Working Paper 154

Young Lives

Psychosocial Competencies and Risky Behaviours in Peru

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www.younglives.org.uk

JULY 2016

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ISBN 978-1-909403-70-3

A catalogue record for this publication is available from the British Library.

Funded by

UKaid
from the British people

Irish Aid
An Roinn Gnóthaí Eachtracha agus Trádála
Department of Foreign Affairs and Trade

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Summary

We use a unique longitudinal dataset from Peru to investigate the relationship between psychosocial competencies related to the concepts of self-esteem, self-efficacy and aspirations, and a number of risky behaviours at a crucial period of transition between adolescence and early adulthood. First, we document a high prevalence of risky behaviours, with one in two individuals engaging in at least one risky activity by the age of 19, and a dramatic increase between the ages of 15 and 19. Second, we find a pronounced pro-male bias and some differences according to area of residence, particularly in the consumption of alcohol, which is more prevalent in urban areas. Third, we find a negative correlation (robust to a number of specifications) between early self-esteem and later risky behaviours. Further, aspiring to higher education at the age of 15 is found to be correlated with a lower probability of drinking and of engaging in criminal behaviours at the age of 19. Similarly, such aspirations protect girls from risky sexual behaviours.

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Acknowledgements

We are grateful to Santiago Cueto for his detailed and helpful feedback. A special thanks to Grace Chang and Maria Gracia Rodriguez for excellent research assistance. We are also grateful to colleagues at Young Lives for insightful discussions in this research area. Readers are invited to send comments to marta.favara@qeh.ox.ac.uk and asanchez@grade.org.pe.

1. Introduction

Risky behaviours are associated with health problems, low productivity, and more generally with a decline in individual and collective well-being in the short, medium, and long run (see, for example, Parkes et al. 2010). The study of the determinants of risky and criminal activities is informed mainly by sociological and psychological literature establishing the link between cognitive skills, psychosocial competencies and risky behaviours (Caspi et al. 1994; Agnew et al. 2002; Pratt and Cullen 2000).[1]

The economic literature on crime and risky behaviours primarily adopts an opportunity-cost framework. People choose to commit a crime or to engage in risky behaviours if their expected utility from engaging in that behaviour is greater than the expected utility from their alternative options (for example, labour-market opportunities). Within this framework, better-educated people or people with better cognitive abilities are less likely to be involved in risky behaviours (Travis and Hindelang 1977; Lochner and Moretti 2004). However, these models do not acknowledge the role of psychosocial competencies.

More recently, economists have developed an interest in studying the role of soft skills (or *non-cognitive skills*) as predictors of economic outcomes, such as educational attainment, health status, and labour-market outcomes (see, for example, Borghans et al. 2008, Heckman et al. 2006, Cobb-Clark and Tan 2011, Dohmen et al. 2010, Chiteji 2010, and Jaeger et al. 2010). Nevertheless, few economic papers analyse the link between soft skills and risky behaviours.

The aim of this study is to gain a better understanding of the link between psychosocial competencies and risky behaviours at a crucial period of transition between adolescence and early adulthood. Specifically, our analysis has three objectives. First, to document the prevalence of risky behaviours in the context of Peru, and the heterogeneity of these outcomes in terms of gender and area of location. Second, to test the hypothesis that dimensions related to the concepts of self-esteem, self-efficacy and aspirations have an impact on the occurrence of risky behaviours during adolescence. Third, to test the robustness of this association by applying statistical methods which allow us to control for unobservable cofounders.

For this analysis we exploit the longitudinal nature of the Young Lives data, a unique individual-level panel following a cohort of about 700 children in Peru over four rounds of data collection which took place between 2002 and 2013. The Young Lives data cover a critical phase of the life-cycle for human capital and skills accumulation, following the same children between the ages of 8 and 19. Information on a number of risky behaviours is collected at the ages of 15 and 19, which makes the Young Lives data particularly suitable for this analysis. Furthermore, rich information at both household and individual levels is collected, including children's cognitive and psychosocial competencies, school history,

1 There is an on-going debate, and little agreement, on how to refer to those skills which represent 'patterns of thought, feelings and behaviour' (Borghans et al. 2008) and which encompass those traits that are not directly represented by cognitive skills or by formal conceptual understanding. The current list includes such terms as behavioural skills, soft skills, personality traits, non-cognitive skills or abilities, character, life-skills, and socio-emotional and psychosocial skills or competencies. In this paper, we use the term 'soft skills' and 'psychosocial competencies' interchangeably.

parental and children's aspirations, and aspirations for education.[2] Drawing on the data available, we define indicators to measure the prevalence of (i) smoking behaviours; (ii) drinking behaviours; (iii) drinking and violence (engaging in violent or risky activities when drunk); (iv) consumption of illegal drugs; (v) criminal behaviours; (vi) possession of weapons; (vii) unprotected sexual activity; and (viii) total number of risky and criminal behaviours.

