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DOES HOPE LEAD TO BETTER FUTURES?

EVIDENCE FROM A SURVEY OF THE LIFE CHOICES OF YOUNG ADULTS IN PERU

Carol Graham and Julia Ruiz Pozuelo

Abstract

We use a novel survey of poor and near poor urban young adults in Peru to study the role of hope in individuals' propensity to invest in the future. We explored the past predictors of aspirations and life satisfaction today, based on battery of questions about past experience, education and health status, relationships with parents and friends, as well as about negative shocks. We included questions on current and past life satisfaction, internal and external locus of control, self-esteem, discount rates, optimism, and education aspirations. We found remarkably high levels of resilience and education aspirations among our survey population. Eighty-eight percent of our young adults aspire to completing college or post-college education. In addition, most of the respondents in the high aspirations categories had experienced one or more negative shocks in the past. Respondents in the high aspirations categories are also far less likely to partake in risky behaviors, such as smoking or having unsafe sex. This provides additional evidence suggesting 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. While we do not know how lasting that hope channel is, particularly in the face of future shocks or disappointments, we hope to answer that question in future research.

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INTRODUCTION

Does hope matter? More specifically, does it matter to future outcomes? Individuals and families typically make key decisions based on a desire to achieve something. While at the heart of economics and other behavioral sciences, we know little about the role of hope and optimism in determining future behavior or about the links between beliefs and behavior, more generally.

It seems intuitive that attitudes and beliefs determine many behaviors and future choices such as education, occupation, or investments. While these may play an independent role, they also interact with objective factors such as capability and talent, leading to virtuous – or vicious – circles. Yet it is also possible that optimists mispredict their futures, resulting in frustration and unhappiness in the long-run.

Several studies in the literature on the economics of well-being support the first hypothesis. In some early work on this topic, one of us (Graham, with Eggers and Sukhtankar, 2004) found that higher levels of residual happiness – e.g. the happiness of each individual that was not explained by observable socioeconomic and demographic traits – was correlated with higher levels of income and better health in future periods.¹ Since then, several studies (DeNeve and Oswald, 2012; DeNeve et al., 2013) using a range of metrics, from twin and sibling comparisons to lab experiments, have confirmed such a channel, finding again that optimists have better outcomes in a range of areas from the health to the labor market to the social arena.²

Güven et al. (2014) find that happier people are more likely to consume less and save more than others, and to have higher perceived life expectancies. Goudie et al. (2014) show that individuals with higher levels of subjective well-being are more likely to wear seatbelts, highlighting longer time preferences and less risk taking. O'Connor and Graham (forthcoming) use panel data from the Panel Study of Income Dynamics for the U.S. to study cohorts born between 1935 and 1948 – and including questions on optimism from young adulthood (1962) onwards. They find that the respondents with higher levels of optimism were more likely to be alive in 2015, with investments in education being a mediating channel.

In contrast to the above findings, Puri and Robinson (2007) report that extreme optimists are more likely to display imprudent financial behavior (i.e., they tend to have shorter term financial horizons, save less, and work shorter hours). Yang, Markoczy and Qi (2007) show that optimistic people consistently pick credit card options that are suboptimal considering their actual borrowing behavior. Odermatt and Stutzer (2015), meanwhile, based on panel data for Germany, find significant misprediction of the positive effects of life events such as marriage and the negative effects of others such as unemployment and divorce, as they are unable to predict the

¹ The study was based on panel data for Russia. We regressed happiness on the usual control variables in t-0 and then calculated a residual or unexplained happiness for each respondent, which we used as an independent variable in t-1. Second, while unexplained happiness is not correlated (by definition) with the observable socioeconomic variables that we believe affect happiness, it is positively correlated across time for individuals: people with high unexplained happiness in 1995 were likely to have high unexplained happiness in 2000. (The simple correlation between the two is 0.2198.) This result is consistent with the view that unexplained happiness includes stable factors that affect happiness and that might include cognitive bias.

² For an overview of the existing studies, Graham (2017).

extent to which they will adapt. Most recently, Deaton (2018) explores the extent to which people mispredict their future life satisfaction, based on Gallup World Poll data. He finds that young people tend to over-predict how happy they will be in the future, while older people do the opposite. The gap between predictions and actual outcomes are greatest in the middle ages, a point at which life satisfaction is, on average, the lowest for most people.

Another issue is whether hope is the same thing as prediction or expectations. In this research, we posit that hope is a distinct emotion that operates through separate, if related, channels. Some of our recent work (Graham and Pinto, 2018) based on the United States finds that poor blacks, who are objectively more deprived than most other poor groups (in this case whites and Hispanics) are by far the most optimistic of all racial *and* income groups. While the current levels of life satisfaction of poor blacks fluctuate over time as it does for all groups, their high optimism levels do not, objective outcomes aside.³ Our poor black optimists are not pollannas, meanwhile. They are less satisfied with their financial situations and with their places of residence, for example, than are whites (Blanchflower and Oswald, forthcoming; Graham and Pinto, 2018), and their overall longterm trajectory has been one of gradual progress in narrowing wage and education gaps.

In contrast, we find that the corresponding lack of hope, stress, and worry among poor whites links to their rising rates of premature mortality, due to drug overdose, alcohol poisoning, and suicide. While we still need to know more about the channels between hope and future outcomes, it is quite clear that lack of hope combined with frustration leads to significantly inferior outcomes.

Hope is, indeed, the least studied channel (at least in economics). While hope, aspirations, and resilience are all closely related concepts, we treat them as distinct ones in this paper. In our view, hope reflects optimism about the future regardless of realistic prospects and/or capabilities. Aspirations, while entailing a clear degree of hope, tend to focus on particular future outcomes and incorporate people's expectations or beliefs on what they *think* they can achieve with effort (Dalton et al., 2016). Resilience combines hope on the one hand and determination on the other.

