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# **Do High Aspirations Lead to Better Outcomes? Evidence from a Longitudinal Survey of Adolescents in Peru**

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## **Abstract**

Using a novel panel survey of relatively poor urban Peruvian adolescents, we explore the link between three type of aspirations (educational, occupational, and aspirations to migrate) and individual's propensity to invest in the future. We found remarkably high education aspirations, even among relatively poor individuals and adolescents that were exposed to negative shocks in the past, suggesting high levels of resilience among our sample. We also find that aspirations are quite stable over time, and positively associated with personality traits such as self-efficacy, life satisfaction, and locus of control, which helps explain their persistence over time. Finally, we find that high aspirations are strongly associated with positive future outcomes such as higher investments in education and less engagement in risky behaviors such as unsafe sex and binge drinking.

Keywords: adolescents, aspirations, human capital outcomes, risky behaviors, Peru

## **1. Introduction**

Adolescence is a period of exploration in which individuals start to develop their self-identity, and make important decisions about their future, ranging from education, relationships, and entrance into the labor market to health behaviors (Sawyer et al. 2012). Risky behaviors such as unsafe sex, binge drinking, and drug use tend to emerge during this period, potentially jeopardizing those plans (Steinberg 2004). Poor self-concepts (such as esteem) and hopelessness are also significant risk factors for adverse health behaviors during adolescence and adulthood (Mann 2004). While at the heart of behavioral sciences, we know little about how aspirations shape behaviors and subsequent accomplishments. Better understanding this relationship is particularly important for adolescents, as they are at a juncture in their lives that aspirations will likely guide their choices and shape their futures.

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Several studies in the literature on the economics of well-being have found that people with high hopes and aspirations tend to have better outcomes in a range of areas from health to the labor market to social arenas (Graham, Eggers, and Sukhtankar 2004; De Neve and Oswald 2012; O'Connor and Graham 2018). Longitudinal studies with adolescents find that aspirations predict future educational attainment, occupational attainment, and engagement in risky behaviors (Beal and Crockett 2010; Mahler et al. 2017; Schmid, Phelps, and Lerner 2011; Sipsma et al. 2013).

In contrast, lack of aspirations and/or hope for the future – often due to the daily stress that accompanies poverty and makes future planning difficult – can contribute to inferior later life outcomes, as individuals who do not believe in the future have higher discount rates, are more likely to participate in risky behaviors, and less likely to invest in their futures, such as via education and savings (Mullainathan and Shafir 2013).

It is also possible that high aspirations can result in frustration if the aspired goals are unattainable. A study based on the Young Lives panel study for India finds an inverse U-curve in the relationship between aspirations (of both parents and adolescents) and education outcomes, with both very low and overly high aspirations leading to worse outcomes than those in the “bell” of the curve (Ross 2019). Consistent with this result, another study finds that aspirations that are ahead, but not too far ahead, provide the best incentives for investment in the future (Ray 2006).

Using a novel panel survey of relatively poor urban Peruvian adolescents, we explore the link between aspirations and individuals' propensity to invest in the future. Our analysis has four objectives. First, to explore three types of aspirations (educational, occupational, and migration) among participants, and to understand how aspirations vary with individual characteristics, their childhood experience, and the characteristics of the household where they grew up. Second, the longitudinal nature of the study allows us to examine how aspirations change over time *within* individuals and to explore whether there are any distinct traits that pertain to each of the aspirations categories. When possible, we determine whether adolescents met their aspirations or whether they mis-predicted their futures. Third, we look at the link between aspirations and broad personality traits such as self-efficacy, subjective well-being, and locus of control. Lastly, we explore whether high aspirations lead to better human capital outcomes. We investigate this by looking at an individual's propensity to invest in their own future, as measured by school enrollment, academic achievement, time use, and their engagement in risky behaviors such as substance use and delinquency.

Our results show that aspirations can be very high even among relatively poor individuals and are also resilient to negative shocks. Indeed, we find that aspirations are quite stable over time – which is particularly notable given that our respondents are in a period in which young lives change and develop a great deal. Aspirations in our sample are positively associated with personality traits such as self-efficacy, life satisfaction, and locus of control, which helps explain their persistence over time. Finally, we find that high aspirations are strongly associated with positive future outcomes such as higher investments in education and risk avoidance.

## **2. Aspirations and its determinants**

Aspirations are commonly defined as a hope or ambition of achieving something. The concept of aspirations spans multiple – often interrelated – dimensions both at the individual level (e.g. level of education that one aspires to, type of job, fertility, status, etc.) and at the collective level. The concept is different from expectations, which typically encompass an individual’s beliefs on what they think they can achieve with effort (i.e. the most likely or realistic outcome) (Dalton, Ghosal, and Mani 2016). It is also different from hope, which in our view, reflects optimism about the future without explicitly involving agency or clear goals.

More formally, aspirations have three distinctive aspects. They are future-oriented, as they involve goals to be accomplished in the future. They act as motivators and drivers of effort, as they allow us to narrow our effort and attention toward accomplishing our goals, and away from less relevant activities. Finally, they require some amount of effort to achieve (Bernard and Taffesse 2012).

Aspirations evolve over time, and are shaped by individual characteristics and their experiences, their families, and interaction with the social environment. Aspirations may also interact with objective factors such as capability and talent, leading to virtuous – or vicious – circles. As a result, several factors have been identified as potential determinants of aspirations, as well as possible interactions among these factors.

One perspective, often taken by behavioral economists, is that aspirations are drawn from individual’s past experiences, and at the same time, are profoundly affected by one’s social environment (Genicot and Ray 2017). According to this view, individuals adjust their aspirations to what is perceived to be possible.

This has implications for people living in poverty as the lack of opportunity and/or information about what is possible can result in a reduced ‘capacity to aspire’, frustration if the aspired goals are unattainable, and vicious cycles of continually lowering aspirations in ways which can perpetuate poverty (Appadurai 2004; Dalton, Ghosal, and Mani 2016). This adaptation may be explained in part as a psychological preservation mechanism for those with limited capabilities or who live in conditions that do not allow them to aspire, as in the case of women in situations with extremely unequal gender rights (Frederick and Loewenstein 1999; Graham 2011; Ray 2016).

It is important to distinguish between hedonic and evaluative well-being in this instance. Hedonic well-being metrics measure momentary moods, such as worry or contentment, which are strongly influenced by character traits such as positive or negative affect. Evaluative well-being metrics assess satisfaction with life over the life course, and these evaluations are very much influenced by individuals’ perceptions of their opportunities over the life course. As such, very poor people in difficult conditions may often report to be very “happy” - in the sense of momentary contentment - but they typically score lower on evaluative questions which prime them to think about their lives as whole (Graham, 2009). A more recent literature, meanwhile, focuses on optimism (as opposed to focused aspirations) and finds that some cohorts who lived in deprived conditions are much more optimistic than their counterparts of the same income levels and tend to do better over time in the education and health arenas. This is the case, for example, for low-income African Americans and Hispanics compared to whites in the U.S. (Graham and Pinto 2019; Kerpelman, Eryigit, and Stephens 2008)

A second perspective is offered by personality and social psychologists who believe that aspirations are linked to broad personality traits, which include traits like self-esteem, locus of control, and self-efficacy (Almlund et al. 2011; Bandura et al. 2001; Dercon and Singh 2013). Studies have shown that compared to measures of fluid intelligence such as IQ, personality traits are more likely to evolve over time and to interact with the environment well into the middle ages (Almlund et al. 2011). These personality traits, in turn, are known to predict future outcomes such as education attainment, health and labor outcomes (Borghans et al. 2008; Heckman and Kautz 2012).

