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**Aspirations, Family Background and Educational
Outcomes: Evidence of a Poverty Trap in
Ethiopia, India, Peru and Vietnam**

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Abstract

Using data from four developing countries (Young Lives dataset), this paper investigates the role of aspirations in the transmission of poverty, focusing on education. We compare children from the same community and with the same level of academic performance in order to identify the impact of social background on aspirations, and that of aspirations on performance. We find that among equally-performing children from the same community, having low-educated parents has a strong negative impact on the level of educational aspirations, as well as professional aspirations (to a lower extent). Simultaneously, future academic performance is significantly related to children's current level of aspiration, in addition to family background. Hence, this is evidence for the existence of an aspiration-poverty trap. We also add insight on the underlying mechanisms of such a trap, by exploring the role of non-cognitive skills (self-efficacy and self-esteem) and of parents' direct influence (through school enrollment decision and their own aspirations), in the creation of this vicious circle.

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1 Introduction

The Chronic Poverty Report 2014-2015 estimates that up to half a billion people are trapped in chronic poverty: they will live in poverty for most or all their life, and their children will likely inherit it. Such intergenerational transmission of poverty is a multidimensional process: as Moore (2005) put it, “poverty is not transferred from one generation to the next as a ‘package’, but as a complex of positive and negative factors that affect a child’s chances of experiencing poverty”. It involves the transmission of physical capital (cash, land, housing), human capital (cognitive and non-cognitive skills, mental and physical health), and social capital (norms and values, networks). Among this set of transmitted attributes, the “capacity to aspire” (Appadurai, 2004) is key. As Appadurai argues, the poor lack this capacity, which prevents them from altering the conditions of their own poverty. This paper investigates this specific dimension of the transmission of poverty in developing countries. In particular, our focus lies on the relation between children’s aspirations and social inequalities in education. Our aim is to understand if and how aspirations are tied with poverty and educational outcomes in a self-sustaining trap. To this purpose, we address three main questions: to what extent does poverty “stifle dreams” (Ray, 2006) for children? Do aspirations significantly impact academic performance? What are the mechanisms underlying the relationship between social background, aspirations and educational outcomes?

We use data from the Young Lives study, which gathers information on child poverty in four developing countries: Ethiopia, India (Andhra Pradesh), Peru and Vietnam. Following the strategy set up by Guyon and Huillery (2016) and adapting it to the Young Lives dataset, we compare children with the same academic performance and who live in the same community. This allows us to identify the causal impact of social background on aspirations, and that of aspirations on performance. Our results indicate that, among equally-performing children from the same community, having low-educated parents has a strong negative impact on the level of educational aspirations, as well as professional aspirations, to a lower extent. Simultaneously, future academic performance is significantly related to children’s current level of aspiration, in addition to family background. Hence, our study brings new experimental evidence on the existence of an aspirations-poverty trap. Furthermore, it adds insight on the underlying mechanisms of such a trap, by exploring the role of non-cognitive skills (namely self-efficacy and self-esteem) and of parents’ direct influence (through school enrollment decision and their own aspirations), in the creation of this vicious circle. The rest of this paper will expand as follow: Section 2 reviews the existing theoretical and empirical literature on the links between aspirations and social background; Section 3 presents our data; Section 4 details our empirical strategy; Section 5 reports our results; Section 6 provides some robustness checks; and Section 7 concludes.

2 Literature Review

2.1 The Aspiration-Poverty Trap

In an influential piece of work, the anthropologist Appadurai (2004) argues that the “capacity to aspire” is unequally distributed in the society. This capacity, which is defined as a “navigational capacity”, is more developed in richer people: “If the map of aspirations [...] is seen to consist of a dense combination of nodes and pathways, relative poverty means a smaller number of aspirational nodes and a thinner, weaker sense of the pathways from concrete wants to intermediate contexts to general norms and back again.” Indeed, poorer agents do not have the same social networks and stock of experiences as richer agents, and hence form a different zone of “similar” or “attainable” individuals, also called “aspirations window” (Ray, 2006). Building on this theory, Genicot and Ray (2015) set up a model in which aspirations are not just a reference point that is chosen by the individuals themselves: they are also influenced by their social environment. They examine the relationship between aspirations and inequality at the aggregate level, where income distribution determines individuals’ aspirations, and where aspirations, in turn, impact growth. In this framework, they show that aspirations have a different impact on growth depending on how equal is a society: the more unequal it is, the more frustrated the aspirations of the poorest and the lower the investment and the growth for the poor, which increases even more the level of inequality in the society. Similarly, Mookherjee et al. (2010) set up a model in which the economic situation of neighbors directly influences parents’ aspirations for their child, which sequentially determines their investments’ in the child’s education. They show that spatial segregation can thus lead to greater inequality across neighborhoods, in particular in educational opportunities.

In contrast, Dalton et al. (2015) build a model in which aspirations do not differ initially between poor and rich individuals, but diverge because of different levels of efforts in those two groups. Indeed, aspirations and effort are jointly determined: aspirations set the effort level chosen, which in turn influences aspirations via realized outcomes. Hence they show that, due to external constraints (lower wealth), poor people are more susceptible to an aspirations failure: even if they were to start from the same aspirations as wealthier people, they would optimally choose a lower level of effort because they have a lower marginal benefit of effort: to get the same output, they would have to work harder. Because of this low effort, they reach lower realized outcomes, which then lowers the level of aspirations, and the spiral continues. Therefore, aspirations can explain poverty persistence through its impact on effort. Both models hence emphasize the fact that aspirations and outcomes are jointly determined, thus inducing a vicious circle and the creation of an aspiration-poverty trap.

There are few empirical evidence proving the impact of social background on aspirations. Using data from the 1960s on Wisconsin farmers, Sewell et al. (1969, 1979) and Jencks et al. (1983) showed that high school students with a low socio-economic status (SES) have lower aspirations than their equally-achieving high-SES peers, and that aspirations impact their probability to reach college. More recent contributions include that of Hoxby and Avery (2013), who use data on high-achieving US high school students (in the top 4% of US students based on SAT and ACT scores and high school GPA) to show that low-income students (from the bottom quartile of the income distribution) are much less likely to apply to selective colleges than high-income students (from the top quartile of the income distribution). Using original data on French middle school students, Guyon and Huillery (2016) compare students who are in the same class and have the same academic performance, and find that academic aspirations are not only determined by realized outcomes, but also by social background: for the same level of academic performance (same deciles of the test scores distribution and teachers' yearly grades distribution), students from low SES have lower educational aspirations than their high-SES classmates. They also find that both social background and aspirations affect students' track assignment at the end of middle school independently from academic performance, hence suggesting the existence of an aspiration-poverty trap. Lastly, using the Young Lives survey data from Peru, Pasquier-Doumer and Brandon (2015) find a positive relationship between parents' education and wealth status and children's professional aspirations. However, they do not control for students' test scores in this part of their analysis, thus it is not possible to disentangle the pure effect of social background on aspirations from its effect on aspirations through academic performance. They also find a positive and significant impact of social background and occupational aspirations on test scores.

2.2 Social Background and the Formation of Educational Aspirations

What are the mechanisms by which social background shapes aspirations in education? Enriching Sewell et al. (1969, 1970)'s framework, Guyon and Huillery (2014) provide a comprehensive model of how educational aspirations are formed. We build on this framework as well as on Ray (2006)'s work to review the different factors explaining the role of social background in the formation of aspirations, and illustrate them with existing empirical arguments.

First, aspirations are influenced by the anticipated returns to educations (Guyon and Huillery, 2014). This is very dependent on the “(perceived) mobility” there is in society that Ray (2006) stressed as an important factor explaining the gap in aspirations between poor and rich people. Indeed, the more socially rigid is a society, or the more discrimination there is on the job market, the lower the expected returns of education for students from disadvantaged background and hence

the lower the level of aspirations. Discrimination can also deter minorities to have high aspirations, because racial discrimination occurs more at higher level jobs (Galarza and Yamada, 2014): indeed, Major and Eccleston (2005) argue that one reaction to stigmatization is to withdraw from domains in which one is likely to be excluded.

Second, the influence of peers arguably plays a very important role in shaping aspirations (Guyon and Huillery, 2014; Ray, 2006 ; Sewell et al., 1969 and 1970), through different mechanisms. In a first place, it is natural for individuals to use their peers and individuals who are close to them economically, spatially and socially, to form their aspirations (Ray, 2006). Besides, there are direct benefits associated with having the same aspirations as one's peers, because choosing the same options could allow them to stay together, and maintains a sense of unity (Akerlof and Kranton, 2000 and 2002). Lastly, there are peer sanctions associated with having too ambitious aspirations compared to the peer group (Austen-Smith and Fryer, 2005). Exploiting the results from a lab-in-the-field experiment in French classrooms, Guyon and Huillery (2014) find evidence that low background students fear peer pressure, but not that they like to conform to their peers.

Third, students think of different sets of option, or aspiration windows, depending on the flow of information they receive (Guyon and Huillery, 2014; Ray, 2006; Oyserman et al., 2006). Guyon and Huillery (2014) provide evidence that low social background students have a more limited set of options in mind. Importantly, this flow of information may be restricted because of lack of communication, or because people are limited in what they can observe physically (Ray, 2006). Indeed, William Julius Wilson (1987) showed that successful individuals who move out of inner city ghettos cannot be a role model anymore for young people. Similarly, using Mexican data from the program Progres, Chiapa et al. (2012) find that random exposure to highly educated professionals significantly increased children's educational aspirations. Beaman et al. (2012) also find a positive impact in India of female community leadership on girls' career aspirations and educational attainment. Since low background children have different social networks than high background children, they are likely to have less educated persons as role models, hence inducing lower aspirations.

Fourth, aspirations are dependent on the cost linked to a given education path (Guyon and Huillery, 2014). Indeed, sending a child to school includes direct cost to the family, such as textbooks, school supplies, or tuition fees. It also incurs indirect cost: instead of working and earning money for the household, the child is studying. Education costs prove very influential in the context of developing countries. Burde and Linden (2013) show that reducing the distance to primary school in Afghanistan increases enrollment, in particular for girls. Duflo, Dupas and Kremer (2012) show that randomly providing scholarships to secondary school students in Ghana increases dramatically the enrollment rate. Evans and Kremer (2005) also find positive effects of

distributing uniforms on enrollment. Hence, poor families are less likely to pursue higher levels of education due to its cost, and internalize this constraint when they form their aspirations.

Fifth, academic performance is also very likely to have an impact on aspirations, since it affects students' probability to succeed in a given track (Guyon and Huillery, 2014). This is consistent with Dalton et al. (2015)'s model of aspirations and effort: aspirations are determined by the current realized outcomes. Social background is very likely to influence academic performance, because parents' education has an important effect on cognitive skills from an early age, and because low educated parents cannot provide as much help with homework or cannot afford private lessons as can high educated parents. Therefore, the effect of social background on aspirations is partly mediated by its impact on performance.

Self-esteem should also play an important role in shaping aspirations (Guyon and Huillery, 2014). Academic self-esteem stems directly from one's level of academic performance, but is also influenced by social stereotypes that are associated with one's gender, social class, ethnic group or cast. These stereotypes are internalized by students, who thus underestimate their objective performance or ability. For instance, Steele and Aronson (1995) show that when asked to indicate their race, African American college students under-perform compared to when they do not have to do so. Hoff and Pandey (2006) find similar results studying the impact of castes stereotypes in North India. The evidence is however mitigated: in France, Guyon and Huillery (2014) do not find a significant effect of stereotype activation on self-esteem. Self-esteem may also be influenced by teachers' stereotypes, either by discriminatory comments and behavior, or as reflected in grades. Indeed, Hanna and Linden (2007) have shown evidence of grade discrimination against low caste students in India.