The positive psychology literature, meanwhile, defines hope as “the capacity to aspire”, a capacity that hinges on attitudes, agency, and identifiable pathways for future success (Lybbert and Wydick, 2016). Some work distinguishes between raw hope and aspirational hope (as we do). The latter includes agency, self-efficacy, and clear goals. The same authors note that it is easier to raise aspirations than it is to increase self-efficacy or conceptualizations of the pathways out of poverty.

Some recent experimental studies, based on simple interventions that evoke hope, find significant resulting changes in behavior. One such study finds that the provision of modest assets – such as a cow or other livestock – to poor people in developing countries results in increased work effort (Haushofer and Fehr, 2014). Another study explored the potential of self-affirmation in lessening the mental toll of poverty. The authors asked respondents in U.S. soup

³ The period studied covered 2008 to 2015.

kitchens to recall a time they felt positive about themselves, and that in turn resulted in more effort in playing simple games compared to those who did not receive the optimism prompt (Hall, Zhang, and Shafir, 2014).

Others have similar findings but focus on specific aspirations. Bernard et al. (2014) show that playing a documentary featuring role models in rural Ethiopia led to higher aspirations and better saving and investment decisions. Using census data for Brazil, La Ferrara et al. (2012) find that exposure to TV shows with strong female role models has a significant effect in lowering birth rates. Lastly, Jensen (2010) estimates that providing information on the returns to education in the Dominican Republic (thus changing the perceived returns), increased completion of secondary education by 0.20–0.35 additional years of school.

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. While these studies cannot reveal how long the behavioral changes last, they are, at the very least, suggestive of a virtuous circle. Our initial results – as well as those of some others cited above – suggest that hope combined with investment in future capabilities, such as via education are likely have the most positive long-run outcomes.

Raised aspirations without agency, meanwhile, can lead to significant frustration. A recent study based on the Young Lives (YL) panel study for India finds an inverse U curve in the relationship between aspirations (of both parents and children) and education outcomes, with both very low and overly high aspirations leading to worse outcomes than those in the “bell” of the curve (Ross, 2016).⁴ A related study based on the same dataset finds that aspirations adjust downwards as adolescents age, even though higher aspirations are, in general, linked to better educational outcomes (Favara, 2017).

Using a novel survey of relatively poor urban Peruvian young adults, this paper attempts to shed light on these questions. We use data on respondent’s aspirations for future education, past shocks and experiences, past and present life satisfaction, as well as other indicators (i.e. self-efficacy, discount rates/impatience, proclivity to risky behaviors), to understand the determinants of optimism. We differentiate between those that relate to objective circumstances (such as higher income or better health) and those that stem from innate character traits and resilience.

Three of our findings stand out as the most important. The first is the remarkably high levels of education aspirations among poor young adults in Peru, with 85 percent aspiring to completing college or post-graduate education. An equally high percentage of these high-aspiration cohorts report that they can achieve their goals. The second main finding is that virtually all of the respondents in the high aspirations categories have experienced one or more negative shocks, such as crime victimization or the illness or death of a family member. These findings, in our view, reflect a combination of hope and resilience driving aspirations and, quite plausibly, future

⁴ The Young Lives survey is a longitudinal study of 12,000 children born in the millennial year fielded in Ethiopia, Andhra Pradesh and Telangana in India, Peru, and Vietnam, with four rounds completed in the past 15 years. The U.K. government development office (DFID) funds the survey, and the research team at Queen Elizabeth House, Oxford University manages the survey, with field research conducted by local institutions in each country. Much of the data is publicly available and can be accessed via: <https://www.younglives.org.uk/>.

behaviors. The third finding is that our high aspirations respondents did better on average. Even in cases where they did not achieve fully achieve their predictions for future education, they still achieved part of their goals and retained high levels of happiness.

The remainder of the paper is as follows. Section 2 describes the survey and summarize the data used; section 3 outlines the empirical model; and section 4 presents the results of the empirical analysis. The last section provides some concluding remarks.

SECTION 1. SURVEY DESIGN AND DESCRIPTIVE STATISTICS

Survey design

As noted above, our main – if difficult – research objective is to understand the determinants of optimism that relate to objective circumstances and those that stem from innate character traits and resilience. We took a two-pronged approach. One was to exploit the existing data in the Young Lives (YL) survey for Peru, a longitudinal study following two cohorts of children from 2002 to 2014. The second was to field a new survey among a similar population to explore, to the extent we can, some unanswered questions.

The YL survey is comprised of five rounds of interviews of children born in the millennial year, their older siblings, and their parents, with extensive questions similar to those in our survey (for more on the YL surveys see footnote 4). The Lima segment of the YL survey was conducted in the same neighborhood and by the same survey team as our survey (not coincidentally), and the profiles of the households interviewed are very similar. In fact, the older cohort in YL's fourth round is the same age (18-19) as our respondents.

This longitudinal study provides us with a benchmark for our survey results (in an attempt to explore how accurate the unusually high aspirations of the young adults in our survey are likely to be). It also allows us to explore whether optimists miscalculate their futures. To that end, we examine the earlier round responses to questions about respondents' future life satisfaction and education aspirations and compare them to their outcomes in these same areas in later rounds. We find a very modest downward adjustment of aspirations, and at the same time a much more robust and positive association between high aspirations in early survey rounds and more positive educational outcomes in the latest round.