Evidence of psychosocial competencies as a predictor of criminality and delinquency invites questions about the ability to prevent risky behaviours by shaping those skills. Furthermore, while the most 'sensitive' (productive) periods for investment in both cognitive skills and psychosocial competencies occur earlier in people's lives, soft skills during adolescence are more malleable than cognitive skills (Knudsen et al. 2006; Cunha and Heckman 2008; Cunha et al. 2010; Cunha and Heckman 2007; Carneiro and Heckman 2003). Of course, the differential plasticity of different age-related skills has important implications for the design of effective policies.

Three recent studies have considered the determinants of risky behaviours at age 15 in Peru, using the first three rounds of Young Lives data: Cueto et al. 2011, Crookston et al. 2014, and Lavado et al. 2015. The study by Cueto et al. (2011) highlights the importance of parent–child relations and peer effects in predicting smoking habits and unprotected sexual activity at early ages. Crookston et al. (2014) document the association between child victimisation at school and subsequent risky behaviours. Finally, the study by Lavado et al. (2015) looks at the relationship between cognitive and non-cognitive skills, consumption of cigarettes and alcohol, and early sexual initiation. Overall, their results suggest a negative relation between risky behaviours and cognitive and non-cognitive skills.

However, the evidence that these studies can provide is limited, for two reasons. First, there is a low prevalence of risky behaviours observed at age 15, which authors try to compensate for by using extremely inclusive definitions, particularly in the way that smoking and drinking are defined. Second, there is an endogenous relationship between child characteristics and risky-behaviour outcomes. There are reasons to believe that psychosocial competencies and the outcomes of interest are jointly determined. Therefore, the main challenge is to assess whether the effect of poor psychological resources on the probability in engaging in risky behaviours is due to potential endogeneity bias – either through reverse causality or through uncontrolled confounding variables.

In this analysis we try to overcome both challenges. First (the question of low prevalence), we show that in most cases the frequency of risky behaviours has increased considerably between the ages of 15 and 19, which makes the empirical study more viable. Furthermore, the use of the last round of data allows us to broaden the scope of risky behaviours observed (at age 19, individuals were asked to report criminal behaviours in addition to reports of the other risky behaviours collected in previous rounds). Second (potential endogeneity bias), although this paper does not claim any causal relation, we exploit the fact that the data were collected over multiple periods to implement strategies which minimise both sources of endogeneity. To deal with reverse causality, we use lagged values of the psychosocial variables of interest, measured three years before the realisation of the risky behaviours. To deal with omitted variable bias, we estimate a child fixed-effects model, which purges bias due to unobservables that are constant over time.

2 It is important to note that information about cognitive and psychosocial competencies is collected for all children, regardless of their school-enrolment status, which avoids any selection problem commonly arising from the use of school-based tests.

These are our main findings. First, we find that the prevalence of risky behaviours is evident and increases significantly over time: by age 15, two out of 10 individuals had engaged in at least one risky behaviour, whereas by age 19 one out of two had done so. By age 19, the prevalence of smoking and drinking is 19 and 34 per cent respectively; 13 per cent had consumed illegal drugs, 27 per cent had had unprotected sex, and 19 per cent had engaged in criminal behaviours.

Second, with the exception of unprotected sexual activity, there is a notorious pro-male bias in the prevalence of most of these behaviours. There are also some differences in terms of area of location, particularly in the consumption of alcohol, which is more prevalent in urban areas.

Third, and perhaps most importantly, we find a negative correlation between psychosocial competencies and risky behaviours. Keeping everything else constant, an improvement of one standard deviation in self-esteem at the age of 15 is associated with a reduction of 6, 7 and 8 percentage points respectively in the probability of smoking, drinking and engaging in violent behaviours while drinking at the age of 19. It is also associated with a reduction in the prevalence of criminal behaviours and in the possession of a weapon, by 14 and 5 percentage points respectively. No similar correlation is found with self-efficacy. These results are robust to a large set of controls at the child and household levels and to community characteristics that are fixed over time. Moreover, child fixed-effects estimates show that these associations persist after controlling for time-invariant unobservable characteristics. We note further that early self-esteem, measured at the age of 12, is already a predictor of later drugs consumption, unprotected sex, criminal behaviours and the number of risky behaviours in which the adolescents engage at the age of 19.

Finally, we find that aspiring to higher education at the age of 15 reduces the probability of drinking and engaging in criminal behaviours at the age of 19 by 14 and 25 percentage points respectively. Furthermore, while on average girls are more at risk of unprotected sex, girls aspiring to higher education are less likely to have unprotected sex. Nevertheless, once we control for unobservable individual characteristics, the correlation between aspirations and risky behaviours is no longer significant.

The remainder of the paper is structured as follows: Section 2 discusses the different strands of theoretical literature on risky behaviours and reviews the empirical economic literature on the determinants of risky behaviours; Section 3 documents recent patterns in risky behaviours in Peru, using the Demographic and Health Survey; Section 4 describes the data and the core predictors of risky behaviours used in the present analyses, together with some statistics on risky behaviours using the Young Lives data; Section 5 discusses the empirical strategy and specifications adopted; and finally Section 6 and 7 report and discuss our findings.

