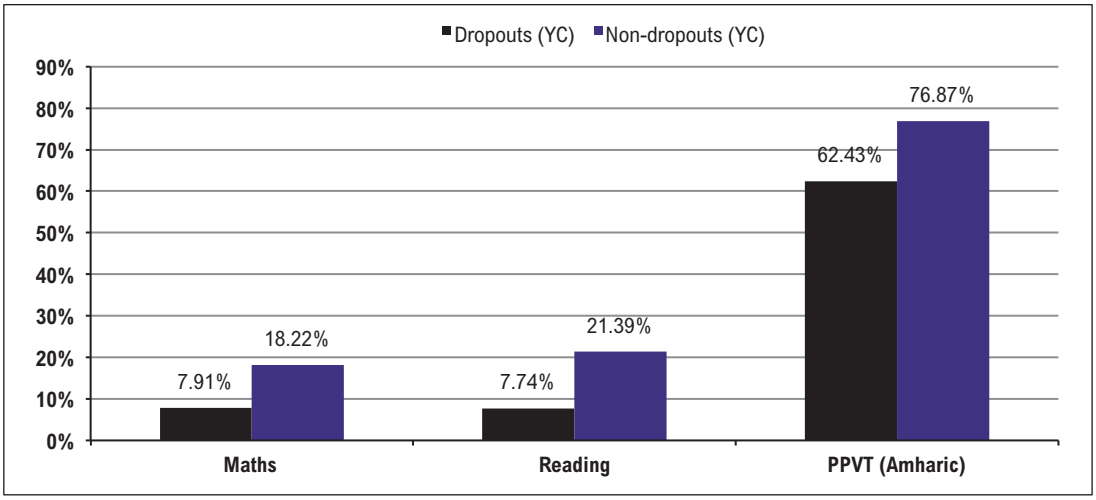
	Mathematics*	Cloze**
Average	17.26	20.14
Residence area		
Urban	23.17	29.65
Rural	13.09	12.91
Gap (%)	10.08	16.74
Gender		
Male	19.07	20.23
Female	15.36	20.05
Gap (%)	3.71***	0.18****
Wealth quintile (R1)		
Top quintile	26.21	33.03
Bottom quintile	11.31	11.34
Gap (%)	14.90	21.68
Mother's level of education		
Complete primary or above	20.59	23.27
Incomplete primary or below	16.14	18.63
Gap (%)	4.44*****	4.64******
Regional variation in reference to Addis Ababa		
Addis Ababa sites	23.38	35.82
Amhara sites	14.71	15.23
Gap (%)	8.67	20.59
Oromia sites	14.20	12.06
Gap (%)	9.18	23.76
SNNP sites	15.63	21.63
Gap (%)	7.75	14.18
Tigray sites	20.23	20.60
Gap (%)	3.15	15.21
Extreme groups		
Least vulnerable	26.11	33.33
Most vulnerable	12.73	11.94
Gap (%)	13.38	21.39

Notes: *The mathematics test contains 30 items, with 20 items on mathematics and computing and other 10 problem solving. **Cloze: 24 items for the Older Cohort .*** t-test: t=3.6319 and p=0.0003. **** t-test: t=0.0976 and p=0.9222. ***** t-test: t=-3.7921 and p=0.0002. ****** t-test: t=-3.2044 and p=0.0014

There is also a clear difference in the percentage of correct scores in the mathematics, reading and PPVT tests between children who dropped out and non-dropouts (Figure 6). The 10.31 percentage point gap between the dropouts and non-dropouts is statically significant (t=5.95 and p=0.00) in favour of non-dropouts. The same is true with the gap in reading and PPVT, where the non-dropouts scored 13.64 and 11.60 percentage points higher than those who did drop out of school.

18 Cloze refers to the 'reading closure' practice required when readers must fill blanks left in text, using whatever knowledge and experience they have. In a Cloze activity words or letters are omitted from text in ways that require the readers to use specific reading strategies, or to focus upon specific cues in the text.

Figure 6. *Percentage of correct scores in mathematics, reading and PPVT tests at age 15, Older Cohort by dropouts*



4.4. Early adulthood

The emergence of divergent pathways for males and females, with entrance to the labour market, completion of general education and parenthood all possible – but limited entrance to tertiary education.

Early childhood in Ethiopia is a time when young people are expected to complete their secondary education and are ready either to join an institution of higher learning or enter into the world of work. To examine where the Young Lives children were at age 19, we analysed data for the Older Cohort.

Table 18 reports the educational status of the Older Cohort. It appears that rate of dropout before reaching Grade 10 is very high, to the extent of 30 per cent. It is particularly high for children of rural and poor families (36.31 per cent and 37.85 per cent, respectively). Some also discontinue their education after Grade 10, where dropout rate is as high as 10 per cent, albeit the gaps are smaller across the forming groups variables. Overall, only 58 per cent of the children were able to continue education at age 19, while the remaining children either were unable to continue schooling or had never been in school for various reasons.[19]

19 See Table 19 for more disaggregated data at age 19.

Table 18. *Educational status and dropout rates at age 19 (Older Cohort)*

	Still in full-time education (%)	Dropped out before completing Grade 10 (%)	Dropped out at Grade 10 (%)	Dropped out after Grade 10 (%)
Average	57.87	29.37	8.03	4.73
Residence area				
Urban	63.99	21.79	8.26	5.96
Rural	52.23	36.31	7.86	3.61
Gap (%)	11.76	-14.52	0.40	2.35
Gender				
Male	54.62	32.44	8.42	4.52
Female	61.52	25.89	7.6	4.99
Gap (%)	-6.90	6.55	0.82	-0.47
Wealth quintile (R1)				
Top quintile	71.82	13.26	8.29	6.63
Bottom quintile	50.85	37.85	7.91	3.39
Gap (%)	20.97	-24.59	0.38	3.24
Mother's level of education				
Complete primary or above	63.87	23.95	7.14	5.04
Incomplete primary or below	55.78	31.61	8.36	4.26
Gap (%)	8.09	-7.66	-1.22	0.78
Regional variation in reference to Addis Ababa				
Addis Ababa sites	63.27	17.69	9.52	9.52
Amhara sites	59.66	25.57	9.09	5.68
Gap (%)	3.61	-7.88	0.43	3.84
Oromia sites	53.77	34.67	6.53	5.03
Gap (%)	9.50	-16.98	2.99	4.49
SNNP sites	68.34	25.13	5.03	1.51
Gap (%)	-5.07	-7.44	4.49	8.01
Tigray sites	44.62	41.4	10.75	3.23
Gap (%)	18.65	-23.71	-1.23	6.29
Extreme groups				
Least vulnerable	74.03	12.15	8.29	5.52
Most vulnerable	46.86	40.10	8.70	4.35
Gap (%)	27.17	-27.95	-0.41	1.17

In addition to dropout rates, looking at the combined work and schooling is also insightful to understand the nature of school-to-work transitions of the young people. Table 19 presents information on the proportion of young people who were not in employment, education or training (NEET), those who combined work and education, and those who were only working or studying. It appears that many of the children either combined work and education (38.55 per cent) or engaged only in work activities (38 per cent). Only one-fifth of the children were able to continue their education without working. The implication is that child labour is widespread in Ethiopia, and a significant number of the Young Lives children discontinue their education in order to work. The gaps for 'studying only' are large, favouring young people who come from the least vulnerable group, urban areas, top wealth quintile, with mothers with better education, and from Addis Ababa sites. But what is important to mention here is that, unlike in the case of early and middle childhood, it seems that there is statistically significant gender difference across all the categories of work and schooling activities.[20]