Lastly, in addition to those factors incorporated in Guyon and Huillery's model (2014), we introduce (perceived) self-efficacy or sense of agency, which has been emphasized by psychology theory as a strong determinant of students' aspirations. Thus, Bandura (1993) poses that "students' beliefs in their efficacy to regulate their own learning and to master academic activities determine their aspirations, level of motivation, and academic achievement". Bandura et al. (2001) test this model and find that subjects' perceived efficacy is a key determinant of their perceived career efficacy, which itself affects preferred occupational choice. Studying the impact of a skill-building program in Bombay slums, Krishnan and Krutikova (2013) find close links between children's self-efficacy and their aspirations as teenagers. Skinner, Zimmer-Gemmel and Connell (1998) emphasize the role of social context in shaping children's self-efficacy, through parents' interactions with their children: "caregivers model, explain, coach, and directly teach metacognitive skills and strategies that allow children to place structure on challenging tasks, such as planning, strategy generation, or problem solving". Therefore, we can expect low background children to have lower self-efficacy

and sense of agency, hence contributing to lower aspirations.

Our analysis builds on this body of theoretical and empirical literature to add new empirical evidence on the existence of an aspiration-poverty trap in developing countries, and document the mechanisms at play behind it.

3 Data

3.1 The Young Lives survey

We use survey data from the Young Lives project, a longitudinal study led by the Department of International Development at the University of Oxford, which aim is to study the determinants and consequences of child poverty in Ethiopia, India (Andhra Pradesh), Peru and Vietnam. The survey covers two cohorts. In our study, we concentrate on the first (older) cohort, because the questions on aspirations that interest us were not asked to the younger cohort. The older cohort is composed of about 1,000 children per country (700 in Peru), who were born in 1994–95. The children were selected into the study with a multi-stage sampling procedure: first, twenty clusters were selected in each country, randomly in Peru and semi-randomly in the three other countries. Within each cluster, a village, group of villages, or town, were randomly chosen, and a group of households was randomly chosen within each of these sub-clusters. About 50 households were selected in each sub-cluster. The samples were selected in order to over-represent poor households: the dataset is thus not intended to be nationally representative. However, it is appropriate for uses such as analyses of causal relations linked to child poverty, due to its longitudinal nature. The sampled children and their caregivers were interviewed in 2002 (7-8 years old), 2006-2007 (11-12 years old), and 2009 (14-15 years old). Attrition is very low (less than 5% in the four countries between rounds 1 and 3) and was found unlikely to bias research inferences (Outes-Leon, and Dercon, 2008). The Young Lives survey provides a wide range of information on the multiple dimensions of childhood poverty, including data on children’s attitudes, educational and professional aspirations, cognitive test scores, and social background information.

3.2 Building the sample

The Young Lives survey is composed of different questionnaires. The variables we use in this study come from the child questionnaire, the household questionnaire, and the community questionnaire from round 3; the child questionnaire and household questionnaire from round 2; and the child questionnaire from round 1. We collected those variables for all of the four countries. In order

to get a single dataset with all the variables needed from different questionnaires, rounds and countries, we first merged, for each country, the child questionnaire, the household questionnaire, and the community questionnaire from the round 3. We then merged the four resulting country files for round 3, thus obtaining a dataset containing all the variables from round 3. We proceeded similarly for the two other rounds, and merged the three resulting round-datasets. In the process, the files were harmonized when necessary so as to have variables coded and named the same way across countries. The resulting working dataset has hence the form of an $(N \times k)$ matrix with N the number of children in all countries, and k the number of variables coming from all the three rounds.

3.3 Variables of interest

Educational aspirations: The children were asked the following question in round 2 (age 12) and 3 (age 15) : “Imagine you had no constraints and could study for as long as you liked, or go back to school if you have already left. What level of formal education would you like to complete?” In the initial database, answers are coded from 1 to 12 to cover primary school until the end of secondary education; then the coding differs across country. In the Ethiopian file, 13 denotes post-secondary/vocational, 14 university, 28 adult literacy, and 29 religious education. In India, Peru and Vietnam, 14 is complete technical institute, 16 complete university, and 19 Masters/PhD. The Indian questionnaire also codes incomplete technical institute as 13, incomplete university as 15, and 20 as informal preschool; while Peru has 17 coded as alphabetization program. Based on these differences, and adapting for different school systems in the different countries (looking at how many years include primary, middle and high school), we created six dummy variables corresponding to the following levels of aspiration: less than Middle school, High school, Technical college, Bachelor’s, Master’s, and University (Bachelor’s and Master’s included). Since the Ethiopian questionnaire does not distinguishes Bachelor’s from Master’s, contrarily to the other countries, it has missing values for the corresponding dummies. This is why we constructed the additional dummy “University”, which thus includes information from all four countries. Besides, we constructed an educational aspiration variable that is a categorical variable taking the following values: 1 is Middle school or less, 2 is High school, 3 is Technical college, 4 is Bachelor, and 5 is Master’s or more. We proceeded the same way for educational aspirations in round 2 (the only difference being that the round 2 questionnaire does not distinguishes Bachelor’s from Master’s in any country). Our final educational aspirations variables for round 3 (respectively for round 2) are thus: one categorical variable with four hierarchical ordered categories ; and six dummy variables (respectively four).

Professional aspirations: In round 3, children were asked the following question: “When you are about 20 years old, what job would you like to be doing?”. The formulation differs in round 2, where they were asked what job they “think” they will be doing. While this different wording is problematic because the word think is likely to prompt answers that reflect expectations instead of aspirations, we can notice that the distribution of professional aspirations in round 2 is similar to that of round 3 (see Table 1), thus suggesting that the answers to both questions exhibit the same phenomenon. In both cases, the answers were not prompted. We constructed the professional aspirations variables by coding each job in terms of skill level. Our choice of coding is based on the International Standard Classification of Occupation 2008 (ISCO-08), designed by the International Labour Office. The ISCO-08 defines a skill level as “a function of the complexity and range of tasks and duties to be performed in an occupation.” (ISCO-08 Vol.I, p. 11). It is assessed based on the nature of the work performed; the level of formal education required, defined in terms of the International Standard Classification of Education (ISCED-97, by the UNESCO); and possibly the amount of on-the-job training or previous experiences. The ISCO-08 thus identifies four skill levels. Skill Level 1 groups occupations that “involve the performance of simple and routine physical or manual tasks” (*ibid*) and may require the completion of primary school. Typical examples include office cleaners or garden laborers. Skill Level 2 includes occupations that “involve the performance of tasks such as operating machinery and electronic equipment; driving vehicles; maintenance and repair of electrical and mechanical equipment; and manipulation, ordering and storage of information” (*ibid*) ; they usually require completion of lower- or higher-secondary education, and possibly additional vocational education. Examples include butchers, secretaries or bus drivers. Occupations at Skill Level 3 “involve the performance of complex technical and practical tasks that require an extensive body of factual, technical and procedural knowledge in a specialized field” (*ibid*); and generally require short-term tertiary education (1 to 3 years). Such occupations include technicians or commercial sales representatives. Lastly, Skill Level 4 occupations “involve the performance of tasks that require complex problem-solving, decision-making and creativity based on an extensive body of theoretical and factual knowledge in a specialized field” (*ibid*). These jobs are usually obtained after completion of medium- to long-term tertiary education (3 to 6 years). For instance, we can cite marketing managers, civil engineers or secondary school teachers. We linked each of the jobs answered by the children with an occupation classified in the ISCO-08, identified the corresponding skill level, and coded the answers accordingly. A difficulty that arose in this process was that some answers were ambiguous, or difficult to classify. For instance, “civil servant” encompasses very different types of occupations and hence can hardly be put in a single category. Therefore, we created two professional aspiration variables based on two different scenarii: in the first one, we took the lower level of education required for a given job, while in the second one

we took the maximum level of education needed. We use the first variable (minimum level of education) throughout our study for our main results, and we use the second one (maximum level of education) to check the robustness of our results. In the Young Lives sample, 76% of children aspire to Skill Level 4 occupations in round 3. In order to get a finer representation of professional aspirations, we split this last category into two. We kept in the fourth category the jobs which require a Bachelor's, and created a new category 5 grouping the jobs which require a Master's or more. We constructed dummies indicating whether the child aspires to a given level of occupation, as well as a categorical variable taking the values 1 "Less than Primary", 2 "Secondary", 3 "Technical college", 4 "Bachelor's", 5 "Master's". Our final professional aspirations variables are thus: one categorical variable with five hierarchically ordered categories, and five dummies for each of these levels of aspirations.

Parents' level of education: The Young Lives questionnaire reports the highest level of education completed by the mother and the father. The coding of mother and father's level of education is different across countries. While in the Ethiopia, India and Vietnam files 1-12 denotes primary to end of secondary, 13 vocational, 14 university, 28 adult literacy and 19 religious education, Peru coded 13 as incomplete technical institute, 14 as complete technical institute, 15 incomplete university, 16 complete university and 17 adult literacy. Taking into account those differences and the variations in the education system of each country, we harmonized parents' education variables by coding 0 as No education, 1 as Primary school or less (including adult literacy), 2 as Middle school, 3 as High school, 4 as Technical college and 5 as University. We then created a variable taking the maximum between the level of education of the mother and that of the father. Finally, after running a first set of regressions, we observed that some categories of parents displayed similar coefficients (namely: No education was similar to Primary school; and Middle school to High school and to Technical college). We thus regrouped those categories. Hence, we obtain three dummies for parents' highest level of education, which indicate whether at least one of the parent's: has a Primary school level or less ("Low-educated"); has been to Middle school at least and Technical college at most ("Medium-educated"); has been to University ("High-educated"). Figure 1 and 2 show the distribution of educational and professional aspirations by level of education of the parents (detailed). The two histograms confirm that aspirations are unequally distributed across social backgrounds.

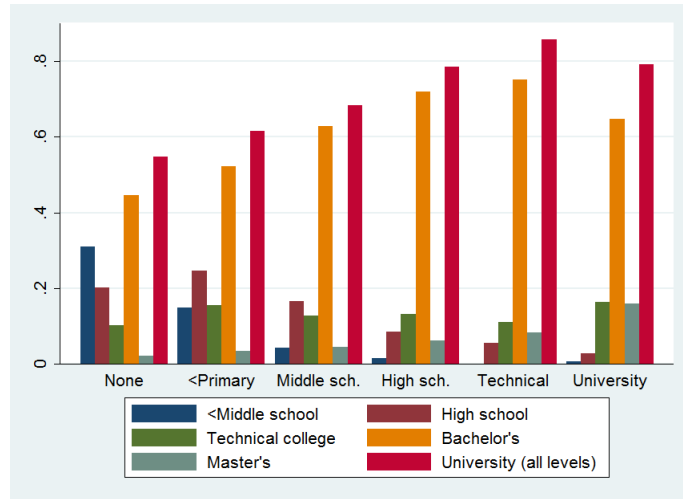


Figure 1: Educational aspirations at age 15 by level of parental education

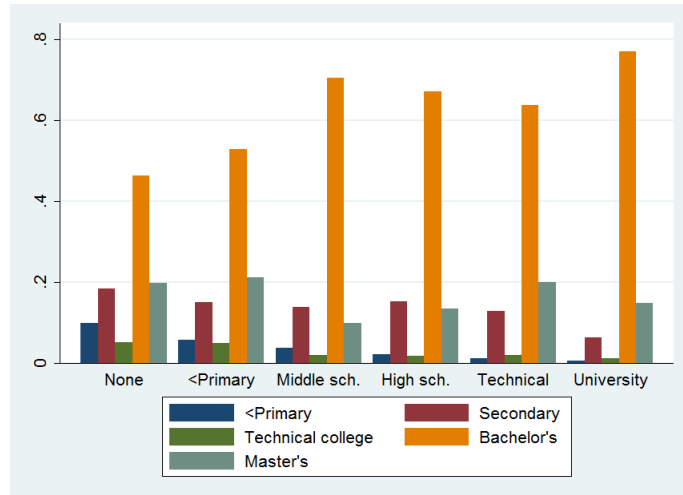


Figure 2: Professional aspirations at age 15 by level of parental education

Minority: We constructed a dummy variable to grasp the effect of belonging to a culturally and politically dominated ethnic or social group. In Peru, we took indigenous as our minority category, as indigenous are discriminated against on the job market and in school. Thus, Galarza and Yamada (2014) randomly sent fictitious CVs to employers and find that, among equally-qualified individuals, the chance of indigenous applicants being called back is significantly lower than that of non-indigenous applicants. Besides, indigenous children's school experience is marked by teachers' negative stereotypes and remarks, as shown by Ames (2012), Sara-Lafosse et al. (1994) and Wilson (2007). We followed Pasquier-Doumer and Brandon (2015), who define as indigenous children

those whose mother has an indigenous language as her first language, and constructed our minority dummy for Peru accordingly. For other countries, we simply used the child’s ethnic belonging as answered by her caregiver in the survey. For Ethiopia, we placed in the dominant group children from Amhara and Tigrayan ethnic background, and all others in the minority group. Ethiopia is a deeply multi-ethnic state, in which 75 ethno-linguistic communities have been officially recognized. However, historically, the Amhara and Tigrayan have indeed been considered as the dominant ethnic groups because of their deep ties with the state and institutions (Feyissa and Zekele, 2015). In India, the minority group is composed of Scheduled Casts and Tribes children (SCs and STs). Madheswaran and Attewell (2007) have shown the existence of occupational discrimination against SC and ST workers. Hanna and Linden (2012) have also shown the existence of discrimination in grading by teachers against low-caste pupils. Lastly, in Vietnam, the dominant group is composed of Kinh children, while all other ethnic groups form the minority group. Van de Walle and Gunewardena (2000) indeed find that there are systematic differences in level of living between Kinh and ethnic minorities that are not related to the location or household characteristics, thus suggesting the existence of current or past discrimination.