2. Literature review

2.1 Theoretical strands of the literature on risk behaviours

In this section we review the three theoretical strands of the literature on risk behaviours: first the traditional economic literature; then developmental-psychology literature; and finally the behavioural-economics literature. Most of the literature and empirical evidence on risky behaviours applies to developed countries and the adult population.

The traditional economic approach to youth risk-taking is, as mentioned above, a utility-maximisation/opportunity-cost approach. Forward-looking individuals pursue a certain activity if the expected benefits of it exceed the expected costs. One example of a model using this approach is the ‘rational addition model’ developed by Becker and Murphy (1988).

Developmental psychology, although not necessarily in contrast to the traditional economic approach, considers a wider variety of factors determining young people's decisions to engage in risky behaviours. As Fischhoff (1992) effectively summarises, according to developmental psychologists, (risk-related) decision-making depends on three groups of factors: how people ‘think’ about the world, i.e. their capacity for thinking through problems, examining the alternatives available and evaluating their implications (‘cognitive’ development); how people ‘feel’ about the world (‘affective’ development); and the roles that others play in people’s choices (‘social’ development).

Finally, behavioural economists bring the two approaches together and enrich economic models with a number of dimensions suggested by developmental psychologists (O’Donoghue and Rabin 2001). We highlight here the most relevant features for youth decision making.

The first one is related to the way in which short-run benefits and long-run costs are modelled. Empirical evidence suggests that young people are excessively myopic with respect to the future and therefore are more likely to have inconsistent preferences over time (O’Donoghue and Rabin 2001; Gruber and Koszegi 2000). More specifically, they have a tendency to have a discount rate that is higher in the short run than in the long run. Young people respond to uncertainty about the future by reducing the importance of the future, an effect known as 'hyperbolic discounting'.

The second feature is related to young people's tendency to introduce projection bias (O’Donoghue and Rabin 2001; Loewenstein et al. 2000). They have limited capacity to appreciate the extent to which their preferences may adapt over time, and they tend to project their current preferences inappropriately on to their future tastes. For this reason, random changes to their current states affect their long-run decision making.

The third feature is related to the young people's attitude to risk (O’Donoghue and Rabin 2001; Gruber 2001). Young people tend to be less risk-averse than older people, which is consistent with the myopia and hyperbolic-discounting features. Moreover, risky decisions are made in uncertain environments, and for many risky activities the cost is one-time and permanent. Uncertainty and one-time cost with longer-term implications might increase risk-taking behaviours, and a mistake made in the past becomes permanent in its consequences.

2.2 Soft skills as predictors of risky behaviours: evidence from policy and research

Many studies in the economic literature find evidence of a contemporaneous correlation between different risky behaviours (DiNardo and Lemieux 1992; Model 1993; Chaloupka and Laixuthai 1997; Farrelly et al. 2001; Dee 1999; Wiefferink et al. 2006; DuRant et al. 1999). Such evidence supports the 'bad seed' hypothesis, as described by Gruber (2001). The hypothesis is that there is a certain segment of the youth population that is predisposed towards risky activities, while others are not. In that case, policies targeting the segment of the population at risk should work effectively. An alternative hypothesis in the psychological literature is that there is a certain degree of risk that youths have a tendency to take ('conservation of risk' hypothesis). Reducing risky activity in one area would have a substitution effect by increasing risky activities in another.

To date, most intervention programmes have been targeting specific groups of the population considered to be at risk, mainly by targeting single risk behaviours. Most recently, there are examples of interventions taking a broader approach and targeting more than one risky behaviour at a time. More specifically, they aim to address some underlying determinants of risky behaviours which are believed to protect young people from, or predispose them to, distinct risky behaviours. Therefore a better understanding of which childhood traits predict risky behaviours is crucial from a policy perspective.

Empirical evidence suggests that interventions focusing on improving cognitive skills or aimed at improving soft skills are effective in reducing risky behaviours. An example of an intervention aimed at improving opportunities for children from poor backgrounds is the well-known Perry Preschool Program, an intervention targeting a sample of African-American children aged 3–4 living in poverty and assessed to be at high risk of school failure. Although the literature originally focused on the cognitive impact of the intervention, long-term effects have in fact been more persistent in non-cognitive areas. Heckman et al. (2010) and Conti et al. (2012) show that Perry significantly enhanced adult outcomes, including education, employment, earnings, marriage, participation in healthy behaviours, and reduced participation in crime, teenage pregnancy, and welfare dependency later in life. Interestingly, although the programme initially boosted the IQs of participants, this effect soon faded. A persistent effect has been found in the form of improvements in personality skills (for example, it reduces aggressive, anti-social and rule-breaking behaviours). On the other hand, Hill et al. (2011) show that several interventions which focused on personality rather than solely on cognitive skills were effective in reducing delinquency and traits related to delinquency.