20 Pearson's chi-squared test, $\chi 2$ =31.8725 and P=0.000.

Table 19. *Percentage of work and education status at age 19 (Older Cohort)*

	Neither in employment, education or in training (NEET)	Working and studying	Studying only	Working only
Average	4.3	38.55	19.16	38
Residence area				
Urban	4.82	33.94	30.05	31.19
Rural	3.83	42.77	9.15	44.26
Gap (%)	0.99	-8.83	20.9	-13.07
Gender				
male	2.67	40.86	13.55	42.92
female	6.18	35.87	25.65	32.3
Gap (%)	-3.51	4.99	-12.1	10.62
Wealth quintile (r1)				
Top quintile	5.52	34.81	37.02	22.65
Bottom quintile	2.26	42.37	7.91	47.46
Gap (%)	3.26	-7.56	29.11	-24.81
Mother's level of education				
Complete primary or above	4.2	36.13	27.73	31.93
Incomplete primary or below	4.26	39.88	15.68	40.18
Gap (%)	-0.06	-3.75	12.05	-8.25
Regional variation in reference to Addis Ababa				
Addis Ababa Sites (a)	6.12	24.49	38.78	30.61
Amhara Sites	3.41	42.61	17.05	36.93
Gap (%)	2.71	-18.12	21.73	-6.32
Oromia Sites	6.03	42.71	10.55	40.7
Gap (%)	0.09	-18.22	28.23	-10.09
SNNP Sites	1.52	48.99	19.19	30.3
Gap (%)	4.6	-24.5	19.59	0.31
Tigray Sites	4.84	29.57	15.05	50.54
Gap (%)	1.28	-5.08	23.73	-19.93
Extreme groups				
Least vulnerable	4.42	35.36	38.67	21.55
Most vulnerable	4.35	38.16	8.21	49.28
Gap (%)	0.07	-2.8	30.46	-27.73

With respect to placement in institutions of higher learning such as TVET (level I and II); teacher training colleges (10+1, 10+3 and 12+2) and universities, it is apparent from Table 20 that only few percentage of the young people are able to join higher education institutions at the proper age, while the majority are either attending at secondary level or below with an overage of 45.37 per cent, or already dropped out of school (40.22 per cent).

But what is important from Table 20 is the percentage of placement for those who are able to join institutions of higher learning. It appears that many of those who managed to join institutions of higher learning are in TVET (ranging from junior TVET to level-II) and universities, with 6.72 per cent and 4.85 per cent, respectively, while about 1 per cent are placed in teacher training college, with about 0.77 per cent in TTC 10+1 (Teaching certificate programme) and 0.22 per cent in TTC 10+2 and TTC 12+2 (Teaching diploma programme) and other similar diploma programmes. What is also important is that higher education placement shows large inequality by group, in favour of urban children, the least vulnerable group, top wealth quintile, children of more-educated mothers, and Addis Ababa sites.

Table 20. *Percentage of educational placement by type of institution at age 19 (Older Cohort)*

	Not in education	Upper secondary or below	Teacher training college (10+1)	TVET (level I &II)	Teacher training college (10+3) & Diploma (12+2)	University	Others
Average	40.53	45.37	0.77	6.72	0.22	4.85	1.54
Residence area							
Urban	33.72	43.12	0.92	10.09	0.23	9.17	2.75
Rural	46.81	47.45	0.64	3.62	0.21	0.85	0.43
Gap (%)	-13.09	-4.33	0.28	6.47	0.02	8.32	2.32
Gender							
Male	43.33	44.15	0.82	6.16	0	4.93	0.62
Female	37.29	46.79	0.71	7.36	0.48	4.75	2.61
Gap (%)	6.04	-2.64	0.11	-1.2	-0.48	0.18	-1.99
Wealth quintile (r1)							
Top quintile	27.07	48.07	1.1	8.29	0.55	11.6	3.31
Bottom quintile	49.15	46.33	0	2.26	0.56	1.69	0
Gap (%)	-22.08	1.74	1.1	6.03	-0.01	9.91	3.31
Mother's level of education							
Complete primary or above	34.03	44.12	0.42	8.82	0.42	9.66	2.52
Incomplete primary or below	43.07	46.27	0.91	5.33	0.15	3.2	1.07
Gap (%)	-9.04	-2.15	-0.49	3.49	0.27	6.46	1.45
Regional variation in reference to Addis Ababa							
Addis Ababa Sites	31.29	34.01	0.68	14.97	0.68	13.61	4.76
Amhara Sites	36.36	53.98	0	5.68	0	3.41	0.57
Gap (%)	-5.07	-19.97	0.68	9.29	0.68	10.2	4.19
Oromia Sites	45.73	41.71	0	8.04	0.5	3.02	1.01
Gap (%)	-14.44	-7.7	0.68	6.93	0.18	10.59	3.75
SNNP Sites	31.82	59.6	0.51	4.04	0	3.54	0.51
Gap (%)	-0.53	-25.59	0.17	10.93	0.68	10.07	4.25
Tigray Sites	55.91	34.95	2.69	2.15	0	2.69	1.61
Gap (%)	-24.62	-0.94	-2.01	12.82	0.68	10.92	3.15
Extreme groups							
Least vulnerable	24.31	46.41	0.55	11.05	0.55	12.71	4.42
Most vulnerable	53.14	43.96	0	1.93	0	0.48	0.48
Gap (%)	-28.83	2.45	0.55	9.12	0.55	12.23	3.94

Notes: Only eight children of the Older Cohort have never been in school, implying that the dropout rate for the Older Cohort at the age of 19 surged to about 40.22 per cent from 9.47 per cent at the age of 15.

As discussed previously, Amharic as a working language of the Federal Government is taught as a language of nationwide communication. Taking this into account, the reading test was administered for the 19-year-old children in Amharic. The results show that 80.29 per cent of Young Lives children are able to read multiple sentences in Amharic. There are no noticeable differences between boys and girls, but considerable gaps are observed by residential area (urban or rural), baseline wealth, mother's education, degree of vulnerability and region. While only 60.59 per cent of Young Lives children from the bottom wealth quintile can correctly read multiple sentences, this is about 97.79 per cent for the children of the rich. Moreover, English is the medium of instruction for secondary and higher education, and for

better cultural and international relations, it is taught as a subject starting from Grade 1. Therefore a reading test was also conducted to measure the capacity of the Older Cohort at age 19. Reading outcomes in English are lower than those in Amharic. On average only 70 per cent of the Young Lives children can correctly read multiple sentences in English, compared to 80.29 per cent in the Amharic reading test. The gap by degree of vulnerability is also high, where the gap is above 38 per cent, in favour of the least vulnerable children.

