



## **Leaving no one behind in a growing Vietnam: The story from Young Lives**

**Nguyen Thang and Nguyen Thi Thu Hang**

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# Summary

The Young Lives Vietnam Country Report presents results from a fifteen-year longitudinal study, which followed two cohorts of children in various situations from remote rural and mountainous sites to urban sites, as a component of a larger multi-country project. The study relates conditions early in the lives of children to later outcomes, and so improves understanding of the effects of poverty on children's life trajectories. It also provides information on changes taking place in the lives of children, and offers evidence-based guidance for policies to improve children's chances of developing into integrated and productive members of society.

The report first outlines the Young Lives project and the global and national contexts in which the study took place. It presents key findings on the main areas of study: improvements in wealth and nutrition, but with stunting remaining a problem for ethnic minority children; progress in education with challenges still to meet; and long-term impacts of poverty. The report considers challenges relating to the revolution in technology, and concludes with implications of the findings for policy.

## Highlights

- Young Lives children from all population groups enjoyed improved wealth levels. The disadvantaged groups (ethnic minority households and households with poorly educated caregivers) made the most progress, resulting in a narrowing of the poverty gap between the advantaged and disadvantaged. Nevertheless, the gap remains substantial.
  - Compared to the Older Cohort (born seven years earlier), the Younger Cohort enjoyed significant improvement in their nutritional indicators at age eight, 12, and 15. Their stunting rates at these ages was more than ten percentage points lower than those of the Older Cohort at the same ages. In addition, post-infancy physical recovery was observed at all these ages.
  - The school enrolment rate among the Young Lives children has been high and the educational gap between the advantaged and disadvantaged groups was less than the nutritional and poverty gaps. However, as children progressed through to higher grades, more of the disadvantaged groups would drop out from school, with girls less likely to drop out of school than boys. Encouragingly, we found evidence of educational 'catch up' by fifth graders from the most disadvantaged groups in both maths and Vietnamese reading.
  - Parental physical status and education level as well as family socioeconomic level (represented by the wealth index) consistently played an important role in development of the child over the long term. Being from an ethnic minority was frequently associated with a caregiver's low level of education and low wealth index.
  - Technological progress and the rapid diffusion of the internet have profoundly altered the nature of the skills needed by children and young people. In addition to cognitive skills, other soft and transferable skills, including critical thinking and problem-solving, play an increasingly important role. Young Lives' evidence shows that many children in Vietnam are not well equipped with the skills required for the 21st century (critical thinking, problem solving, and English). On the other hand, early childhood development is an important factor in shaping both cognitive and psychosocial skills for children in early adulthood. The implication of this is for stronger attention to be paid to early childhood development to set strong equitable foundations and help children better prepare for the future.
  - There is a huge gap in terms of access to computers and the internet between ethnic majority and the ethnic minorities groups. This "digital divide" creates new type of inequality and need to be addressed in order not to leave anyone behind in a digital age.
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# Acknowledgements

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In particular, we wish to thank the Young Lives children and their families for generously giving us their time and cooperation. They willingly share with us a great deal of detailed personal information about their family lives, and we have a responsibility to protect their confidentiality and ensure that their identities remain protected. For this reason, the names of the children and their communities have been replaced with pseudonyms throughout.

Young Lives is a collaborative partnership between research institutes, universities and NGOs in the four study countries and the University of Oxford. Young Lives Vietnam is based at the Centre for Analysis and Forecasting (CAF) at the Vietnam Academy of Social Sciences in collaboration with the General Statistics Office of Vietnam (GSO) and the University of Oxford. The views expressed are those of the authors. They are not necessarily those of, or endorsed by, Young Lives, the University of Oxford, DFID or other funders.

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## **Photo credits:**

The images throughout our publications are of children living in circumstances and communities similar to the children within our study sample. © Young Lives / Pham Viet Anh; Nguyen Quang Thai; Trinh Van Dang; James Duong.

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# Introduction

Young Lives is a unique longitudinal study of child poverty. The study tracks 12,000 children from Ethiopia, India, Peru, and Vietnam over 15 years, starting in 2002. These children are followed across two cohorts: an Older Cohort of 1,000 children born in 1994-5 and a Younger Cohort of 2,000 children born in 2001-2.<sup>1</sup> Young Lives has completed five rounds of surveys, with the last one conducted in 2016. The 15-year period of the Young Lives project provides a picture of growing up in child poverty as well as its long-term consequences.

Vietnam has successfully reduced poverty. The numbers of those facing 'basic need' poverty were reduced from 58 per cent in the early 1990s to fewer than ten per cent in 2010.<sup>2</sup> 'Extreme poverty' (defined as having under US \$1.9 per person per day, in 2011 purchasing power parity) was brought down to less than two per cent.<sup>3</sup> However, the current reduced level of poverty ironically impedes further poverty reduction. The remaining poor now mostly consists of ethnic minorities from isolated mountainous areas.<sup>4</sup> Poverty reduction policies are less likely to deliver meaningful effect on these minorities due to constraints such as less fertile land, lower educational level and underdeveloped infrastructure.<sup>5</sup> Policymakers are primarily concerned with the generational inheritance of poverty and possible solutions to end this vicious cycle.

Recent years have witnessed radical technological advances. For example, the internet, so-called 'big data', automation, cloud storage, social networking and artificial intelligence are growing exponentially.<sup>6</sup> The internet and social networks help spread knowledge and information effectively and efficiently, reaching wide audiences at minimal cost. In 2003, only three million Vietnamese used the internet, but ten years later 31.2 million Vietnamese had access to the service.<sup>7</sup> A 2015 survey on the lifestyle of Vietnamese metropolitan youth in Hanoi and Ho Chi Minh city revealed that 85 per cent of those surveyed owned a smartphone and spent on average 4.7 hours a day using the Internet.<sup>8</sup> Among the 2,800 Young Lives children surveyed in 2016, only one knew nothing about the internet, and more than 93 per cent of the Older Cohort had mobile phones with internet access.

This accelerated technological progress has influenced the lives of the Young Lives children, and will continue to do so into the future when they enter the labour market. In 2016, when the final Young Lives survey took place, the Older Cohort were 22 years old and more than 80 per cent of them were already working. It is therefore possible for Young Lives to make preliminary assessments of our young people's preparedness for the future.

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1 Also referred to as 'millennium children'

2 World Bank (2012)

3 World Bank (2017b)

4 Committee on Ethnic Minority Affairs (2015)

5 World Bank (2012)

6 <http://www.fr.sogeti.com/globalassets/global/downloads/reports/vint-research-3-the-fourth-industrial-revolution>

7 <https://www.vnnic.vn/sites/default/files/taillieu/BaoCaoTaiNguyenInternet2012.pdf>

8 Asia Plus Inc. Press release: Vietnam Youth Lifestyle Report <http://www.asia-plus.net/pr/Vietnam-youth-survey.pdf>

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The purpose of this synthesis report is to review changes in the lives of the children of the two cohorts over the period of 15 years and based on the data from the Young Lives study to understand how well Vietnamese children are prepared for the technology-intensive future. The report is structured in six sections. The first section describes emerging global and national trends shaping our world; the second provides a description of Young Lives; the third section outlines changes between the two cohorts of the same age over the study period; the fourth section focuses on the intergenerational transmission of human capital characteristics; the fifth section discusses the skills of young Vietnamese people; the final concludes.

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# 1. Context

## 1.1. Global context

Globalisation and technological progress marked the period of the Young Lives study. The former has been responsible for the Vietnamese economy's development over the past 15 years, while the latter is the current trend that will continue to play a crucial role in the near future. In the coming years, we expect these two global mega-trends to shape the development of Vietnam, with intensification of globalisation, characterised by new generations of Free Trade Agreements (FTAs), and an acceleration of technological progress.

Vietnam embarked upon an economic reform Doi Moi in 1986 which set the foundation for the country's integration into the international economy. Vietnam has signed a number of Free Trade Agreements and, despite their varied impact, a 2009 study showed that up to that point Vietnam's economic integration had had a positive impact on its economic growth and development.<sup>9</sup>

Recent years have witnessed breakthrough developments in information and communications technology, nanotechnology, the internet of things, robotics, artificial intelligence, 3D-printing and solar energy. These developments are commonly referred to as the fourth industrial revolution. Unlike the previous industrial revolutions, where innovations took decades to be widely adopted, this fourth one has seen exponential uptake. This implies that impacts from this revolution will soon start to take effect.

These impacts can generally be viewed as positive, although each country may experience them to a different extent. Impacts on Vietnam will be delivered through two main channels: a drastic reduction in the cost of energy and robotic replacement of labour-intensive workers in export industries. The former channel will mainly affect the oil and electricity industries. While oil is tradable and closely linked to global market prices, which have been kept low over the past few years and are likely to remain so in the near future, electricity in general is not tradable, or only tradable to a very limited extent owing to its logistical constraints, and electricity businesses are currently concerned with how to take advantage of developments in renewable energy technology.

The bigger challenge for Vietnam arises from the second channel. Unemployment is expected to rise as robots start to replace human workers in manufacturing. The sectors most likely to be affected include the garment, footwear and electronics sectors. According to the International Labour Organization<sup>10</sup> about 86 per cent of Vietnamese workers in the garment industry are likely to lose their jobs as a result of the fourth industrial revolution. About 17 per cent of Vietnamese garment workers have only completed primary school, making it extremely difficult for them to find a different job. A similar scenario can be observed in the footwear and electronics sectors.

All of this calls for better prepared students in order to survive and thrive in the digital-age labour market.