Our survey, meanwhile, while not the same population as in the YL panel (as we could not intervene in the panel), essentially mirrors that population, in terms of the neighborhood, ages of the respondents, and distribution within the neighborhood. During May-June 2017, we collaborated with the Instituto de Investigacion Nutricional (IIN) in Lima, directed by Dr. Mary Penny, and the same team that implemented the health components of the Peruvian YL survey, to implement our survey.⁵ We interviewed 400 adolescents in the district of San Juan de Lurigancho, a large peri-urban and relatively poor neighborhood of Lima with a population of over 1 million.

We focused on 18-19-year olds, as they are at a point in their lives where they have sufficient education and experience to observe, and yet are at a critical juncture in making key life choices. Our aim with the survey design was to explore the past predictors of aspirations and life satisfaction today, based on battery of questions about past experience, education and health status, relationships with parents, friends, and family, as well as about negative shocks. We also included questions on current and past life satisfaction, internal and external locus of control,

⁵ For full disclosure, Graham is on the Scientific Advisory Committee of IIN.

self-esteem, discount rates, optimism, and education aspirations. Some of the questions are the exact ones that are in the YL survey; many are additional.⁶

The adolescents 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 pre-fabricated homes further away from the center still in the process of acquiring these amenities.

Most of them (82.8 percent) have completed secondary education and are making critical decisions about their continued education, entrance into the labor market, family formation, and risky behaviors such as drug or alcohol consumption and risky sexual behaviors. For the most part, they have the opportunity to pursue higher education and other means of escaping poverty, but those pursuits require determination, financial sacrifice, and, arguably, hope.

It is impossible to test the explicit role of hope perfectly (not least without panel data). Still, we collected extensive detail on the health, economic situations, and past experiences of our respondents. This allows us to tease out the difference between hope based on having advantages, such as higher income or better health, and hope based on raw emotions or resilience. We find, for example, that the young adults with at least one or more past negative shock, such as a deceased parent or a sick family member, are significantly more likely to have high aspirations for their future education than are those without a past negative shock. This suggests resilience as a driving channel.

Our point of departure is a set of findings from related research on the Peruvian YL survey, some conducted by Graham's doctoral students and some by others. Magdalena Bendini's (2015) dissertation explored maternal life satisfaction and reported depression in the earliest rounds of the survey on children's growth and educational outcomes (Peabody test scores and math proficiency) approximately five years later, finding a negative association with maternal depression. Sarah Dickerson's thesis (forthcoming) looks at the same earlier variables and adolescents' life satisfaction and choices about risky behaviors in later rounds. They find higher levels of maternal well-being are modestly associated with less proclivity to risky behaviors later, with maternal depression more important to boys' outcomes and life satisfaction more important to girls' outcomes. Meanwhile, Favara et al. (2017) find that self-esteem earlier in life is positively associated with a lower proclivity to engage in risky behaviors as respondents navigate the adolescent years. They also find that higher education aspirations also protect adolescents from risky behaviors.

The State of Education in Peru

In the past decades, the Peruvian educational system has undergone significant transformation, leading to substantive progress in providing access to education, improved teacher-training programs, and increased education spending. While there has been progress, challenges such as

⁶ Sections include: household demographics, migration expectations, subjective well-being, education, labor and income, emotions, attitudes and perceptions, marital information, fertility, health, access to social programs, social capital, time preferences and risks.

significant differences in access and quality of education across rural and urban areas remain, which in turn show up in the performance statistics.

Still, Peru is coming ever closer to guaranteeing universal access to primary education. In 2016, net enrollment rate and completion rates stood at 95.15 percent and 95.91, respectively⁷. For secondary, net enrollment rates were 79.6 percent and lower secondary completion was 85.8 percent. Lastly, gross enrollment ratio⁸ for tertiary was 40.51 percent, while the share of the population with completed tertiary education was 12.27 percent (UNESCO).

Adequate minimum levels of learning have not accompanied this progress evenly. More than half of the students (53.7 percent) in primary did not achieve minimum reading skills in 2013.⁹ According to the triennial PISA assessments conducted in 2015, Peru ranked near the bottom of the international ranking on education quality (rank 62/70 in mathematics, 63/70 in reading, and 64/70 in science).

Within Latin America, Peru's PISA scores are above those of the Dominican Republic and just below those of Brazil and Mexico. Peru has also been the leader in score improvement among the other participating countries from Latin America since the assessments began in 2000. Some experts argue that this is due to improved socio-economic conditions and a more ambitious approach to education at both the family and governmental levels (Ambrus, 2017).

As in many other places around the world, meanwhile, returns to different levels of education are changing. In Peru, between 1980 and 2004, returns to primary, secondary, and technical education fell relative 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, 2006). While not all those who enroll in tertiary education are able to complete it, the high aspirations that our respondents have for college and post-college education suggest that they are well aware of these differential returns.

Descriptive statistics

Going back to our survey, and in addition to the range of questions described above, we asked extensive questions about household demographics and reported income status, education, labor market participation, access to social programs, and more. For the full survey questionnaire, see Appendix 1. Main descriptive statistics are in Table 1 below.

Levels of education are relatively high, with only 3 percent of the sample having no formal education. Yet their households are of modest means and most parents have not completed higher than secondary levels of education. When we look at parents' occupation, we find that

⁷ Net enrollment rate for primary (secondary) is the ratio of the total number of students of both sexes of the official age group for primary (secondary) education enrolled in any level of education and the total population of the same age group. Completion rates correspond to data from 2014.

⁸ Total enrollment in tertiary education (ISCED 5 to 8), regardless of age, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving. Data corresponds to 2010.

⁹ Performance in mathematics shows a similar pattern, with 52.6 percent of students achieving the minimum threshold. Data from *Latin American Laboratory for Assessing Educational Quality* (LLECE).