Table 21. *Percentage of correct reading multiple sentences at age 19 (Amharic and English)*

	Amharic	English
Average	80.29	69.48
Residence area		
Urban	91.22	82.95
Rural	70.09	56.99
Gap (%)	21.13	25.96
Gender		
male	80.21	70.25
female	80.39	68.59
Gap (%)	-0.18	1.66
Wealth quintile (r1)		
Top quintile	97.79	93.33
Bottom quintile	60.59	53.41
Gap (%)	37.2	39.92
Mother's level of education		
Complete primary or above	86.46	79.06
Incomplete primary or below	77.88	66.06
Gap (%)	8.58	13
Regional variation in reference to Addis Ababa		
Addis Ababa Sites	95.24	88.36
Amhara Sites	91.48	65.71
Gap (%)	3.76	22.65
Oromia Sites	52.15	59.28
Gap (%)	43.09	29.08
SNNP Sites	76.65	67.68
Gap (%)	18.59	20.68
Tigray Sites	89.73	70.97
Gap (%)	5.51	17.39
Extreme groups		
Least vulnerable	96.11	92.22
Most vulnerable	66.5	53.4
Gap (%)	29.61	38.82

Lastly, it is worth looking at the fertility rate and being a parent for the Older Cohort and whether becoming a parent at early age has something to do with the grouping variables. Table 22 shows that about 5 per cent of children of the Older Cohort have become parents by the age of 19. There are variations associated with the grouping variables. For instance, young people from rural areas, lowest economic backgrounds, living outside Addis Ababa and SNNP sites and being most vulnerable have higher fertility rates. Particularly, being a young female is found to be statistically significant in giving a birth at early age (t=-5.098 and p=0.000). However, unexpectedly, level of maternal education does not show a statistical significant influence on the early fertility (as the t=0.5070 and p=0.6123).

Table 22. *Percentage being a parent at age 19 (n=43/908)*

	Percentage of those who become a parent with at least one birth by 19 years old
Average	4.74
Residence area	
Urban	3.67
Rural	5.74
Gap (%)	-2.07
Gender	
Male	1.44
Female	8.55
Gap (%)	-7.11
Wealth quintile (r1)	
Top quintile	0.55
Bottom quintile	2.26
Gap (%)	-1.71
Mother's level of education	
Complete primary or above	5.02
Incomplete primary or below	4.2
Gap (%)	0.82
Regional variation in reference to Addis Ababa	
Addis Ababa Sites	1.36
Amhara Sites	7.39
Gap (%)	-6.03
Oromia Sites	8.54
Gap (%)	-7.18
SNNP Sites	2.02
Gap (%)	-0.842
Tigray Sites	3.76
Gap (%)	-2.4
Extreme groups	
Least vulnerable	0.55
Most vulnerable	5.31
Gap (%)	-4.76

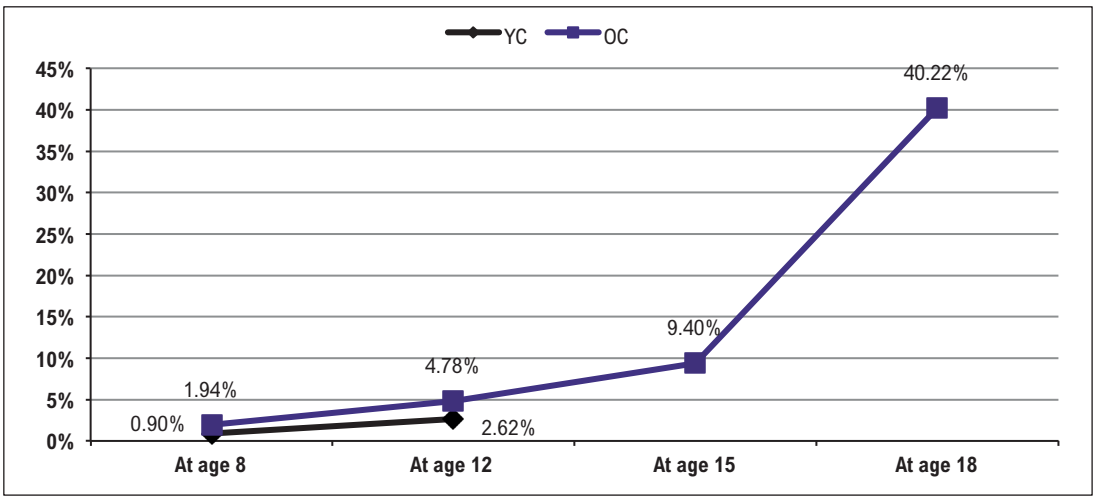
5. Educational outcomes: gaps over time

General improvements evident between Older and Younger Cohorts, but stark differences in educational opportunity and achievement remain between children from the most- and the least-privileged backgrounds.

Longitudinal data gathered from the Young Lives study helps us track changes in educational access, learning opportunities and challenges within a cohort and across cohorts. As seen in the previous sections, there are large gaps by the forming group variables. But, as well as looking at group variables, looking at inequalities by age and cohorts over time can help illustrate the overall challenges that the young people face along their educational pathways.

Figure 7 depicts the rate of dropout by age and cohort, and clearly shows the high level of difficulty experienced by children in the education sector. The dropout rate for the Older Cohort after primary schooling is particularly striking, where the rate rose by four times between the age of 15 and 19 (from 10 per cent at age 15 to slightly more than 40 per cent at age 19). This does not mean that the Younger Cohort are immune to early dropping out, rather they faced a higher rate of dropping out than the Older Cohort at the same age. For example, at the age of 12, the Younger Cohort experienced nearly twice the drop out rate of the Older Cohort.

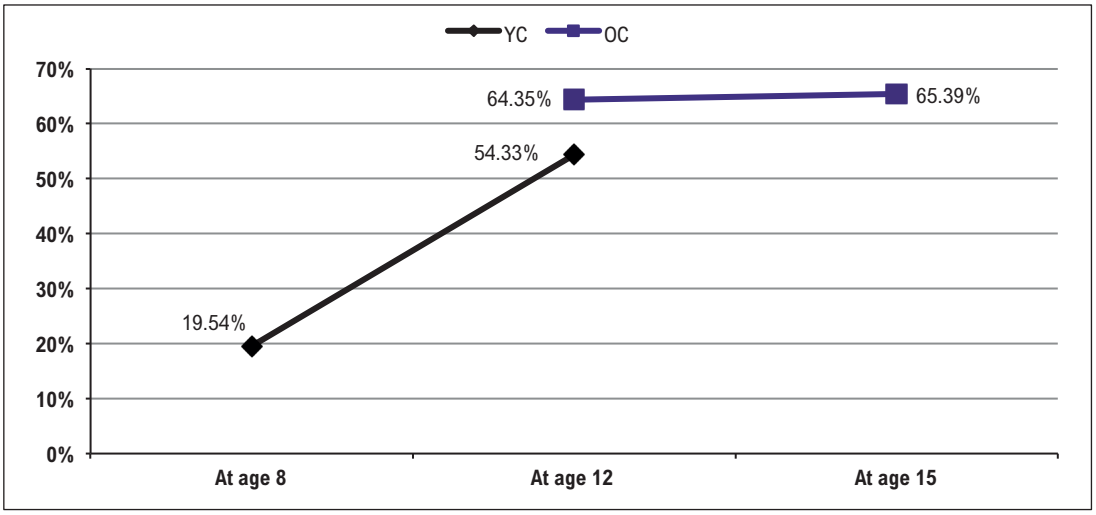
Figure 7. *Rates of dropout of school by age and cohorts*



It is not only the rate of dropping out that the children have encountered in their schooling, but also the percentage of overage is very high for both cohorts, as a result of delayed starts and inability to progress through grades smoothly.