Test scores: Different tests were administered to the children in each round, since the level of the tests were adapted to the age of the children. The set of tests in round 1 is composed of the Raven’s Progressive Matrices test (which measures the child’s cognitive development), qualitative assessments in reading and writing, and an assessment in numeracy. In round 2, the tests include the Peabody Picture Vocabulary Test (PPVT), a mathematics test, and qualitative assessments in reading and writing. Lastly, the round 3 questionnaire includes the PPVT, a mathematics test, and a Cloze test (which assesses reading skills). We use the results at those tests to create a global test score index for each round. We construct the test score index (referred to as test score afterwards) for a given round as the equally weighted average of z-scores of each of the tests administered in the round, following the method developed by Kling, Liebman and Katz (2007). The z-scores are constructed by subtracting the country mean and dividing by the country standard deviation. We chose to standardize at the country level because test scores are distributed differently across countries (see Figures A1, A2 and A3). Our test score variable has thus mean zero and standard deviation one. Lastly, we created dummy variables indicating whether the child belongs to a given decile of the test score distribution, for each round. We here need to stress that in round 1, 75% of children in Ethiopia and 80% in Vietnam were not assessed, so their test scores at round 1 are missing, as well as 53% of Ethiopian children in round 3. For each round, we thus have one normalized test score variable, and ten dummies indicating whether the child is in a given decile of the test score distribution.

Wealth Index: The Young Lives dataset includes a measure of household’s socioeconomic status, the Wealth Index. It is computed as the average of three different indexes: the Housing Quality Index, the Consumer Durables Index and the Services Index. The Housing Quality Index includes the number of rooms per person, the quality of the floor and of the roof; the Consumer Durables Index includes the ownership of specific durable goods (radio, bicycle, TV, motorbike, motorized vehicle, landline telephone, and a modern bed or a table); and the Services Index includes access to electricity, water, toilets and cooking fuel. We created dummy variables indicating whether the household belongs to a given quartile of the Wealth Index distribution at round 3, by country (because the distribution of Wealth Index is different across countries: see Figure A4).

Self-efficacy: Our Self-efficacy index gives an indication of the degree of agency of a child and feeling of mastery over her life. The index is based on the answers to the three following questions, asked at round 3: “If I study hard at school I will be rewarded by a better job in future”, “If I try hard, I can improve my situation in life”, and “I like to make plans for my future studies and work”, for which the children had to say whether they “strongly disagree”, “disagree”, “more or less”, “agree” or “strongly agree”. We created our index as the simple average of the z-scores of those three questions, normalizing the answers at the country level because of the different distribution of answers across countries. The z-scores are thus constructed by subtracting the country’s mean to the child’s answer and dividing the result by the country’s standard deviation. Our self-efficacy index is hence a variable centered at zero with standard deviation one.

Self-esteem: We estimated self-esteem in the classroom context with the answer to the following question: “Think about the other children in your class. How do you think you are doing compared to them?”, to which the children could answer “worse”, “about the same” or “better”. This measure thus captures how children perceive their own performance. We normalized the children’s answers at the country level, thus our final self-esteem measure is a z-score (mean zero and standard deviation 1).

School enrollment: In the context of developing countries, enrollment in school is an important economic decision that parents have to make. While we expect a low family background and wealth to negatively influence this decision due to both economic constraints and a lower taste for education, we also suggest that, among children from the same background and from the same community, those whose parents decided to take them out of school have a lower ambition (reflecting their parents’ lack of ambition). Other things being equal, enrollment in school is also likely to

affect aspirations through teacher and peer effects, for which we are unable to control here. Our variable for school enrollment is a dummy indicating whether the child is enrolled in school at round 3.

Parents’ aspirations for their children: Parents were asked the following questions: “Ideally what level of formal education would you like [your child] to complete?” and “When [your child] is about 20 years old, what job do you think s/he will be doing?”. While the question on the child’s professional future measures expectations more than aspirations, we believe it still reflects the level of ambition and aspirations for the child based on the distribution of answers: more than 75% of parents answer a job which requires at least a Bachelor’s degree, which certainly does not reflect what all children could realistically achieve. Moreover, the distribution of parents’ professional aspirations is similar to that of children’s professional aspirations (see Table 1). We proceeded the same way as with children’s aspiration variables to construct parents’ aspiration variables. We thus have two different variables for parents’ aspirations in each round: a categorical variable with four categories (1 is less than Middle school, 2 is High school, 3 is Technical college, and 4 is University), and four dummies for each level of aspirations. We need to stress that during round 3, questions on parents’ aspirations were not asked to Indian parents at all, and to 80% of Vietnamese parents.

Communities: We want to compare children who face the same environment in order to eliminate neighbors and location fixed-effects. Unfortunately, the Young Lives dataset does not allow us to know the class and school to which each child belongs to. The smaller unit for which we can control is the community. In the Young Lives setting, communities are generally analogous to administrative areas. In each country, community questionnaires were led, which report, in particular, the size of the population. The number of communities varies widely across country, as well as the size of the population and the number of Young Lives children across communities (see Figure A5). In order to ensure that we are comparing children that face the most similar environment as possible, we will check the validity of our results when we only consider the smallest communities (in Section 6).

Table 1: Descriptive statistics

	Ethiopia		India		Peru		Vietnam		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Educational aspirations at age 15										
Middle school or less	82.0	8.7	156.0	16.7	6.0	0.9	53.0	6.0	297.0	8.7
High school	129.0	13.6	86.0	9.2	51.0	7.8	182.0	20.7	448.0	13.1
Technical college	37.0	3.9	189.0	20.2	73.0	11.1	63.0	7.2	362.0	10.6
University (all levels)	699.0	73.8	503.0	53.9	526.0	80.1	583.0	66.2	2,311.0	67.6
- Bachelor's	NA	NA	447.0	47.9	490.0	74.7	547.0	62.1	1,484.0	60.1
- Master's	NA	NA	56.0	6.0	36.0	5.5	36.0	4.1	128.0	8.7
Total	947.0	100.0	934.0	100.0	656.0	100.0	881.0	100.0	3,418.0	100.0
Educational aspirations at age 12										
Middle school or less	60.0	6.6	134.0	15.7	5.0	0.8	40.0	4.6	239.0	7.3
High school	174.0	19.1	68.0	7.9	48.0	7.5	138.0	15.9	428.0	13.1
Technical college	41.0	4.5	70.0	8.2	78.0	12.1	30.0	3.5	219.0	6.7
University	636.0	69.8	584.0	68.2	513.0	79.7	658.0	76.0	2,391.0	73.0
Total	911.0	100.0	856.0	100.0	644.0	100.0	866.0	100.0	3,277.0	100.0
Professional aspirations at age 15										
<Primary	13.0	1.4	88.0	9.9	16.0	2.7	50.0	6.1	167.0	5.2
Middle school	56.0	6.0	156.0	17.5	126.0	21.5	147.0	17.9	485.0	15.0
High school	77.0	8.2	14.0	1.6	5.0	0.9	19.0	2.3	115.0	3.6
Bachelor's	417.0	44.6	546.0	61.1	366.0	62.6	586.0	71.5	1,915.0	59.3
Master's	371.0	39.7	89.0	10.0	72.0	12.3	18.0	2.2	550.0	17.0
Total	934.0	100.0	893.0	100.0	585.0	100.0	820.0	100.0	3,232.0	100.0
Professional aspirations at age 12										
<Primary	13.0	1.4	109.0	11.7	43.0	7.6	46.0	6.4	211.0	6.7
Middle school	43.0	4.6	120.0	12.9	99.0	17.5	111.0	15.5	373.0	11.9
High school	118.0	12.7	2.0	0.2	6.0	1.1	8.0	1.1	134.0	4.3
Bachelor's	469.0	50.6	589.0	63.4	374.0	66.2	516.0	71.9	1,948.0	62.1
Master's	283.0	30.6	109.0	11.7	43.0	7.6	37.0	5.2	472.0	15.0
Total	926.0	100.0	929.0	100.0	565.0	100.0	718.0	100.0	3,138.0	100.0
Parents' education										
None	285.0	29.8	356.0	37.0	11.0	1.7	38.0	4.3	690.0	19.9
Primary or less/Adult literacy	509.0	53.2	297.0	30.9	181.0	27.5	153.0	17.1	1,140.0	32.9
Secondary	55.0	5.8	181.0	18.8	54.0	8.2	405.0	45.4	695.0	20.0
High school/Technical college	95.0	9.9	58.0	6.0	352.0	53.5	246.0	27.5	751.0	21.6
University	12.0	1.3	70.0	7.3	60.0	9.1	51.0	5.7	193.0	5.6
Total	956.0	100.0	962.0	100.0	658.0	100.0	893.0	100.0	3,469.0	100.0
Minority										
No	487.0	50.9	656.0	68.2	453.0	68.8	811.0	90.8	2,407.0	69.4
Yes	469.0	49.1	306.0	31.8	205.0	31.2	82.0	9.2	1,062.0	30.6
Total	956.0	100.0	962.0	100.0	658.0	100.0	893.0	100.0	3,469.0	100.0
Male										
Female	467.0	48.8	485.0	50.4	306.0	46.5	447.0	50.1	1,705.0	49.1
Male	489.0	51.2	477.0	49.6	352.0	53.5	446.0	49.9	1,764.0	50.9
Total	956.0	100.0	962.0	100.0	658.0	100.0	893.0	100.0	3,469.0	100.0
Parents' educational aspirations at round 3										
Middle school or less	54.0	5.7	NA	NA	8.0	1.2	15.0	12.8	77.0	7.9
High school	120.0	12.8	NA	NA	45.0	6.9	22.0	18.8	187.0	19.2
Technical college	29.0	3.1	NA	NA	127.0	19.4	4.0	3.4	160.0	16.4
University (all levels)	737.0	78.4	NA	NA	475.0	72.5	76.0	65.0	1,288.0	75.2
- Bachelor's	NA	NA	NA	NA	444.0	67.8	73.0	62.1	517.0	67.0
- Master's	NA	NA	NA	NA	31.0	4.7	3.0	2.6	34.0	4.4
Total	940.0	100.0	NA	NA	655.0	100.0	117.0	100.0	1,712.0	100.0
Parents' educational aspirations at round 2										
Middle school or less	45.0	4.8	279.0	30.0	3.0	0.5	53.0	6.0	380.0	11.5
High school	145.0	15.4	79.0	8.5	25.0	4.4	131.0	14.9	380.0	11.5
Technical college	52.0	5.5	67.0	7.2	37.0	6.5	47.0	5.3	203.0	6.1
University	697.0	74.2	504.0	54.3	503.0	88.6	648.0	73.7	2,352.0	71.0
Total	939.0	100.0	929.0	100.0	568.0	100.0	879.0	100.0	3,315.0	100.0
Parents' professional aspirations at round 3										
<Primary	12.0	1.3	NA	NA	21.0	3.4	2.0	1.7	35.0	2.1
Middle school	30.0	3.3	NA	NA	98.0	15.8	33.0	28.7	161.0	9.7
High school	167.0	18.1	NA	NA	3.0	0.5	1.0	0.9	171.0	10.3
Bachelor's	353.0	38.2	NA	NA	459.0	73.8	76.0	66.1	888.0	53.5
Master's	361.0	39.1	NA	NA	41.0	6.6	3.0	2.6	405.0	24.4
Total	923.0	100.0	NA	NA	622.0	100.0	115.0	100.0	1,660.0	100.0
Parents' professional aspirations at round 2										
<Primary	5.0	0.5	178.0	20.0	14.0	2.3	49.0	6.8	246.0	7.8
Middle school	24.0	2.6	92.0	10.3	63.0	10.4	95.0	13.1	274.0	8.7
High school	215.0	23.2	1.0	0.1	1.0	0.2	20.0	2.8	237.0	7.5
Bachelor's	419.0	45.2	564.0	63.4	501.0	82.4	553.0	76.3	2,037.0	64.7
Master's	265.0	28.6	54.0	6.1	29.0	4.8	8.0	1.1	356.0	11.3
Total	928.0	100.0	889.0	100.0	608.0	100.0	725.0	100.0	3,150.0	100.0
Self-esteem (comparison with classmates)										
Worse	42.0	4.9	19.0	2.6	12.0	2.0	67.0	9.6	140.0	4.9
About the same	532.0	62.5	262.0	36.1	451.0	74.3	477.0	68.5	1,722.0	59.8
Better	277.0	32.5	445.0	61.3	144.0	23.7	152.0	21.8	1,018.0	35.3
Total	851.0	100.0	726.0	100.0	607.0	100.0	696.0	100.0	2,880.0	100.0
Self-efficacy Index										
Below the median	340.0	36.3	408.0	45.1	331.0	50.9	437.0	50.2	1,516.0	45.1
Above the median	596.0	63.7	496.0	54.9	319.0	49.1	434.0	49.8	1,845.0	54.9
Total	936.0	100.0	904.0	100.0	650.0	100.0	871.0	100.0	3,361.0	100.0
Enrolled in school at round 3										
No	100.0	10.5	219.0	22.8	49.0	7.4	197.0	22.1	565.0	16.3
Yes	856.0	89.5	743.0	77.2	609.0	92.6	696.0	77.9	2,904.0	83.7
Total	956.0	100.0	962.0	100.0	658.0	100.0	893.0	100.0	3,469.0	100.0