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

We rely on two self-reported measures of income, one in absolute and the other in relative terms (i.e. compared to other households in the district). Both variables are then coded on a five-point scale where 1 corresponds to “very poor” and 5 represents “very rich”. On average, 88.3 percent of the sample self-reports an average relative income (step 3 out of 5), while 87.75 report to be in step 3 of own income. There is a high degree of consistency across these two measures in all the possible categories, meanwhile, likely because both are self-reported.

Table 1. Descriptive statistics

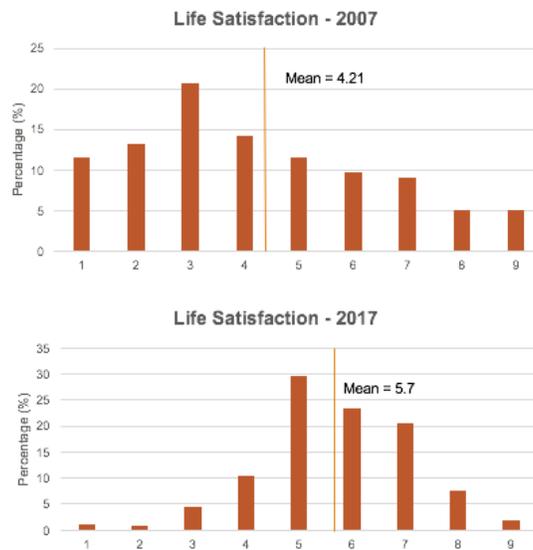
	Mean	Observations
<i>Child's individual characteristics</i>		
Female	0.538	400
Age of child (in years)	18.450	400
Married	0.048	400
Any children (only females)	0.144	215
Born in:		
Lima	0.370	400
SJL	0.478	400
Born in jungle, sierra, or coast	0.153	400
Education Level		
Primary	0.973	400
Secondary	0.828	400
<i>Income (self-reported measures)</i>		
Absolute income (1=poor, 5=rich)	2.905	400
Relative income (1=poorest, 5=richest)	2.963	400
Employment		
Worked in the past 12 months	0.765	400
Currently employed	0.353	400
	Mean	Observations
<i>Household's characteristic</i>		
Parents age:		
Father (min: 37; max: 71)	49.592	240
Mother (min: 31; max: 69)	45.974	340
Deceased Parent	0.083	400
Parent left the household	0.365	400

Table 2. Parents' occupations

	Freq.	Percentage	Observations
<i>Parents occupation: (top responses)</i>			
Father:			
Construction worker	30	12.30	244
Taxi Driver	28	11.48	244
Merchant / Dealer	28	11.48	244
Bus/truck driver	17	6.97	244
Carpenter	13	5.33	244
Mother:			
Housewife / Housekeeper	159	46.76	340
Merchant / Dealer	51	15.00	340
Street vendor	27	7.94	340
Tailor / seamstress	15	4.41	340
Cleaning / maintenance services	14	4.12	340

To measure life satisfaction, we use the best possible life (BPL) Cantril ladder question, which asks respondents to place themselves on an 9-step ladder in which their lives compare to the best possible life they can imagine. The actual question is: “Please imagine a ladder, with steps numbered from 1 at the bottom to 9 at the top. The top represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?” On average, life satisfaction scores are relatively high, and are higher than recalled life satisfaction scores for 10 years earlier (5.7 vs. 4.21). In short, most respondents believe they are happier today than they were 10 years ago (Figure 1).¹⁰

Figure 1. Life satisfaction across time



¹⁰ Specifically, and compared to 2007, 36 individuals believe they are equally off, 278 are better off, and 86 are worse off (9%, 69.5%, 21.5%, respectively).

Most respondents are remarkably optimistic. The overwhelming majority (over 90 percent) either agree or strongly agree with the following statement: “If I try, I can improve my situation in life”. Mean levels of hard work pays off, self-confidence, sociability, self-esteem, and internal locus of control are also very high (80.5% to 98.5% agree with each of these statements). An equally high majority (85.5 percent) are also willing to take risks to get ahead. Meanwhile, less than half of the respondents (41.8 percent) report to be impatient when offered immediate sums of money today versus higher sums in the future (in a classic discount rate question). See table 3 below for details.

Education aspirations, meanwhile, as assessed by a question asking what level of education they would like to complete, are very high: 41 percent of our respondents report wanting to achieve post-graduate education, 47 percent aim for tertiary, and 10 percent aspire for secondary or technical education. When asked a follow up question about whether or not they can achieve their desired level of education, 89 percent of the sample with the highest education categories respond affirmatively.

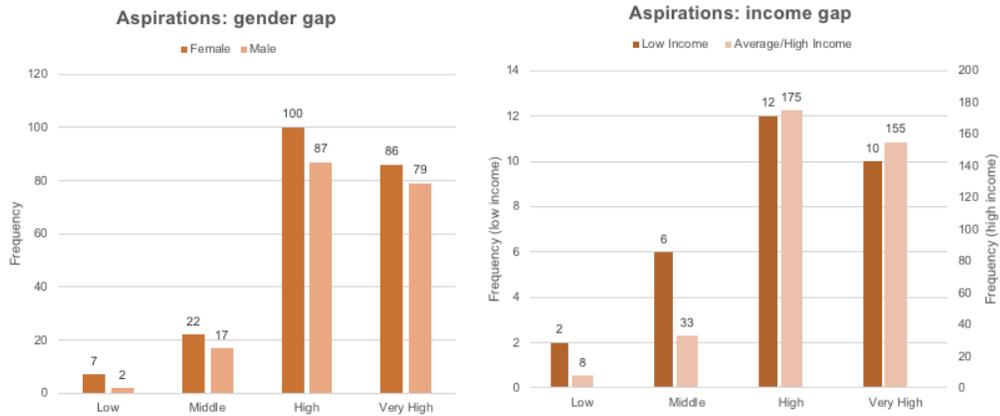
Table 3. Subjective well-being and other inner traits