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9 IBM Belgium, DMI, Ticon and TAC (2009)

10 ILO (2016a)

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## 1.2. National context

The 1986 comprehensive reform programme known as Doi Moi shifted Vietnam from having a planned economy to a market-oriented economy, completely transforming the country. Along with economic development, Vietnam has also been implementing several poverty reduction programmes such as Programme 135.<sup>11</sup> These efforts have paid off and according to the General Statistics Office of Vietnam, the poverty rate in 2016 was about six per cent.<sup>12</sup>

There have been a number of important poverty reduction policies exclusively targeting children over the period of the Young Lives study, such as the policy granting free health care for all children under six years old. A 2013 study found that this policy resulted in more hospital visits from children and a reduction in health expenses.<sup>13</sup> The 2004 Law on Child Care and Protection was revised in 2016 with more about child protection and children's participation in development of policies for adolescents. The National Strategy for Development of Education for the 2001-10 period aimed at universalization of lower secondary education across the country by 2010. Prime Ministerial decision No. 239/2010 approved a national strategy on universalization of pre-school education for children five-years-old and below, aiming to provide pre-primary education for 95 per cent of five-year-old children by 2015. This objective was achieved by the school year 2016-7 with 98.8 per cent of five-year-old children enrolled. However, challenges remain, for example with shortages of teachers and poor physical infrastructure in the Mekong Delta and South-Eastern regions.<sup>14</sup>

Different poverty lines used by the Vietnamese authorities all indicate that poverty in Vietnam has steadily decreased over the past two decades. The increase of General Statistics Office/World Bank (GSO/WB) and Ministry of Labour – Invalids and Social Affairs (MOLISA) poverty lines<sup>15</sup> reflects an improvement in living standards and meeting 'basic needs'. In 1993, more than half of the Vietnamese population lived on under US \$1.9 a day in 2011 PPP. Today, such extreme poverty has almost been eliminated. It is noteworthy that Vietnam achieved high growth without significantly widening inequalities.<sup>16</sup>

However, poverty among ethnic minorities remains high. The 2014 GSO/WB poverty line indicates that the poverty rate fell to 6.3 per cent among Kinh and Hoa ethnic groups, but that poverty persists at 57.8 per cent on average among ethnic minorities and at 93 per cent among the H'Mong. Social and language barriers, geographic isolation and low mobility, limited access to good land, low levels of education, and poor health and nutrition are the main reasons why ethnic minorities fall behind.<sup>17</sup>

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11 135 is a national poverty reduction programme targeting ethnic minority and vulnerable communes in Vietnam. The programme was completed in two phases: the first phase (1998-2005) focused on development of infrastructure of the targeted communes; the second phase (2006-10) extended it to agricultural production, capacity building and improving livelihoods (Ha, 2009). The current third phase (2012-20) continues investment in infrastructural improvement and development of production.

12 GSO (2016)

13 Nguyen *et al.* (2013)

14 <http://vietnamnet.vn/vn/giao-duc/nguoi-thay/63-tinh-thanh-da-pho-cap-giao-duc-mam-non-cho-tre-5-tuoi-377949.html>

15 There are different poverty lines used in Vietnam. The most popular are the GSO/WB and MOLISA poverty lines. Both are constructed using a Cost-of-Basic-Needs methodology. The former based on a reference food basket measured in caloric norms plus an additional allocation for non-food consumption by the poor. The GSO/WB line has been roughly constant in real purchasing power since the late 1990s. The later sets official lines for urban and rural areas in terms of income and not adjusted to inflation annually. They are only revised every five years (Demombynes and Vu, 2015).

16 World Bank and Ministry of Planning and Investment (2016)

17 World Bank and Ministry of Planning and Investment (2016)

There is concern over the so-called vicious cycle of poverty where children who grow up in poor households are frequently exposed to stunting and leave school early, which in turn undermines their later development outcomes, yet so far there is little empirical evidence for this. The unique dataset from Young Lives might help explore this relationship. On the other hand, policymakers seek to maximise benefits while minimising negative impacts from the exponential advances of the technological revolution. They are therefore primarily concerned with preparing the younger generation for a technology-intensive future and how to ensure that all attain the right skills. Further analysis in this report will consider, among other things, two important issues of concern to policymakers: the long-term transmission of human capital and the skills of young people entering the labour market.

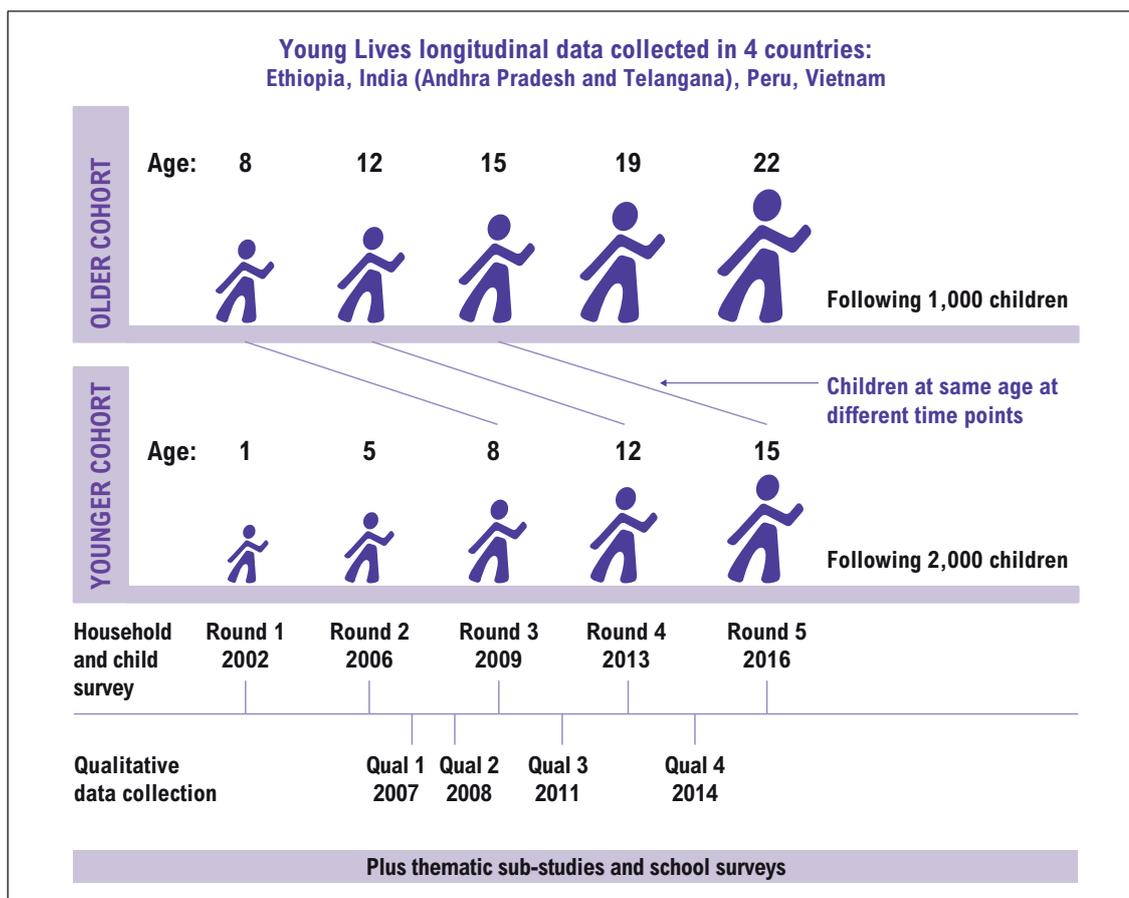
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## 2. About Young Lives

Young Lives is the first multi-disciplinary longitudinal study on child poverty in Vietnam. It is a panel study that has been following 12,000 children in Ethiopia, India (Andhra Pradesh and Telangana), Peru and Viet Nam over 15 years starting in 2002. In each country the sample consists of two cohorts of children: an Older Cohort of 1,000 children born in 1994-5 and a Younger Cohort of 2,000 children born in 2001-2. As Young Lives focuses on child poverty, its sample selection is pro-poor, thus making it not a nationally representative sample. In Vietnam the study was conducted in five provinces that represent Vietnam’s geographical and regional diversity, namely Lao Cai, Hung Yen, Da Nang, Phu Yen and Ben Tre. The children and their caregivers took part in surveys conducted in 2002, 2006, 2009, 2013 and 2016. Figure 1 illustrates the timeline of the surveys and the corresponding ages of children in both cohorts at each round. Information was collected from both the households and the children. In addition to quantitative surveys, between 2007 and 2014 four rounds of qualitative surveys were carried out on a sub-set of the Young Lives sample. By employing interviews with the children themselves, their parents, teachers, friends and local staff, the qualitative surveys created nested case studies of how children’s lives have changed and how the living environment and policies affected their lives. The qualitative surveys are an effective complement to the quantitative surveys as they provide insight into the context and possible explanation of the quantitative findings.

Figure 1: Young Lives’ longitudinal and cohort study design



Source: Young Lives

In addition to the main quantitative and qualitative surveys, Young Lives has carried out two rounds of a thematic survey on education in Vietnam. The first round of data collection for the Vietnam School Survey was conducted during academic year 2011-2 with a sample of 3,284 Grade 5 pupils from 92 primary schools<sup>18</sup> located in 20 of Young Lives' sentinel sites.<sup>19</sup> The second round of the School Survey, focusing on secondary school effectiveness, took place in the 2016-7 academic year with 8,740 Grade 10 students. This time, the survey explored school effectiveness through multiple outcome measures, namely performance in maths, functional English, problem solving and critical thinking. The sample for the second round consists of all upper secondary schools, both public and private, in the districts where the Young Lives sentinel sites are located.

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18 Satellite schools were considered as individual schools.

19 Each sentinel site consists of 100 Younger Cohort children and 50 Older Cohort children. Each sentinel site covers one or two communes.