Few economic papers analyse the role of personality traits and non-cognitive skills in criminal activities, or risky behaviours more generally. Heckman et al. (2006) find that self-esteem and locus of control measured during adolescence are as powerful as cognitive abilities in predicting adult earnings. Moreover, they find that personality factors for men affect the probability of daily smoking more than cognitive factors do, and the opposite is true for women. Similarly, Cunha et al. (2010) show that personality traits are relatively more important in predicting criminal activity than cognitive traits are. Further, Conti and Heckman (2010) suggest that personality and health status measured during adolescence explain more than 50 per cent of the difference in terms of poor health, depression and obesity at age 30. For males, personality traits and health endowments are more predictive than cognitive skills, while for women they are equally predictive.

3. Patterns of risky behaviours in Peru

Information about the prevalence of risky behaviours among young people in Peru is scarce. The National Committee for a Life Without Drugs (DEVIDA) provides estimates for the consumption of alcohol, cigarettes and illegal drugs among the population from 12 to 65 years in Lima City –the capital of the country, where about one-third of the population lives (DEVIDA 2013). According to DEVIDA, 12 per cent of individuals consume cigarettes in the 12–18 age group, and the figure increases to 32 per cent in the 19–29 age group. The prevalence of alcohol consumption increases from 32 per cent at ages 12–18 to 69 per cent at ages 19–29. In terms of gender differentials, there is a clear pro-male bias in the consumption of both cigarettes and alcohol. In the case of illegal drugs, the prevalence is much lower: around 3 per cent in both age groups. The main drug consumed is marijuana. In this case, there is also a pro-male bias in consumption.

In terms of the prevalence of unprotected sex, this information can be obtained from the Peru Demographic and Health Survey, which contains nationally representative information for women of reproductive age, from 14 to 50 years old. We use this survey to construct indicators of sexual behaviours (ever had a sexual relationship, and age of first sexual intercourse) and unprotected sex for females. These results are reported in Table 1. To resemble the age-periods observed in the Young Lives study, results are reported separately for adolescents aged 15 to 17, and young females aged 18 to 19. We find that the proportion of females who had ever had sexual intercourse increases from 18 per cent at ages 15–17 to 53 per cent at ages 18–19. On the other hand, the proportion of females who engaged in unprotected sex (i.e. without a condom) during their most recent act of intercourse is similar for both age groups: approximately two out of ten.

Although the above is useful as a first diagnosis, the data available present some limitations and concerns in terms of comparability with Young Lives data. First, there is no available information about the frequency of the consumption of cigarettes and alcohol, so it is not possible to determine whether the prevalence of cigarettes and alcohol consumption observed in Lima City corresponds to habitual consumption, as opposed to occasional consumption. Second, the information related to the consumption of legal and illegal drugs is not collected at the national level and, at best, is informative about urban areas only. Third, the information about risky sexual behaviours is available only for females. Fourth, all the information available was obtained from face-to-face interviews. Results are therefore likely to be biased, particularly in the case of illegal drugs consumption. Finally, there is no information available related to the prevalence of criminal behaviours.

In the next section we present the Young Lives data for Peru and show how they can be used to enable a better understanding of the prevalence and the predictors of risky behaviours among young people, as well as their determinants.

4. Data, definitions and descriptive statistics

4.1 Data

The data used in this paper come from the Young Lives Panel Survey, a longitudinal study which follows 12,000 children in Ethiopia, India (Andhra Pradesh and Telangana), Peru and Vietnam over 15 years. The sample in each country consists of two cohorts: an Older Cohort, born in 1994/95, and a Younger Cohort, born in 2001/03. The first wave of the study was in 2002 (Round 1), which was then followed by three subsequent rounds in 2006 (Round 2), 2009 (Round 3), and 2013 (Round 4). The attrition rate across all four rounds is relatively low compared with other longitudinal studies, particularly for Peru, where the attrition rate is 6.3 per cent for the Younger Cohort and 10.3 per cent for the Older Cohort.

The Young Lives sample for Peru gathers information concerning approximately 700 Older Cohort children and 2,000 Younger Cohort children, with an over-sampling of poor areas. The original sample was spread over 20 clusters in different geographical regions.[3]More specifically, the 20 clusters were randomly selected from the universe of districts in 2002, excluding the wealthiest 5 per cent. Each district was awarded a probability of being selected in proportion to its population size. Then, within each selected district, an area was randomly selected, and families with children aged 6 to 18 months and 7 to 8 years were selected to be part of the Younger Cohort and Older Cohort respectively. Although Young Lives is not intended to be nationally representative, it is worth highlighting that, because of the sampling procedure used, the Young Lives sample for Peru has been found to optimally reflect the diversity of children and families in Peru, excluding the wealthiest 5 per cent.[4] In the present analysis, we use data for the Older Cohort at the ages of 8 years in 2002, 15 years in 2009, and 19 in 2013. For this cohort, data on risky behaviours were collected in both Round 3 and Round 4 (ages 15 and 19).