### **3. Methods**

#### ***3.1 Study context***

We collaborated with the Instituto de Investigacion Nutricional (IIN) in Lima, directed by Dr. Mary Penny, to conduct a new panel survey of 400 adolescents in the district of San Juan de Lurigancho. The first study wave was conducted between May-June 2017, when the adolescents were aged 18 and 19 years old and was followed by another subsequent wave of data in February 2020, with the interviews being completed just before the COVID-19 pandemic hit Peru. Institutional Review Board approval for this study was obtained before each round of data collection from the IIN.

San Juan de Lurigancho is a large peri-urban and relatively poor neighborhood of Lima with a population of over 1 million residing in a 50-square-mile area. The district is home to several slums, and to high levels of crime and youth unemployment (Andrade-Chaico and Andrade-Arenas 2019). The adolescents from our survey come from poor or near-poor families. Living standards range from concrete houses with newly acquired piped water and sewage and electricity, as well as access to metro and bus transport, to significantly more impoverished prefabricated homes further away from the center still in the process of acquiring these amenities.

We focused on late adolescence (18–19 years at wave 1) as they are at a point in their lives where they have enough education and experience to observe, and at the same time are at a critical juncture in making vital choices. Most of them (83 percent) had completed secondary education in wave 1 and were making decisions about their continued education, entrance into the labor market, family formation, and risky behaviors such as sexual relationships and substance use.

In the past decades, the Peruvian educational system has undergone significant transformation, leading to substantive progress in providing access to education,<sup>3</sup> improved teacher-training programs, and increased education spending. While there has been progress, challenges such as significant differences in access and quality of education across rural and urban areas remain, which in turn show up in the performance statistics (OECD 2016).

As in many other places around the world, returns to different levels of education are changing. In Peru, between 1980 and 2004, returns to primary, secondary, and technical education fell relative

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<sup>3</sup> In 2018, net enrollment rate were over 95 percent for primary education, and 89.3 percent for secondary education. Gross enrollment ratio for tertiary education in 2017 was 70.7 percent (UNESCO UIS n.d.).

to returns to tertiary education. While returns to secondary education halved (from 12.6% to 6.3%) in that period, returns to tertiary doubled, reaching 17.3% by 2004 (Yamada 2007). The aspirations that our respondents have for college and post-college education suggest that they are aware of these differential returns.

While the parents of our San Juan de Lurigancho respondents do not have college educations and are in low skill jobs – such as construction, taxi drivers, domestic servants, and local market owners – the aspirations of their children suggest an strong awareness of the need to get tertiary education to do better than their parents. Informal interviews in the area, meanwhile, suggest that parents play a strong role in this by encouraging them to seek higher education.<sup>4</sup>

### **3.2 Measures**

#### **3.2.1 Aspirations**

We asked about aspirations in three domains: education, occupation, and migration. Respondents were asked directly about their aspirations in both waves. This approach has been shown to elicit more reliable measurements of individuals' aspirations when compared to indirect approaches that use other measures such as the self-reported minimum income need to infer measures of aspirations (Bernard and Taffesse 2014)

*Educational aspirations.* We asked participants what level of education they would like to complete. The variable is coded on a four-point scale where 1 corresponds to low aspirations and 4 represents very high aspirations (i.e. postgraduate education).

*Occupational aspirations.* We asked participants about the type of job or occupation they would like to be achieve in their life. We used ILO's International Standard Classification of Occupations (ISCO-08) to rank our respondent's occupational aspirations. Scores range from 1 (elementary occupations) to 9 (managerial occupations) (ILO 2012).

*Aspirations to migrate.* We also asked adolescents whether they would like to migrate somewhere, and if they did, we asked where. The variable is coded on an 8-point scale, where the score indicates how far a respondent aspires to migrate (i.e. 0=no desire to migrate, 7=aspires to migrate somewhere abroad).

#### **3.2.2 Individual- and household-level characteristics**

*Emotional symptoms.* These are measured using the 5-item subscale of the Strengths and Difficulties Questionnaire (SDQ), one of the most widely used screening instruments to measure psychosocial problems and strengths among young people (Goodman 1997). The scale assesses symptoms such as headaches and stomach-aches, worry, unhappy/tearful, nervous, and fears.

*Locus of control.* We selected 4 items on locus of control from Levenson's (1974) original scale (Levenson 1974). Two of these items measured internal locus of control, while the others measured

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<sup>4</sup> In addition to informal interviews, Graham also received a number of comments supporting this pattern when presenting the first-round results at the IIN in November 2018.

external (i.e. powerful others and chance) locus of control. All the above items were measured on a Likert scale, from strongly disagree (=1) to strongly agree (=4). The scale evaluates which forces individuals consider as determining their lives.

*Self-efficacy.* We used 5 items from Schwarzer and Jerusalem's (1995) Generalized Self-Efficacy Scale. This construct measures an individual's general confidence to cope with unforeseen or demanding situations (Schwarzer and Jerusalem 1995).

*Life satisfaction.* This measure, which assess current satisfaction with life, is based on responses to the best possible life (BPL) Cantril ladder question. This commonly used question asks respondents to place themselves on a 9-step ladder in which they compare their lives to the best possible life they can imagine.

*Hope.* We used a 12-item scale that Abler et al (2017) developed and piloted among adolescents in rural South Africa (Abler et al. 2017). The scale encompassed three theorized dimensions of the hope construct: personal motivation to achieve goals, anticipation of a positive future, and influence of others on hope. Response option used a four-point Likert response, ranging from 1 for 'strongly disagree' to 4 for 'strongly agree'. We created a mean hope score, going from 1 (low hope) to 4 (high hope). This scale was only asked in wave 2. Hope is related to but distinct from more specifically focused aspirations.

We also measured respondents' beliefs that hard work will get them ahead, participant's willingness to take risks, sociability, self-esteem, and optimism. We measured impatience by administering the classic discount rate question, where respondents decide between immediate sums of money today versus higher sums in the future.

*Socioeconomic status.* We measured respondent's socioeconomic status using a household asset index which included several questions on housing quality, access to services, and ownership of consumer durables. We created a weighted average, where a higher wealth index indicates a higher socioeconomic status.

*Negative shocks.* We collected data on six different type of negative shocks: robbery, whether he/she suffered from an accident (defined as serious injuries that would prevent respondents from doing their normal activities and/or require medical attention), sickness of oneself or a family member, death of family member, whether one (or both) parent left the household, unemployment shock or natural disaster.

### **3.2.3 Future outcomes**

*School outcomes.* These were assessed by the highest level of education attained by our respondents, whether they are full-time students, and their overall grade for the past academic year.

*Time use.* We asked respondents how much time they allocated to school-related tasks and whether they participated in any professional development training, such as language courses.

*Depressive symptoms.* Measured using the short form of the Center for Epidemiological Studies Depression scale (CES–D), a 10-item Likert scale questionnaire assessing depressive symptoms in the past week. The scale assesses symptoms such as feeling depressed, fearful, lonely, and having restless sleep. This was only asked in wave 2.