	Mean	Observations
Happiness (Cantril Ladder question - 1 to 9)		
2017	5.693	400
2007	4.213	400
Better off today (vs. 2007)	0.785	400
	% agree	Observations
Belief in hard work	98.50	398
Impatient (high discount rate)	41.75	400
Self-confidence	91.00	400
<i>Locus of control</i>		
Internal locus	92.48	399
Health locus	92.25	400
External locus	36.25	400
Willing to take risks	55.00	400
Optimist	97.75	398
Sociable	80.50	400
Self-esteem	90.25	400

Note: **Internal, health and external locus** are defined on the basis of the following questions: "My life is determined by my own actions"; "My health is mainly the result of decisions I take"; and "I feel like what happens in my life is mostly determined by powerful people", respectively. **Discount rate** is defined on the basis of the following question: "You have just won the lottery and have been offered two options in receiving your payment: (i) 500 soles guaranteed immediately or (ii) 750 soles guaranteed in 1 month. Which one do you prefer?" (around 154 vs. 231 US\$, aprox).

When we explore the gender gap in aspirations, we find that female respondents have slightly higher aspirations than males, but the difference is not statistically significant. Those respondents who report to have above average income (this group comprises the vast majority of respondents) are also more likely to have high education aspirations (see Figure 2).

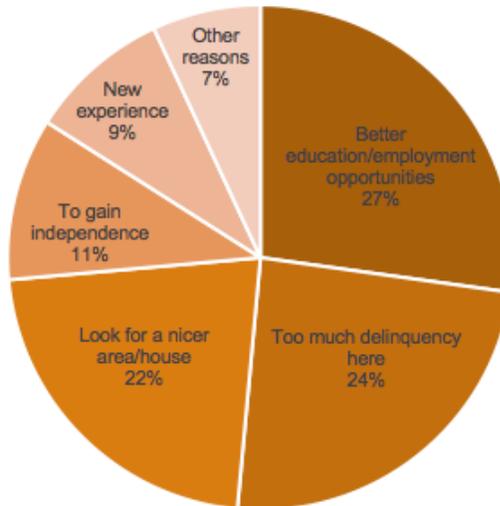
Figure 2. Gender and income gap in aspirations



NB: We fail to reject the null hypothesis of equality in means between gender groups at all commonly used critical levels (i.e. no significant different) and we reject the null within income groups (i.e. average/higher income groups tend to have higher aspirations). "Low" aspirations corresponds to no further education or up to second grade (primary), "middle" includes secondary and technical education and "high" aspirations corresponds to university and "very high" aspirations includes graduate level education (masters and/or PhD).

Meanwhile, most respondents (94 percent) would like to migrate to another city or country, with the main reasons being to find better education and employment opportunities or to avoid high levels of crime and delinquency (figure 3 below). More than half of the sample (54 percent) would like to move to other district within the same province, while a quarter of the sample would like to migrate to a distant country. High aspirations for moving to another place is not particularly surprising for this age and the neighborhood quality of our respondents; at the same time, the role of education aspirations again stands out in these results.

Figure 3. Reasons to migrate



Despite these high levels of optimism, most respondents have 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.

Table 4. Prevalence of negative shocks

Type of Shock	Prevalence rate (%)	Observations
Thievery	54.0	400
Parent left the household	36.5	400
Accident	29.8	400
Sickness of family member	29.3	400
Sick	25.3	399
Unemployed	15.5	400
Death of family member	12.8	400
Natural disaster	4.8	400

We then look at the difference in aspirations between those who experience shocks versus individuals that did not experience any sort of shock in the past. Indeed, rather remarkably, we find that only 10 percent of respondents in the high aspiration category had zero negative shocks in the past. That is, aspirations remain very high for these individuals despite having experienced negative shocks, perhaps because of their high levels of hope and resilience.

Looking at the nature of the shock, we find that individuals with high and very high aspirations (tertiary and postgraduate education), were mostly exposed to robbery, a parent abandoning the household, and illness in the family. Meanwhile, respondents with middle aspirations (secondary or technical education) mostly suffer from robbery and own sickness. Presumably, this could be due to compromised capabilities that force individuals who get severely sick to adjust their aspirations downward. A simple correlation matrix shows that respondents who have a sick family member (rather than being sick themselves) are significantly more likely to have high education aspirations (significant at 5 percent). As mentioned before, this is at least suggestive of resilience as a driving channel.

SECTION 2. EMPIRICAL MODEL

We focused our econometrics on the education aspirations question for two reasons. First, the patterns in the raw data followed a normal distribution, as opposed to questions on optimism or pride that were highly skewed. Second, going forward in a follow up survey (and as in the comparison exercise in the current YL data) it will be much more feasible to check whether optimists miscalculate their ability to pursue future education aspirations than, for example, whether or not they were able to make a difference in their lives by trying hard (the raw optimism question).

Our simple model is:

$$EducAspirations_{it} = \beta_0 + \beta_1 \mathbf{X}_{it} + \beta_2 Income_{it} + \beta_3 Employed_{it} + \beta_4 Shocks_{it} + \mu_{it}$$

Where *EducAspirations*_{it} is coded on a four-point scale where 1 corresponds to low aspirations and 4 represents very high aspirations (i.e. postgraduate education). \mathbf{X}_{it} is a vector of demographic traits such as gender and marital status. *Income*_{it} is a relative variable based on the basis of the following question: “compared to other households in this district, how would you describe your household?” where 1 corresponds to “the poorest” and 5 to “the richest”. *Employed*_{it} is a variable equal to one if the individual is currently employed, and \mathbf{Shocks}_{it} includes all the different type of shocks described above (see table 4).