A key challenge involved in the collection of risky-behaviours data is the danger of substantial under-reporting, due to cultural factors as well as legal reasons (in the case of the consumption of illegal drugs). This problem is particularly acute in face-to-face interviews. Although Young Lives administers face-to-face interviews for both the child or young person and his or her family, the information on risky behaviours comes from a self-administered questionnaire which includes a set of questions about alcohol, cigarettes and drugs consumption, together with questions about sexual behaviours, contraceptive use and knowledge about sexual and reproductive health. This questionnaire was applied in Rounds 3 and 4, following a meticulous protocol with the aim of minimising under-reporting.

The protocol of the self-administered questionnaire, which is typically applied at the end of the visit, is as follows. The interviewer explains to the child or young person that he or she will be asked a number of questions about aspects that might be considered sensitive, such as consumption of alcohol, cigarettes and even drugs, together with sexual behaviours,

3 These include three clusters in the department of Lima, and 17 in Amazonas, Ancash, Apurimac, Arequipa, Ayacucho, Cajamarca, Huanuco, Junin, La Libertad, Piura, Puno, San Martin, and Tumbes.

4 For more details of the sampling design, see Escobal and Flores 2008.

contraceptive use and knowledge about sexual and reproductive health. The informant is told that he or she is free to choose to complete the questionnaire or not, and free to leave questions blank if wished. Then the interviewer states that all the answers will remain confidential and that, once the informant has completed the questionnaire, the paper will be put in a sealed envelope and the questionnaire and its envelope will be identified by a code, not by a name. Once the interviewer has given this information, the child is asked whether he or she wants to complete the questionnaire. If the informant agrees, he or she is left alone for 15 minutes. Finally, once the questionnaire is completed, it will be sealed in an envelope with the code that corresponds to the child.

The aim of the protocol previously described is to assure the child that his or her answers will remain confidential (as indeed is the case). Following this procedure, the percentage of children who decided to answer the questionnaire was very high. In Round 4, only 3.8 per cent of the sample refused to complete the self-administered questionnaire. Of those who agreed to answer, 1.6 per cent left all the self-administered questions blank. Among those who decided to go on, the proportion of missing answers is relatively small, especially for questions related to smoking, drinking, possession of a weapon and criminal behaviours (1.3 per cent of missing answers related to the consumption of cigarettes; 0.5 per cent to alcohol consumption; up to 1.0 per cent to alcohol consumption and engagement in risky activities; 0.5 per cent to possession of a weapon; and up to 1.5 per cent to questions related to criminal behaviours). The proportion of missing answers is slightly larger for sexual relations (4.0 per cent for questions related to use of condoms during last sexual intercourse) and consumption of illegal drugs (up to 5.8 per cent). Although there may be some level of under-reporting hidden in the answers that were left blank, the fact that a small proportion of children answered in this way leads us to believe that this is unlikely to produce a significant bias in our results, particularly because we do capture a high proportion of adolescents engaged in risky behaviours, as will be shown in the following sections.

4.2 Risky behaviours: definition and statistics using Young Lives data

In this paper we investigate a number of risky behaviours for which information is available at the ages of both 15 and 19. More specifically, we look at smoking, alcohol and drugs consumption, unprotected sex, and weapons possession. More details on the survey questions administered are available in Table 2. In Tables A.1 and A.2 in the Appendix we report their distribution by age, gender, and rural/urban location.

On the basis of these survey questions, we define seven risky-behaviours indicators for the empirical analysis. In the remaining part of this section, we define them and we highlight a number of stylised patterns emerging from our data. In Table 3 we report the prevalence of risky behaviours at the ages of 15 and 19, by gender and by rural/urban location, alongside tests for statistical significance.

Smoking participation ('smoking' variable) is defined as a dummy variable equal to 1 for those individuals who reported smoking cigarettes at least once per month. At the age of 19, about 19 per cent of our sample report themselves to be smoking (Table 3). On average they smoke their first cigarette at the age of 16. Most of them (89 per cent) report smoking only one cigarette per day, or less (see Table A.1 in the Appendix).

With respect to alcohol consumption, there is growing public concern about how much alcohol young people are drinking in their teenage years. According to our data, drinking is

the activity with the highest prevalence at the ages of both 15 and 19. At the age of 15 about 65 per cent of the sample report that they never drink alcohol; among those who do, most of them drink exclusively on special occasions or very sporadically. By the age of 19 the number of young people reporting that they drink increases tremendously, although most of them do not drink on a regular basis.[5]

Although the proportion of 19-year-olds who drink regularly is quite low (fewer than 1 per cent drink alcohol on a daily basis, and 3 per cent at least once per week), alcohol consumption increases tremendously between 15 and 19, as does the number of times they admit to alcohol-related abuse. Excessive alcohol consumption not only puts their own health at risk, but also makes them more likely to get involved in anti-social behaviours.