*Risky behaviors.* In a separate, anonymous section, we asked respondents about their sense of self-respect in their interactions with parents and peers; their usage of cigarettes, alcohol, and drugs; their attitudes about risky sexual behaviors and their proclivity to those, among others. Answering these questions was optional, and respondents provided their answers to the interviewers in a sealed envelope.

We also included a battery of questions on education, health, family support and employment.

### ***3.3 Statistical analysis***

To explore whether high aspirations result in better future outcomes we take a two-step approach.

First, we use a lagged model to deal with issues of reverse causality. That is, we explore whether aspirations at wave 1 are associated with future outcomes at wave 2. We also controlled for individual- and household level characteristics, as well as the character traits correlated with each type of aspirations.

Second, we exploit the fact that we have a panel study and estimate our outcomes of interest using a fixed-effects model to minimize omitted variable bias. Fixed-effects model eliminates one major source of confounding by controlling for any unobserved time-invariant heterogeneity that may be correlated with the explanatory variables (Wooldridge 2010).

## **4. Results**

### ***4.1. Basic socio-demographics and attrition analysis***

Table 1 shows the main descriptive statistics across both waves of data. Mean average age is 18 years old at wave 1, with the sample being evenly split between males and females. Levels of education are relatively high, with only 3 percent of the sample having no formal education in wave 1. By wave 2, more respondents had married, had children, and lost a parent. Average years of education increased, but so did the number of adolescents that dropped out of school. Overall, half of the sample was no longer enrolled full-time in education at wave 2. Respondents reported that the main reason for leaving school was lack of financial resources (e.g. respondents could not afford school and had to look for a job to make a living). Most respondents experienced some form of negative shock (90.5 percent). The most common shocks were thievery, followed by parent leaving the household, accident, and family sickness.

In terms of household-level characteristics, and according to data from the wealth asset index, most of the houses have access to electricity, water, and a toilet. Further, over 95% of households have access to a TV and a phone, 87% to a fridge, and 60% to a computer in the house. Most of their parents had not completed higher than secondary levels of education. As noted above, the majority

of the fathers were construction workers, merchants (likely informal sector), bus or taxi drivers, or carpenters, while most mothers were housekeepers, merchants or street vendors, seamstresses, or housecleaners.

Ninety-nine adolescents were lost to follow-up, resulting in an attrition rate of 24.75%. Table 2 tests for attrition bias across observables. On average, males and adolescents who were not enrolled full-time at wave 1 were more likely to drop out at follow-up. Educational aspirations were lower among those who were lost to follow-up a significant difference. We observed no differences in occupational aspirations, aspirations to migrate, or other covariates.

We have reasons for attrition for most of these individuals (75%). Half of the missing sample had moved to a different location (within Peru and/or abroad to countries such as Spain or the U.S.). The rest were either not available (12%), traveling (5%) or working (4%) at the time of the interview. Parents refused to the survey in three cases, and one adolescent had a high-risk pregnancy and could not participate. Given that a significant percent of the attrition group traveled abroad to seek better jobs, we cannot attribute attrition to low aspirations or worse performance.

#### ***4.2. What do adolescents aspire to do in the future?***

We find remarkably high aspirations in wave 1. Overall, 41 percent of our sample report wanting to achieve post-graduate education (i.e. master's degree or PhD), 47 percent aiming for university, and 10 percent aspiring for technical education. Occupational aspirations are also high, with most respondents aspiring to high-skilled professional jobs such as a lawyer, architect, or doctor. Almost all respondents (93%) aspire to migrate, with half of those wanting to migrate to another district within the same province, and a quarter to a distant country (Figure 1-3).

The main reasons for wanting to migrate is to find better education and employment opportunities or to escape high levels of crime and delinquency. Table 3 shows the correlation across all three types of aspirations. We find a positive and statistically significant association between educational and occupational aspirations, as well as between educational aspirations and aspirations to migrate. When asked a follow up question about whether they can achieve their desired level of education and occupation, 89 percent and 96 percent of the sample respond affirmatively, respectively.

There is substantial heterogeneity in aspirations depending on individual characteristics (Table 4). We find lower educational aspirations among adolescents who were married and those who had a child. This is not a surprise given that those who marry or have a child at such a young age have likely reduced their possibilities to continue education. We also find that educational aspirations are lower among the poor. For example, 38% of respondents from poor households aspire to achieve post-graduate, compared to 56% of respondents from highest income households which are, at most, aspiring lower middle class. Educational aspirations are also lower amongst those respondents who did not attain secondary education and where employed – presumably because they had to skip school or stop education all together.

Occupational aspirations, meanwhile, are higher for females, those who had attained secondary education, did not have a child, and for those who lived in a household with high family support.

Lastly, aspirations to migrate are lower for those adolescents who lost a parent, likely because they had to stay home to help take care of other family members.

We find no difference in levels of aspirations among individuals that were highly exposed to negative shocks compared to those that did not. This is likely because negative shocks like robbery or accidents are very common in neighborhoods such as San Juan de Lurigancho, making it more likely that people adapt to them (for similar examples, see Graham, 2011). It is also at least suggestive of resilience as a driving channel.

#### ***4.3. Do aspirations change over time?***

Aspirations may change as a result of new experiences, past achievements and failures, and interactions with the social and academic environment. With time, individuals obtain a better understanding of the world and what is possible and, especially during adolescence, start to realign their behavior with the social norms of those they identify with and/or with difficult realities in their situations (Gottfredson 2002; Sebastian, Burnett, and Blakemore 2008)

In the first wave of data, our respondents were 18–19 years, point at which they likely had enough education and life experiences to internalize personal and contextual barriers to attaining these aspirations (i.e. aspirations and expectations converge). Indeed, we find that aspirations remain relatively stable over time (Table 5a). We calculated t-test for differences in average aspirations across both waves and failed to reject the null hypothesis that these two were different ( $p=0.09$ ). This pattern was also consistent with occupational aspirations ( $p=0.74$ ) and aspirations to migrate ( $p=0.81$ ). Half of the sample kept their educational and occupational aspirations constant, and the rest of the sample was evenly split between those who increased and decreased their aspirations (Table 5b).

#### ***4.4. Do optimists mispredict their futures?***

An obvious question in this narrative is whether optimists succeed in their aspirations or mispredict their futures. Misprediction could lead to frustration or lower happiness in the long run. Alternatively, it might simply result in continuity in happiness among innately optimistic respondents, who remain so regardless of shocks or setbacks.

We are not able to measure whether or aspirations were met for most of our sample since we do not observe the complete education or labor market trajectories. Respondents are 20-22 years old at wave 2, and a third of them are still attending university. Only 4 of our respondents had completed university at the time of the second wave (all of which had aspired to attain it at the first round). For those enrolled in university we can only conclude that they are on track to meet their aspirations but cannot say anything about their final outcomes.

Among the individuals with lower educational aspirations who might have had time to achieve those, we observe that those individuals who aspired for technical school ( $n=39$ ) in wave 1, met their aspirations at wave 2. While small sample sizes, these results suggest that the aspirations that adolescents set for themselves are realistic.

#### ***4.5. Are aspirations and personality traits correlated?***

How high an individual aspires is determined by their own beliefs about what they think they can achieve as well as their personality traits. Typically, individuals evaluate their internal and/or external constraints (e.g. one's locus of control and/or credit) and exclude some of the unattainable options. Particularly for those living in poverty, this plays a crucial role since very often, individual's perceived returns are inaccurate due to imperfect information (Jensen 2010).