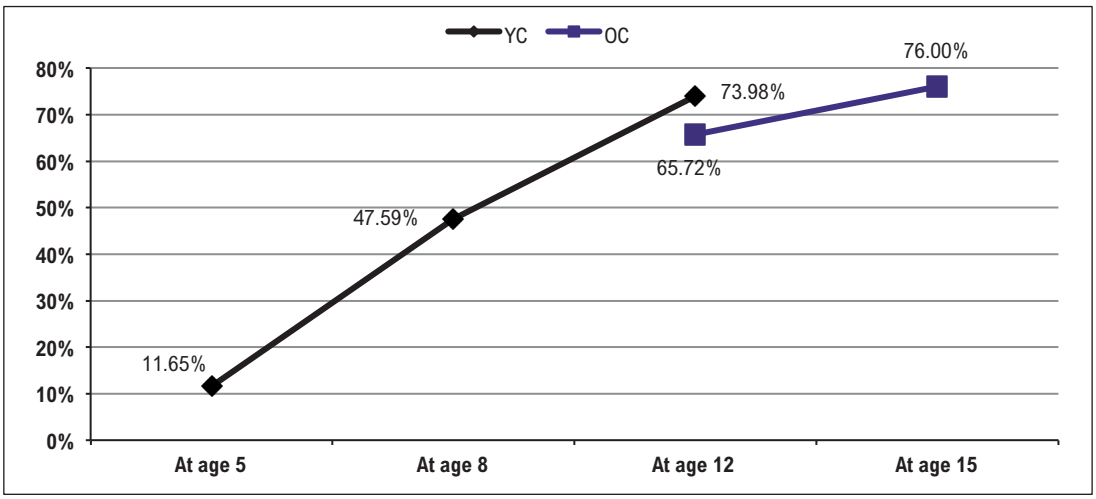
Figure 8 depicts the percentage of overage experienced by both cohorts over time. By age 12, by 10 percentage points of difference the Older Cohort children have experienced a higher level of overage at school, with a slight increase over the next three years. Although from a relatively low base (19.54 per cent), the overage experienced by the Younger Cohort children also saw a large increase from the age of 8 to that of 12. The implication of such a jump in the percentage of overage for both cohorts over time is that there is frequent grade repetition among the Young Lives children and they are not able to progress through grades as they are supposed to (one year per grade).

Figure 8. *Percentage of overage by age and cohort*



Looking at the percentage of correct scores also gives some understanding of the educational performance of both cohorts over time. Figure 9 reports the percentage of correct PPVT scores administered in Amharic. It appears that the percentages of correct scores have improved over the years for both cohorts. For example, the Younger Cohort scored on average 74 per cent of the total possible score at age 12, up from 12 per cent at age 5. For the same age, Younger Cohort children also scored a slightly higher percentage of correct PPPVT score than Older Cohort children (74 per cent versus 66 per cent). However, the Older Cohort's score saw an increase over the next three years and rose to 76 per cent by age 15 (see Figures A5-A8 for percentage of correct PPVT scores in other local languages).

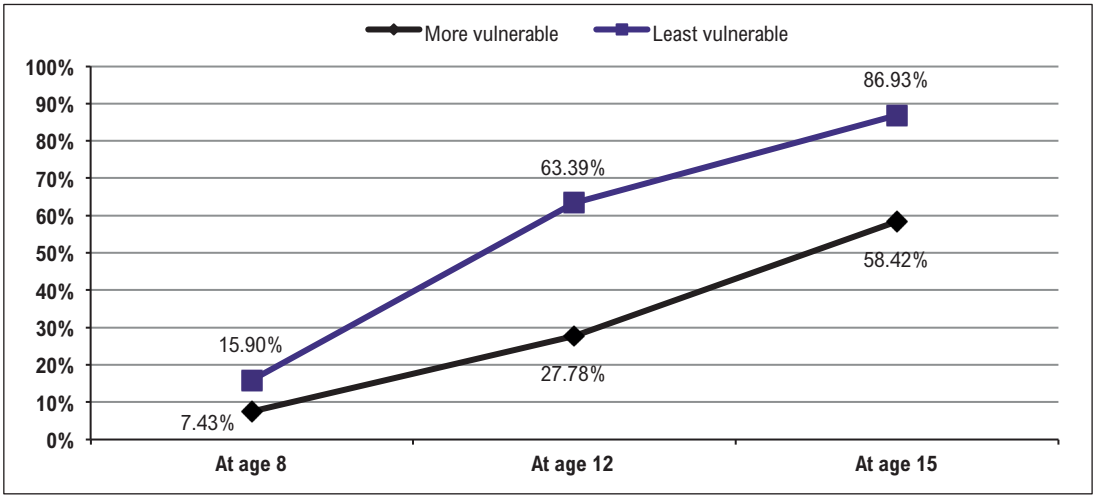
Figure 9. *Percentage of correct PPVT scores by age and cohort (Amharic language)*



The percentage of correct scores by the extreme groups is also an essential indicator in the analysis of educational inequalities. Figure 10 shows the percentage of correct PPVT scores for the least and more vulnerable children over time. It appears that there has been a large

and widening divide between the two extreme groups, particularly in the middle childhood period, with a 35.61 percentage point difference.

Figure 10. *Percentage of correct PPVT scores (Amharic language) by extreme groups over time, Younger Cohort*



In addition to the percentage of correct PPVT scores, we examined the percentage of correct mathematics (CDA) scores (Figure 11). However, the scores correctly answered by both cohorts in the case of maths tests do not show improvement over time. While the percentage of correct scores from the Younger Cohort exhibit a sort of v-shape, with the percentage of correct score as low as 30 per cent during middle childhood, the scores from the Older Cohort are very low over adolescence and early adulthood, declining from 60 per cent at age 12 to about 20 per cent at age 15.

Figure 11. *Percentage of correct mathematics (CDA) scores by age and cohort (Amharic language)*

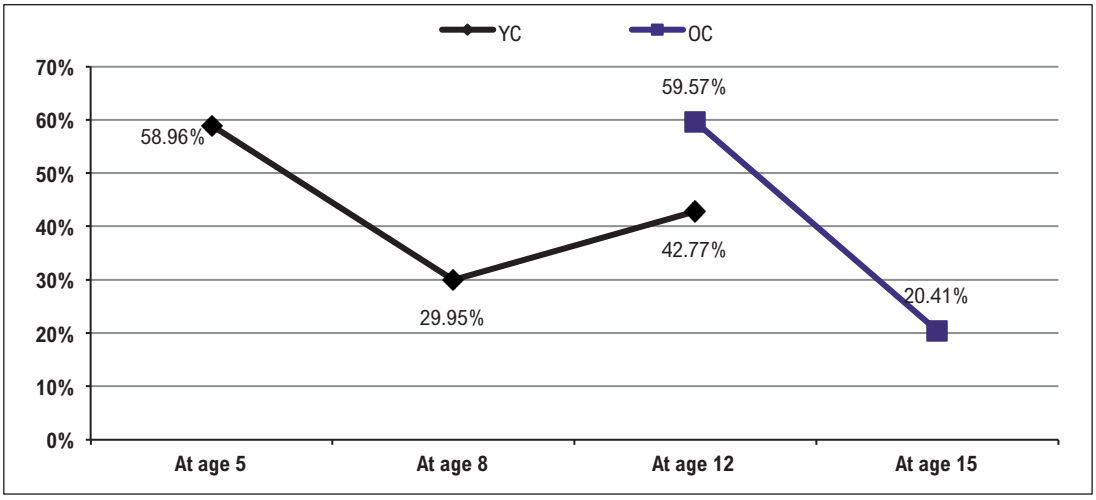
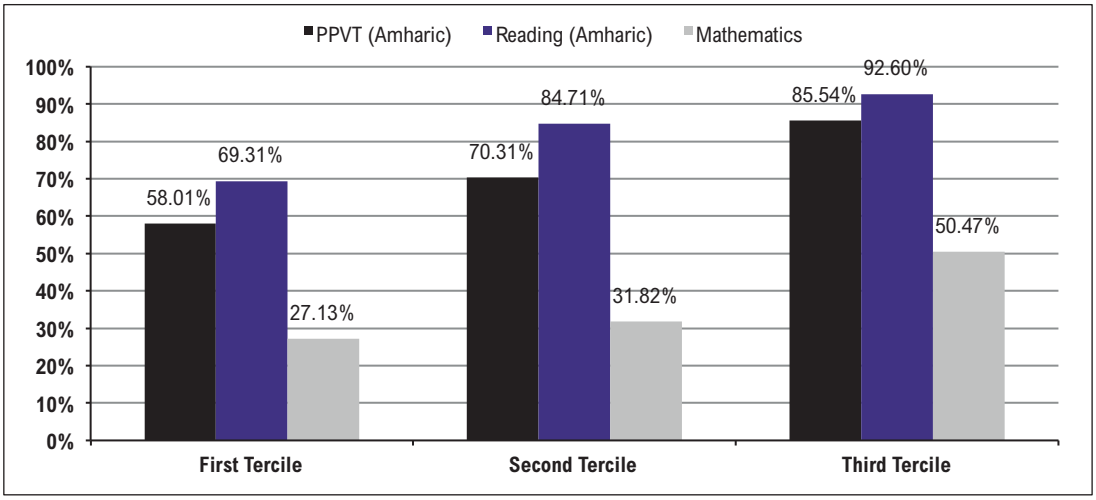