We defined two variables for excess alcohol consumption: the 'drinking' variable equal to 1 for those adolescents who got drunk at least once in their life (and 0 otherwise), and the 'drinking and violence' variable equal to 1 for those who engaged in risky behaviours (either having sex, or engaging in a fight, or feeling sick or drunk) while drinking. By the age of 19, about 34 per cent of the sample report having been drunk, and 40 per cent report having engaged in risky behaviours while drinking (Table 3).

With respect to sexual behaviours, about 67 per cent of our sample had had sex by the age of 19, on average having the first sexual relation at the age of 16 (see Table A.1 in the Appendix). We define a variable to capture those young people at risk of sexually transmitted diseases (STDs).[6] The 'unprotected sex' variable is equal to 1 for those who did not use a condom in the most recent sexual relationship (including also those who used other birth-control methods or emergency contraception) and 0 for those who had protected sex (using condoms) or never had sex.

For drugs consumption we define an indicator to identify those who had ever tried any drugs: about 13 per cent by the age of 19.

Similarly, the dummy variable for weapon possession is equal to 1 for those who during the last 30 days had carried a weapon at least once.

Overall, considering the incidence of risky behaviours by age, we notice that risky behaviours increase significantly between the age of 15 and the age of 19, corresponding to the transition from childhood to adolescence (Table 3). It is worth noting that by the age of 19 male engagement in risky behaviours is about two to three times greater than that of females in terms of smoking, drinking and taking drugs, and criminal behaviours. There is also an urban–rural difference in relation to drinking, where adolescents living in urban areas drink more (9 per cent by the age of 15 and 37 per cent by the age of 19) relative to those in rural areas (5 per cent by the age of 15 and 24 per cent by the age of 19) and by the age of 19 are more likely to engage in risky behaviours while drinking.

However, not only the prevalence but also the intensity of risky behaviours increases over time. We define a variable counting the number of risky activities in which the young people have been involved by the ages of 15 and 19.[7] By the age of 15, about 22 per cent of young

5 In other words, they could be defined as 'social drinkers'. 'Social drinking' refers to casual drinking in a social setting without necessarily intending to get drunk.

6 Unfortunately, Young Lives only collects information about the use of contraceptive methods in the last sexual relationship.

7 The intensity variable includes all the risky-behaviours variables as defined above. With respect to alcohol consumption we include the 'drinking' variable only.

people have engaged in at least one risky behaviour. By the age of 19, slightly more than one out of two had engaged in at least one type of risky behaviour, with a distinctive pro-male bias (65 per cent among males, 43 per cent among females). While 28 per cent of the population engaged in only one risky activity, there is an equally consistent segment of the youth population (28 per cent), mainly young men, which undertakes more than one of these activities.

Our data report a remarkable diffusion of risky behaviours among Peruvian adolescents, and a worrisome predisposition towards risky activities for the relevant part of them. Although our data do not provide full support to either the 'bad seed' or the 'conservation of risk' hypothesis, it is worth noting that there is evidence of a certain persistence ('recidivism') in risky behaviours. Those who engage in risky behaviours at the age of 15 are indeed more likely to engage in risky behaviours at the age of 19. The average 'number of risky behaviours' at the age 15 is strongly correlated with the same measured four years later (standardised correlation coefficient of 0.6). Recidivism is more evident in some risky behaviours than others, particularly in drugs consumption, drinking and smoking. In fact, adolescents who consume drugs at age 15 are 64 percentage points more likely to consume drugs at age 19. Similarly, drinking (smoking) at age 15 increases the probability of smoking (drinking) at age 19 by 38 percentage points (39 percentage points).

In the next section we further characterise these young people: using a multivariate approach, we investigate who they are, their history, their past experience, their ability, their psychosocial well-being, and where they live.

4.3 Predictors of risky behaviours

In this section we briefly discuss the core predictors of risky behaviours. We focus exclusively on those predictors that are either time-invariant or are available in earlier rounds of the Young Lives survey.[8]

As we discussed in the previous section, soft skills have been identified as important factors in predicting risky behaviours. In our data, we capture soft skills (or psychosocial competencies) through two indicators that have been administered in the last three rounds of the Young Lives survey: the self-esteem scale and the self-efficacy scale. In the Young Lives database, these scales are referred to as the pride index and the agency index, respectively. The former builds on the self-esteem concept presented by Rosenberg (1965) and is related to the individual's overall evaluation of his/her own worth. The latter builds on the concepts of locus of control presented by Rotter (1966) and self-efficacy put forward by Bandura (1993); it measures the child's freedom of choice and his/her agency (or power) to influence his/her own life. The full list of survey questions included to compute the two scales is reported in Table 2.[9]

Another core predictor for risky behaviours is individual aspirations. There is a considerable body of economic literature investigating the role played by aspirations and subjective expectations in contraceptive choices (Delavande 2008); (sexual) risky behaviour (De Paula et al. 2013; Shapira 2013); and non-marital child-bearing choices (Wolfe et al. 2007). As Dalton et al. (2015) argue, how far people aspire depends on their own beliefs about what

8 Table 2 documents the indicators used in the analysis, and their definitions or procedure of computation.

9 It is worth noting that the correlation between these scales is 0.25. This suggests that the scales capture different dimensions of the child.

they can achieve with effort, i.e. their own expectations. People would not aspire to an outcome that is perceived as inaccessible. Consistently with the 'opportunity cost' argument in the risky-behaviour literature, if an outcome is perceived as inaccessible, people might believe that they have little to lose by engaging in a risky behaviour.