Mean levels of character traits are high and continue to be so in wave 2 (Table 6). Respondents improve in internal locus of control, self-efficacy, self-esteem and optimism scores over time. They are also more likely to believe that hard work will get them ahead and are more willing to take risks. On average, life satisfaction scores are relatively high in both waves.

Most respondents (79%) believe that they were happier in wave 1 than they were 10 years ago, and similarly, most (76%) believed that they were happier in wave 2 than they were in wave 1. This is consistent with other work that we have done exploring optimism levels over time, where we find that respondents who are optimistic in earlier periods tend to remain optimistic in later periods and to do better in the income and education realms, even if they have suffered some negative shocks along the way (Graham and Pinto 2019; O'Connor and Graham 2018).

In Table 7 we report the pairwise correlations between all three types of aspirations and personality traits. Educational aspirations are positively correlated with self-efficacy, life satisfaction, belief in hard work, and negatively with impatience. Occupational aspirations are negatively correlated with impatience and willingness to take risks, and positively with belief in hard work. Aspirations to migrate are correlated with belief in hard work.

The mean hope score in our sample was close to that for a study of adolescents in rural South Africa (mean = 3.30; std = 0.35 in our sample; mean = 3.4; std = 0.6 in South Africa). We find a positive correlation between educational aspirations and hope ( $p < 0.001$ ), but no correlation with occupational aspirations or aspirations to migrate.

#### ***4.6 Do high aspirations lead to better outcomes?***

To explore this question, we look at the association between aspirations and future outcomes such as school enrollment, academic achievement, time use, mental health, and adolescent's engagement in risky behaviors such as substance use and delinquency.

Overall, we found that 16.61% of the sample screened positively for depression using a cut-off of 10 in the short version of the Center for Epidemiological Studies Depression scale (CES-D-10). This is consistent with the evidence found with adolescents in Peru (Flores-Cornejo et al. 2017). As shown in Table 8, most respondents experimented with alcohol and unsafe sex, almost half smoked, while very few had taken drugs or were part of a gang. Engagement in these behaviors increased over time/with age.

Educational aspirations at wave 1 predict better outcomes at wave 2. Higher educational aspirations are associated with better educational outcomes (e.g. level of education attained and

enrollment status) and more time allocated to school-related tasks and professional development. Keeping other factors constant, a 1 standard deviation increase in educational aspirations at wave 1 decreases the likelihood of smoking, engaging in unsafe sex, and engaging in sex while drunk by 15, 7, and 7 percentage points, respectively in wave 2 (Table 9A). Occupational aspirations at wave 1 also predict better educational outcomes, more time devoted to school, and less engagement with alcohol and risky sex at wave 2 (Table 9B). Lastly, high aspirations to migrate are associated with higher grades, more time allocated to professional development training, and being less likely to carry a weapon. Aspirations to migrate also seem to be positively correlated with depressive symptoms and gang membership (Table 9C).

In order to obtain a better identification of the relationship between aspirations and future outcomes, we specify a fixed-effects model. Time-invariant variables (such as sex) were thus dropped from the analysis. Academic performance and depressive symptoms were not observed in wave 1 and were also excluded from this analysis.

The results resemble the ones above (Table 10). An increase in educational aspirations is positively correlated with being a full-time student and allocating more time to school activities. High educational aspirations are also predictive of avoiding drugs and carrying weapons, which was not a significant finding in the first model. As in the first model, a one standard deviation increase in occupational aspirations reduces the likelihood of smoking, drinking alcohol and carrying a weapon by 10, 7, and 1 percentage points, respectively. The point estimate for alcohol is the same across both models (7 percentage points).

Lastly and rather surprisingly, aspirations to migrate seem to be positively correlated with smoking, drinking, and engaging in risky sex. This last finding runs counter to the direction of the rest of our findings. One potential explanation is that these individuals aspire to migrate in order to get away from these kinds of behaviours among their peers, in addition to looking for better opportunities elsewhere (which is in our data on reasons for wanting to migrate). Unfortunately, we do not have the data to test the negative peer effects explanation. More generally, though, the fixed effects estimates show that the relationship between aspirations and future outcomes is robust to holding within person traits constant.

## **5. Discussion**

Our research attempted to shed light on the role of aspirations in generating better future outcomes. We conducted a panel study with adolescents (18–19 years at wave 1) in a poor and near poor peri-urban neighborhood in Lima, Peru. We asked about aspirations in three domains: education, occupation, and migration.

Our main finding was remarkably high levels of aspirations among our survey population, with over 80% of our respondents aspiring to complete university or post graduate education. Further, aspirations are sticky over time, with half the sample keeping their aspirations constant two years later (a quarter increased them). Lastly, high aspirations predict better future outcomes. Respondents with high aspirations in wave 1 were more likely to have better educational- and health-related outcomes as measured by school enrollment, academic achievement, time allocated to school activities and professional development, and lower engagement in risky behaviors such

as substance use and unsafe sex in wave 2. This supports our (and others') priors that individuals with high aspirations and/or hope for the future are more likely to invest in those futures as well as to avoid behaviors that are likely to jeopardize their futures.

There are some differences across the aspiration types, though, with educational aspirations most positively associated to human capital investments and negatively associated with risky behaviors. Migration aspirations, while linked to positive investments in human capital such as attaining higher grades, are also, rather surprisingly, associated with depressive symptoms and engaging in risky behaviors (both of which have been shown to be positively associated (Pozuelo et al. 2021)). We do not have the data to explain this pattern, but we posit that at least some respondents may aspire to migrate in order to get away from these behaviors among their neighborhood peers.

Our study of course has limitations. First, we look at the association between aspirations and future outcomes using observational evidence, and thus, this paper does not claim any causal relation. To minimize potential endogeneity concerns, we specified a lagged model and fixed effects model, which eliminates one major source of confounding by controlling for any unobserved time-invariant heterogeneity that may be correlated with the explanatory variables. Second, we do not have data on the role and aspirations of peers. This is particularly important during adolescence, as it is during this time when adolescents start spending more time with peers than with family members, and place more value on what their peers think and do (Blakemore and Mills 2014).

We also cannot say anything about parental aspirations (aspirations that the parents have for their own children). However, anecdotal data based on interviews with those who work in this neighborhood and in Lima more generally suggest that there is a very strong shared belief in the importance of education among these parents – even though they do not have tertiary education – which in turn provides a support system for the young adults in our sample; indeed 88% of our respondents report that their education is paid for by their parents.

Our results suggest that aspirations may be an important policy lever to improve overall well-being and long-run outcomes, and recent evidence shows that it is possible to intervene to alter aspirations. For example, a study conducted in the Dominican Republic estimated that providing information on the returns to education (thus changing the perceived returns) increased completion of secondary education by 0.20–0.35 additional years (Jensen 2010). Using census data for Brazil, another study found that exposure to soap operas with strong female role models has a significant effect in lowering birth rates, with the strongest effect among women from lower socioeconomic status (La Ferrara, Chong, and Duryea 2012). Beaman et al. (2012) show that female leadership influences adolescent girls' career aspirations and educational attainment (Beaman et al. 2012). Lastly, a study conducted in rural Ethiopia found that playing a documentary featuring role models led to higher aspirations and better saving and investment decisions (Bernard et al. 2014).