Figure 12. *Percentage of correct PPVT, reading and maths scores at age 12 by wealth tercile (all in Amharic), Younger Cohort*



6. Concluding remarks

Of particular research interest in the area of education is the issue of inequality among different groups of children. This paper aimed to analyse educational inequalities that may exist among different groups of children and young people in Ethiopia using Young Lives data collected over four rounds of surveys, for two cohorts of children born around 1994 and 2001. This longitudinal data allow researchers to track the trajectory of educational access, learning opportunities and outcomes over time and to make comparisons between the two cohorts at the same age.

The paper began with a detailed discussion of the Ethiopian education system and how the landscape of the sector has changed over the last two decades. It is worth recapping that the structure of the current education system is based on the 1994 Education and Training Policy (ETP), where students need to pass through a KG-8-2-2 format of grades before joining institutions of higher learning. Designed constitutionally, the education sector has been one of the most important pro-poor sectors over recent years, where the percentage of public education expenditure to total government spending rose in real terms from 17 per cent in 2002/3 to more than 21 per cent in 2012/13. In terms of GDP, the proportion also increased from 3.4 per cent in 2009/10 to around 4 per cent in 2012/13. As the result of this effort, school enrolment (Grades 1-12) has increased remarkably, to over 20 million learners in 2013/14 from less than 10 million in 2002/3.

Coupled with the public educational expenditure, the Government of Ethiopia has also made a number of policy changes in different areas of the sector. Examples of these are the introduction of an “O” class programme and non-formal preschool service called the Child–to–Child delivery system, aiming to address marginalised children who have little or no access to preschool education. Additionally, targeted at promoting better access, equity, efficiency and quality, some other reforms were also introduced in line with the latest two Education Sector Development Programmes (2005/6-2009/10 and 2010/11-2014/15). It is important to note the General Education Quality Improvement Program, designed to support quality improvements for all primary and secondary schools. Higher education, particularly

universities, is another area that has seen dramatic shift over recent years, where the number of public universities increased to 31 in 2013/14 from eight in 2008/9. Despite much doubt on the issue of quality, there has also been expansion of private universities and colleges, which were able to absorb approximately 15 per cent of the 627,453 students enrolled at university level (undergraduate and postgraduate programmes) in 2013/14.

However, in spite of the unprecedented enrolment numbers at all levels, the education sector still resembles a pyramid, with varying degrees of access for different groups; where nine out of ten children of the appropriate age are enrolled in primary cycle, two out of ten in secondary education, and only one out of ten at university. There could be several reasons for such a pyramidal shape of the sector in general and the disparity among various groups of individuals in particular. These factors may range from individual characteristics to household economic and educational status, and from residence area to regional location (this might be peculiar to Ethiopia as the result of unequal social infrastructure expansion historically).

Aiming to identify how those factors explain educational access, learning opportunities and achievement of children from different backgrounds, this paper made a thorough analysis on the disparity between children in five groupings: children in urban and rural households; children of the rich versus the poor; males versus females; children of least educated versus more educated mothers; and children of different regions compared to those who reside in Addis Ababa. Also, using factor analysis, two vulnerability-based extreme groups are formed by combining categorical variables of maternal education levels, household's baseline wealth index quintiles and whether the child is parentless or not. The two extreme groups are then classified as least vulnerable and more vulnerable children based on the top and bottom quintiles of the index derived from the factor analysis. Framing the methodology this way, we presented the educational access, learning opportunities and outcomes of the Younger and Older Cohort across four stages of development: early childhood, middle childhood, adolescence and early adulthood.

During early childhood, measured by the percentage of preschool attendance at age 5, even with an almost doubling in enrolment rates between cohort, educational access remains limited for the Younger Cohort, with around one in four children enrolled in a pre-school programme. This hides a huge divide by residence area (urban/rural), household wealth, mothers' level of education, degree of vulnerability and regional location. Only gender doesn't show a differential effect in this regard. Also, a majority (70.8 per cent) of those who had the chance of enrolling were in fee-charging private kindergartens, implying that preschools for the children of the poor are inaccessible. For achievement, we looked at the percentage of correct PPVT scores, which is a measure of receptive vocabulary test. The results show an average of 11.65 per cent of correct scores, with considerable differences by many of the grouping variables (except gender), in favour of urban children, children of the rich, children of educated mothers, children who reside in Addis Ababa; and those who are classified as least vulnerable.

The middle childhood period is also characterised by a considerable difference in educational access and outcomes of children. By looking at the percentage of overage learners at 8 and 12 years of age, attendance rate by primary school type, and percentage of correct answers in the mathematics and reading tests, we reveal strong associations between achievement and proxies for poverty. Around 54.33 per cent of the Younger Cohort and 64.35 per cent of the Older Cohort were behind the expected grade at age 12, with considerable disparities by the variables. Unlike in early childhood, the participation of private schools is low at this stage

of development, with only 6.39 per cent of the Younger Cohort and 4.09 per cent of the Older Cohort enrolled in private schools, with the rest primarily in public and a few in community primary schools. Test scores from mathematics and reading tests at age 12 were also analysed for both cohorts. The percentages of correct scores in reading tests (76.14 per cent and 75.31 per cent for the Younger and Older Cohort respectively) are higher than the scores from mathematics tests (37.17 per cent and 54.42 per cent). What else is evident at this stage of development is that beyond being overage at school, a significant number of children started to drop out of school. This was about 5 per cent for the Younger Cohort and 3 per cent for Older Cohort, which may signify that school failure starts too early in Ethiopia. All the educational access, learning opportunities and achievements are also very different across the variables, including by gender, particularly in the percentages of correct scores in mathematics and reading tests for the Older Cohort.

Similar to middle childhood, the proportion of overage and dropout rate were analysed for the Older Cohort during the adolescence period. The results indicate that the percentage of overage (65.39 per cent) and dropout rate (9.47 per cent) are much higher than those experienced in the middle childhood period, but retain a similar pattern of inequality among the grouping variables. The differences are particularly large by baseline wealth quintile, degree of vulnerability and regional location. The percentages of correct scores from the mathematics (17.26 per cent) and reading (Cloze, 20.14 per cent) tests are, however, much lower than the scores of the previous stage of development.