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## 3. Changes in the lives of children born seven years apart

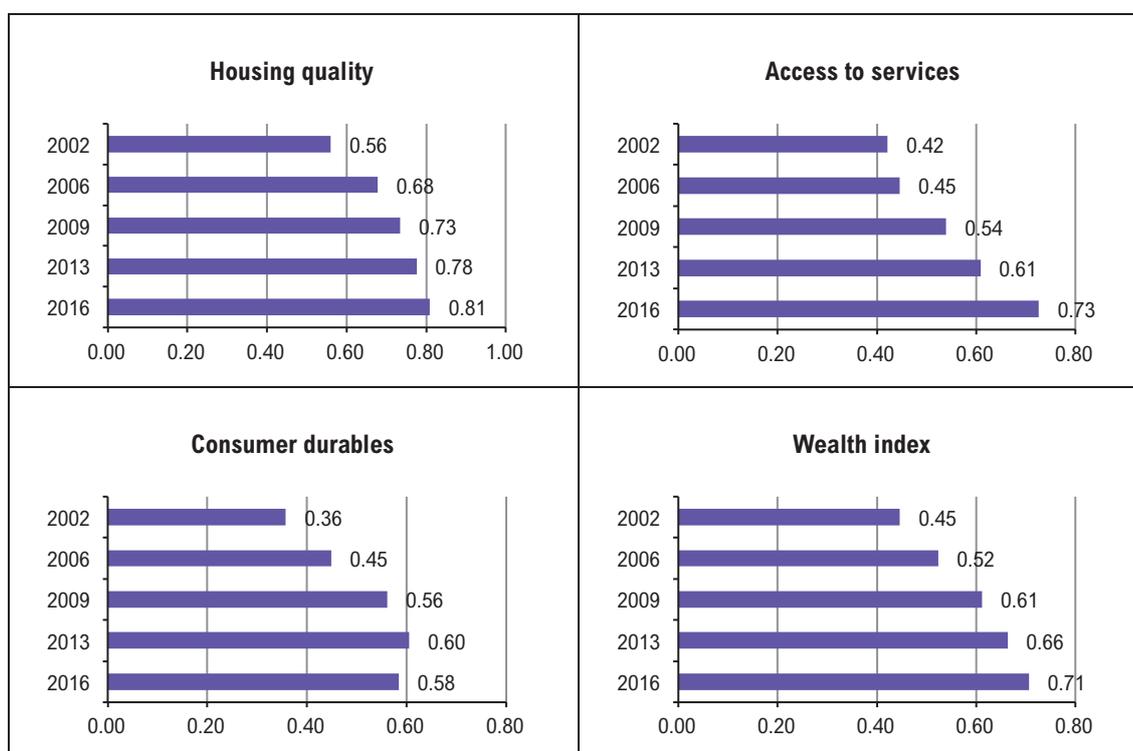
Figure 1 above suggests that it is possible to compare the outcomes for the two cohorts at the same age, given that they were born seven years apart. The Younger Cohort has noticeably improved on the Older Cohort's outcomes in terms of both education, and nutrition and health. At the household level, positive changes were observed in wealth level. What follows outlines the key findings on these issues.

### 3.1. Improvement in wealth level

A wealth index (reflecting the socioeconomic conditions of a household) was used as the measure of poverty by Young Lives. The wealth index is calculated based on sub-indices measuring quality of housing, access to basic services and ownership of consumer durables. The index is computed as simple average of the sub-indices and takes value between 0 and 1, with higher wealth index indicates higher socio-economic status.

Figure 2 presents changes of the wealth index and its three sub-indices across the survey rounds. The y-axes show years when Young Lives surveys were conducted in Vietnam and the x-axes show wealth index and its sub-indices, varying between 0 and 1, with 1 the highest and 0 the lowest level.<sup>20</sup>

**Figure 2:** Change in average wealth index and sub-indices by survey year



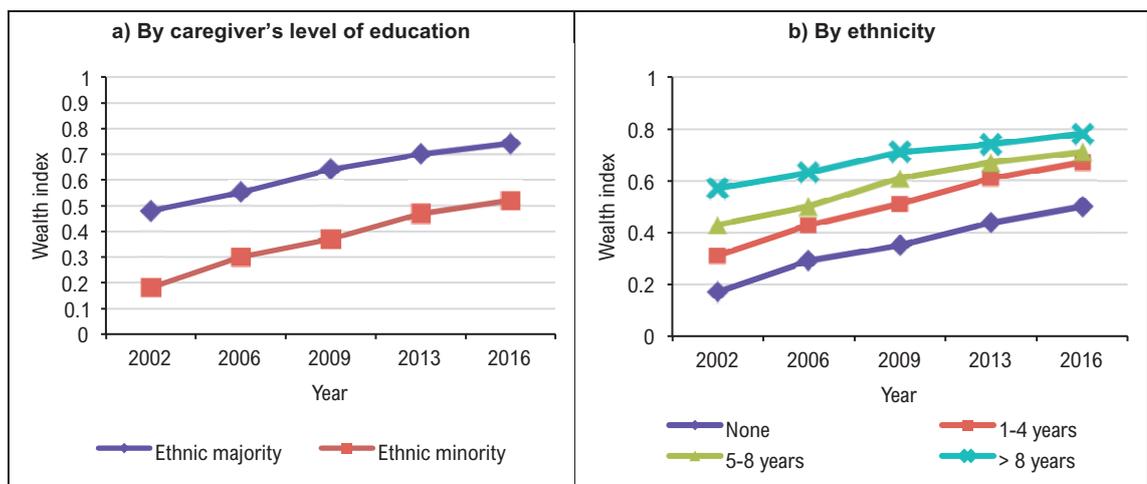
Source: Briones, 2017

20 For more details please see Briones (2017)

Over the past 15 years the Young Lives families from all population groups enjoyed a significant improvement in wealth with the average wealth index of all households in both cohorts gradually improving from 2002 to 2016 (Figure 2). The most disadvantaged groups – ethnic minorities and children whose caregivers had no education – made the most progress,<sup>21</sup> even though there remained differentials across different domains such as quality of housing, access to clean water and access to sanitation.

However, the gap between the ethnic majority and minority groups was narrower in the Younger Cohort. The wealth index of the former was almost double that of the minority group in 2009 but in 2016 the wealth index of the minority group had risen to almost three-quarters of the wealth index of the majority group (Figure 3).

**Figure 3:** Change in the Younger Cohort wealth index between 2002 and 2016 by ethnicity and caregiver's level of education



Source: Round 5 Fact Sheet. *Poverty and Intergenerational Change: Preliminary Findings from the 2016 Young Lives Survey*

Similarly, the wealth index of the Younger Cohort children whose caregivers had no education or fewer than four years of education, increased faster than that of the other two groups with better educated caregivers (Figure 3).

To understand what contributed to the improvement in wealth index, analysis of data between 2002 and 2009 for children from both cohorts at different ages (the Younger Cohort at five and eight years of age and the Older Cohort at 12 and 15 years) showed that the increase in the wealth index was driven by greater access to consumer durables, greater access to services and improved housing. The analysis also pointed out that despite the improvement of the wealth index, large disparities between communities persisted in 2009 similar to the poverty pattern observed in 2016. Among the 247 households persistently in the bottom wealth tercile between 2002 and 2016, 140 households are from the Northern Uplands, 69 households are from the Mekong Delta and the remainder are from the Central Coastal region. None of them are from the Red River Delta.<sup>22</sup>

Young Lives coincided with a period of intense globalisation in Vietnam. Such global integration has had a positive impact on the country's socioeconomic development. At the community level, changes can be observed through significant improvement to infrastructure and ubiquitous emergence of factories. At the household level, increasing household wealth and consumption

<sup>21</sup> Young Lives (2018)

<sup>22</sup> Young Lives (2018)

reflect these changes and in part explain the marked reduction in national poverty over this period.

At the community level, across all sites, the average wealth index was higher in 2009 than in 2002. Despite periodic variations in wealth level, sites with high average wealth levels in 2006 would almost certainly enjoy high average wealth levels in 2009.<sup>23</sup>

Despite the strong correlation between communities' average wealth-index in 2002 and 2009, there were outliers which did better or worse than the 'average' trend. Two of these in remote areas where ethnic minorities live, illustrate different trajectories. Lang Hoi in the Northern Uplands is one of the poorest mountain communities in Lao Cai province, with a population mostly composed of ethnic minority groups, and with difficult transportation and little infrastructure; Lang Hoi had the lowest average wealth-level of the Young Lives sites both in 2002 and 2009 and showed very little improvement over that period. By contrast, Van Lam in the Central Highlands is a very poor mountainous community in the South Central Coast region, with a mostly ethnic minority population; it nevertheless made great economic progress.<sup>24</sup> One possible explanation is a sugar factory being established in the area, and a reservoir being built in the village (Box 1). This implies that communities exposed to economic development were able to make better progress in reduction of poverty than others.

#### **Box 1: Changes in people's lives as a result of setting up a new sugar factory and construction of a hydropower station water reservoir in the community**

Before the sugar factory was set up in Van Lam, a very poor mountainous community in the South Central Coast region, with mostly an ethnic minority population, people in this community relied entirely on growing red beans, corn, sesame and cassava, and were heavily dependent on the weather. This made people very vulnerable because of the unreliable harvests. But when the sugar factory was set up here, people were able to grow sugarcane, which was bought by the factory, thus creating a stable income. Today, almost every family has been able to build a new house and buy new motorbikes.

Building a reservoir for the hydropower station required land clearance. As a result, a number of families in the village were forced to move. But in return they received sufficient compensation to allow them not only to buy new land for their relocation but also enough to build new houses. Many of them also bought new trucks, cars, tractors or cows, and even had savings in the bank. The lives of people in the village have, therefore, generally improved. However, economic development has brought other challenges and people had been facing more pollution from busier traffic caused by trucks carrying construction materials on unmetalled roads.

*Source: Interview on 31<sup>st</sup> March, 2014 and group discussion on 23<sup>rd</sup> March, 2014*

### **3.2. Improvement in nutrition and health**

The unique cohort design of Young Lives allows detection of changes in physical growth of children of the same age group but born seven years apart: children aged eight (Round 3 for the Younger Cohort and Round 1 for the Older Cohort), aged 12 (Round 4 for the Younger Cohort and Round 2 for the Older Cohort), and aged 15 (Round 5 for the Younger Cohort and Round 3 for the Older Cohort). As measures of child physical growth, Young Lives uses World Health

<sup>23</sup> (Dornan, 2011)

<sup>24</sup> (Dornan, 2011)

Organization standards to calculate height-for-age and weight-for-age z-scores.<sup>25</sup> Both scores are calculated based on a comparison with the reference population of healthy and well-nourished children of the same age.