4 Empirical Strategy

4.1 Estimating the impact of social background on aspirations

We assess the impact of social background on aspirations using within-community identification. Because aspirations are a “capacity to set goals for the future which are in line with one’s potential” (Guyon and Huillery, 2016), children with different potential are likely to have different levels of aspirations. We thus want to compare children with the same potential, measured here as their relative performance at externally graded tests. We follow Guyon and Huillery’s (2016) strategy and include in our model dummies for the decile of the test score distribution. Hence, we are able to separate the “pure” effect of social background on aspirations from its effect through academic performance. Besides, we want to compare individuals who face the same environment, in order to separate the impact of social background from community effects. We thus include community-fixed effects in our regression. This allows us to control for the culture and economic characteristics of the region, the quality of the infrastructures (especially, the schools), the rural/urban nature of the location, and the neighborhood effects. We are thus able to analyze the influence of social background on aspiration net of performance effects and community effects. We estimate the following equation:

$$asp_{itc} = \alpha + \beta_1 parentedu_i + \beta_2 minority_{ic} + \sum_{d=1, d \neq 5}^{10} \gamma_{d,t} testscore_{dit} + \theta male_i + community_c + \epsilon_{itc}$$

asp_{itc} denotes children’s level of aspirations (educational or professional) for child i , at time t and from community c . $parentedu_i$ is a vector of two dummy variables that take value 1 if the highest level of education of either parent is, respectively, primary school (low-educated) or technical college (medium-educated), the reference being university (high-educated). $minority_i$ is a dummy indicating whether the child belongs to the minority group. $testscore_{dit}$ are dummies indicating whether the child belongs to the decile d of the test score distribution at time t . $male_{it}$ is a dummy indicating whether the child is a male or not. $community_c$ denotes community fixed-effects. ϵ_{itc} is the error term. We also include the gender of the child as a control, since gender stereotypes can directly affect the child’s aspirations, as well as her academic performance through differentiated parents’ support and inputs towards boys and girls. In particular, it is possible that the effect of family background on aspirations is dependent on the child’s gender. The dependent variable $asp_{i,t,c}$ is either a dummy variable indicating whether the child has expressed a given level of aspirations; or a categorical variable taking different values for each of the different levels of aspirations. In the first case, we simply estimate the coefficients through a linear probability

model, while in the second case we run an ordered logit regression.

We initially wanted to account for academic progression, by including controls for past performance (deciles of the test score distribution at $t - 1$). Indeed, we can expect two children with the same current performance but different past performance, to be on different academic progression paths, and thus to aspire differently because their expectation of future performance is different. However, test scores at round 2 revealed to be highly correlated to test scores at round 3 and did not bring further information. Therefore, when measuring the impact on aspirations at round 3, we chose to keep the grades from round 3 only, which we argue enclose the most information on student's performance at the time she formulates her aspirations. The use of externally, impartially graded tests, allows us to estimate the impact of social background on aspirations in a comprehensive manner. Indeed, while teachers' grades are likely to be affected by parents' inputs (such as help with homeworks) and teacher's stereotypes, this is not the case of Young Lives' achievement tests results. Therefore, the coefficient attached to social background reflects the global effect of social background on aspirations, including the role of teachers' stereotypes and parents' inputs (and excluding the channel by which social background affects objective performance). Besides, our measure of academic performance is very comprehensive, including results in mathematics, reading and writing. The fact that it is highly correlated with past test scores may also suggest that it is likely to be a good measure of performance without much measurement error.

Nevertheless, a main drawback in our estimation strategy is that we are unable to control for school or class fixed-effects, because the Young Lives dataset does not provide such information. Not controlling for school or class fixed-effects has its advantage, since it allows our coefficient β_1 to incorporate the effect of school and class choice by parents, which is arguably an important driver of social inequalities. Indeed, better educated parents are likely to choose a better school or class for their children. Thus, controlling solely for community fixed-effects allows us to capture the broad impact of family background on aspirations, including its materialization in school and class choice. However, doing so induces an important caveat in the interpretation of our results. Indeed, without controlling for school or class fixed-effects, we cannot separate the effect of family background from teachers and classmates effects. Hence, it is possible that the effect observed is not uniquely due to family background. In this context, we can only interpret β_1 as the causal impact of family background on aspiration insofar as there is no peer effect or teacher effect on aspirations. Our results thus need to be interpreted with this limitation in mind. Lastly, our estimation relies on the assumption that parents' level of education captures their inputs and involvement in the future of their child (quality of the study environment, homework assistance...), which may not necessarily be the case.

4.2 Estimating the impact of aspirations on academic performance

Next, we estimate the impact of past aspirations on current performance. We want to compare students with the same family background, from the same community and with the same level of past performance, in order to assess the impact of previous aspirations alone on current performance. We thus estimate the following equation:

$$\begin{aligned} testscore_{itc} = & \alpha + \delta asp_{it-1} + \beta_1 parentedu_i + \beta_2 minority_{ic} \\ & + \sum_{s=1}^2 \sum_{d=1, d \neq 5}^{10} \gamma_{dt-s} testscore_{dit-s} + \theta male_i + community_c + \epsilon_{itc} \end{aligned}$$

where asp_{it-1} is a vector of dummy variables indicating the level of professional or educational aspirations, the reference being the highest level of aspirations. Comparing students who have the same academic progression (by including test scores at $t-1$ and $t-2$) ensures that our results are not driven by expectations of future performance. However, our aspiration variables may be subject to measurement errors, which could bias our estimate of δ towards zero. In Section 6, we provide some robustness checks by modifying the classification of professional aspirations, and show that our results still hold; which suggests that measurement errors are unlikely to drive our results.

4.3 Estimating the mechanisms through which social background is related to aspirations and outcomes

Lastly, we investigate some of the mechanisms that are likely to be driving an aspirations-poverty trap. The mechanism variables that we consider are: self-efficacy, self-esteem, school enrollment, and parents' aspirations for their child. We expect that family background has a direct impact on a child's level of self-efficacy and self-esteem, on parents' decision to send their child to school, and on their own level of aspirations for their child, independently from the child's and performance at school. In turn, those variables are likely to impact aspirations and educational outcomes independently from the child's aspirations and social background. We thus test those hypotheses by estimating the following equations:

$$\begin{aligned} asp_{itc} = & \alpha + \phi mecha_{it} + \beta_1 parentedu_i + \beta_2 minority_{ic} + \sum_{d=1, d \neq 5}^{10} \gamma_{dt} testscore_{dit} \\ & + \theta male_i + community_c + \epsilon_{itc} \quad (1) \end{aligned}$$

$$\begin{aligned}
testscore_{itc} = & \alpha + \phi mecha_{it} + \delta asp_{it-1} + \beta_1 parentedu_i + \beta_2 minority_{ic} \\
& + \sum_{s=1}^2 \sum_{d=1, d \neq 5}^{10} \gamma_{dt} testscore_{dit} + \theta male_i + community_c + \epsilon_{itc} \quad (2)
\end{aligned}$$

$$\begin{aligned}
mecha_{itc} = & \alpha + \beta_1 parentedu_i + \beta_2 minority_{ic} + \sum_{d=1, d \neq 5}^{10} \gamma_{dt} testscore_{dit} \\
& + \theta male_i + community_c + \epsilon_{itc} \quad (3)
\end{aligned}$$

where $mecha_i$ represents one of the mechanisms considered. Equation (1) estimates the impact of the mechanism variables on children’s aspirations net of family background, performance and community effects. Equation (2) assesses the impact of the mechanisms variables on the child’s current academic performance net of past performance, aspirations and family background. Finally, equation (3) estimates the impact of family background on the mechanisms variables net of academic performance. Again, those results are subject to the caveat that there might be some measurement errors in our measure of family background, our aspiration variables or our mechanism variables that would thus bias our coefficients.