By the time of early childhood when the Older Cohort was expected to complete their secondary education and join an institution of higher learning, about 40.22 per cent were no longer in the education sector, while 45.37 per cent were still at secondary level or below with an overage percentage. The implication is that school progress is very slow, if not difficult in Ethiopia as a result of poverty and related issues. At the age of 19, only 14.1 per cent of the Older Cohort were able to join institutions of higher learning, with 0.77 per cent in teacher training college (TTC (10+1)), 6.72 per cent in technical and vocational education and training (TVET, level I and II); 0.22 per cent in teacher training college (TTC (10+31 and 2+2)) and other diploma programmes, 4.85 per cent at university level, and 1.54 per cent in other similar institutions. But, despite the small proportion progressing to institutions of higher learning, there are still substantial disparities by the forming groups, all in favour of children of urban areas, children of the rich, children of educated mothers, those living in Addis Ababa, and being least vulnerable in general. It is also worth mentioning that about 5 per cent of the Older Cohort were a parent (with at least one birth) at the age of 19, which could be one of the contributing factors for the slow educational progress and high dropout rates.

Overall, although the education system has expanded rapidly, affording access to millions of children who would not have had such an opportunity at the beginning of the Young Lives project in 2002, smooth progression and completion of general, further and higher education remain luxuries attainable by only the children of the rich, children of educated mothers, children of least vulnerable groups, children of urban households and in particular, those residing in Addis Ababa. Recent ‘remarkable’ progress in the sector came from a terribly low base and improvements should be lauded, but many gaps remain to be closed through equitable and inclusive educational policies. An important mechanism in this pursuit will be a revision of public education spending policies, to transfer funds from the higher- to lower-levels in the system; to the levels at which so many of the children from the lowest income quintile and with the least family support are still unable to move beyond.

6.1. Policy recommendations

- There seems a need for resource reallocation within the education sector to improve equity in the distribution of benefits from public education spending. Household wealth plays a strong role in influencing educational access, learning opportunities and outcomes throughout the analysis. This implies that in an effort to counteract the educational inequality resulting from an unequal income distribution, the government ought to be directing more public resources towards the lowest income quintile by allocating funds to lower educational levels, where many of the poor get stuck on their educational ladder.
- Creating awareness on the demand side of the education sector is also needed. As seen in the analysis, the fact that enrolment drops as one goes from primary level to secondary level is influenced by the opportunity cost of sending children to school when they could be doing some work and contributing to family income. This could be due to lack of understanding of the parents/families or communities on the future return of education, which requires due consideration at the grassroots level.
- It is often argued that teachers at primary level are found to be less motivated, perhaps until the point that they can't check students' homework throughout an academic year. Hence schools need to monitor teachers' activities. In particular, teachers' increased efforts in monitoring student attendance will reduce students' absenteeism and therefore dropout rates. Also, the professional development of teachers has to address teachers' pedagogical challenges and increase their knowledge on how to bring long-term improvement in learning outcomes.
- There is also a need for ensuring minimum school resources, including infrastructure (electricity, water, and sanitation) and other learning resources at every school, as these factors have positive impacts on student learning.

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Appendix

Figure A1. *Enrolment in pre-school by type of school*

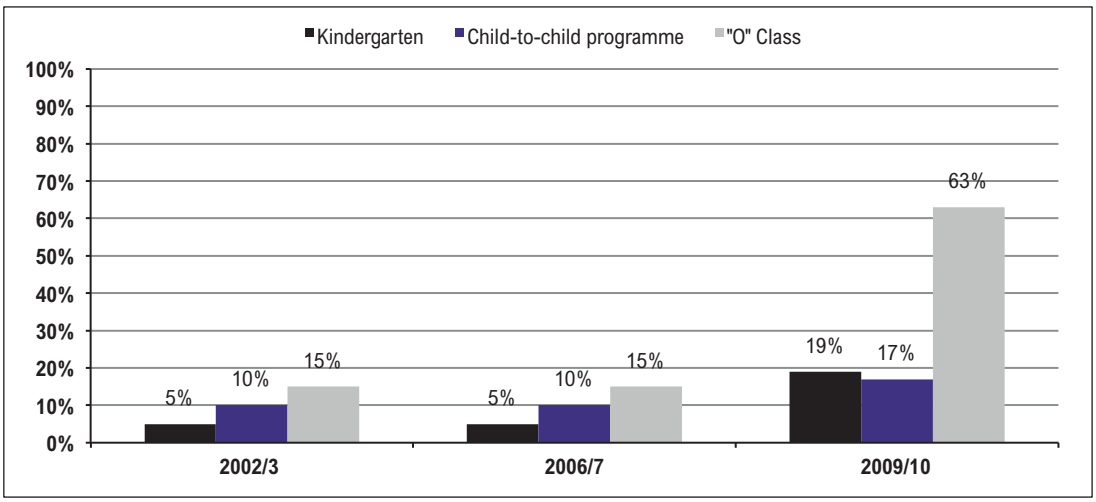
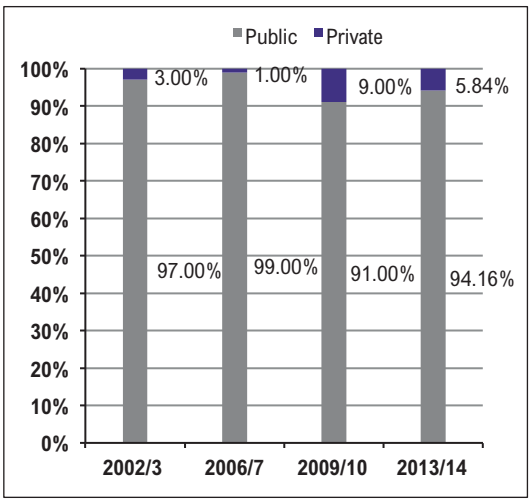


Figure A2. *Enrolment in secondary by type of school and residence area*



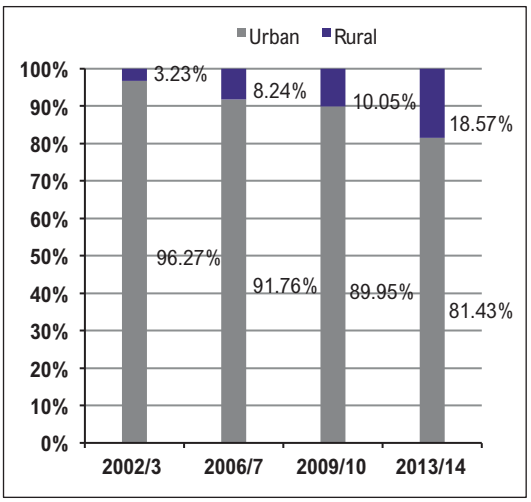


Table A1. *Literacy rates, by region, rural/urban, and survey years, all persons 10 and older*

Region	2000 (%)	2004 (%)	2011 (%)	Change 2000 to 2014 (%)
Tigray	29.6	42.5	53.5	80.7
Afar	18.6	37	34.2	83.9
Amhara	23.3	30.1	41.4	77.7
Oromiya	27.1	36.7	45.4	67.5
Somale	24.3	25.5	30.5	25.5
Benishangul Gumuz	31.8	37	47.3	48.7
SNNP	29.8	36.7	46.8	57.0
Gambela	46.3	–	59	27.4
Harari	55	60.6	59.8	8.7
Addis Ababa	79.3	82.3	86.7	9.3
Dire Dawa	55.1	60.4	63.8	15.8
Total	29.4	37.6	46.8	59.2

Source: CSA (2012), WMS (2002, 2004, 2011.)