However, given the endogenous nature of aspirations, the empirical distinction between aspirations and expectations is hard to achieve in a non-experimental setting. Therefore, the measure of aspirations considered in this study reflects a combination of aspirations and beliefs about the likelihood of achieving the hoped-for outcomes. Young Lives collects information about educational aspirations by asking the child the following question: 'Imagine you had no constraints and could study for as long as you liked, or go back to school if you have already left. What level of formal education would you like to complete?'. In this study, we define a dummy variable equal to 1 for individuals with high aspirations, i.e. for those children who aspire to go to university, and 0 otherwise.

As noted in previous sections, patterns of risky behaviours may vary by gender and may change significantly during adolescence. While there is consistent evidence in the literature of a higher prevalence of risky behaviours among boys, the age pattern is more complex. In fact, while younger teens tend to be both more impatient and more subject to peer pressure (Lewis 1981), which could make them more prone to risk taking than older teens, there are at least three factors which might counterbalance this: biology, income and law (Gruber 2001). Indeed, some risky activities (for example, sexual intercourse) become desirable with age (*biology*). Moreover, some illegal activities for younger teens become legal at older ages (for example, cigarette consumption is illegal under the age of 19 in Peru) (*law*). Finally, older teens may have more money available to finance their risky activities (*income*).

Related to this last point, poverty is often seen as a trigger factor for engaging in risky behaviours. In the present analysis we approximate the socio-economic status of the natal household by using the following criteria: father's and mother's education level; an indicator for the rural/urban location where the household resides; and the tercile of wealth index, a composite measure of living standards including housing quality, access to services and a consumer-durable index, as defined in Table 2.

Finally, we consider two additional sets of potential predictors of risky behaviours related to household composition and education, and cognitive skills. The first set of characteristics that we look at relates to household composition. In the light of the results of past research, we include the number of siblings and whether the informant is living with only one biological parent (broken home).[10]

We also control for whether the young person has an older sibling. Siblings, and in particular older siblings, might affect the behaviour of our sample child by being a role model to them and by enlarging their peer groups. There is a consistent body of literature investigating the influence of family and peers on the behaviour of disadvantaged youths. For example, Clark and Loheac (2007) use the Add Health survey to examine risky behaviour by American adolescents. They find that the consumption of tobacco, alcohol and marijuana is correlated with peer-group behaviour. The correlation is stronger for alcohol use and among young males more commonly than among young females.

10 See Lundberg and Plotnick (1990) for a review of this evidence.

We also control for a dummy variable to identify movers, i.e. those children/families who are living in a different community from where they lived when they were 8 years old. There is some evidence of a positive association between displacement and risky behaviours. For example, Gaviria and Raphael (2001) suggest that recent movers may be more susceptible to peer-group pressure.

Finally, we look at a set of predictors relating to education. More specifically we investigate school enrolment, delayed enrolment and school achievement. School achievement, measured by either the Raven test score or the Peabody Picture Vocabulary Test (PPVT) and also by a maths test, can also be considered as a proxy of the child's cognitive skills. Notably, the two tests have been collected for all children, regardless of whether they are attending school or not. This feature of the data avoids any of the selection problems which commonly arise from the use of school-based data.

As an initial exploration of factors that might affect the probability of engaging in risky behaviours at the age of 19, we compare the mean characteristics of the predictors listed above for adolescents 'at risk' (engaging in at least one risky behaviour by the age of 19) and adolescents 'not at risk'. All predictors are measured when the adolescent was 12 and 15 years old. These differences are presented in Table 4 alongside tests for statistical significance.

Looking first at the individual characteristics, we note that young people engaging in risky behaviours by the age of 19 are more likely to be boys and to be slightly older than those who are not at risk. Young people 'at risk' have lower self-efficacy (slightly lower self-esteem) and are less likely to aspire to university at the age of 15. Furthermore, risky behaviours are more prevalent among young people with lower cognitive skills (performing worse in the maths test) and those who have already dropped out of school by the age of 15.

Interestingly, risky behaviours are not necessarily a phenomenon prevalent among young people living in poverty. Indeed, young people living in poverty are as likely as young people living in less poor households to engage in risky behaviours.

Additionally, there is no difference in the prevalence of risky behaviours in rural and urban areas, and the level of parental education is the same among young people at risk and those who are not at risk. Notably, risky behaviours are more prevalent in single-parent households.