The driving channel in all these cases – as well as in other experiments – seems to be the provision of a hope channel where one previously did not exist. A recent review showed that the provision of hope in very poor populations in Africa – via the gift of a cow or some other form of livestock – improve household outcomes the following year, with hope being the most important driver of those (Haushofer and Fehr 2014). While these studies cannot reveal how long the behavioral changes last, they are, at the least, suggestive of a virtuous circle.

In Peru, education levels are high enough to drive awareness of the increasing returns to higher versus secondary education, which is likely a driving factor. Yet our data also suggest that traits such as optimism, self-esteem, and internal locus of control matter independently of that. Our results suggest that aspirations are persistent *within* respondents, with high aspirations remaining at the same levels over the two-year period for most respondents. While two years is not a long-time frame, it is typically a time of many changes for individuals in their late teens and early twenties. As such, persistence in these critical years certainly suggests that aspirations are not just fleeting traits.

There is much more we need to know, both about the drivers of aspirations and how the in-person and environmental factors interact in determining them, and about the consistency and durations of the channel from aspirations to better outcomes. We are in the process of fielding similar versions of our surveys in different cultural and population contexts (again with low-income young adults) and, if possible, in the next year or two in the same cohort in Peru. We also hope to explore the possibility of implementing aspirations interventions in some of them.

At this juncture, though, our findings suggest that hope and aspirations matter to actual outcomes and that they may be particularly important in the context of deprived populations. This is because they do not have the same level of financial support and other advantages as wealthier ones that facilitate making key investments in their own human capital.

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## Tables and Figures

**Table 1. Basic sociodemographics**

	Wave 1 (n=400)	Wave 2 (n=301)
Female	53.8%	57%
Age of child (in years)	18	21
Married	4.8%	17%
Any children (only females)	13.0%	29.5%
Deceased parent	8.3%	13%
Attained primary	97.3%	99%
Attained secondary	82.8%	94%
Enrolled in school	68.0%	50%
Average years of education	11.8	14.3
Worked in the past 12 months	76.5%	79%
Currently employed	35.3%	58%
Average number of negative shocks experienced	2.3	1.3

**Table 2. Testing non-random attrition across observables**

Variable	Lost to follow up	Followed up	P-value
<i>Individual characteristics</i>			
Female	42%	57%	0.01**
Age of child (in years)	18.44	18.45	0.90
Married	5%	5%	0.87
Any children	12%	13%	0.81
Deceased parent	5%	9%	0.13
Attained primary	99%	97%	0.11
Attained secondary	84%	82%	0.74
Enrolled full-time	60%	71%	0.05*
Worked in the past 12 months	79%	76%	0.53
Currently employed	42%	33%	0.10
Subjective relative income	2.90	2.98	0.22
<i>Aspirations</i>			
Educational (0-4 score)	2.10	2.33	0.01*
Occupational (1-9 score)	7.37	7.46	0.62
Migration (0-7 score)	3.74	3.52	0.46
<i>Personality traits</i>			
Emotional symptoms	3.82	4.30	0.11
Internal locus of control	2.61	2.63	0.65
External locus of control	2.26	2.25	0.79
Self-efficacy	3.06	2.99	0.11
Subjective well-being	5.70	5.69	0.97

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Table 3. Pairwise correlation across types of aspirations**

	Educational	Occupational	Migration
Educational	–		
Occupational	0.27***	–	
Migration	0.10*	0.06	–

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Table 4. Educational, occupational, and migration aspirations across subgroups (wave 1)**

	Educational	Occupational	Migration
All	2.27	7.44	3.58
Male	2.31	7.20	3.64
Female	2.23	7.65	3.52
<i>p-value</i>	0.26	0.002**	0.64
Single	2.30	7.45	3.56
Married	1.63	7.26	3.83
<i>p-value</i>	0.01*	0.56	0.61
Poorest	2.23	7.75	3.59
Less poor	2.53	7.49	3.37
<i>p-value</i>	0.00***	0.80	0.46
No children	2.31	7.52	3.54
Has children	1.71	6.96	3.38
<i>p-value</i>	0.00**	0.01*	0.73
Parents alive	2.29	7.43	3.66
Deceased parent	2.09	7.53	2.74
<i>p-value</i>	0.19	0.70	0.04*
Did not attain secondary	1.81	6.93	3.38
Attained secondary	2.37	7.55	3.62
<i>p-value</i>	0.00***	0.00**	0.47
Not employed	2.34	7.50	3.71
Employed	2.15	7.32	3.33
<i>p-value</i>	0.02*	0.29	0.14
Low family support	2.18	7.25	3.52
High family support	2.32	7.75	3.64
<i>p-value</i>	0.06	0.00***	0.67
Lower exposure to negative shocks	2.25	7.37	3.45
Higher exposure to negative shocks	2.30	7.53	3.77
<i>p-value</i>	0.52	0.26	0.22

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Table 5a. Changes in average aspirations over time**

	Wave 1	Wave 2	Relative change (%)	T-test p-value
Educational aspirations	2.27 (SD 0.7)	2.24 (SD 0.8)	-1.2%	0.09
Occupational aspirations	7.44 (SD 1.4)	7.47 (SD 1.5)	0.4%	0.74
Aspirations to migrate	3.58 (SD 2.4)	3.4 (SD 2.4)	-4.7%	0.81

**Table 5b. Changes in aspirations over time**

	Lowered aspirations	Kept aspirations constant	Increased aspirations
Educational	27%	52%	21%
Occupational	18%	47%	17%
Migration	19%	28%	23%

**Table 6. Personality traits over time**

	Wave 1 (n=400)	Wave 2 (n=301)	T-test p-value
Emotional symptoms score	4.18	4.29	0.60
Internal locus of control	2.62	3.29	0.00***
External locus of control	2.25	2.24	0.69
Self-efficacy	3.01	3.08	0.01**
Life satisfaction	5.69	5.82	0.22
Impatience	0.42	0.46	0.32
Belief in hard work	3.62	3.28	0.00***
Willingness to take risks	2.59	2.99	0.00***
Sociability	3.04	3.04	0.99
Self-esteem	3.11	3.26	0.00***
Optimism	3.41	3.57	0.00***

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Table 7. Correlation across types of aspirations and personality traits**

	Educational aspirations	Occupational aspirations	Aspirations to migrate
Emotional symptoms score	-0.04	0.04	0.07
Internal locus of control	0.05	0.00	0.00
External locus of control	-0.06	0.02	0.06
Self-efficacy	0.11**	0.02	0.02
Life satisfaction	0.14***	0.00	0.04
Impatience	-0.12**	-0.09*	-0.05
Belief in hard work	0.1*	0.09*	0.09*
Willingness to take risks	-0.03	-0.09*	0.02
Sociability	0.00	0.03	-0.04
Self-esteem	0.04	0.05	0.05
Optimism	0.02	0.04	0.06