Figure A3. *Trends in literacy in Ethiopia by gender*

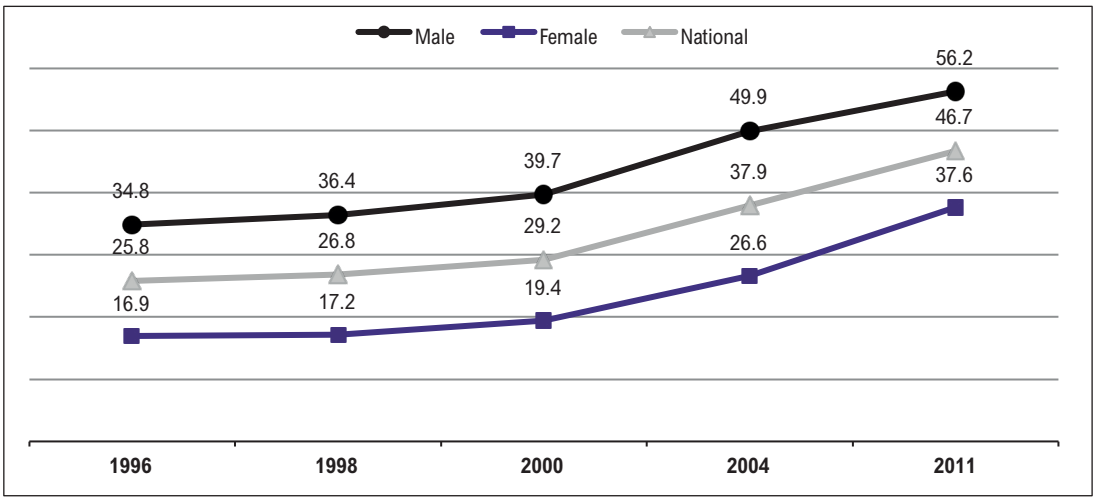


Figure A4. *Trends in literacy in Ethiopia by rural/urban residency*

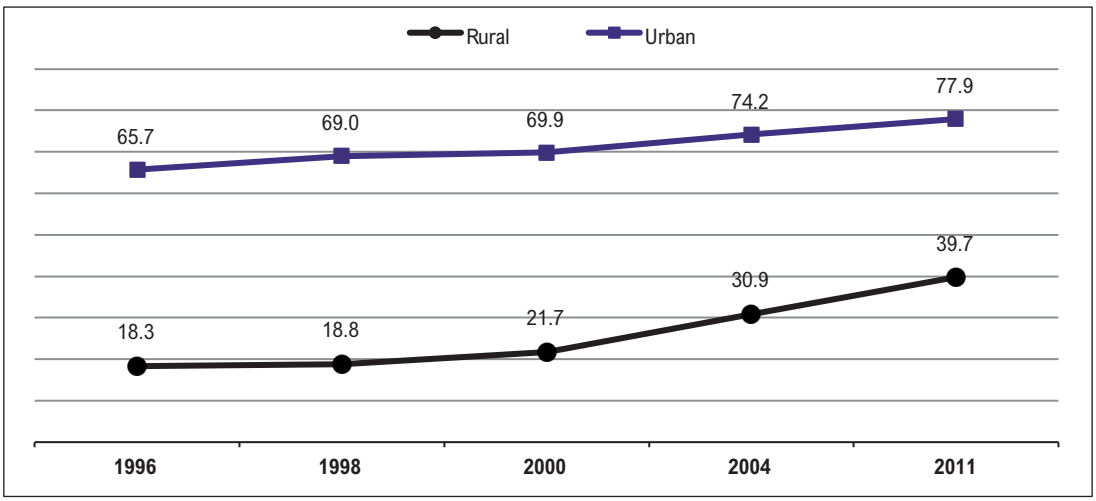


Table A2. *Projected urban and rural population size and main language by region (2015)*

Region	Total population (in thousands)	% Urban	% Rural	Main language
Tigray	5055	26%	75%	Tigrigna
Afar	1723	18%	82%	Afaregna
Amhara	20399	16%	84%	Amharic
Oromiya	33692	14%	86%	Oromifiya & Amharic
Somali	5452	14%	86%	Somale
Benishangul	1005	20%	80%	Amharic
SNNPR	18276	16%	84%	Sidamegna, Welayta & Amharic
Gambella	409	32%	68%	Gumuz
Harari	232	55%	45%	Harari & Amharic
Addis Ababa	3272	100%	0%	Amharic
Dire Dawa	440	63%	37%	Amharic
Country Level	88571	19%	81%	

Source: Computed from population projections for Ethiopia (2007-37), Ethiopian Central Statistical Agency (2013)

Figure A5. *Percentage of correct PPVT scores (Oromifia language) by age and cohort*

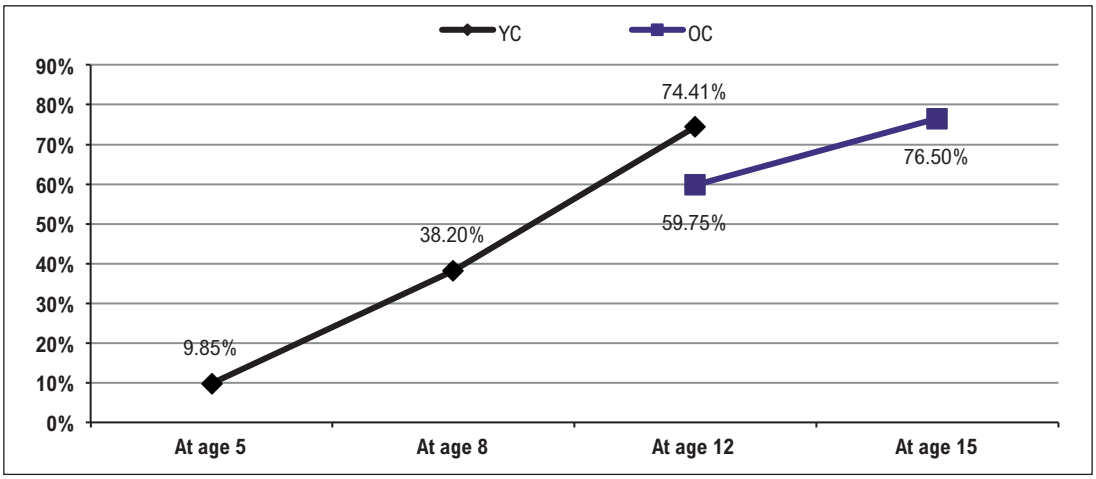


Figure A6. *Percentage of correct mathematics scores (Oromifia language) by age and cohort*