5 Results

5.1 Impact of social background on aspirations at age 15

- Educational aspirations

Table 2 displays the results from the ordered logit regression, in odds ratios. It clearly shows that, among students with similar academic performance and from the same community, social background has a strong influence on the level of educational aspirations (column 1). Indeed, both parents’ education and ethnic group are significantly associated with educational aspirations at age 15, in different directions. On the one hand, there is a negative relationship between parents’ education and educational aspirations: holding everything else constant, a child with low-educated parents (Primary school or less) is about 70% less likely to aspire to higher levels of education than a child whose parents have been to university (significant at the 1% level), while those with medium-educated parents are 32% less likely to do so. This indicates that children coming from lower educated families are clearly less ambitious than those coming from highly educated families. Table 2 gives more insight by showing the impact of social background on each of the educational aspiration levels. At 15 years-old, children with low-educated parents are 877% more likely than

Table 2

<i>Ordered logit regression</i>		
	Educational aspirations at age 15	Professional aspirations at age 15
Low-educated parents	0.299*** (0.0791)	0.452*** (0.103)
Medium-educated parents	0.681* (0.158)	0.874 (0.153)
Minority	1.429* (0.273)	1.272 (0.220)
Male	0.926 (0.120)	0.591*** (0.0620)
Test score at age 15: lowest decile	0.0861*** (0.0250)	0.187*** (0.0545)
Test score at age 15: 2nd decile	0.234*** (0.0627)	0.354*** (0.0765)
Test score at age 15: 3rd decile	0.513** (0.134)	0.862 (0.208)
Test score at age 15: 4rth decile	0.745 (0.212)	1.045 (0.232)
Test score at age 15: 6th decile	1.702* (0.500)	1.566* (0.371)
Test score at age 15: 7th decile	2.331*** (0.690)	1.348 (0.315)
Test score at age 15: 8th decile	2.742*** (0.870)	1.822*** (0.396)
Test score at age 15: 9th decile	2.901*** (0.841)	2.427*** (0.585)
Test score at age 15: highest decile	3.674*** (1.130)	3.498*** (0.766)
Deciles in test score at age 15	Y	Y
Community fixed-effects	Y	Y
Observations	2718	2545
Pseudo R^2	0.240	0.181

Exponentiated coefficients; Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

those with high-educated parents to aspire to leave school at the end of middle-school or before (6% against 0.6%), and 300% more likely to aspire to get a high school degree (11% against 3%). These differences are respectively significant at the 1% and at the 5% level. Consistently, they are 60% less likely to aspire to a Master's degree than children from high-educated families and

Table 4: Educational aspirations

	$\leq$ Middle school	High school	Technical college	Bachelor's	Master's	University
Low-educated parents	0.0491** (0.0199)	0.0849*** (0.0243)	0.0231 (0.0421)	-0.0599 (0.0551)	-0.0939** (0.0367)	-0.132*** (0.0397)
Medium-educated parents	-0.00501 (0.0115)	0.00923 (0.0180)	0.0258 (0.0282)	0.0443 (0.0448)	-0.0732** (0.0332)	-0.0159 (0.0283)
Minority	0.00288 (0.0255)	-0.0713*** (0.0263)	0.00858 (0.0265)	0.0657* (0.0362)	-0.00502 (0.0162)	0.0536* (0.0298)
Male	-0.0113 (0.0137)	0.0259* (0.0156)	0.0115 (0.0145)	-0.0130 (0.0216)	-0.0103 (0.00999)	-0.0206 (0.0207)
Constant	-0.0103 (0.0308)	0.516*** (0.0407)	0.435*** (0.0522)	0.314*** (0.0735)	0.118*** (0.0399)	0.882*** (0.0561)
Deciles in test score at age 15	Y	Y	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y	Y	Y
Mean among high-educated parents	0.0056	0.0282	0.1638	0.6477	0.1591	0.7927
Mean among non-minority children	0.0836	0.1582	0.1301	0.6084	0.0550	0.6772
Observations	2369	2369	2369	2278	2278	2752
Adjusted R^2	0.284	0.132	0.089	0.176	0.034	0.242

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

17% less likely to aspire to a University degree in general (significant at the 1% level). Notice that the difference between medium-educated families and high-educated families is only significant when we consider the highest level of aspirations: children with medium-educated parents are 46% less likely to desire a Master's degree than their equally-achieving high-background peers. These results attest the existence of stark differences in extreme levels of aspirations (the highest and the lowest) between children from different social backgrounds, everything else being equal. The coefficients do not change much when we control for wealth index quartiles (see Table A1 and A2), thus suggesting that parents' education has an impact on aspirations independently from the level of material wealth.

On the other hand, being from a minority group increases the likelihood of having higher academic aspirations by 42% (Table 2, significant at the 10% level). Among children with the same social background and with the same level of academic performance, minority children have more ambition than their non-minority peers, thus suggesting that the negative stereotypes on minorities that may harm children's aspirations are actually non-significant when we compare students with similar academic performance and social background. On the contrary, our results seem to indicate that minority children have more grit than their peers, possibly as a way to

fight against the stereotypes that surround them - this is indeed one of the reactions to being marginalized, as highlighted by Major and Eccleston (2005). Table 3 confirms those results. At 15 years old, minority children are 45% less likely to aim for a High school degree than their non-minority peers (significant at the 1% level); and 11% more likely to aim for a Bachelor's degree (significant at the 10% level).

On a side note, we can see from Table 2 that academic performance is indeed strongly related to the level of aspirations: the coefficients attached to the deciles of test scores are even larger in magnitude than those attached to family background. It justifies that we should control for it when estimating the impact of social background on aspirations.

These results are in line with those of Guyon and Huillery (2016), who found that, among equally-performing French middle school students, those from a low-SES background are 120% more likely to prefer the vocational high-school track than their high-SES classmates, and 78% more likely to stop their education after high-school. Our findings thus show that such social inequalities in aspirations also exist in developing countries, and to an even greater magnitude, which can be explained by the higher degree of social inequalities and the presence of extreme poverty.

- *Professional aspirations*

Professional aspirations appear to be less affected by social background than educational aspirations. Table 2 (column 2) shows that children from low-educated families are 55% less likely to aspire to a higher level of occupation than equally-achieving high-background children from the same community (significant at the 1% level); however there is no significant influence of coming from a medium-educated family compared to a highly-educated family. This observed difference between low- and high-educated families originates from the lowest aspiring children, who are overwhelmingly coming from the poorest background: children with low-educated parents are 800% more likely to want a job that requires primary education at most, and 113% more likely to aim for a job that requires secondary education, than their high-background peers (Table 4, significant at the 10% level). However, no significant difference is found for higher occupational aspirations. Table A3 suggests that the sharp disparity between low- and high-background children in professional aspirations is mainly linked to economic constraints: indeed, when we add wealth as a control, the effect of parents' education on the lowest levels of aspirations shrinks (the coefficients are almost halved) and becomes non-significant. However, adding wealth does not change the observed significant impact on the categorical variable for professional aspirations (Table A1, column 2).

In opposition to educational aspirations, belonging to a minority group has no impact on profes-

Table 5: Professional aspirations

	≤Primary	Secondary	Technical college	Bachelor's	Master's
Low-educated parents	0.0456** (0.0212)	0.0716** (0.0322)	-0.00126 (0.0143)	-0.0622 (0.0520)	-0.0538 (0.0348)
Medium-educated parents	-0.00806 (0.0117)	0.0329 (0.0290)	-0.00168 (0.0124)	-0.0212 (0.0441)	-0.00196 (0.0303)
Minority	-0.00969 (0.0169)	-0.0158 (0.0321)	-0.00133 (0.0129)	0.000930 (0.0404)	0.0259 (0.0236)
Male	-0.0129 (0.0105)	0.109*** (0.0207)	0.0170* (0.00975)	-0.0809*** (0.0241)	-0.0324** (0.0155)
Constant	0.0195 (0.0239)	0.0410 (0.0503)	0.176*** (0.0194)	0.592*** (0.0696)	0.171*** (0.0384)
Deciles in test score at age 15	Y	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y	Y
Mean among high-educated parents	0.0057	0.0632	0.0115	0.7701	0.1494
Mean among non-minority children	0.0560	0.1478	0.0330	0.6326	0.1306
Observations	2545	2545	2545	2545	2545
Adjusted R^2	0.195	0.155	0.004	0.140	0.154

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

sional aspirations (Table 2, Table 4). However, we can notice the important effect of being a male, which had no influence on educational aspirations, but appears to negatively affect professional aspirations (Table 2, Table 4).

These findings are coherent with the results obtained by Pasquier-Doumer and Brandon (2015), who find a positive and significant relationship between the years of education of the most educated parent and the score of occupational aspirations in Peru. By contrast, Guyon and Huillery (2016) do not find that occupational aspirations are socially determined. Our results are in between, as we find that professional aspirations are significantly related to social background, but to a lower extent than educational aspirations.

Table 6

	Test scores at age 15	
	(1)	(2)
Educational aspirations at age 12: $\leq$ Middle school	-0.147** (0.0728)	
Educational aspirations at age 12: High school	0.00623 (0.0940)	
Educational aspirations at age 12: Technical college	-0.0575 (0.0511)	
Professional aspirations at age 12: $\leq$ Primary		-0.177 (0.115)
Professional aspirations at age 12: Middle school		-0.0987 (0.0909)
Professional aspirations at age 12: High school		-0.191 (0.161)
Professional aspirations at age 12: Bachelor's		0.00514 (0.0718)
Low-educated parents	-0.219*** (0.0622)	-0.214*** (0.0623)
Medium-educated parents	-0.0726 (0.0649)	-0.0835 (0.0652)
Minority	-0.0892** (0.0445)	-0.0892** (0.0423)
Male	0.118*** (0.0419)	0.162*** (0.0374)
Constant	0.861*** (0.107)	0.846*** (0.117)
Deciles in test score at age 12	Y	Y
Deciles in test score at age 8	Y	Y
Community fixed-effects	Y	Y
Mean among high-educated parents	0.7053	.7053
Mean among non-minority children	0.1109	0.1109
Mean among children aspiring to go to university	0.2509	0.2509
Mean among children aspiring to a Master's level job	0.1931	0.1931
Observations	1381	1345
Adjusted R^2	0.539	0.594

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

5.2 Impact of aspirations on academic progression

We now turn to the effect of past aspirations on current academic performance. Table 5 shows that among children from the same community, with the same social background and the same past academic achievement, past educational aspirations are significantly associated with current

academic performance. Indeed, the test scores at age 15 of children who had the lowest educational aspirations when they were 12 are 0.15 standard deviations lower than those of children with the highest past educational aspirations (significant at the 10% level). Hence, having low educational aspirations seems to dampen academic progression, through lower levels of effort invested. Conversely, past professional aspirations appear to have no significant impact on current academic performance. This result suggests that children may not clearly associate possible professional outcomes with their school performance, while they do so concerning their academic horizon.

Besides, there is a strong relationship between parents' education and academic performance: being from a low-educated family lowers test scores by 0.22 standard deviations compared to children from high-educated families (significant at the 1% level). This effect is still significant when controlling for wealth (Table A4). Belonging to a minority also affects academic outcomes: all other things being equal, minority children have lower test scores than their non-minority peers (0.09 standard deviations lower). The fact that social background is strongly related to the academic outcomes of previously equally-achieving children confirms that family context plays a role in academic progression by providing support to the child's academic attainment, for instance through help in homework, better working conditions, or self-esteem.

Pasquier-Doumer and Brandon (2015) have found a positive and significant effect of occupational aspirations on academic progression in Peru, especially in terms of vocabulary. Guyon and Huillery (2016) also find that academic progression within one year is strongly determined by aspirations. In our sample combining data from four developing countries, the influential role of educational aspirations on academic progression is supported, but that of professional aspirations is not found significant.

5.3 Mechanisms through which social background is related to aspirations and outcomes

We have seen that social background is an important determinant of aspirations, and that both aspirations and social background contribute to academic progression. We now investigate the different vectors through which social background, aspirations and educational outcomes are interrelated.

- *Self-efficacy*: Tables 6 shows that self-efficacy is partly determined by family background. Indeed, among equally-performing children from the same community, those with low-educated parents have a lower self-efficacy score than those whose parents are highly educated (0.16 standard deviations lower, significant at the 10% level). Besides, self-efficacy is significantly related to

Table 7: Mechanisms variables

	Self-efficacy	Self-esteem	Enrolled in school	Parents' educ. asp	Parents' prof. asp.
Low-educated parents	-0.159** (0.0661)	-0.108 (0.0988)	-0.0711*** (0.0260)	0.387** (0.168)	0.704 (0.151)
Medium-educated parents	-0.0633 (0.0556)	-0.0579 (0.0905)	0.00977 (0.0208)	0.562 (0.237)	0.993 (0.170)
Minority	0.0647 (0.0441)	0.103 (0.0758)	0.0225 (0.0240)	0.536* (0.200)	1.118 (0.309)
Male	-0.0710** (0.0360)	-0.187*** (0.0495)	-0.0225 (0.0148)	0.925 (0.182)	0.877 (0.137)
Deciles in test score at age 15	Y	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y	Y
Mean among high-educated parents	0.2816	0.2076	0.9793	3.9125	2.9481
Observations	2673	2275	2752	1173	1126
Adjusted/Pseudo R^2	0.093	0.076	0.277	0.211	0.125

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

educational aspirations: for the same academic performance and the same social background, an increase of one standard deviation in the self-efficacy index lowers the probability of preferring to leave at the end of Middle school or before by 0.03 percentage points (Table 7, significant at the 1% level), and raises the probability of aspiring to go to university by 0.07 percentage points (Table 8, significant at the 1% level). Self-efficacy also affects professional aspirations, as shown in Table 9. Lastly, self-efficacy is strongly related to test scores, independently from social background and past performance: an increase in the self-efficacy index by one standard deviation raises test scores by 0.9 standard deviations (significant at the 1% level). Importantly, we notice that adding self-efficacy does not cancel the effect of parents' education, which is still significant in all the tables, and the impact of children's educational aspirations on test scores is also still significant. Therefore, these findings suggest that self-efficacy is an important vector of transmission of social inequalities. Indeed, it is determined by social background (independently from performance), plus it is strongly related to aspirations (independently from performance and social background), and to academic outcomes (independently from social background and aspirations). These findings thus support Bandura's (1993) and Skinner et al.'s (1998) theories and confirms Krishnan and Krutikova's (2012) findings.