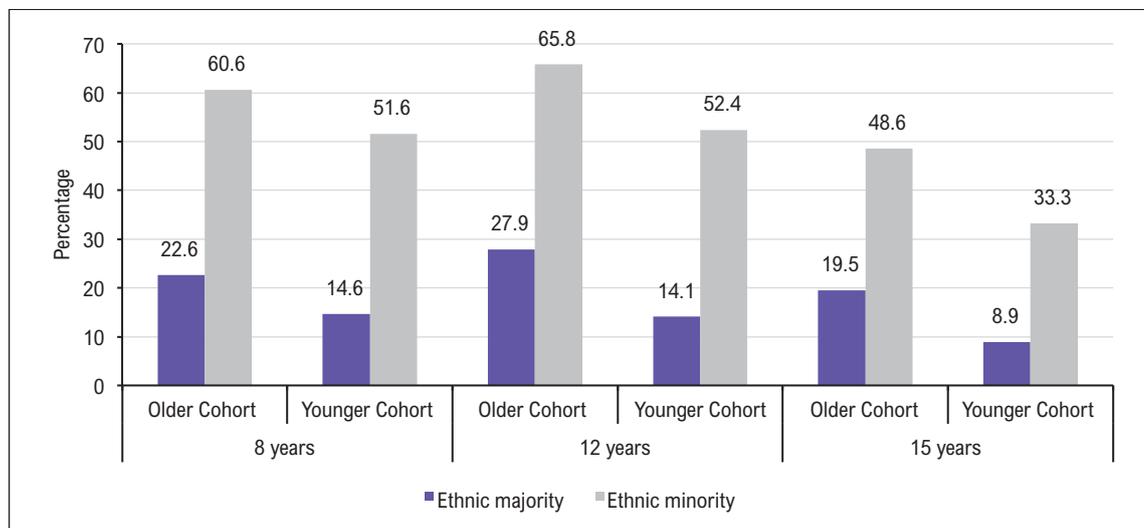
### 3.2.1. Nutrition

The nutrition indicators for children aged eight significantly improved over the seven years from 2002 to 2009 (Table 1). Gains from economic growth seem to benefit all, even though differentials remain between population groups. However, the pattern of under-nutrition and stunting by region remained unchanged and were concentrated in the Northern Uplands and Central Coast rural regions, both mountainous and remote areas where many ethnic minorities reside. Stunting rates in those two regions in 2009 were 35.6 per cent and 27.3 per cent respectively, compared to 6.6 per cent in the urban Central Coast region and 11.5 per cent in the Red River Delta region.<sup>26</sup>

Children's physical status, as measured by their height-for-age score, has displayed a positive trend over the period of study. The rate of stunting has fallen by more than ten percentage points among children at the age of 12 but born seven years apart (from 33 per cent in 2006 to 20 per cent in 2013). However, stunting remained high among disadvantaged groups. The prevalence of underweight (thinness) also fell, but with little improvement among the poorest children.<sup>27</sup>

Specifically in the Younger Cohort, there was little change in stunting rates between the ages of eight and 12, but it dropped by almost half by the time they reached the age of 15 (from 25.1 per cent in 2009 to 12.7 per cent in 2016). Yet regional disparity in levels of stunting remains unchanged and concentrated in the Northern Uplands (48%) and Central Coastal Rural (43%).

**Figure 4:** Stunting rates of children aged eight, 12, and 15, across both cohorts by ethnicity



<sup>25</sup> The z-score system expresses the anthropometric value as a number of standard deviations or z-scores below or above the reference mean or median value. If a child's height-for-weight is more than two standard deviations below the reference value, she or he is considered to be stunted. The z-scores were computed using the 2006 World Health Organization standards.

<sup>26</sup> Le *et al.* (2011)

<sup>27</sup> Young Lives (2014a)

### 3.2.2. Physical recovery

According to the survey conducted in 2014 by ASEAN DNA,<sup>28</sup> Vietnamese people are the second shortest group in Southeast Asia. The average height of the Vietnamese population was, at 162cm, lower than the mean Southeast Asian height of 164cm.<sup>29</sup> This difference is probably the result of the country's military and economic struggles prior to the introduction of Doi Moi in the mid-1980s rather than hereditary factors. The Government of Vietnam has therefore put forward the target of increasing the height of younger generations. One of the objectives of the Strategy for Youth Development during the period 2011-20 has been set as achieving a height of 1.67m for men aged 18 and 1.56m for women of the same age.<sup>30</sup> The Young Lives data demonstrates that in 2016 Older Cohort 22-year-old females were on average 4cm taller than their mothers.<sup>31</sup> This increase indicates that it is very likely that the target will be achieved.

The first 1,000 days of life, from conception to the age of two, are considered crucial for a child's subsequent development. It is believed that restricted intra-uterine growth and stunting in the first two years of life may lead to damage that is irreversible, including lower adult height, lower school achievement, lower economic productivity and, for women, lower birthweight of offspring.<sup>32</sup> Further, stunting, wasting and poor foetal growth were found to have been causally linked to mortality and disease for under-fives.<sup>33</sup> However, there is growing evidence of the possibility of physical recovery beyond early childhood and to show this requires longitudinal data following the same children. Young Lives provides exactly this type of evidence. Our data shows that there was post-infancy physical recovery for children during different age intervals: one to five years, five to eight years, eight to 12 years and eight to 15 years.

9.3 per cent of the Younger Cohort Vietnamese children who were stunted at one year of age were no longer stunted at eight years. Such early childhood recovery was found not only in Vietnam but in all other three other Young Lives countries, with the recovery rate as high as 26.1 percentage points in Ethiopia and about half of that in India and Peru. More importantly, the early- and mid-childhood growth improvement (from one to five years and from five to eight years) had positive effects on school progression and cognitive achievements at age eight in maths, reading comprehension and receptive vocabulary.<sup>34</sup>

**Table 1:** Incidence of stunting and recovery at age one and changes at age five and eight: Younger Cohort (%)

	Stunted		Not stunted	
Status at Round 1 (1 year)	21.2		78.8	
	Recovered	Remained stunted	Remained not stunted	Faltered
Status at Round 2 (5 years)	27.1	72.9	88.8	11.2
Status at Round 3 (8 years)	45.2	54.8	90.4	9.6

Note: Incidence of stunting is the proportion of children who were not stunted at an earlier survey round but were stunted at a later survey round. Incidence of recovery is the proportion of children who were stunted at an earlier survey round but were not stunted at later survey round. Sample size: 1,830.

Source: Lundeen *et al.* (2013)

28 ASEAN DNA is a website to promote a better understanding and appreciation of shared values and common characteristics across the countries of the Association of Southeast Asian Nations (ASEAN). It is owned and managed by Human Resources Institute, Thammasat University, Thailand.

29 <http://globalnation.inquirer.net/102688/filipinos-second-shortest-in-southeast-asia>

30 Decision No.2474/QD-TTg issued by the Prime Minister on 30 December, 2011  
[http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class\\_id=2&mode=detail&document\\_id=153381](http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=2&mode=detail&document_id=153381)

31 Young Lives (2016)

32 Victora *et al.* (2008)

33 Black *et al.* (2008)

34 Crookston *et al.* (2013)

Tracking the stunted children through rounds 1-3 allows an impressive observation of high growth recovery. Among 21.2 per cent of the stunted children from the Round 1 survey, 27.1 per cent in Round 2 and 45.2 per cent in Round 3 were recovered (Table 1).

Factors associated with early childhood physical recovery included the mother's height, household living standards and shocks, community wages, food prices, and community cleanliness. These results hold for all four countries, including Vietnam. Again this growth was probably linked with improvement in their cognitive development at ages eight and 12.<sup>35</sup>

A window for physical recovery exists between the ages of eight and 15 years, with a growth spurt linked to puberty. 36 per cent of Older Cohort children who were stunted at age eight managed to catch up with their peers by age 15;<sup>36</sup> this proportion of the Younger Cohort was even higher (50 per cent), and those who caught up had smaller deficits in cognitive scores than did children who remained stunted. Timing of puberty also played a crucial part in children's growth for the whole period from eight to 15 years. Girls with delayed puberty (experienced puberty later on in the eight to 15 year old period) gained more height at age 15 than their peers.<sup>37</sup>

Such results are very encouraging, and it is important that children have the opportunity for growth recovery from stunting in infancy. However, as shown in Table 1, there is a risk of growth faltering during early childhood and early primary school. Among 78.8 per cent of the not stunted children at age one 11.2 per cent became stunted at age five and reduced to 9.6 per cent at age eight. This suggests that along with prevention of early life stunting, policymakers should pay attention to the risk of later growth faltering.

### **3.3. Education**

#### **3.3.1. Education progress**

Children in Vietnam start school in Grade 1 at the age of six. At the age of eight, they are expected to be in Grade 3. The rate of primary school enrolment of the eight-year-old Young Lives children was high, more than 98 per cent, for both the Younger and Older Cohorts. In 2002, 98.5 per cent of the Older Cohort eight-year-olds were enrolled in school, while the same rate was slightly lower for the corresponding aged group from the Younger Cohort in 2009 (98.2%)(Table 2). While the enrolment gap between the disadvantaged groups (poor and ethnic minority) and advantaged groups (better off and urban) has not been significant, the physical growth difference was considerably wider.

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35 Georgiadis *et al.* (2017)

36 Fink and Rockers (2014)

37 Le and Tran (2015)

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**Table 2:** Comparing eight-year-olds in 2002 and 2009

Children aged 8	2002 (Older Cohort) %	2009 (Younger Cohort) %	Difference (%)
<b>Primary school enrolment rate</b>			
Full sample	98.5	98.2	-0.3
Girls	98.4	98.5	0.1
Boys	98.6	97.8	-0.8
Ethnic majority	99.6	99.3	-0.3
Ethnic minority	90.6	91.0	0.4
<b>Stunting rate</b>			
Full sample	25.3	17.6	-7.7
Bottom wealth group*	39.7	32.0	-7.7
Top wealth group**	15.0	6.1	-8.9
Ethnic majority	22.6	14.6	-8.0
Ethnic minority	60.6	51.6	-9.0
<b>Underweight rate<sup>38</sup></b>			
Full sample	36.7	24.6	-12.1
Bottom wealth group*	41.1	36.3	-4.8
Top wealth group**	26.1	7.4	-18.7
Ethnic majority	34.9	20.6	-14.3
Ethnic minority	49.6	48.6	-1.0

\*The bottom wealth group includes households whose wealth index was in the bottom 25%

\*\* The top wealth group includes households whose wealth index was in the top 25%

Source: Le *et al.* 2011.

**Table 3:** Comparing 12-year-olds in 2006 and 2013

	2006 (Older Cohort) %	2013 (Younger Cohort) %	Difference (%)
<b>Children enrolled in school</b>			
Full sample	96.6	97.5	0.9
Boys	96.8	97.3	0.5
Girls	96.4	97.8	1.4
Ethnic majority	98.3	99.0	0.7
Ethnic minority	85.2	88.4	3.2
<b>Average performance across 3 comparable math questions</b>			
Full sample	80.5	83.2	2.7
Boys	78.9	83.4	4.5
Girls	82.2	83	0.8
Caregivers without education	48.0	60.4	12.4
Caregivers with more than 9 years of education	89.9	89.3	-0.6
Ethnic majority	84.3	86.1	1.8
Ethnic minority	53.2	63.4	10.2
Bottom wealth group*	69.3	74.6	5.3
Top wealth group**	88.8	89.7	0.9
<b>Stunting rate</b>			
Full sample	33.1	19.7	-13.4
Bottom wealth group*	40.4	30.6	-9.8
Top wealth group**	20.6	8.7	-11.9
Ethnic majority	27.9	14.1	-13.8
Ethnic minority	65.8	52.4	-13.4

\*The bottom wealth group includes households whose wealth index was in the bottom 33.33%.