We then add in innate traits:

$$EducAspirations_{it} = \alpha_0 + \alpha_1 \mathbf{X}_{it} + \alpha_2 Income_{it} + \alpha_3 Employed_{it} + \alpha_4 \mathbf{Shocks}_{it} + \alpha_5 \mathbf{Traits}_{it} + \varepsilon_{it}$$

Where \mathbf{Traits}_{it} is a vector of innate character traits such as life satisfaction (using the Cantril ladder question), belief in hard work, impatience (with higher elicited discount rates corresponding to more impatience), internal locus of control, and self-confidence.

SECTION 3. RESULTS

3.1. Baseline model, shocks and innate traits

Table 5 displays our results using a standard regression (OLS) framework. The first column (1) is the simple baseline model; column (2) includes six different type of negative shocks, and column (3) includes innate traits/optimism (such as life satisfaction and belief in hard work) in addition to the shocks.

The findings are consistent and rather striking. In the baseline, being married correlates negatively with future education aspirations, which is not a surprise given that those who marry at such a young age have likely reduced their possibilities to continue education. Higher levels of reported income are positively correlated. Given that income is self-reported, some of this latter correlation also reflects innate optimism since most respondents rank their income as above average. Individuals who are employed have lower aspirations, presumably because they had to skip school or stop education all together. There is not much difference between the aspirations of those who are employed and still enrolled in school and those not enrolled and not working, meanwhile. The major gap in aspirations is between those who are enrolled and those who are not, suggesting that the drag on aspirations comes from not being educated rather than from working.

The relationship between aspirations and negative shocks (captured in column 2) tends to differ depending on the nature of the shock. Respondents who suffered an accident tend to have lower aspirations.¹¹ This stands in contrast with having a sick family member in the household, which appears to be *positively* correlated with aspirations. It seems that the latter shock, which is difficult to handle but does not directly affect the *individual's* capacities, result in more

¹¹ In the survey, accidents are defined as serious injuries that would prevent respondents from doing their normal activities and/or require medical attention.

determination to succeed, while the former type of shock might limit young adults' agency to pursue further education and success in the future.

Although a significant part of the sample was exposed to other shocks like thievery, parent leaving the household or accidents, these do not emerge as significant. This is likely because these kinds of shocks are common in neighborhoods such as San Juan de Lurigancho, making it more likely that people adapt to them (for similar examples, see Graham, 2010).

Of the innate character traits (captured in column 3), respondents' happiness, belief in hard work, internal locus of control, and self-confidence correlated positively with high aspirations. Unsurprisingly, having a high discount rate (impatience), meanwhile, correlated negatively.

While a very simple econometric exercise, the results suggest that there is a strong role for optimism/innate character traits in driving aspirations. At the same time, though, our findings suggest resilience comes from some experience with negative shocks or, alternatively, that more optimistic people navigate negative shocks better. These are likely complementary explanations. Graham and Pinto (2018) find strong evidence that poor blacks and poor Hispanics – who have historically experienced discrimination and disadvantage – are more resilient than poor whites in the U.S. historical data, data from psychologists, a finding corroborated by current trends in premature/preventable mortality (and they explicitly test the association with the latter). The role of resilience based on past negative shocks runs through all of these trends.

Table 5. Aspirations

Aspirations	(1) Baseline	(2) Shocks	(3) Innate traits
Female	-0.04582 [-0.6]	-0.05973 [-0.8]	-0.08265 [-1.1]
Marital Status	-0.69206*** [-4.1]	-0.62296*** [-3.6]	-0.49615*** [-3.0]
Relative Income	0.12523* [1.7]	0.11402 [1.5]	0.05954 [0.8]
Employed	-0.21145*** [-2.9]	-0.22014*** [-3.0]	-0.19706*** [-2.7]
Sick		-0.01264 [-0.2]	0.00527 [0.1]
Sick family member		0.20725*** [2.6]	0.14361* [1.8]
Death of family member		-0.03169 [-0.3]	0.01225 [0.1]
Parent left the HH		-0.05611 [-0.8]	-0.03414 [-0.5]
Accident		-0.15669** [-2.0]	-0.17352** [-2.3]
Thievery		-0.01724 [-0.2]	0.00714 [0.1]
Happiness			0.04700* [1.9]
Belief in hard work			0.14413** [2.2]
Impatient			-0.19674*** [-2.8]
Internal locus of control			0.16741** [2.4]
Self-confidence			0.12601* [1.7]
Constant	2.03103*** [8.9]	2.09709*** [8.9]	0.64551 [1.5]
Observations	400	399	395
R-squared	0.0552	0.09	0.15
F test	6.826	3.741	4.490

t-statistics in brackets
*** p<0.01, ** p<0.05, * p<0.10

3.2. Aspirations and risky behaviors

Additionally, we looked at the relationship between aspirations and risky behaviors based on an optional and confidential portion of our survey. This section is similar to that in the YL survey; respondents are asked 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. The respondents provide their responses on paper and provide them to the interviewers in a sealed envelope.