Table 8

	Child's educational aspiration: $\leq$ Middle school			
	(1)	(2)	(3)	(4)
Low-educated parents	0.0415** (0.0186)	0.0382*** (0.0115)	0.0295* (0.0174)	-0.00644 (0.0170)
Medium-educated parents	-0.00747 (0.0108)	-0.000630 (0.00624)	-0.00183 (0.0100)	-0.00254 (0.00663)
Self-efficacy	-0.0295*** (0.00861)			
Self-esteem		-0.00985* (0.00533)		
Enrolled in school			-0.252*** (0.0321)	
Parents' educ. asp.: $\leq$ Middle school				0.422*** (0.103)
Parents' educ. asp.: High school				-0.0198 (0.0331)
Parents' educ. asp.: Technical college				-0.0201** (0.00988)
Minority	0.0100 (0.0238)	0.00692 (0.0180)	0.0110 (0.0238)	0.0279 (0.0191)
Male	-0.0107 (0.0125)	-0.00350 (0.00847)	-0.0150 (0.0126)	0.00834 (0.0143)
Constant	-0.0323 (0.0309)	-0.0291 (0.0198)	0.174*** (0.0386)	-0.0860*** (0.0293)
Deciles in test score at age 15	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y
Mean among non-enrolled children	0.4182	0.4182	0.4182	0.4182
Mean among parents who aspire the highest	0.0558	0.0558	0.0558	0.0558
Observations	2301	1931	2369	823
Adjusted R^2	0.268	0.143	0.365	0.397

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9

	Child's educational aspiration: University			
	(1)	(2)	(3)	(4)
Low-educated parents	-0.126*** (0.0408)	-0.0931** (0.0427)	-0.106*** (0.0382)	-0.132*** (0.0493)
Medium-educated parents	-0.0145 (0.0303)	-0.0120 (0.0295)	-0.0195 (0.0282)	-0.0362 (0.0294)
Self-efficacy	0.0688*** (0.0123)			
Self-esteem		0.0305*** (0.0101)		
Enrolled in school			0.367*** (0.0312)	
Parents' educ. asp.: $\leq$ Middle school				-0.300*** (0.109)
Parents' educ. asp.: High school				-0.296*** (0.0666)
Parents' educ. asp.: Technical college				-0.163*** (0.0535)
Minority	0.0484* (0.0291)	0.0441 (0.0287)	0.0454 (0.0276)	0.0572 (0.0368)
Male	-0.0171 (0.0202)	-0.0139 (0.0210)	-0.0123 (0.0199)	-0.0290 (0.0319)
Constant	0.915*** (0.0568)	0.936*** (0.0554)	0.547*** (0.0597)	0.934*** (0.0747)
Deciles in test score at age 15	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y
Mean among non-enrolled children	0.2301	0.2301	0.2301	0.2301
Mean among parents who aspire the highest	0.8432	0.8432	0.8432	0.8432
Observations	2673	2275	2752	1173
Adjusted R^2	0.235	0.157	0.303	0.254

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10

	Child's professional aspiration: Primary school level job			
	(1)	(2)	(3)	(4)
Low-educated parents	0.0356* (0.0205)	0.0185 (0.0149)	0.0339* (0.0197)	0.0145 (0.0140)
Medium-educated parents	-0.0103 (0.0117)	0.00205 (0.00953)	-0.00602 (0.0108)	0.0000646 (0.00675)
Self-efficacy	-0.0166** (0.00674)			
Self-esteem		-0.00656* (0.00352)		
Enrolled in school			-0.187*** (0.0281)	
Parents' prof. asp.: $\leq$ Primary				0.280* (0.147)
Parents' prof. asp.: Secondary				0.0397** (0.0187)
Parents' prof. asp.: Technical college				-0.00314 (0.00363)
Parents' prof. asp.: Bachelor's				0.000592 (0.00581)
Minority	-0.0152 (0.0158)	-0.0115 (0.0106)	-0.00645 (0.0157)	-0.00612 (0.0141)
Male	-0.00741 (0.0103)	0.00240 (0.00649)	-0.0175* (0.0103)	0.00431 (0.0101)
Constant	0.0219 (0.0237)	0.00959 (0.0172)	0.192*** (0.0360)	0.0000145 (0.0228)
Deciles in test score at age 15	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y
Mean among non-enrolled children	0.2439	0.2439	0.2439	0.2439
Mean among parents who aspire the highest	0.0125	0.0125	0.0125	0.0125
Observations	2478	2132	2545	1058
Adjusted R^2	0.167	0.036	0.256	0.216

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11

	Test score at age 15							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Low-educated parents	-0.197*** (0.0619)	-0.167*** (0.0621)	-0.196*** (0.0619)	-0.168*** (0.0642)	-0.197*** (0.0621)	-0.167*** (0.0622)	-0.189*** (0.0619)	-0.201*** (0.0667)
Medium-educated parents	-0.0647 (0.0632)	-0.0673 (0.0654)	-0.0630 (0.0660)	-0.0477 (0.0650)	-0.0757 (0.0639)	-0.0738 (0.0628)	-0.0753 (0.0654)	-0.0633 (0.0681)
Self-efficacy	0.0892*** (0.0288)				0.108*** (0.0314)			
Self-esteem		0.0898*** (0.0168)				0.0878*** (0.0162)		
Enrolled in school at round 3			0.452*** (0.0578)				0.478*** (0.0635)	
Parents' educ. asp. when child is 12: ≤Middle school				-0.284*** (0.0776)				
Parents' educ. asp. when child is 12: High school				-0.132 (0.0893)				
Parents' educ. asp. when child is 12: Technical college				-0.162** (0.0758)				
Parents' prof. asp. when child is 12: ≤Primary								-0.299*** (0.0915)
Parents' prof. asp. when child is 12: Secondary								-0.119 (0.0852)
Parents' prof. asp. when child is 12: Technical college								-0.134 (0.104)
Parents' prof. asp. when child is 12: Bachelor's								0.0245 (0.0700)
Child's educ. asp. at age 12: ≤Middle school	-0.145* (0.0763)	-0.133* (0.0690)	-0.0782 (0.0690)	-0.0463 (0.0778)				
Child's educ. asp. at age 12: High school	0.00829 (0.0953)	0.0381 (0.107)	0.0494 (0.0936)	-0.0187 (0.0930)				
Child's educ. asp. at age 12: Technical college	-0.0547 (0.0527)	-0.0596 (0.0485)	-0.0593 (0.0495)	-0.0340 (0.0549)				
Child's prof. asp. at age 12: ≤Primary					-0.139 (0.116)	-0.000120 (0.0977)	-0.0409 (0.0966)	-0.0960 (0.109)
Child's prof. asp. at age 12: Secondary					-0.0716 (0.0871)	0.0372 (0.0948)	-0.0343 (0.0843)	-0.0969 (0.0885)
Child's prof. asp. at age 12: Technical college					-0.233 (0.157)	-0.139 (0.157)	-0.162 (0.150)	-0.180 (0.175)
Child's prof. asp. at age 12: Bachelor's					0.00977 (0.0703)	0.0808 (0.0655)	0.0278 (0.0694)	-0.0217 (0.0679)
Minority	-0.0917*** (0.0436)	-0.0987** (0.0442)	-0.102** (0.0418)	-0.0801* (0.0466)	-0.0831** (0.0413)	-0.0929** (0.0439)	-0.0900** (0.0387)	-0.0719* (0.0395)
Male	0.133*** (0.0410)	0.117*** (0.0389)	0.109*** (0.0401)	0.0977*** (0.0425)	0.177*** (0.0374)	0.143*** (0.0398)	0.140*** (0.0354)	0.134*** (0.0377)
Constant	0.888*** (0.106)	0.881*** (0.108)	0.419*** (0.124)	0.855*** (0.110)	0.882*** (0.116)	0.840*** (0.111)	0.359** (0.142)	0.928*** (0.118)
[1em] Deciles in test score at age 12	Y	Y	Y	Y	Y	Y	Y	Y
Deciles in test score at age 8	Y	Y	Y	Y	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1353	1225	1381	1319	1303	1137	1345	1280
Adjusted R^2	0.542	0.543	0.564	0.551	0.592	0.552	0.623	0.607

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

- *Self-esteem*: Contrarily to self-efficacy, our measure of self-esteem is not significantly affected by family background, nor by belonging to the minority (Table 6). However, it appears to be strongly related to test scores (Table 10) and to aspirations (Table 7, 8, 9): an increase in self-esteem by one standard deviation raises test scores by 0.09 standard deviation, and increases the probability of wishing to go to university by 3 percentage points (significant at the 1% level). Again, we remark that the impact of educational aspirations on test scores is still significant when adding self-esteem as an independent variable. The fact that self-esteem does not appear to be determined by family context does not allow us to conclude on its contribution to the aspiration-poverty trap. However, our findings suggest that it is an important mechanism in the joint determination of aspirations and effort, since a low self-esteem impacts both aspirations independently from performance, and impacts performance independently from aspirations.

- *School enrollment*: As expected, school enrollment appears to be strongly determined by parents' level of education. Children whose parents are low-educated are 7% less likely to be enrolled in school at 15 years old than those from high-educated families (91% versus 98%), a result which is significant at the 1% level (Table 10). Besides, enrollment is tightly linked to aspirations: among children from the same social background, from the same community and with the same level of academic performance, those who are enrolled in school are 60% less likely to wish to leave after the end of Middle school or before, than those who are not (Table 7). We remind here that the question asked to children allows them to formulate their educational aspirations ignoring the constraints that would prevent them from reaching this goal, and letting them imagine they could go back to school to reach this aim. In this framework, being a drop-out should not prevent them from answering a higher level of education than the one they already have. Therefore, these results suggest that being a drop-out goes hand in hand with a lower taste for education, and this separately from the effect of family background. Indeed, part of the effect of parents' education is captured by enrollment when we add it in the regression (the coefficient on low-educated parents is reduced from 0.49 to 0.03), but it is still significant at the 10% level. Table 8 confirms the strong effect of being a drop-out: enrolled children are 159% more likely to aspire to a university degree than their non-enrolled peers (independently from social background, which coefficient is still significant at the 1% level). This effect can also be seen when we turn to professional aspirations, since enrolled children are 77% less likely to aim for a primary school-level job (Table 9). Lastly, school enrollment also has a strong impact on test scores, which is quite expected, and independently from social background: for a same level of past academic performance, being enrolled in school increases current test scores by 0.45 standard deviation – this is the variable which has the largest impact on current performance, apart from past test scores. Notice that adding

the enrollment dummy reduces the coefficient attached to the child's educational aspirations to a non-significant level, while it was still significant when adding self-esteem and self-efficacy. This confirms the fact that enrollment and children's aspirations are tightly linked. For a given level of performance and in a given community, social background appears to determine school enrollment; and simultaneously school enrollment is tied to aspirations in addition to the effect of social background. Hence this suggests that enrollment is an important mechanism and compounding factor in the expression of social inequalities in aspirations. Besides, enrollment status is enough to explain the previously observed impact of educational aspirations on performance: the effect of aspirations on performance for a given social background thus seems to be mediated by enrollment.