\*\* The top wealth group includes households whose wealth index was in the top 33.33%.

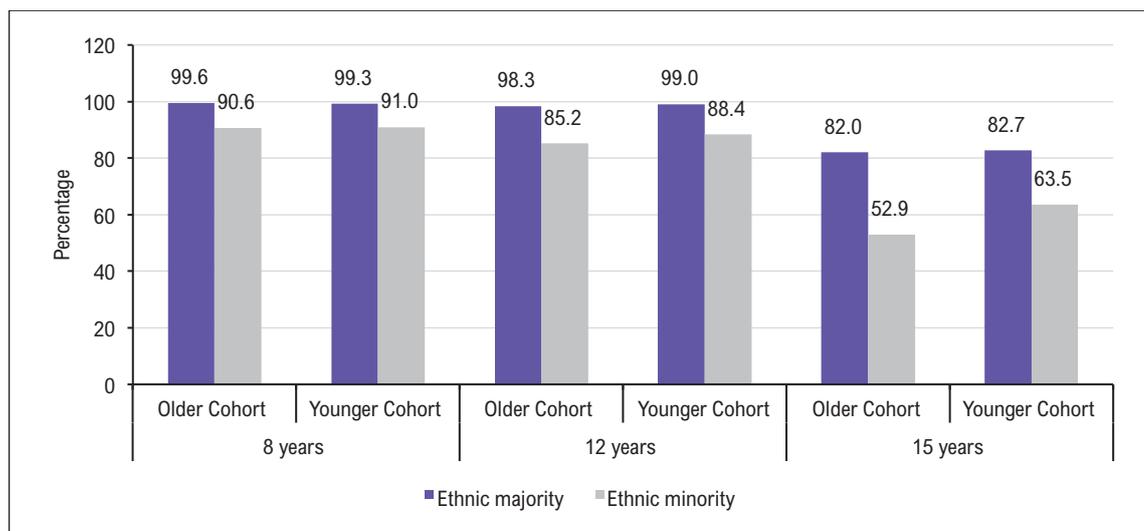
Source: Young Lives 2014a; 2014b

38 A child having weight-for-age z-score < -2 is considered underweight.

The enrolment rate for the 12-year-olds was also high, for boys and girls alike and in both rural and urban areas. But children from the poorest households and from ethnic minority communities were still less likely to be attending school (Table 3).

Education outcomes, measured as the highest grade achieved and maths test scores of 12-year-olds, reflect inequality in education between the advantaged and disadvantaged groups. Children from poorer households and from ethnic minority groups have completed, on average, fewer grades of school and do not perform as well in these maths tests. Encouragingly, we did find evidence that 12-year-old disadvantaged children from the Younger Cohort were doing better in 2013 than their peers from the Older Cohort had done at the same age in 2006, and that the learning gap between them and the better-off group was starting to close.<sup>39</sup>

**Figure 5:** *Enrolment of children aged eight, 12 and 15, for both cohorts by ethnicity*



At the age of 15, girls were more likely than boys to be enrolled in school, both in 2009 and 2016. The ethnic minority children achieved a noticeable improvement in levels of enrolment during the period 2009-16 period (Table 4).

**Table 4:** Comparing 15-year-olds in 2009 and 2016<sup>40</sup>

	2009 (Older Cohort) %	2016 (Younger Cohort) %	Difference (%)
<b>Percentage of children enrolled in school</b>			
Full sample	78.3	79.9	1.6
Boys	75.4	76.4	1.0
Girls	80.9	83.7	2.8
Ethnic majority	82.0	82.7	0.7
Ethnic minority	52.9	63.5	10.6
<b>Percentage who answered all 3 comparable maths questions correctly</b>			
Full sample	35.0	38.2	3.2
Boys	31.9	36.7	4.8
Girls	37.8	39.7	1.9
Caregivers without education	11.7	16.3	4.6
Caregivers with more than eight years of education	47.1	50.6	3.5
Ethnic majority	37.8	41.5	3.7
Ethnic minority	15.7	16.4	0.7
<b>Stunting rate</b>			
Full sample	23.3	12.4	-10.9
Bottom wealth group*	28.6	18.4	-10.2
Top wealth group**	15.4	7.8	-7.6
Ethnic majority	19.5	8.9	-10.6
Ethnic minority	48.6	33.3	-15.3

\* The bottom wealth group includes households whose wealth index was in the bottom 33.33%

\*\* The top wealth group includes households whose wealth index was in the top 33.33%.

Source: Young Lives 2018a; 2018b

The data also indicate that more children drop out of school as they move to higher grades (Figure 5). A 'drop-out deficit' has been calculated to measure how far below Grade 9 the children had left school; for children who had left school by Round 3 in 2009 before completion of lower secondary school, the average deficit was approximately three years, regardless of gender. The bottom wealth quintile group had the highest drop-out deficit of 3.4 years.<sup>41</sup>

### 3.3.2. Education catch-up

Our data for the two groups of eight-year-old children allow us to see the changes in terms of enrolment only. Although we cannot say anything about educational outcomes of this age group, there is 'some evidence of learning progress' between the two cohorts for the 12-year-old children, with those at the bottom catching up to some extent.<sup>42</sup> Specifically, the scores from three comparable maths questions in Table 3 display strong improvement (more than 10 per cent) by the disadvantaged children, including ethnic minority children and children whose caregivers have no education.

For 15-year-olds, the improvement of the two disadvantaged groups was not as great, judging by scores from the three comparable maths questions. While the children whose parents had no

40 Only children who were present in all five rounds of surveys are included.

41 Le and Nguyen (2016)

42 Young Lives (2014b)

education made progress of nearly five per cent, ethnic minority children gained just below one per cent (Table 4).

The first school survey conducted in the 2011-2 school year gave a more precise way to consider this, and to do so with measures related to the school curriculum. Analysis of the performance of Grade 5 students found solid evidence of progress in mastery of the curriculum by the disadvantaged groups. Repeated surveys at the beginning and the end of the school year showed that disadvantaged Grade 5 students narrowed the gap between themselves and their peers in both maths and Vietnamese reading.<sup>43</sup>

**Table 5:** *Learning achievement and progress of fifth-graders, by ethnicity*<sup>44</sup>

	Maths			Vietnamese		
	First test	Second test	Gain	First test	Second test	Gain
Kinh (Ethnic majority)	509.59	546.05	36.46	511.65	518.29	6.46
Ethnic minority	434.01	497.91	63.90	420.16	483.30	63.14
Difference	75.58***	48.14***	27.44***	91.49***	34.99***	56.50***

\*t-test significant at 10% \*\*\* t-test significant at 1%. Results are for pupils with scores for both tests.  
Source: Rolleston *et al.* 2013

However, a similar catch-up effect for ethnic minority students at Grade 10 was not captured during the second school survey conducted in the 2016-7 school year.<sup>45</sup> This suggests that gaps open up between ethnic minority and Kinh students in lower secondary school.

43 Rolleston *et al.* (2013)

44 Raw scores on both the initial and second pupil achievement tests were transformed on to a common scale for each subject, using a three-parameter item-response theory (IRT) model to produce estimates of pupils' latent ability or performance trait ( $\theta$ ), taking account of item difficulty, discrimination by items between pupils and the possibility of guessing answers correctly, given the multiple-choice format of the tests. The mean of the scale is set to 500 and the standard deviation to 100. Since the resulting scale is an interval scale, an equal increase at different points along the IRT scale between tests may be interpreted as an equal increase in the latent trait.

45 Iyer *et al.* (2017)



## 4. Characteristics of intergenerational transmission of human capital

### 4.1. *Transmission of human capital characteristics*

How we nurture children and educate them plays an important role in preparing children for their future. Studies have proved that most inequalities in Vietnamese children's undernutrition (stunting, underweight and wasting) are the result of socioeconomic inequalities.<sup>46</sup> As this report will go on to discuss, a child's undernutrition has negative impacts on his or her later cognitive and psychosocial development, raising concerns around the intergenerational transmission of poverty.

The final round of surveys was conducted when the Older Cohort was 22-years-old (in 2016). Although about three-quarters of them were already exclusively working at that time, those who completed university were recent graduates. According to the second Vietnam Survey on Transition from School to Work (SWTS) conducted in 2015, 'youth educated at the university level needed an average of 7.3 months to complete the transition from school to a first stable or satisfactory job, while the equivalent figure for [those with] general secondary education was 17.8 months'.<sup>47</sup> Since so many of the Older Cohort lie in this unsettled and transitional period, it is too early to outline firm conclusions on their incomes.

However, throughout the rounds of the Young Lives survey, we observe that human capital characteristics, including status and educational level of parents and household wealth, have had consistent long-term impacts on children's physical growth and learning outcomes. The mother's level of education appeared significantly more influential than that of the father, although maternal and paternal education levels are usually closely associated.

In terms of children's physical development, as mentioned earlier, factors that were associated with post-infancy growth recovery included the mother's height and household's living standard.<sup>48</sup> Tables 2, 3, and 4 demonstrate that stunting at ages eight, 12 and 15 for both the Younger and the Older Cohort shares the same pattern, with a high concentration of stunted children in poor households and among children whose mothers have low levels of education.

Being a member of an ethnic minority is frequently associated with both poverty and low levels of education, not least given that many minority groups live in poorer areas. Analysis of the Young Lives data found that the mother's ethnic minority status was related to poverty status. Data collected in 2016 indicated that 84 per cent of ethnic minority households were in the bottom wealth tercile in the first round of surveys and 59 per cent of this group have remained in the same bottom tercile throughout the five rounds.<sup>49</sup>

A family's socioeconomic position was also found to be linked with children's cognitive achievements at the age of five and parents' education had even stronger effects.<sup>50</sup> Similarly, high levels of education of the parents of Kinh children largely explained the gap in test scores

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46 Vu *et al.* (2016)

47 International Labour Organization (2016b)

48 Georgiadis *et al.* (2017)

49 Young Lives (2018)

50 Le T. D. (2009)

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between Kinh and ethnic minority children of both cohorts in 2006 (at five and 12 years old respectively).<sup>51</sup>

There was also found to be a strong association between parents' education and consumption levels and their children's cognitive scores. In long term, however, even substantially higher levels of parental education and consumption led to little reduction in poverty and inequality in human capital of their children when they become adults.<sup>52</sup>

Apart from influencing educational outcomes, household poverty and parental education were proven to be important determinants of children leaving school before completion of lower secondary education,<sup>53</sup> and adolescents who fail to complete lower secondary education are mostly the children of parents who themselves have little education.<sup>54</sup> Those who do not complete even lower secondary education also had fewer chances of finding waged employment or a job in the government sector.