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Table 8. Outcomes**

	Wave 1 (n=400)	Wave 2 (n=301)	T-test p-value
<i>Education outcomes</i>			
Average years of education	11.8	14.3	0.00***
Enrolled full-time	68%	50%	0.00***
Grade in last academic year (0 – 20)	–	15.7	–
<i>Time use</i>			
School-related	0.4	0.3	0.00***
Training-related	0.3	0.2	0.20
<i>Depressive symptoms</i>			
CES-D average score	–	5.8 (SD 4.7)	–
% Depressed (cut-off≥10)	–	17%	–
<i>Risky behaviours</i>			
Smokes cigarettes	42%	49%	0.09
Drinks alcohol	67%	81%	0.00***
Tried illicit drugs	9%	15%	0.02*
Unsafe sex	8%	13%	0.03*
Had sex while drunk	13%	23%	0.00***
Carries weapon	3%	2%	0.72
Part of a gang	3%	1%	0.08

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001



Table 9A. Educational aspirations at wave 1 on outcomes at wave 2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Level of education	Full-time enrollment	Grade	Time use: school	Time use: prof development	Depressive symptoms	Smoke cigarettes	Drink alcohol	Tried drugs	Unsafe sex	Sex while drunk	Carries weapon	Part of gang
Educational aspirations (wave 1)	0.72*** [0.2]	0.17*** [0.0]	-0.06 [0.1]	0.12*** [0.0]	0.06*** [0.0]	-0.29 [0.4]	-0.15** [0.1]	-0.05 [0.1]	0.02 [0.0]	-0.07** [0.0]	-0.07* [0.0]	0.01 [0.0]	-0.00 [0.0]
Female	0.36 [0.3]	-0.04 [0.1]	0.36*** [0.1]	-0.07** [0.0]	-0.01 [0.0]	0.32 [0.6]	-0.45*** [0.1]	-0.20** [0.1]	-0.17*** [0.0]	-0.02 [0.0]	-0.07 [0.1]	-0.02 [0.0]	-0.04*** [0.0]
Wealth asset index	2.44** [1.0]	0.82*** [0.2]	0.26 [0.4]	0.49*** [0.1]	0.06 [0.1]	0.12 [1.8]	0.19 [0.3]	0.07 [0.3]	0.00 [0.1]	-0.20 [0.2]	-0.25 [0.2]	-0.04 [0.1]	-0.03 [0.0]
Total shocks experienced	0.07 [0.1]	-0.01 [0.0]	0.06 [0.0]	-0.02 [0.0]	0.01 [0.0]	0.63*** [0.2]	0.01 [0.0]	0.03 [0.0]	0.03* [0.0]	0.01 [0.0]	-0.02 [0.0]	-0.00 [0.0]	0.00 [0.0]
Self-efficacy	0.29 [0.4]	0.03 [0.1]	0.03 [0.2]	0.03 [0.1]	0.01 [0.0]	-0.07 [0.8]	0.07 [0.1]	0.11 [0.1]	-0.06 [0.1]	-0.09 [0.1]	0.09 [0.1]	0.02 [0.0]	-0.02 [0.0]
Life satisfaction	0.01 [0.1]	-0.00 [0.0]	0.08** [0.1]	0.00 [0.0]	-0.00 [0.0]	-0.25 [0.2]	-0.01 [0.0]	0.03 [0.0]	-0.02 [0.0]	0.01 [0.0]	-0.02 [0.0]	-0.00 [0.0]	-0.00 [0.0]
Belief in hard work	-0.05 [0.3]	0.02 [0.1]	-0.01 [0.1]	-0.00 [0.0]	0.02 [0.0]	-0.29 [0.6]	0.02 [0.1]	-0.01 [0.1]	-0.02 [0.0]	0.09* [0.0]	0.03 [0.1]	0.02 [0.0]	0.02 [0.0]
Impatience	-0.32 [0.3]	-0.07 [0.1]	0.02 [0.1]	-0.02 [0.0]	0.04 [0.0]	-0.60 [0.6]	-0.07 [0.1]	-0.22** [0.1]	-0.08* [0.0]	-0.02 [0.0]	-0.05 [0.1]	-0.02 [0.0]	-0.01 [0.0]
Constant	9.46*** [1.6]	-0.64** [0.3]	3.13*** [0.1]	-0.39** [0.2]	-0.10 [0.2]	7.64** [0.2]	0.91* [0.5]	0.73 [0.5]	0.55** [0.2]	0.35 [0.2]	0.48* [0.3]	-0.04 [0.1]	0.08 [0.1]
Observations	247	299	281	300	300	300	293	295	290	253	290	295	296
R-squared	0.11	0.16	0.07	0.20	0.05	0.06	0.09	0.05	0.08	0.04	0.04	0.02	0.03

Standard errors in brackets  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

Table 9B. Occupational aspirations at wave 1 on outcomes at wave 2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Level of education	Full-time enrollment	Grade	Time use: school	Time use: prof development	Depressive symptoms	Smoke cigarettes	Drink alcohol	Tried drugs	Unsafe sex	Sex while drunk	Carries weapon	Part of gang
Occupational aspirations (wave 1)	0.19** [0.1]	0.04* [0.0]	-0.01 [0.0]	0.03** [0.0]	0.01 [0.0]	-0.21 [0.2]	-0.01 [0.0]	-0.07** [0.0]	-0.00 [0.0]	0.01 [0.0]	-0.04* [0.0]	0.00 [0.0]	-0.00 [0.0]
Female	0.22 [0.3]	-0.08 [0.1]	0.36*** [0.1]	-0.10*** [0.0]	-0.02 [0.0]	0.48 [0.6]	-0.43*** [0.1]	-0.18* [0.1]	-0.16*** [0.0]	0.00 [0.0]	-0.05 [0.1]	-0.02 [0.0]	-0.03** [0.0]
Wealth asset index	3.00*** [1.0]	0.97*** [0.2]	0.31 [0.4]	0.61*** [0.1]	0.11 [0.1]	-0.64 [1.8]	0.03 [0.3]	0.02 [0.3]	-0.00 [0.1]	-0.25 [0.2]	-0.36** [0.2]	-0.03 [0.1]	-0.03 [0.0]
Total shocks experienced	0.09 [0.1]	-0.01 [0.0]	0.05 [0.0]	-0.02 [0.0]	0.01 [0.0]	0.60*** [0.2]	0.01 [0.0]	0.03 [0.0]	0.02* [0.0]	0.01 [0.0]	-0.01 [0.0]	-0.00 [0.0]	0.00 [0.0]
Impatience	-0.35 [0.3]	-0.08 [0.1]	-0.00 [0.1]	-0.03 [0.0]	0.03 [0.0]	-0.47 [0.5]	-0.04 [0.1]	-0.24*** [0.1]	-0.08* [0.0]	0.01 [0.0]	-0.04 [0.1]	-0.03 [0.0]	-0.01 [0.0]
Willingness to take risks	0.13 [0.2]	0.01 [0.0]	-0.06 [0.1]	0.00 [0.0]	0.02 [0.0]	0.55 [0.4]	0.07 [0.1]	-0.04 [0.1]	0.06** [0.0]	0.05 [0.0]	-0.05 [0.0]	-0.01 [0.0]	-0.00 [0.0]
Belief in hard work	-0.02 [0.3]	0.04 [0.1]	-0.01 [0.1]	0.01 [0.0]	0.02 [0.0]	-0.19 [0.5]	0.02 [0.1]	0.02 [0.1]	-0.02 [0.0]	0.05 [0.0]	0.05 [0.0]	0.02 [0.0]	0.01 [0.0]
Constant	9.78*** [1.5]	-0.67** [0.3]	3.77*** [0.6]	-0.41** [0.2]	-0.12 [0.1]	5.75** [2.9]	0.74 [0.5]	1.70*** [0.5]	0.17 [0.2]	-0.04 [0.2]	0.80*** [0.3]	-0.01 [0.1]	0.05 [0.1]
Observations	245	297	279	298	298	298	292	294	289	251	289	294	295
R-squared	0.07	0.12	0.05	0.15	0.03	0.06	0.08	0.06	0.09	0.03	0.04	0.02	0.02