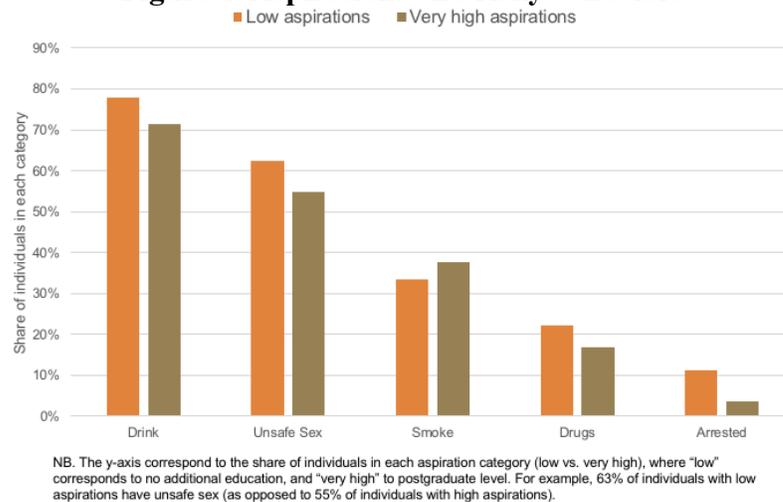
Very few respondents refused to answer this section (Table 6). As shown, most respondents experimented with alcohol and unsafe sex, almost half of the sample smoke, while very few had taken drugs or been arrested by the police. We also find, perhaps unsurprisingly, that some of these behaviors are positively correlated with each other, that is, individuals who smoke also tend to drink more, have unsafe sex or take drugs (all significant at 5% critical level).

Table 6. Prevalence of risky behaviors

	% of yes	Observations
Drink Alcohol	70.25	400
Unsafe sex	60.96	374
Smoke	44.75	400
Take drugs	18.50	400
Arrested by police	4.08	392

As in the earlier studies cited above, we find those individuals with higher aspirations are less likely to take part in risky behaviors. Figure 4 shows the prevalence of risky behaviors among individuals with low aspirations compared to the proportion of individuals with high aspirations. With the exception of smoking, individuals with low aspirations experiment consistently more than those in the higher category. This provides additional evidence suggesting that individuals with high aspirations and/or hope for the future are more likely to invest in those futures or, at the least, not pursue behaviors that are likely to jeopardize their futures.

Figure 4. Aspirations and risky behaviors



3.3 Do Optimists Mispredict?

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

While we cannot test this in our current survey data (we plan to do a repeat of the survey in a year), we did test it in the Lima YL panel. As a point of departure, we take previous work, described above – Favara (2017) for Ethiopia, and Bendini (2016), Dickerson (2017), and Favara et al. (2017) for Peru. All of this research provides evidence that the life satisfaction/optimism of parents and children in early years are associated with better health and education outcomes (and fewer risky behaviors) in the adolescent years. We explicitly explored the question whether education aspirations mispredicted education outcomes in later years.

The descriptive statistics for round 4 of the Peru YL survey for the older cohort, which corresponds closely to our sample both in terms of demographics and age, is in Table 7 below. Mean age, for example, is 18.97 years, origins (primarily coastal) are very similar, and the mean of life satisfaction is 5.97 on the 1-9 scale, as opposed to 5.7 for our sample. We cannot test the income distributions directly, as the YL income variable is based on an economic prosperity index, while the one in our survey is based on self-reported economic conditions. The education distributions in the two samples, however, are very similar.¹²

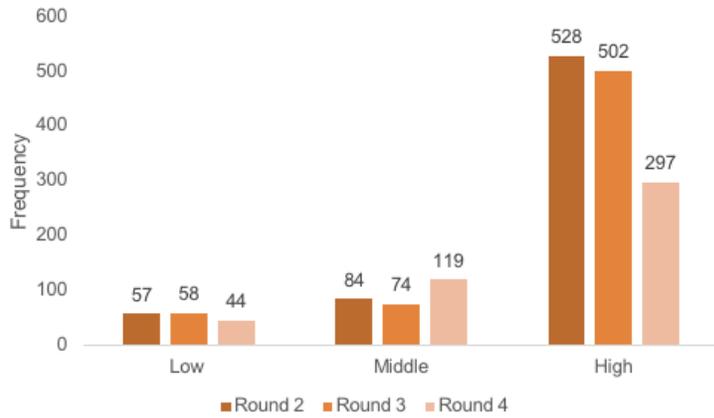
**Table 7. Descriptive statistics –
(Peru, Round 4, Old cohort)**

	Mean	Observations
Age	18.97	608
Female	0.46	635
Born in		
Coast	0.54	626
Mountain	0.34	626
Jungle	0.12	626
Education level attained	%	N
None	1.62	10
Primary	24.39	151
Secondary	73.02	452
Other	0.97	6
Wealth Index quantiles	Mean	Observations
First quantile	0.43	211
Second quantile	0.66	212
Third quantile	0.85	206
Access to safe drinking water	0.85	629
Access to sanitation	0.96	629
Access to electricity	0.96	629
Life Satisfaction (ladder of life 1–9)	5.97	617

We again find that the distribution is right-skewed, with a majority of the sample population being in the high aspirations category (up to 79 percent in round 2). We also find a very modest *downward* revision of aspirations across time (see figure 5).

Figure 5. Aspirations across time

¹² We fail to reject the null hypothesis of equality of distribution functions using the Kolmogorov-Smirnov test (p-value = 0.247).



NB: The actual question is: “Which educational grade would you like to complete?” Low aspirations correspond to less than primary education, middle corresponds to secondary and technical education and high to tertiary education.

To measure misprediction, we look at aspirations across time¹³ and education attainment in the fourth round. Given that most of the respondents are 18 years old, we only focus on two different aspirational categories (low and middle aspirations) and exclude the high category, as it includes tertiary education, which would be impossible to complete by age 18.