The first SWTS, conducted in 2013, showed that young people with university degrees have a greater chance of being employed in a stable job in the formal sector. They are also more likely to get higher salaries than lower educated peers. 'Youth with tertiary level degrees can earn three times the wages of youth with no education. The average monthly wages of youth increase steadily with each incremental step of education or training'.<sup>55</sup> Since growing up in a household with less educated parents increases the likelihood of their children leaving school early<sup>56</sup>, this is likely to affect their future employment.

The increasing availability of the internet opens up many opportunities for children who leave school but want to continue learning and acquiring other skills that would help them in the long term. About four-fifths of the children who left school before completion of lower secondary school were economically active. But the average working time for the 11-17 year olds no longer in school was more than five hours, about three hours more than working hours of the school children. On the other hand, those not attending school spend much more time than those at school on sleep and leisure,<sup>57</sup> the implication being that leaving education decreases the likelihood of children acquiring further working skills. With the rapid changes being brought by the fourth industrial revolution, getting good jobs is likely to be more difficult for those children when they grow up. The case of Cam in Box 2 is an example of how her limited education restricts her chances of getting a higher paid job.

## **4.2. The long-term impact of poverty on labour market outcomes**

As mentioned above, in 2016 the Young Lives Older Cohort was 22-years-old. More than 10 per cent of them were neither studying nor working in 2016 and the majority of those who were working were receiving low salaries. However it is still too early to draw conclusions around the intergenerational transmission of poverty, since at age 22, many young people are not yet settled.

We use the International Labour Organization definition which considers a person who receives a salary lower than two-thirds of the median wage of all employees in the country a low-wage

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51 Glewwe *et al.* (2012)

52 Berhman *et al.* (2017)

53 Le and Tran (2013)

54 Baulch *et al.* (2012)

55 International Labour Organization (2015)

56 Le and Tran (2013)

57 Le and Tran (2013)

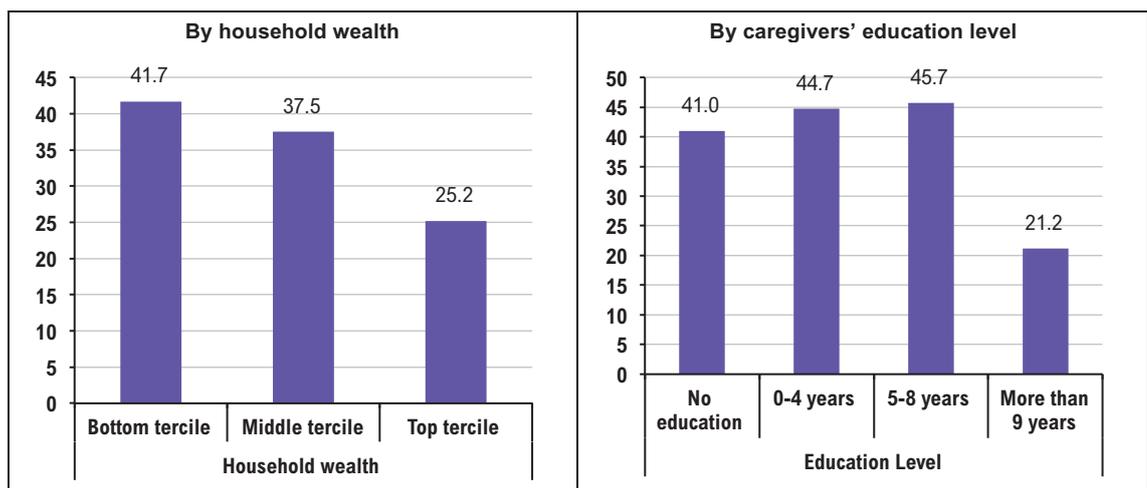
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worker.<sup>58</sup> Based on data from the Vietnam Labour Force Survey of 2016, we found the low-wage threshold for Vietnam in 2016 was VND 2,467,000 per month.<sup>59</sup> More than 80 per cent of the Young Lives 22-year-old paid workers had incomes below this threshold. Clearly we might expect young people with little experience to be on a low salary. This confirms why it is too early to evaluate the labour market outcomes of the Young Lives young people.

There has been some research on the impact of poverty on labour market outcomes. Based on data on the Older Cohort collected in 2013, it is clear that for working 19-year-olds, psychosocial skills<sup>60</sup> were better predictors than cognitive skills of labour earnings.<sup>61</sup> But this finding needs cautious interpretation because the educational level of those young people who were working in 2013 was low. At the age of 19 about half of the Older Cohort had left school, and of these 69 per cent have only lower secondary level of education or lower.<sup>62</sup>

The likelihood that 19-year-olds had already left school and started to work was linked with the wealth level of their families and their parents' level of education. Just a quarter of the young people who were working were from the top wealth tercile compared to more than 40 per cent of those from the bottom tercile. The proportion of the working youth whose parents have more than nine years of education was just half those whose caregivers have eight years of education or less (Figure 6)<sup>63</sup>.

**Figure 6:** Working young people aged 19 (2013) by caregivers' education level and household wealth level (%)



In 2016 when the Older Cohort were aged 22, more than 80 per cent of them were already working. In an attempt to understand how early childhood poverty can relate to labour market outcomes we use the Mincer equation<sup>64</sup> to analyse factors affecting the monthly salaries of the 22-year-olds.<sup>65</sup> We found that the household wealth index of the Older Cohort in Round 1 when they were 8-years-old, their childhood nutrition (measured by height-for-age in Round 1), their pre-school education and their post-secondary education had no association to their labour

58 Grimshaw (2011)

59 The minimum wage in 2016 applied to most of the Young Lives study sites, the exception being Hung Yen, where the minimum wage was VND2,400,000.

60 Self-esteem, self-efficacy, relations with parents and relations with peers

61 Tran (2017)

62 Young Lives (2014c)

63 Young Lives (2014d)

64 The Mincer equation allows us to explore how wages will vary according to different levels of human capital.

65 See details in Annex 1

market outcomes when they were 22-years-old. Their caregiver's level of education level did have a positive relation but the effect was small: for every grade increase of the parents' education, the youth's monthly salary would increase by 0.02 percentage points.

However, the long-term impact on employment, as shown by our qualitative findings, has been determined not only by their education or skills, but also by employment opportunities. The changes brought about by globalisation in communities where children live in Vietnam has opened up many opportunities for young people.

### Box 2: New factories improve employment opportunities for youth

The mother of Cam, a girl who lives in Hung Yen, compared today's employment opportunities with the opportunities when she was her daughter's age. Back then, opportunities for young people to find non-agricultural jobs were practically non-existent. She could find handicraft work in the Bat Trang ceramics village, or do hand embroidery, but there was no local factory. Those jobs were only temporary and she ended up returning to agricultural work.

Cam completed lower secondary education and easily found a job at a garment factory not too distant from her home. She wanted to move to another garment factory where the company offered higher salaries. However, they only accept applicants with an upper secondary degree. According to Cam, there were many other options for her. She can work in Bat Trang ceramics village or work in a factory, since there are industrial parks in Tan Quang, Bat Trang, and Pho Noi within 10km of her home,.

Cam's mother observed that, despite the opportunity to work in the manufacturing sector, young people in the village still prefer to work for private workshops in Bat Trang. The reason given is that young people prefer flexible working hours and soft working rules.

*Source: Interviews held on 29<sup>th</sup> and 31<sup>st</sup> March 2014*

But these opportunities were not equally spread across all communities. If we consider, for example, the number of factories as an indicator, in 2002 only three of 20 Young Lives communities reported having a factory, but by 2009 the figure had risen to over half of the communities (18 out of 33).



# 5. Skills for the 21<sup>st</sup> century labour market

## 5.1. Important determinants of skills development

There is no common definition of what a skill is, but in general ‘skills could be regarded as the ability to carry out a task’.<sup>66</sup> Not only cognitive skills, but other skills, such as psychosocial skills also play important roles in defining success in many aspects of life.<sup>67</sup> Skills formation is a long process starting in early childhood. Studies have pointed out that a person’s skills are the results of the individual’s abilities, family investment and environment, including home, school, and community.<sup>68</sup>

Young Lives collects data through various tests and questions on both cognitive skills (e.g. at age eight children took three tests including Early Grade Reading Assessment [EGRA], maths, and Peabody Picture Vocabulary Test [PPVT]) and psychosocial skills e.g. self-efficacy, self-esteem, self-respect and inclusion). Analysing Young Lives datasets helps us to identify what factors were important for the skills development of children at different ages and supplied evidence on factors that were important for both cognitive and psychosocial skills.