Standard errors in brackets  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

Table 9C. Aspirations to migrate at wave 1 on outcomes at wave 2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Level of education	Full-time enrollment	Grade	Time use: school	Time use: prof development	Depressive symptoms	Smoke cigarettes	Drink alcohol	Tried drugs	Unsafe sex	Sex while drunk	Carries weapon	Part of gang
Aspirations to migrate (wave 1)	0.06 [0.1]	0.01 [0.0]	0.06** [0.0]	0.00 [0.0]	0.02*** [0.0]	0.32*** [0.1]	-0.02 [0.0]	-0.02 [0.0]	-0.00 [0.0]	-0.01 [0.0]	-0.01 [0.0]	-0.01** [0.0]	0.01* [0.0]
Female	0.38 [0.3]	-0.06 [0.1]	0.29** [0.1]	-0.09** [0.0]	-0.02 [0.0]	0.50 [0.6]	-0.45*** [0.1]	-0.24** [0.1]	-0.19*** [0.0]	0.02 [0.0]	-0.07 [0.1]	-0.03* [0.0]	-0.04** [0.0]
Wealth asset index	3.35*** [1.1]	1.02*** [0.2]	0.41 [0.4]	0.63*** [0.1]	0.16* [0.1]	0.91 [1.9]	0.13 [0.3]	0.04 [0.3]	-0.02 [0.1]	-0.24 [0.2]	-0.40** [0.2]	-0.05 [0.1]	-0.02 [0.0]
Total shocks experienced	0.13 [0.1]	0.00 [0.0]	0.06 [0.0]	-0.00 [0.0]	0.02 [0.0]	0.63*** [0.2]	0.02 [0.0]	0.04 [0.0]	0.04** [0.0]	0.00 [0.0]	-0.01 [0.0]	-0.00 [0.0]	0.00 [0.0]
Belief in hard work	0.02 [0.3]	0.03 [0.1]	-0.05 [0.1]	0.01 [0.0]	0.03 [0.0]	-0.66 [0.5]	0.03 [0.1]	0.05 [0.1]	-0.05 [0.0]	0.05 [0.0]	0.04 [0.1]	0.02 [0.0]	0.01 [0.0]
Constant	10.58*** [1.3]	-0.50* [0.3]	3.47*** [0.5]	-0.23 [0.2]	-0.09 [0.1]	4.68* [2.4]	0.77* [0.4]	0.94** [0.4]	0.37* [0.2]	0.16 [0.2]	0.54** [0.2]	0.04 [0.1]	-0.01 [0.1]
Observations	217	265	248	266	266	266	260	262	257	223	258	262	263
R-squared	0.06	0.11	0.06	0.13	0.05	0.07	0.08	0.03	0.08	0.02	0.03	0.03	0.04

Standard errors in brackets  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

**Table 10A. Fixed-effects estimation of human capital outcomes on educational aspirations**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Level of education	Full-time enrollment	Time use: school	Time use: prof development	Smoke cigarettes	Drink alcohol	Tried drugs	Unsafe sex	Sex while drunk	Carries weapon	Part of gang
Educational aspirations	0.16 [0.2]	0.18*** [0.0]	0.09*** [0.0]	0.03 [0.0]	-0.05 [0.1]	0.09 [0.1]	-0.05* [0.0]	-0.00 [0.0]	-0.00 [0.0]	-0.03* [0.0]	-0.00 [0.0]
Total shocks experienced	-0.55*** [0.1]	0.06*** [0.0]	0.02** [0.0]	0.03 [0.0]	-0.04 [0.0]	0.05 [0.0]	-0.01 [0.0]	0.01 [0.0]	-0.02 [0.0]	0.01 [0.0]	0.01 [0.0]
Self-efficacy	1.09*** [0.4]	-0.20** [0.1]	-0.14*** [0.0]	-0.01 [0.1]	-0.07 [0.1]	0.05 [0.2]	0.14*** [0.1]	0.08 [0.1]	-0.03 [0.1]	-0.02 [0.0]	0.03 [0.0]
Life satisfaction	0.06 [0.1]	0.04** [0.0]	0.01 [0.0]	-0.01 [0.0]	-0.01 [0.0]	-0.04 [0.0]	0.03** [0.0]	-0.00 [0.0]	0.01 [0.0]	0.01 [0.0]	0.00 [0.0]
Belief in hard work	-1.48*** [0.2]	0.08 [0.0]	0.07** [0.0]	0.05 [0.1]	-0.03 [0.1]	0.28*** [0.1]	-0.04 [0.0]	-0.10*** [0.0]	-0.06 [0.0]	0.00 [0.0]	-0.00 [0.0]
Impatience	-0.20 [0.3]	0.06 [0.1]	0.04 [0.0]	-0.02 [0.1]	0.08 [0.1]	0.14 [0.1]	-0.01 [0.0]	-0.00 [0.0]	0.05 [0.0]	0.02 [0.0]	0.00 [0.0]
Constant	14.97*** [1.5]	0.17 [0.3]	0.21 [0.2]	0.06 [0.3]	1.12*** [0.4]	-0.10 [0.6]	-0.19 [0.2]	0.19 [0.2]	0.40* [0.2]	0.04 [0.1]	-0.09 [0.1]
R-squared	0.29	0.14	0.13	0.08	0.02	0.06	0.07	0.03	0.03	0.02	0.01
Observations	396	399	399	321	396	391	395	384	393	398	397

Standard errors in brackets  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

**Table 10B. Fixed-effects estimation of human capital outcomes on occupational aspirations**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Level of education	Full-time enrollment	Time use: school	Time use: prof development	Smoke cigarettes	Drink alcohol	Tried drugs	Unsafe sex	Sex while drunk	Carries weapon	Part of gang
Occupational aspirations	0.03 [0.1]	0.02 [0.0]	0.00 [0.0]	0.01 [0.0]	-0.10*** [0.0]	-0.07* [0.0]	-0.00 [0.0]	-0.00 [0.0]	-0.00 [0.0]	-0.01* [0.0]	0.00 [0.0]
Total shocks experienced	-0.61*** [0.1]	0.05** [0.0]	0.02* [0.0]	0.05* [0.0]	-0.02 [0.0]	0.07* [0.0]	-0.01 [0.0]	-0.00 [0.0]	-0.02 [0.0]	0.01 [0.0]	0.01* [0.0]
Impatience	-0.30 [0.3]	0.08 [0.1]	0.04 [0.0]	-0.01 [0.1]	0.10 [0.1]	0.09 [0.1]	0.02 [0.0]	0.00 [0.0]	0.06 [0.0]	-0.01 [0.0]	-0.02 [0.0]
Willingness to take risks	0.58*** [0.2]	-0.05 [0.0]	-0.04** [0.0]	-0.01 [0.0]	0.05 [0.0]	0.06 [0.1]	-0.01 [0.0]	-0.00 [0.0]	0.10*** [0.0]	0.02* [0.0]	-0.01 [0.0]
Belief in hard work	-1.22*** [0.3]	0.06 [0.1]	0.02 [0.0]	0.03 [0.1]	-0.04 [0.1]	0.32*** [0.1]	-0.04 [0.0]	-0.08* [0.0]	-0.03 [0.0]	0.01 [0.0]	0.01 [0.0]
Constant	16.49*** [1.4]	0.25 [0.3]	0.32** [0.2]	-0.03 [0.3]	1.35*** [0.4]	0.26 [0.5]	0.30* [0.2]	0.40* [0.2]	0.03 [0.2]	0.01 [0.1]	0.01 [0.1]
R-squared	0.32	0.06	0.05	0.09	0.08	0.09	0.01	0.02	0.09	0.04	0.03
Observations	396	399	399	282	394	385	393	381	391	397	396