- *Parents' aspirations for their child*: Table 6 (columns 4 and 5) displays the results of the ordered logit regressions with parents' aspirations as dependent variables. While parents' level of education is found to be significantly linked with their own educational aspirations for their child, it is not the case when it comes to professional aspirations. Among parents from the same community and with an equally-performing child, those who are low-educated are 61% less likely to aspire to higher levels of education for their child. Interestingly, the effect of being from a minority is different for parents than for children. While we have seen that minority children tend to be more ambitious than their non-minority peers, other things being equal (Table 1 and 2); we can notice that minority parents are 46% less likely than non-minority parents to aspire to higher levels of education for their child. This suggests a more fatalistic behavior from parents compared to their children in minority families. This may be due to the fact that they have faced discrimination throughout their life and thus adjust their aspirations for their children based on this experience, while the children themselves have had a more limited experience of discrimination which makes them more optimistic. Another cause of this difference may be a change in mentalities that makes discrimination less prevalent than before in the society, and that parents have not internalized. Children may also have access to more information or role models through increased means of communication, which raises their aspirations compared to their parents. Besides, Table 7, 8 and 9 show that parents' aspirations are strongly correlated with their children's. Indeed, other things being equal, the probability that a child will want to quit after Middle school or before is 42 percentage points higher when their parents have the same wish, compared to parents who would like their child to go to university (Table 7, significant at the 1% level). Conversely, the probability to aspire to university is lower by 30 percentage points for the lowest aspiring parents compared to the highest aspiring ones (Table 8, significant at the 1% level). Notice that adding parents' educational aspirations in the regression with the dummy for Middle school educational aspirations (Table 7) eats up completely the coefficient on social background. This is not the case when considering the

highest level of aspiration (Table 8), where both parents' aspirations and parents' level of education are strongly related to children's wish to go to university (both significant at the 1% level). This is because parents' aspirations in very low- families are tightly correlated with family background. However, high aspirations are less correlated with social background, which is why we can observe a separate effect of parents' aspirations from the effect of social background. Similarly, we see from Table 9 that low parental aspirations are positively linked with children's aspirations to a low-qualified job, and this effect also reduces the coefficient attached to parents' education, which was already barely significant. Lastly, parents' educational aspirations have a significant impact on children's future test scores (Table 10): having parents who want them to leave education after or before the end of Middle school decreases test scores at the next period by 0.28 standard deviation (significant at the 1% level). On a side note, the effect of the child's educational aspirations is small and not significant anymore when we add parents' educational aspirations in the regression, which reflects the fact that both are tightly linked. Low parents' professional aspirations also have an impact on the child's progression, as having parents' aiming for a primary-level job decreases next-period test scores by 0.30 standard deviations. Overall, these results show that, among children from the same social background, the same community, and with the same level of performance, low parental aspirations may be a strong aggravating factor in the formulation of children's aspirations.

6 Robustness checks

6.1 Modifying the classification of professional aspirations

As we already mentioned in Section 3, we created two different professional aspirations variables to cope with the ambiguous answers that children provided. The first one, that we have been using up to now, takes the lower level of education required for a given job. The second one takes the maximum level of education required. We now replicate our analysis using this second measure and compare the results to our main results. We observe that the results found with the first specification still hold. Indeed, Tables A5 and A6 show that the coefficients using the second specification are almost identical to those which take the minimum level of education required. Hence measurement errors in professional aspirations are not likely to affect our results, which prove to be robust to a change in the definition of those aspirations.

6.2 Using data from round 2

In a second step, we take advantage of the longitudinal nature of the data to check if our results still hold when estimating our equations at t =round 2 (instead of round 3). Furthermore, the correlation between test scores at round 2 and test scores at round 1 is much lower than the correlation between test scores at round 3 and test scores at round 2. This allows us to include in our model of aspirations the deciles of the test score distribution from $t - 1$ in addition to those from t , i.e. to control for academic progression in addition to current performance. As aspirations are not available in round 1, we are unable to check the consistency of our results on the impact of past aspirations on performance. The results are reported in Tables A7 and A8. The coefficients attached to social background are very similar to those of our main results from Table 2 and 3. These findings indicate thus two things: first, that our results are robust across time; and second, that they still hold even when controlling for academic progression.

6.3 Eliminating large-sized communities

Finally, as we acknowledged in Section 3, a main limitation in our study is that we are unable to control for class fixed-effects or school fixed-effects, because the dataset does not allow it. We thus used in our analysis community fixed-effects. However, communities, which are based on administrative areas, are very diverse in size. We now refine our analysis by eliminating from our sample very large communities, in order to ensure that we are comparing children that face the most similar environment possible. We limit the community size to 15 000 inhabitants, and drop the ones that are larger. Doing so mostly removes communities from Peru and Ethiopia, which are the most dispersed in terms of population (see Figure A5). Tables A9 and A10 show that the coefficients attached to parents' education are not much altered compared to those of our main results. The same conclusion applies when estimating the impact of parents' education and aspirations on test scores (Table A11) - if anything, the coefficients attached to parents' professional aspirations are slightly larger. These findings thus strengthen our results.

7 Conclusion

In this study, we investigated the role of aspirations in the transmission of poverty, focusing on education. Combining data from four developing countries, and comparing children from the same community and with the same level of academic performance, we have provided evidence on two phenomenon. First, social background impacts children's educational and, to a lower extent, occupational aspirations. Second, both educational aspirations and social background

affect academic progression. Therefore, our results support the existence of an aspiration-poverty trap: children from low-educated families have both lower aspirations and lower academic skills than their high-background peers; these lower aspirations transform into even lower performance levels, while, simultaneously, low academic performance translates into lower levels of aspirations. This self-sustaining trap is supported by non-cognitive skills and parents' behavior. Self-efficacy amplifies the transmission of social inequalities through aspirations; self-esteem sustains the joint determination of aspirations and performance; while enrollment in school and parents' aspirations - both determined by family background - mediate the impact of aspirations on performance.

Understanding this dimension of poverty transmission is important for policy-making. Our paper provides additional evidence that policies aiming to tackle social inequalities in education should not only target poor children's cognitive skills, but should also enhance their non-cognitive skills. As such, the capacity to aspire proves to be key.

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Appendix

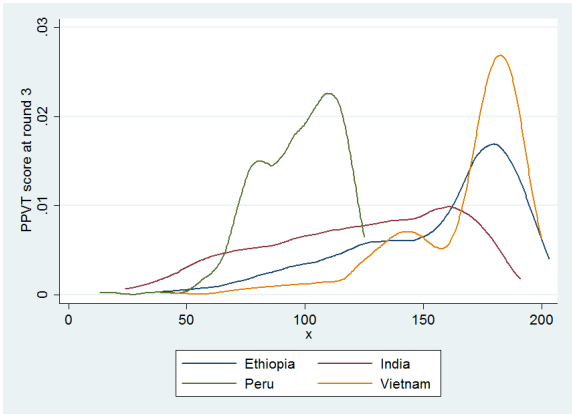


Fig A1: Distribution of PPVT score by country (round 3)

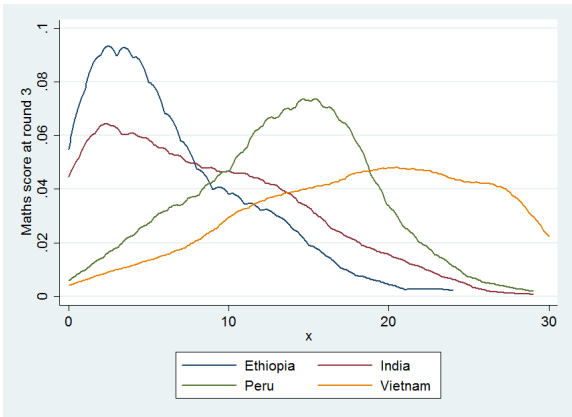


Fig A2: Distribution of Maths score by country (round 3)

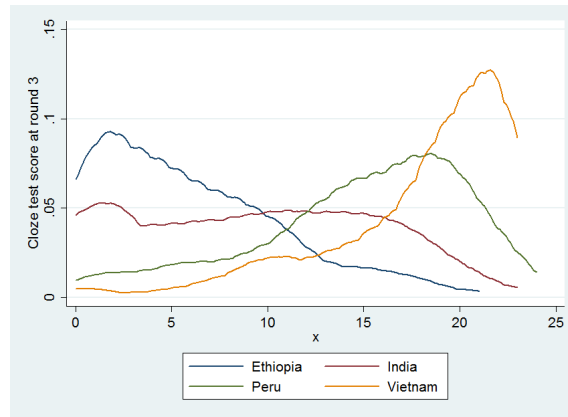


Fig A3: Distribution of Cloze test score by country (round 3)

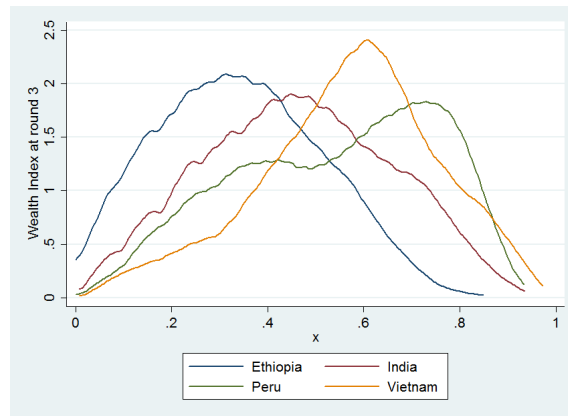


Fig A4: Distribution of Wealth Index by country (round 3)

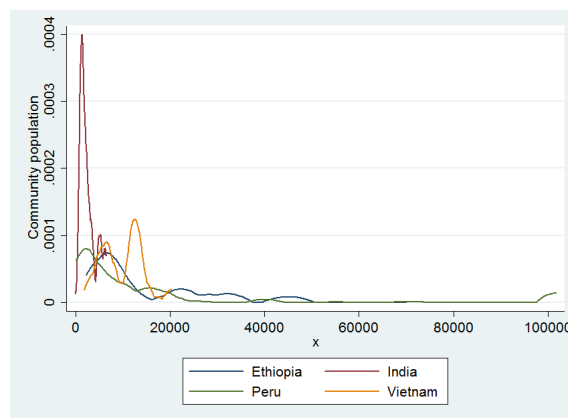


Fig A5: Distribution of community size (in population) by country

Table A1

	Ordered logit regression	
	Educational aspirations at age 15	Professional aspirations at age 15
Low-educated parents	0.342*** (0.0913)	0.540*** (0.127)
Medium-educated parents	0.739 (0.174)	0.974 (0.175)
Wealth index: lowest quartile	0.622*** (0.109)	0.558*** (0.0984)
Wealth index: 2nd quartile	0.584*** (0.101)	0.555*** (0.109)
Wealth index: 3rd quartile	0.877 (0.142)	0.715** (0.119)
Minority	1.509** (0.287)	1.323 (0.231)
Male	0.933 (0.119)	0.596*** (0.0618)
Deciles in test score at age 15	Y	Y
Community fixed-effects	Y	Y
Observations	2718	2545
Pseudo R^2	0.242	0.184

Exponentiated coefficients; Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A2