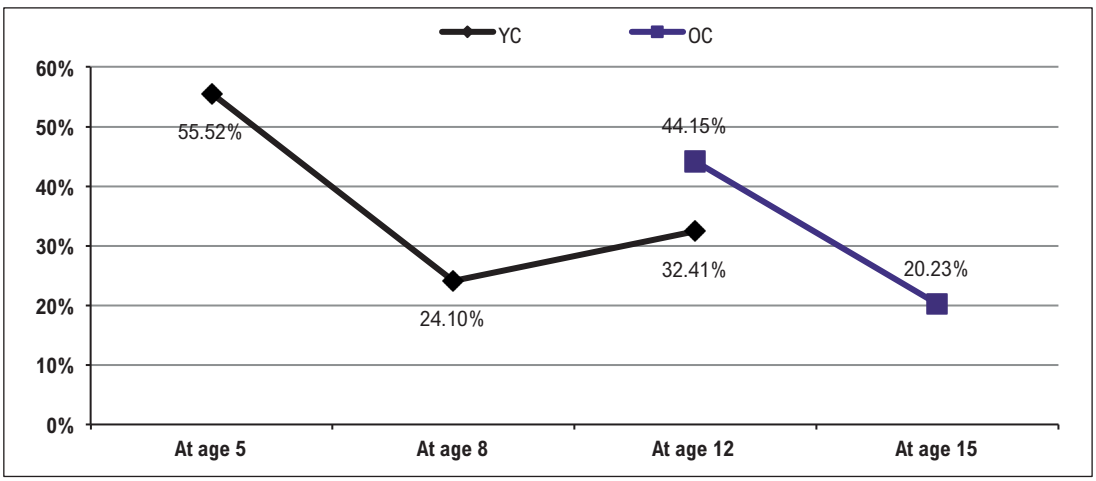


Figure A7. *Percentage of correct PPVT scores (Tigrigna language) by age and cohort*

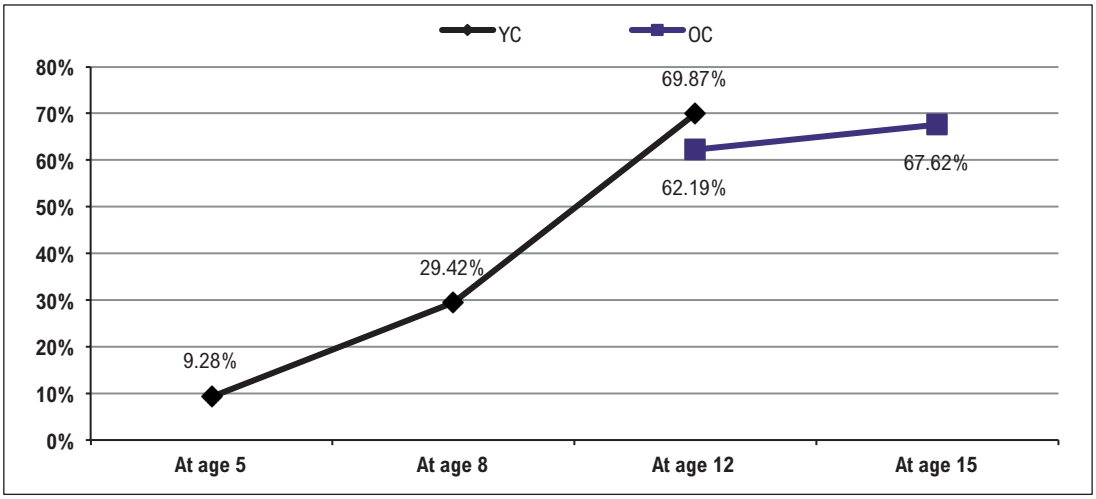
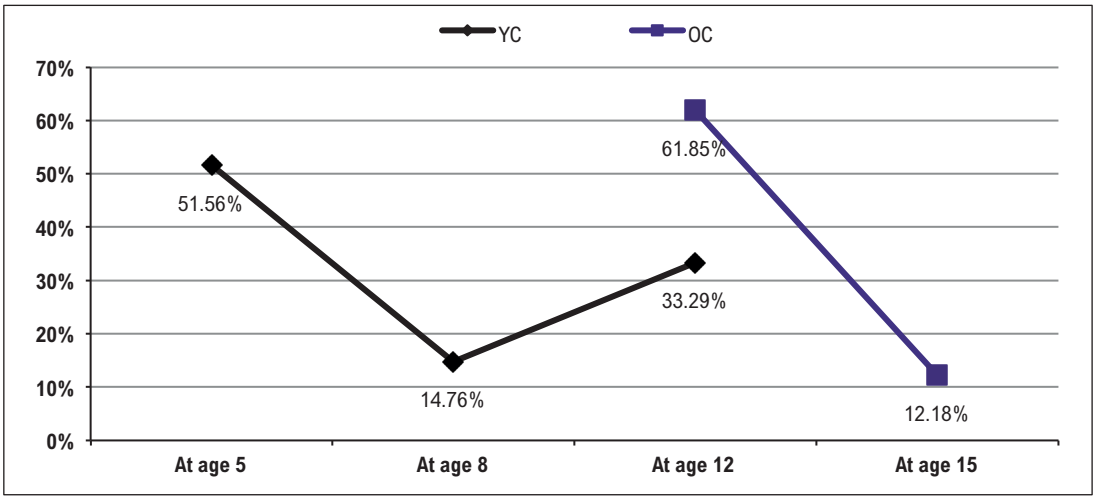


Figure A8. *Percentage of correct mathematics scores (Tigrigna language) by age and cohort*



Educational Inequalities Among Children and Young People in Ethiopia

The Ethiopian education sector has been one of the most important pro-poor sectors in the country over recent years, with public education spending accounting for 21 per cent of total government spending, and to 4 per cent of GDP, in 2012/13. As the result of this, school enrolment (Grades 1-12) doubled from about 10 million students in 2002/3 to over 20 million in 2013/14. Coupled with the public educational expenditure, the government has also made a number of policy changes in different areas of the sector.

Yet, in spite of the unprecedented enrolment at all levels, the education sector still shows varying degrees of access for different groups, with nine out of ten children of appropriate age enrolled in primary education, two out of ten in secondary education, and only one out of ten at university.

This working paper analyses the educational inequalities that may exist among different groups of children and young people in Ethiopia using Young Lives longitudinal data collected over four rounds of surveys, for two cohorts of children born in 2001-02 and in 1994-95.

The paper's findings are that overall, although the education system has expanded rapidly, affording access to millions of children who would not have had such an opportunity at the beginning of the Young Lives project in 2002, smooth progression and completion of general, further and higher education remain attainable by only the children of the rich, of educated mothers, of least vulnerable groups, of urban households, and in particular, those residing in Addis Ababa. Recent 'remarkable' progress in the sector came from a terribly low base and improvements should be lauded, but many gaps remain to be closed through equitable and inclusive educational policies. An important mechanism will be a revision of public education spending policies, to transfer funds from the higher- to lower-levels in the system; to the levels at which so many of the children from the lowest income quintile and with the least family support are still unable to move beyond.

Young Lives

An International Study of Childhood Poverty

About Young Lives

Young Lives is an international study of childhood poverty, involving 12,000 children in 4 countries over 15 years. It is led by a team in the Department of International Development at the University of Oxford in association with research and policy partners in the 4 study countries: Ethiopia, India, Peru and Vietnam.

Through researching different aspects of children's lives, we seek to improve policies and programmes for children.

Young Lives Partners

Young Lives is coordinated by a small team based at the University of Oxford, led by Professor Jo Boyden.

- *Ethiopian Development Research Institute, Ethiopia*
- *Pankhurst Development Research and Consulting plc, Ethiopia*
- *Centre for Economic and Social Studies, Hyderabad, India*
- *Save the Children India*
- *Sri Padmavathi Mahila Visvavidyalayam (Women's University), Andhra Pradesh, India*
- *Grupo de Análisis para el Desarollo (GRADE), Peru*
- *Instituto de Investigación Nutricional, Peru*
- *Centre for Analysis and Forecasting, Vietnamese Academy of Social Sciences, Vietnam*
- *General Statistics Office, Vietnam*
- *Oxford Department of International Development, University of Oxford, UK*

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