Standard errors in brackets  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

**Table 10C. Fixed-effects estimation of human capital outcomes on aspirations to migrate**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Level of education	Full-time enrollment	Time use: school	Time use: prof development	Smoke cigarettes	Drink alcohol	Tried drugs	Unsafe sex	Sex while drunk	Carries weapon	Part of gang
Aspirations to migrate	0.03 [0.1]	0.01 [0.0]	0.00 [0.0]	0.02 [0.0]	0.04* [0.0]	0.05* [0.0]	0.00 [0.0]	-0.00 [0.0]	0.02* [0.0]	0.00 [0.0]	-0.00 [0.0]
Total shocks experienced	-0.56*** [0.1]	0.04 [0.0]	0.02 [0.0]	0.04 [0.0]	-0.02 [0.0]	0.06 [0.0]	-0.04** [0.0]	0.04** [0.0]	-0.03 [0.0]	0.01 [0.0]	0.01 [0.0]
Belief in hard work	-1.20*** [0.3]	0.02 [0.1]	0.02 [0.0]	0.01 [0.1]	-0.02 [0.1]	0.31*** [0.1]	-0.00 [0.0]	-0.08** [0.0]	-0.07 [0.0]	0.02 [0.0]	0.00 [0.0]
Constant	17.78*** [1.0]	0.44** [0.2]	0.24** [0.1]	0.09 [0.2]	0.62** [0.3]	-0.16 [0.4]	0.19 [0.1]	0.32** [0.1]	0.40** [0.2]	-0.07 [0.1]	0.00 [0.1]
R-squared	0.24	0.02	0.01	0.07	0.02	0.08	0.03	0.05	0.04	0.01	0.01
Observations	379	385	385	273	380	372	379	369	379	382	381

Standard errors in brackets  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

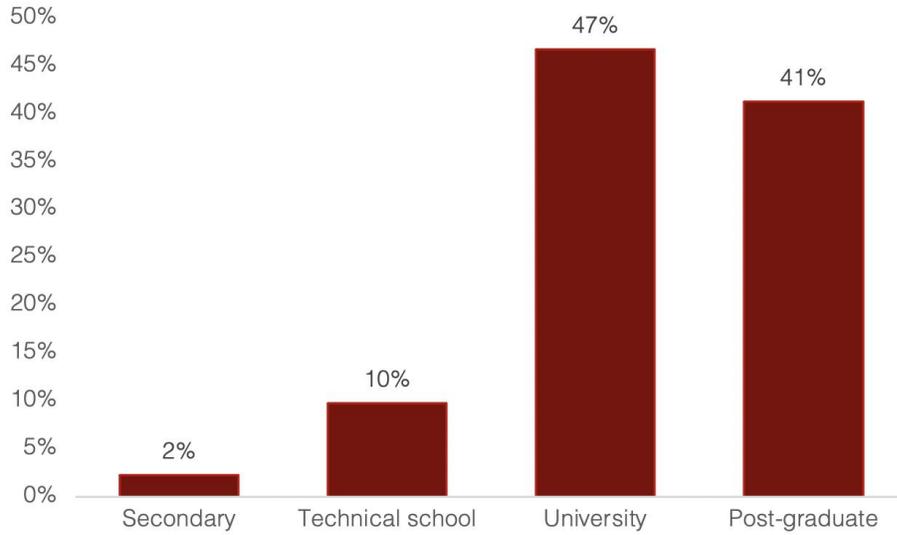


Figure 1. Educational aspirations in wave 1

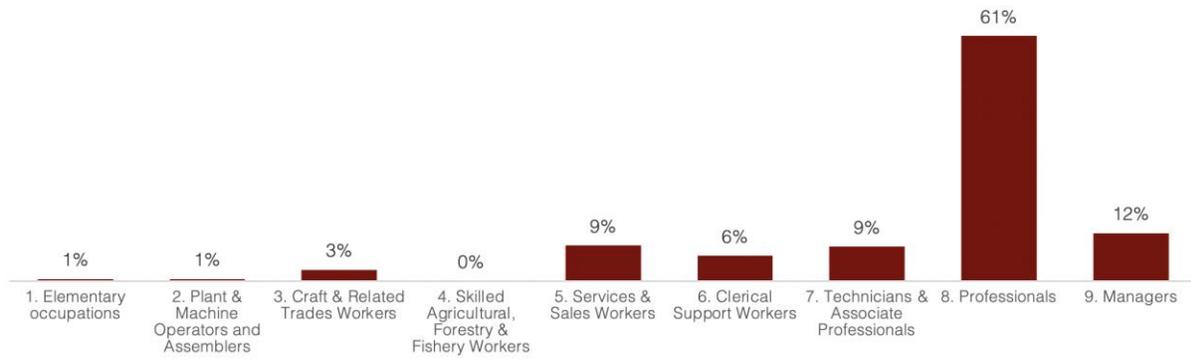


Figure 2. Occupational aspirations in wave 1

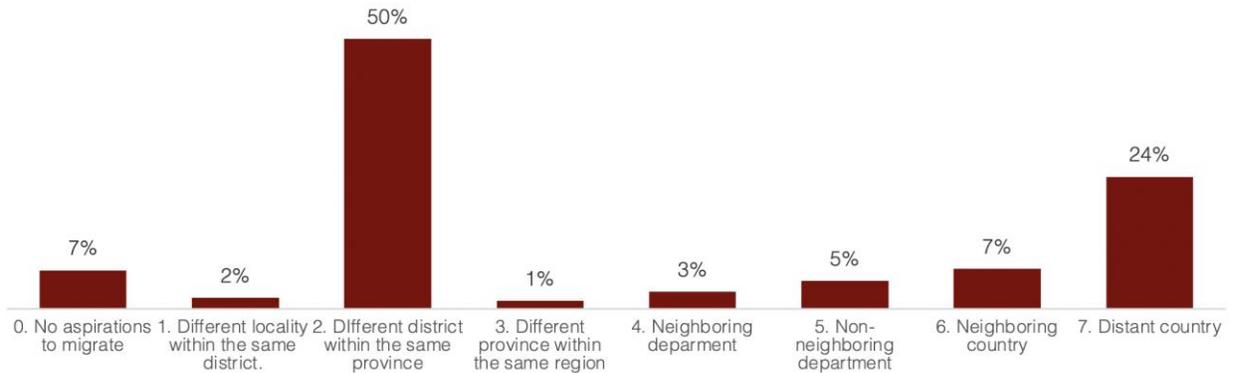


Figure 3. Aspirations to migrate in wave 1