	Child's educational aspirations at age 15					
	$\leq$ Middle school	High school	Technical college	Bachelor's	Master's	University
Low-educated parents	0.0474** (0.0189)	0.0601** (0.0235)	0.0258 (0.0427)	-0.0557 (0.0572)	-0.0738** (0.0365)	-0.112*** (0.0404)
Mid-educated parents	-0.00833 (0.0112)	-0.00397 (0.0180)	0.0262 (0.0283)	0.0485 (0.0459)	-0.0610* (0.0330)	-0.00479 (0.0290)
Wealth index: lowest quartile	0.00320 (0.0200)	0.0796*** (0.0263)	-0.00634 (0.0255)	0.00727 (0.0364)	-0.0849*** (0.0194)	-0.0625** (0.0281)
Wealth index: 2nd quartile	0.0264 (0.0170)	0.0681*** (0.0222)	-0.000654 (0.0227)	-0.0428 (0.0354)	-0.0537*** (0.0204)	-0.0655** (0.0267)
Wealth index: 3rd quartile	0.0117 (0.0150)	0.0130 (0.0187)	0.0102 (0.0241)	0.0364 (0.0278)	-0.0716*** (0.0178)	-0.0148 (0.0242)
Minority	0.00167 (0.0256)	-0.0791*** (0.0265)	0.00942 (0.0262)	0.0699* (0.0362)	-0.000156 (0.0166)	0.0589** (0.0297)
Male	-0.0118 (0.0137)	0.0241 (0.0153)	0.0117 (0.0145)	-0.0116 (0.0217)	-0.00982 (0.00990)	-0.0195 (0.0205)
Constant	-0.0176 (0.0321)	0.526*** (0.0412)	0.430*** (0.0535)	0.307*** (0.0755)	0.167*** (0.0431)	0.877*** (0.0572)
Deciles in test score at age 15	Y	Y	Y	Y	Y	
Community fixed-effects	Y	Y	Y	Y	Y	
Observations	2369	2369	2369	2278	2278	2752
Adjusted R^2	0.284	0.136	0.088	0.178	0.046	0.243

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A3

	Child's professional aspirations at age 15				
	≤Primary	Secondary	Technical college	Bachelor's	Master's
Low-educated parents	0.0298 (0.0213)	0.0564 (0.0343)	0.00105 (0.0145)	-0.0417 (0.0545)	-0.0456 (0.0350)
Medium-educated parents	-0.0154 (0.0119)	0.0225 (0.0304)	-0.000531 (0.0124)	-0.0105 (0.0457)	0.00390 (0.0300)
Wealth index: lowest quartile	0.0512** (0.0201)	0.0484 (0.0320)	-0.00631 (0.0131)	-0.0674 (0.0443)	-0.0259 (0.0267)
Wealth index: 2nd quartile	0.0365** (0.0166)	0.0576* (0.0301)	-0.00738 (0.00961)	-0.0536 (0.0338)	-0.0331 (0.0257)
Wealth index: 3rd quartile	0.000133 (0.0110)	0.0455* (0.0255)	0.00186 (0.0103)	-0.0195 (0.0329)	-0.0280 (0.0254)
Minority	-0.0139 (0.0172)	-0.0182 (0.0320)	-0.000586 (0.0128)	0.00557 (0.0402)	0.0271 (0.0235)
Male	-0.0137 (0.0105)	0.108*** (0.0206)	0.0172* (0.00975)	-0.0799*** (0.0240)	-0.0320** (0.0154)
Constant	0.0309 (0.0257)	0.0320 (0.0493)	0.174*** (0.0189)	0.586*** (0.0710)	0.177*** (0.0402)
Deciles in test score at age 15	Y	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y	Y
Observations	2545	2545	2545	2545	2545
Adjusted R^2	0.199	0.156	0.003	0.141	0.154

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A4

	(1)	(2)
	Test score at age 15	Test score at age 15
Educational asp. at age 15: $\leq$ Middle school	-0.143** (0.0711)	
Educational asp. at age 15: High school	0.00931 (0.0929)	
Educational asp. at age 15: Technical college	-0.0468 (0.0531)	
Professional asp. at age 15: $\leq$ Primary		-0.155 (0.114)
Professional asp. at age 15: Secondary		-0.0958 (0.0896)
Professional asp. at age 15: Technical college		-0.219 (0.169)
Professional asp. at age 15: Bachelor's		0.0163 (0.0698)
Low-educated parents	-0.175*** (0.0641)	-0.158** (0.0653)
High-educated parents	-0.0398 (0.0640)	-0.0420 (0.0621)
Wealth index: lowest quartile	-0.181*** (0.0654)	-0.186*** (0.0717)
Wealth index: 2nd quartile	-0.146** (0.0585)	-0.182*** (0.0610)
Wealth index: 3rd quartile	-0.156*** (0.0536)	-0.180*** (0.0582)
Minority	-0.0811* (0.0448)	-0.0791* (0.0430)
Male	0.120*** (0.0414)	0.167*** (0.0371)
Constant	0.896*** (0.111)	0.879*** (0.126)
Deciles in test score at age 12	Y	Y
Deciles in test score at age 8	Y	Y
Community fixed-effects	Y	Y
Observations	1381	1345
Adjusted R^2	0.544	0.600

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A5: alternative measure of professional aspirations

	Educational aspirations				
	$\leq$ Primary	Secondary	Technical college	Bachelor's	Master's
Low-educated parents	0.0413** (0.0202)	0.0764** (0.0302)	0.00390 (0.0175)	-0.0872* (0.0512)	-0.0345 (0.0456)
Medium-educated parents	-0.00656 (0.0116)	0.0433* (0.0233)	-0.0118 (0.0147)	-0.0559 (0.0458)	0.0311 (0.0421)
Minority	-0.00669 (0.0167)	0.00932 (0.0270)	-0.0369* (0.0195)	-0.0184 (0.0422)	0.0526 (0.0355)
Male	-0.0184* (0.00964)	0.121*** (0.0183)	0.0112 (0.0105)	-0.0463* (0.0248)	-0.0675*** (0.0244)
[1em] Constant	0.0243 (0.0239)	0.0263 (0.0465)	0.0725*** (0.0209)	0.466*** (0.0684)	0.410*** (0.0592)
Deciles in test score at age 15	Y	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y	Y
Observations	2545	2545	2545	2545	2545
Adjusted R^2	0.192	0.126	0.111	0.175	0.174

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A6: alternative measure of professional aspirations

	Test score at age 15
Professional asp.: $\leq$ Primary	-0.148 (0.102)
Professional asp.: Secondary	-0.0441 (0.0664)
Professional asp.: Technical college	-0.218* (0.122)
Professional asp.: Bachelor's	0.0504 (0.0504)
Low-educated parents	-0.215*** (0.0626)
Medium-educated parents	-0.0845 (0.0649)
Minority	-0.0913** (0.0417)
Male	0.161*** (0.0374)
[1em] Constant	0.840*** (0.109)
Deciles in test score at age 12	Y
Deciles in test score at age 8	Y
Community fixed-effects	Y
Observations	1345
Adjusted R^2	0.595

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A7

Educational aspirations at age 12				
	$\leq$ Middle school	High school	Technical college	University
Low-educated parents	0.0536* (0.0291)	0.0411* (0.0223)	0.0147 (0.0214)	-0.109*** (0.0371)
Medium-educated parents	0.00360 (0.0177)	0.0121 (0.0171)	0.0122 (0.0226)	-0.0279 (0.0288)
Minority	-0.00247 (0.0198)	-0.0201 (0.0211)	0.00366 (0.0262)	0.0189 (0.0341)
Male	-0.0337** (0.0157)	-0.00320 (0.0168)	-0.0426** (0.0186)	0.0795*** (0.0251)
Constant	-0.00511 (0.0374)	0.0942** (0.0398)	0.0721* (0.0391)	0.839*** (0.0649)
Deciles in test score at age 12	Y	Y	Y	Y
Deciles in test score at age 8	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y
Observations	1561	1561	1561	1561
Adjusted R^2	0.195	0.061	0.095	0.164

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A8

	Professional aspirations at age 12				
	$\leq$ Primary	Secondary	Technical college	Bachelor's	Master's
Low-educated parents	0.0570** (0.0243)	0.0419 (0.0356)	-0.00894 (0.0169)	-0.0890* (0.0526)	-0.000902 (0.0343)
High-educated parents	0.00203 (0.0150)	0.0276 (0.0331)	-0.00840 (0.0177)	-0.0506 (0.0409)	0.0293 (0.0311)
Minority	0.0143 (0.0290)	-0.0339 (0.0245)	0.00230 (0.00961)	0.00471 (0.0394)	0.0126 (0.0305)
Male	-0.0526*** (0.0172)	0.108*** (0.0177)	0.00897 (0.0123)	-0.0254 (0.0286)	-0.0394 (0.0240)
[1em] Constant	0.0206 (0.0443)	-0.0936* (0.0545)	0.174*** (0.0204)	0.424*** (0.0826)	0.475*** (0.0668)
Deciles in test score at age 12	Y	Y	Y	Y	Y
Deciles in test score at age 8	Y	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y	Y
Observations	1523	1523	1523	1523	1523
Adjusted R^2	0.142	0.106	0.057	0.089	0.076

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A9: restricted sample

	Educational aspirations					
	$\leq$ Middle school	High school	Technical college	Bachelor's	Master's	University
Low-educated parents	0.0616*** (0.0181)	0.0742*** (0.0250)	0.0254 (0.0475)	-0.0808 (0.0525)	-0.0775** (0.0346)	-0.140*** (0.0462)
Medium-educated parents	-0.00102 (0.0123)	0.00453 (0.0198)	0.0250 (0.0318)	0.0317 (0.0452)	-0.0599* (0.0324)	-0.0193 (0.0335)
Minority	-0.00122 (0.0277)	-0.0596** (0.0277)	0.0252 (0.0297)	0.0418 (0.0377)	-0.00462 (0.0183)	0.0321 (0.0329)
Male	-0.0101 (0.0153)	0.0213 (0.0166)	0.00779 (0.0161)	-0.00531 (0.0240)	-0.0120 (0.0107)	-0.0124 (0.0240)
[1em] Constant	-0.119*** (0.0339)	0.913*** (0.0516)	0.00530 (0.0555)	0.342*** (0.0658)	0.0953** (0.0373)	1.063*** (0.0565)
Deciles in test score at age 15	Y	Y	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y	Y	Y
Observations	1996	1996	1996	1935	1935	2236
Adjusted R^2	0.277	0.126	0.082	0.185	0.017	0.241

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A10: restricted sample

	Professional aspirations				
	$\leq$ Primary	Secondary	Technical college	Bachelor's	Master's
Low-educated parents	0.0484** (0.0237)	0.0859** (0.0344)	-0.00221 (0.0172)	-0.0622 (0.0550)	-0.0699* (0.0404)
Medium-educated parents	-0.0100 (0.0142)	0.0384 (0.0285)	-0.00238 (0.0153)	-0.0147 (0.0481)	-0.0113 (0.0370)
Minority	-0.0107 (0.0212)	0.00746 (0.0348)	0.00985 (0.00940)	-0.0379 (0.0416)	0.0313 (0.0222)
Male	-0.0199* (0.0120)	0.129*** (0.0229)	0.00796 (0.00733)	-0.0804*** (0.0272)	-0.0368** (0.0177)
Constant	-0.0111 (0.0240)	-0.152*** (0.0442)	0.0954*** (0.0181)	0.693*** (0.0650)	0.375*** (0.0435)
Deciles in test score at age 15	Y	Y	Y	Y	Y
Community fixed-effects	Y	Y	Y	Y	Y
Observations	2075	2075	2075	2075	2075
Adjusted R^2	0.176	0.167	0.006	0.135	0.154

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A11: restricted sample

	(1)	(2)
	Test score at age 15	Test score at age 15
Educational asp. at age 12: $\leq$ Middle school	-0.142* (0.0753)	
Educational asp. at age 12: High school	-0.105 (0.0986)	
Educational asp. at age 12: Technical college	-0.0571 (0.0615)	
Professional asp. at age 12: $\leq$ Primary		-0.270** (0.124)
Professional asp. at age 12: Secondary		-0.220*** (0.0831)
Professional asp. at age 12: Technical college		-0.514*** (0.186)
Professional asp. at age 12: Bachelor's		-0.0982* (0.0587)
Low-educated parents	-0.236*** (0.0763)	-0.236*** (0.0754)
Medium-educated parents	-0.107 (0.0792)	-0.121 (0.0776)
Minority	-0.0563 (0.0528)	-0.0671 (0.0508)
Male	0.117** (0.0494)	0.164*** (0.0439)
[1em] Constant	0.680*** (0.184)	1.216*** (0.124)
Deciles in test score at age 12	Y	Y
Deciles in test score at age 8	Y	Y
Community fixed-effects	Y	Y
Observations	51	1051
Adjusted R^2	0.543	0.604

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$