Overall, we find that almost 60 percent of the sample exactly meet their aspirations. The rest of the sample splits equally across “over-achievers” (individuals that attained a higher education level than initially hoped for) and “under-achievers” (lower education level). That some misprediction occurred is hardly a surprise, as the earliest responses in round 2 were taken when the respondents were only 12 years old, which presumably could affect their ability to predict future education accurately.

Table 8. Under-, exactly-, and overachievers across time

	Round 2	Round 3	Round 4
Underachievers	105	99	70
Exactly achievers	387	385	273
Overachievers	177	150	117

As such, the education aspirations of respondents seem realistic. This may be due to the strong stock that Peruvians place in education – and have historically or due to the wide availability of decent (if rather poor quality) public education at all levels, discussed above. It may also be associated with growing up at a time in Peru when poverty is falling markedly, while a nascent – and very visible – lower middle class is emerging, as in many other emerging market economies (Kharas, 2017). San Juan de Lurigancho, where we conducted the survey, is a community where the progression from poor homes without access to running water and electricity to those with

¹³ 2006, 2009, and 2013.

access to these services, paved streets, and proximity to a metro and middle class life, is visible to any observer in the neighborhood.

There may also be a shared optimism channel stemming from culture and community. This channel is usually stronger at the community level than at the national level, given that people are less likely to know each other in the larger reference group (Roser and Nagdy, 2018). The large differences in optimism and hope that we find across races in the U.S. – optimistic poor blacks and Hispanics contrasted against desperation among poor whites – also plays out at the community level, with premature mortality concentrated in more isolated rural white communities with declining economic prospects (Graham and Pinto, 2018).

We also cannot discount the role of resilience and innate optimism, which is pervasive among many previously deprived populations. This seems to be particularly strong in Latin America, where life satisfaction, optimism, and positive affect (such as smiling) are consistently much higher than in other regions of similar per capita income levels (Graham and Nikolova, 2015).

Table 8. Happiness and misprediction

Happiness	(1)
Aspirations	0.02827 [0.2]
Educ level attained	-0.05965 [-0.2]
Wealth index	0.32678*** [3.9]
Female	0.18425 [1.4]
Overachievers	0.17428 [0.6]
Underachievers	0.14375 [0.5]
Constant	5.21964*** [15.3]
Observations	590
R-squared	0.03
F test	3.075
Observations	590

t-statistics in brackets

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

One final question to answer is whether those that mispredict experience drops in happiness. To analyze this, we look at happiness levels for all the different types of prediction (i.e. “over-achievers, “under-achievers”, “exactly-achievers”). Table 8 shows the results. We created dummy variables for each of the prediction categories, with exactly achievers being the left-out/comparison category in our regression. We do not find that either under or over-achieving has any correlation with happiness. This is likely because of the general accuracy of the predictions. If the under-achievers, for example, had predicted very high levels of education and not reached them, that might lead to unhappiness. Yet that is not the scenario at play here, as

most under-achievers did not predict high levels of education; they simply achieved slightly lower levels.¹⁴

There are still a number of questions to explore going forward, some of which we may be answered in a follow up version of this survey. These include whether the predictions of the 18-19-year olds in our survey are accurate a few years later and, again, whether unmet or mispredicted aspirations lead to lower levels of happiness and optimism. We also hope to be able to tease out the separate roles of innate character traits/resilience and those of objective outcomes, which we can only do with another round of survey data and controlling for person fixed effects.

SECTION 4. CONCLUSION

Our research attempted to shed light on the role of hope in generating better future outcomes, particularly among the poor. We focused on hope as well as the related but distinct concepts of aspirations and resilience. Our survey research was based on young adults (18-19 years old) in a poor and near poor peri-urban neighborhood in Lima, Peru, and we also conducted parallel analysis based on the YL panel survey for Peru, which follows very similar cohorts of the same age and neighborhood.

We found remarkably high levels of resilience and education aspirations among our survey population. Eighty-eight percent of our young adults aspire to completing college or post-college education. In addition, most of the respondents in this high aspiration category had experienced one or more negative shocks in the past. We posit that these findings are driven in part by hope and resilience, and in part by living in a country where poverty has fallen rapidly in the past decades and where public higher education is available, if not of high quality and typically entailing some financial sacrifice.

We also found that the respondents in the high aspirations categories were less likely to partake in risky behaviors, such as smoking or having unsafe sex. This provides additional evidence suggesting 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 several questions that we cannot answer, at least not until we are able to repeat our survey next year. The first is whether the high levels of hope and resilience of our respondents are driven by objective circumstances and opportunities, or by innate character traits and optimism. Given the conditions that many of our respondents grew up and live in, plus the prevalence of negative shocks, we believe that there is a strong role for the latter explanation.

We also cannot fully discern whether these high levels of hope and educational aspirations are misguided, e.g. whether our optimists are mispredicting their futures and will be frustrated later on. A nascent body of work, including our earlier work, suggest that higher levels of optimism about the future are associated with better future outcomes. We also tested the question to the

¹⁴ These results are available from the authors on request.

extent we could in our parallel panel analysis and found that, indeed, those respondents with higher levels of education aspirations in the past had attained higher levels of education by the time they reached young adulthood. At the same time, most of the respondents who did not fully achieve their aspirations maintained their happiness levels, suggesting a role for persistent raw hope in driving effort, even if success is not fully guaranteed.

Our research is exploratory in nature, and we have only begun to answer some of the key questions. Our early results, though, give us confidence that there is indeed an important role for hope in driving behavioral outcomes, and that past negative shocks are associated with higher levels of resilience. We do not know how lasting that channel is, particularly in the face of repeated future shocks or disappointments. We remain cautiously optimistic that it is persistent in the face of most circumstances, as this study and several others cited above suggest. We will explore that question explicitly in our Peru sample once we have over-time data on our respondents.

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