For cognitive skills, we found that child stunting at the age of one, as measured by height-for-age z-score, has negative effects on children’s cognitive ability by the age of five. Children aged five took two tests – PPVT and Quantitative score in the Cognitive Development Assessment.<sup>69</sup> Similarly, a strong association was found between both weight-for-age and height-for-age at 12 months with physical outcomes and education outcomes at age eight, except that weight-for-age scores do not predict later receptive vocabulary ability.<sup>70</sup> Later, children’s height at age eight also positively correlated with their cognitive outcomes at age 15.<sup>71</sup>

Not only early childhood stunting but also the rate of children’s growth up to 15 years of age also related to cognitive outcomes of children at that age, both in maths and receptive vocabulary. However, rate of growth showed no link with psychosocial skills.<sup>72</sup>

Poor nutrition also associated with the development of psychosocial skills with a positive relationship between higher height-for-age scores and better psychosocial skills (self-efficacy, self-esteem and aspirations) across all four Young Lives project countries.<sup>73</sup> In addition, height-for-age at the age of one was a determinant of both cognitive and psychosocial skills at age eight, although ‘the effect of early nutrition on psychosocial skills is indirect, mediated by cognitive skills. The effect is also relatively small in magnitude’.<sup>74</sup> In addition to the relation with nutrition, psychosocial skills were found to be related to ‘contemporaneous parental investments (relationship with parents, study outside school, food and non-food consumption)’.<sup>75</sup>

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66 Saraf (2017)

67 Heckman (2015)

68 Cunha and Heckman (2007); (2008)

69 For more details on these two tests see Le (2009)

70 Le (2017)

71 Le and Tran (2015)

72 Le and Tran (2015)

73 Dercon and Sanchez (2013)

74 Sanchez (2017)

75 Sanchez (2013)

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Further, Young Lives found evidence of two concepts in skills development: self-productivity, that is, more skills accumulated in the present period leading to more skills accumulated in the next period; and cross-productivity, that is, reinforcement of cognitive skills by psychosocial skills, and vice versa. 'Cognitive skills at 14 to 15 are predicted both by [earlier] cognitive skills (self-productivity) and by psychosocial skills (cross-productivity) accumulated up to the age of 11 to 12'.<sup>76</sup>

In short, stunting early in life has been linked with worse cognitive and psychosocial achievements later in life, which in turn reinforce disadvantage.<sup>77</sup> It is therefore encouraging to see children from both Young Lives cohorts improving their height-for-age scores at ages eight, 12 and 15, with the Younger Cohort improving more than the Older Cohort.

Additional important evidence that emerges from Young Lives is the long-lasting relation between violence and bullying and the children's psychosocial skills. Looking at the bullying that children experienced at age 15 together with four psychosocial indicators at age 19 – namely self-efficacy, self-esteem<sup>78</sup>, relations with parents and relations with peers – the research found an association with the last three indicators but at different levels and for different types of bullying. Specifically, the results show that children who, aged 15, suffered bullying such as others trying to get them into trouble with their friends, had a lower level of self-esteem at the age of 19, although the effect is quite small. On the other hand, bullying of all types – whether physical, verbal, indirect or attacks on property – had bigger negative effects on the relations between the children with their parents in Vietnam. Similar negative associations were found between different types of bullying and relations with peers.<sup>79</sup>

## 5.2. Skills for the 21<sup>st</sup> century

The fourth industrial revolution is bringing about fundamental changes in the labour market. Today, robots replacing human beings in many activities is no longer a fiction and has become more and more common. For example, in Vietnam in 2017 a handicrafts company in Binh Duong bought five robots with the result that 90 per cent of the company workers lost their jobs.<sup>80</sup> The recent Global Investment Competitiveness Report: 2017/2018 also documented the changing priorities of foreign investors; low costs of labour now rank as far less important than political stability and the legal environment. Instead, investors prefer skilled labour.<sup>81</sup> Therefore, the question of how to prepare young people for the labour market of the future is a major concern of many educators and policymakers at the moment.

The world today is witnessing the strong evolution of technology that results in fundamental changes in how different industries function. Big data, Internet of Things (IoT), and AI (artificial intelligence) have created products and technologies that would in the past have been seen only in fiction. Richard Riley has famously described this challenge saying: 'We are currently preparing students for jobs that don't yet exist... using technologies that haven't yet been invented... in order to solve problems we don't even know are problems yet.'<sup>82</sup>

76 Sanchez (2013)

77 Le (2009); Sanchez (2009)

78 Self-efficacy is belief in capability to cope and recover from setbacks; Self-esteem is an individual's judgement on self-worth or self-value (Pell *et al.*, 2016).

79 Pells *et al.* (2016)

80 <http://tintuc.vn/90-cong-nhan-o-mot-nha-may-binh-duong-da-phai-nghi-viec-vi-robot-203363>

81 World Bank (2017a)

82 Former US Secretary of Education under President Clinton

The demand for skills will change, but currently according to Dr. Tony Wagner, Co-Director of Harvard's Change Leadership Group, the seven must-have skills of the future are:<sup>83</sup>

- Critical thinking and problem-solving
- Collaboration across networks and leading by influence
- Agility and adaptability
- Initiative and entrepreneurialism
- Effective oral and written communication
- Accessing and analysing information
- Curiosity and imagination.

To access and analyse information, the skills required are proficiency in computer and internet use as well as English language, essential for access to wider and more current information. In the case of Vietnam, there is good evidence that employers require some of the seven skills listed above. A recent World Bank report indicated that one of the barriers hindering Vietnam's small and medium enterprises from participating in supply chain of services and in information and computer technology was inadequate foreign language skills.<sup>84</sup> A survey of employers conducted in greater Hanoi and Hochiminh city on job-related skills for blue- and white-collar workers found that problem-solving was the third most important skill that they were looking for when hiring both groups of workers. Creative and critical thinking was the fourth most important for white-collar workers but much less important for blue-collar workers.<sup>85</sup>

A survey of enterprises in the ASEAN region, including Vietnam, to identify the skills that are most difficult to find revealed that at the top was strategic thinking and problem-solving, followed by foreign language skills<sup>86</sup>. Vietnamese enterprises rated foreign language skills much higher than other countries in the region in terms of the skills that were most critical for them; more than 40 per cent of Vietnamese enterprises put foreign language skills as the most critical for them, as against more than 20 per cent for ASEAN enterprises on average.<sup>87</sup>

The World Bank's recent Vietnam Enterprises Survey 2015 pointed out that an 'inadequately educated workforce' was the third most important business constraint for firms. For large firms with more than 100 workers this factor was ranked as the first constraint.<sup>88</sup>

While the scope of these seven skills goes far beyond the framework of the Young Lives study, Round 2 of the school survey conducted in 2016-7 allows for some preliminary assessment of the first set of skills, including critical thinking, problem-solving and English language. The following definitions were adopted for this survey:

Problem-solving is an individual's capacity to use cognitive processes to resolve real, cross-disciplinary problems where the solution path is not immediately obvious.

Critical thinking includes skills such as inference and evaluation which are applied to ill-structured problems, and for which there are no definitive solutions.<sup>89</sup>

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83 <https://www.weforum.org/agenda/2017/09/skills-children-need-work-future/>

84 World Bank (2017b)

85 World Bank (2013)

86 International Labour Organization (2016c)

87 International Labour Organization (2016d)

88 World Bank enterprise survey. Vietnam 2015: Country profile.

<http://www.enterprisesurveys.org/~media/GIAWB/EnterpriseSurveys/Documents/Profiles/English/vietnam-2015.pdf>

89 Iyer and Azubuike (2017)

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It was found that the English and transferable skills of Vietnamese tenth-graders are weak. Proficiency in English was graded as low, intermediate, high or advanced.<sup>90</sup> The results of the survey show that only 40 per cent of Grade 10 students are proficient in English at the high and advanced levels that suggest that they would be able to satisfy the requirements of the labour market. Only about 15 per cent of students showed they were competent problem-solvers and only 36 per cent came out as competent critical thinkers.<sup>91</sup>

As mentioned earlier, in a technology-driven world, access to the internet and computer and internet skills play an extremely important role. It has been found that computer skills have a significant positive relation to earning premium in a number of countries, including Vietnam;<sup>92</sup> dividing computer skills into four levels,<sup>93</sup> it appears that the more complex the task, the higher the premium.

In 2016, over 60 per cent of the Young Lives children from both cohorts had used computers or laptops many times, although more than ten per cent of them had never used computers or laptops. The rate of using the internet was high – 85 per cent and 77 per cent for the Older and Younger Cohort respectively. But purpose of using the internet by the two cohorts is different. While the Older Cohort use internet for works and services purpose, the Younger Cohort mainly use for their study and to interact in social networks (Table 7, 8). Children in the Younger Cohort started to use a computer or laptop when they were aged 11 on average, about three years younger than children in the Older Cohort. The decrease in the age of first using a computer shows how fast digital devices have spreading in Vietnam.

A very big difference existed between ethnic majority and ethnic minority groups. More than 90 per cent of the ethnic majority from both cohorts have used computers and internet many times in their lives, but the corresponding rate for ethnic minorities was between five and eight per cent (Table 6).

**Table 6:** Usage of digital devices and internet in 2016 (%) by Older Cohort at age 22 and Younger Cohort at age 15

	Have used many times				Age of first use (if device was used many times in life)			
	Computer or laptop		Internet		Computer or laptop		Internet	
	Older Cohort	Younger Cohort	Older Cohort	Younger Cohort	Older Cohort	Younger Cohort	Older Cohort	Younger Cohort
<b>Gender</b>								
Male	51.0	51.6	48.2	51.3	13.7	11.3	15.0	12.2
Female	49.0	48.4	51.7	48.7	14.5	11.3	16.0	12.3
<b>Ethnicity</b>								
Majority	94.8	93.6	93.6	92.5	14.0	11.3	15.4	12.2
Minority	5.2	6.4	6.4	7.5	15.7	12.0	17.1	13.0

Source: Our own calculation

90 See Annex 2 for more details.

91 Rolleston and Iyer. Presentation at the Second School Survey Launch in Hanoi, December 2017

92 Valerio *et al.* (2016), using STEP (Skills Toward Employment and Productivity) data

93 Level 1: browser-based tasks; level 2: MS office-based tasks; level 3: basic programming tasks; level 4: advanced programming tasks.

**Table 7:** Use of the Internet by Older Cohort

	Search for work-related information or new employment	Search for health-related information	Search for goods or services
Frequently	24.5	21.8	25.6
From time to time	46.0	51.7	46.9
Not at all	29.5	26.5	27.5
Total	100	100	100

Source: Our own calculation

**Table 8:** Use of the Internet by Younger Cohort

	Search for sample exams and problem sets and their solution	Search for open teaching courses and learning materials	Translate materials	Get connected with other people through social media
Frequently	16.1	10.5	19.6	50.9
From time to time	44.8	37.1	36.3	22.0
Not at all	19.7	33.0	24.7	7.8
Missing	19.4	19.4	19.4	19.4
Total	100	100	100	100

Source: Our own calculation

Owning a computer is very important for students at tertiary level of education, yet but it is not always affordable for students, especially those from poor families. Huu from Hung Yen explained how hard it is for him at college without a computer (Box 3).

### Box 3: It is hard to attend college without your own computer

Huu was freshman at college in 2014. He did not have a computer and this limited his ability to study effectively. Since all lecturers use slides for their lectures and speak very fast in class, students can request lecturers to send the slides by email. Not having a computer means that Huu was unable to receive the slides. Moreover, without a computer he could not find reference readings on the internet. Sometimes Huu goes to an internet café to find and note down reference materials but this is very time-consuming. Alternatively he occasionally asked his friends who do have computers and could download reading materials or copy files onto his memory stick so that he can get them printed at a printing shop. Learning without a computer was hard for Huu but he did not want to ask his parents to buy a computer for him because it would be difficult for them. He decided to keep trying for the first year at college, but later when he would start studying his major subject he would ask his parents to buy a computer for him.

*Interview held on March 22, 2014*

Our qualitative data recorded negative views of adults, including parents, teachers, and local officials, toward the use of the internet. Many shared the view that the internet presents a threat to children. A mother in Phu Yen said she was worried about internetcafés because children are attracted to them just to chat online. She said that there are three or four internet cafés in the neighbourhood of her house. (Interview held on 3<sup>rd</sup> April, 2014)

However, children need to be trained in how to use the internet effectively. In contrast to the views of adults, interviews with the children revealed mixed results. Many children agreed that the internet is useful for their studies as well as for them to keep in touch with friends and family

(Box 4). On the other hand, the internet takes up a lot of their time. Phuoc from Da Nang shared that he found many strong temptations such as games on the internet. He considered himself addicted, though not seriously, and spent a lot of time on it.<sup>94</sup>

#### **Box 4: How the internet helps Chinh with his studies**

Chinh is studying Industrial electrics and maintenance at the Vocational Technical School (Cao dang nghe) in Phu Yen. Smartphones and the internet help him a lot in his study. He usually receives assignments and instructions by email from his teachers. He could also send questions to his teachers by email. He uses the internet in his studies in different ways such as checking his timetable, studying and doing his assignments. He also uses it for emails, Facebook or to play games.

As mentioned earlier, the fourth industrial revolution has been accelerating exponentially, and the qualitative evidence in 2014 might not still hold true at this moment. Data from the Young Lives Round 5 survey shows that 70 per cent of the Older Cohort children used the internet for work-related information or new employment (Table 7), although only about 16 per cent of the Older Cohort youth with jobs reported finding their jobs through the internet.<sup>95</sup> By contrast, in developed countries in 2013 including Norway, Sweden and the Netherlands, more than 80 per cent of unemployed adults used the internet to look for jobs. Thus, using the internet to find jobs is likely to become popular in the future in Vietnam, so reiterating the need for youth to be equipped with computer and digital skills.

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94 Interview held on 4th May, 2014

95 The sample included all children who were present in the Round 5 survey in 2016.

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## 6. Conclusion and Policy Implications

Young Lives gives a unique insight into the lives of Vietnamese children since the turn of the millennium. The two cohorts, born seven years apart, also allow us to see the impacts of rapid change in children's lives. Over the 15 years of the Young Lives project we observed considerable improvements in the socioeconomic lives of children as well as in their education and physical growth. More importantly, disadvantaged children were catching up in growth, education and socioeconomic status.

In terms of consequences of child poverty, 81 per cent of the 22-year-old paid workers were on a low income, but young people are often less well paid in labour markets and it is too early for firm conclusions on the long-term consequences of child poverty on later income-earning capacity. Nevertheless, we found intergenerational transmission of human capital characteristics – early childhood nutrition, parents' level of education, wealth level and ethnicity – all have important impacts on the development of children. These findings suggest that each of these are areas for policy development to increase levels of human capital.

Employment today has changed fundamentally under the impact of technological progress. Some skills are likely to be critical for people to be successful in the future, but our evidence from the second school survey suggests that Vietnamese children have insufficient skills for the 21<sup>st</sup> century. In that light, early childhood development contributes to forming both cognitive and psychosocial skills for children when they grow up. Efforts, therefore, should focus on early childhood development and redirecting education and training to focus more on 21<sup>st</sup> century skills, namely critical thinking, problem solving, English language and technological skills.

From the students' perspectives, given the fast-changing environment, young people must keep being constant learners so that they can quickly acquire new skills and adapt to new working environments. Teaching curricula and teaching methods must also be very flexible to accommodate new trends in the labour market.

Although there have been clear signs of catch-up by disadvantaged groups, the gaps between the advantaged and the disadvantaged groups remain large. In addition to traditional gaps such as in education, nutrition, and wealth, gaps in the use of digital devices and access to the internet have also been recorded. In the technology-rich environment, this 'digital divide' is creating a new type of inequality. Poor access to the internet and poor computer and internet skills as well as lack of personal access to a computer may amplify the gap between advantaged and disadvantaged groups; membership of an ethnic minority has been a particular disadvantage. This calls for urgent policy to ensure better access to computers and the internet for the disadvantaged groups. University students should be prioritized as they would soon will enter the labour market and urgently need to learn computer and internet skills.

The data, research and analysis from Young Lives can highlight in greater detail much of the existing background to the challenges being faced by Vietnam and its young people, and can offer perspectives on where policy can and should address the realities of today's rapidly changing environment in which the children who were part of Young Lives will live.

What, then, are the implications for policy development? Vietnam has achieved a huge amount in a short deal of time. The strategies that have achieved past success now need to adapt to technological change, globalisation and towards industrialisation. The flexible and low cost labour market has helped Vietnam build a strong manufacturing base but human capital is increasingly

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important. The experiences of the Young Lives children highlight three key implications for policy aiming to maximise human capital for inclusive development.

*First*, early childhood is foundational. Maximising quality conditions and services in the early years is vital. Such services include nutrition, health and early learning. Good early child development is important for the effectiveness and equity of everything that comes after.

*Second*, early to mid-adolescence is a time where poor children, ethnic minorities and boys begin to fall behind and leave school. This is also the time when external pressures, such as the need to work, increase. Ensuring good opportunities to learn includes efforts to tackle poverty and creating positive learning environment at school are important to ensuring children stay on in school longer.

*Third*, Vietnam has done well on many indicators in managing growth with equity. But the circumstances of minority groups show that some Vietnamese children remain disadvantaged from the start. And the rise of new technologies tells of a future where digital skills are increasingly important. Policymakers should be watching the digital divide with care, and focusing attention to ensure all children have the 21st century skills needed to take up and to create 21st century opportunities.

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# Annex 1: Mincer equation

## Mincerian earnings function

Mincer's income function model is used in empirical economics to measure yields from education, thereby estimating the effect of some factors on wages. The basic Mincer function is expressed as follows:

$$\ln w = \alpha + \beta S + \gamma z + \delta z^2$$

where the logarithmic income is the linear function of the number of years of schooling (S), experience (z) and experience squared ( $z^2$ ).

Inheriting from the basic Mincer's equation, researchers have expanded the function to evaluate the average effect of years of schooling on wages, based on OLS regression or regression with tools to address endogenous problems. The extended wage equation is expressed as follows:

$$\ln w = \alpha + \beta s + \gamma z + \delta z^2 + \theta X + \varepsilon$$

where s = number of years of schooling

z = number of years of working experience

X = Characteristics of workers such as gender, marital status, number of children in the family, father's education, etc. In our estimated model, we include the following characteristics for the 22-year-old youth: (1) individual aspects such as gender, ethnicity, attendance at kindergarten, height-for-age measured in the first survey round and education level; (2) family characteristics such as household wealth index (of the Older Cohort in Round 1 when they were eight-years-old) and caregiver's level of education; (3) economic region in Vietnam; and (4) skills of the 22-year-old youth such as using the internet to find a job and proficiency in English. Estimated results are presented in Table 1a.

**Table 1a:** Estimated results (odd-ratio)

Ln (income)	Model1	Model2	Model3	Model4	Model5	Model6
Using internet to find a job	0.0965911	0.0443633	0.0341873	0.0225049	0.0375853	0.0262842
English proficiency	-0.0710226	-0.1394926	-0.1594121*	-0.1870448*	-0.1918833*	-0.2076858*
Kinh		0.1378014	0.0601334	0.1035962	-0.2356466	-0.3515448
Male		0.1037322	0.0973297	0.0863327	0.1255211	0.1230011
No certificate		-0.5869868*	-0.5529913*	-0.564132*	-0.4417946*	-0.4009336*
Lower secondary						reference group
Upper secondary						
College/University						
Caregiver's education						
Height-for-age						
Wealth index						
Attended kindergarten						
Selfemp Agr <sup>a</sup>						
Selfemp Non-Agr <sup>b</sup>						
Wage employed						reference group
Private enterprises						reference group
HB and family member						
Public sector						
Self-employment						
Constant	8.230336***	8.189826***	8.135058***	8.124218***	8.568746***	8.830101***
Number of observation	670	670	670	576	576	576

Sources: Author's calculation from Young Lives survey Round 5.

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01

<sup>a</sup> Self-employed in agricultural sector

<sup>b</sup> Self-employed in non-agricultural sector

## Annex 2: Measuring proficiency in English

The English test applied by the Young Lives School survey was ‘functional English’ defined as ‘application of [...] skills in purposeful contexts and scenarios that reflect real-life situations’.<sup>96</sup> The test included multiple-choice questions only; as a result it captures only language knowledge and reading skills.<sup>97</sup>

There are four levels of measured proficiency in English:

1. Low level:
  - Able to identify simple, familiar vocabulary;
  - Emerging ability to complete simple sentences correctly.
2. Intermediate level:
  - Able to construct simple sentences, including the use of appropriate grammatical concepts;
  - Able to understand explicitly stated information from a factual passage.
3. High level:
  - Able to identify the meaning of unfamiliar words from their use in a sentence, and to identify antonyms and synonyms;
  - Able to understand explicitly stated information from simple stories;
  - Emerging ability to understand implicit inferences.
4. Advanced level:
  - Able to construct complex, multi-clause sentences and to use appropriate grammatical concepts;
  - Able to read and understand a range of texts, including complex stories and posters;
  - Able to understand both explicitly stated facts and implicit inferences.

*Source: Rolleston and Iyer, Presentation at the Second School Survey Launch in Hanoi, December 2017.*

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96 OFQUAL (2011)

97 Iyer *et al* (2017)

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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.

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### 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 Desarrollo (GRADE), Peru*
- *Instituto de Investigación Nutricional, Peru*
- *Centre for Analysis and Forecasting, Vietnamese Academy of Social Sciences, Vietnam*
- *General Statistics Office of Vietnam*
- *Oxford Department of International Development, University of Oxford, UK*

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