5. Empirical strategy

In this section we define a multivariate set-up, estimating linear probability (OLS) models. Our dependent variables are the risky behaviours as defined in the previous sections. With the exception of the intensity variable (number of risky behaviours), the dependent variable is a variable equal to 1 if the young person engages in risky behaviours at the age of 19, and 0 otherwise.

First of all, we investigate the predictors of risky behaviours by looking at the association between risky behaviours measured at the age of 19 and psychosocial competencies measured at the age of 15, controlling for schooling achievement and a broad set of early (or time-invariant) individual and household-level characteristics, as follows:

$$Y_{ij,19} = \beta_0 + \alpha_i + \beta_1 self-efficacy_{i,15} + \beta_2 self-esteem_{i,15} + X_{i,15}\Gamma + \omega_j + \epsilon_{i,19} \quad (1)$$

In this model $Y_{ij,19}$ denotes risky behaviour outcomes of individual *i* living in the community *j* observed at age 19; $self-efficacy_{i,15}$ and $self-esteem_{i,15}$ are measured at the age of 15; $X_{i,15}$is a vector of pre-determined characteristics of individual *i* recognised as potential predictors of risky behaviours. In particular, $X_{i,15}$ includes some indicators of household socio-economic status (proxied by the wealth-index tertiles, a dummy variable for households living in rural areas, paternal and maternal education); information about family structure (the number of siblings, a dummy for single-parent household, and a dummy equal to 1 if the child has an older sibling and 0 otherwise); individual school achievement (measured by the standardised PPVT score and maths test, both taken at the age of 15); a dummy variable equal to 1 whether the young person at the age of 19 is living in the same community as when he/she was 15 years old and 0 otherwise; the sex and the age of the child at the time of the 2013/14 survey round. The term α_i reflects unobserved individual characteristics that are constant over time. Finally, $\epsilon_{i,19}$ is an idiosyncratic error and ω_i is a set of community dummies to control for unobservable characteristics common at community level.

Similarly, we investigate the correlation between educational aspirations measured at the age of 15 and risky behaviours at the age of 19. According to the 'opportunity cost' argument, we would expect to find a negative correlation between aspirations and risky behaviours if the perceived cost of engaging in risky behaviours increases with aspirations. The descriptive statistics presented in Table 4 indeed show that adolescents engaging in at least one risky behaviour at the age of 19 have lower aspirations than 'not at risk' adolescents.

Given that aspirations are likely to feed into the child's self-efficacy and self-esteem, we estimate a separate model similar to the one discussed above, but including a dummy variable equal to 1 for those children who at the age of 15 aspire to complete higher education (university), and 0 otherwise:

$$Y_{ij,19} = \theta_0 + \alpha_i + \theta_1 aspirations_{i,15} + X_{i,15}\Gamma + \omega_j + \epsilon_{i,19} \quad (2)$$

In both equation (1) and equation (2), self-efficacy, self-esteem and aspirations are measured at the age of 15. An empirical question is whether the psychosocial competencies measured at younger ages predict later risky behaviours. Young Lives collects evidence of self-efficacy, self-esteem and aspirations at the ages of both 12 and 15, which allows us to examine the long-term association with risky behaviours. We also report results for this long-term specification. In this case all control variables are either time-invariant or measured as early as possible (at age 8). In this case, the Raven score measured at age 8 is used as indicator of school achievement.

Although informative, an estimation of the risky-behaviours equations using cross-sectional data would be unbiased only under very strong assumptions about the role of unobservable variables. In the absence of plausibly exogenous variations in the regressors, their estimation raises endogeneity concerns and might lead to biased interpretations. Therefore, our intention is not to identify causal effects. Rather, the estimated parameters should be interpreted as partial correlations which may yield insights into potential drivers of risky behaviours at different ages and the channels through which such effects may be mediated.

Further, we exploit the fact that we have repeated measures of risky behaviours, and we estimate the outcome of interest using a child fixed-effects model, as follows:

$$\Delta Y_{ij,19-15} = \beta_1 \Delta self\_efficacy_{i,15-12} + \beta_2 \Delta self\_esteem_{i,15-12} + \Delta X_{i,15-12}\Gamma + \Delta\epsilon_{i,19-15} \quad (3)$$

and similarly,

$$\Delta Y_{ij,19-15} = \theta_1 \Delta aspirations_{i,15-12} + \Delta X_{i,15-12}\Gamma + \Delta\epsilon_{i,19-15} \quad (4)$$

In this specification, the role of self-efficacy and self-esteem is identified by exploiting changes between ages 12 and 15 which in turn lead to changes in risky behaviours between ages 15 and 19. In doing so, we implicitly assume that the relevant coefficients are age-independent. This strategy has the advantage that it controls for individual unobservable characteristics that are constant over time.

6. Results

The main results of the analysis are reported in Table 5 and Table 6. Outcomes are measured at age 19, whereas, unless otherwise expressed, predictors are measured at age 15. Smoking, drinking, and drinking and violence are the outcomes for which the highest proportion of the variance is explained by the selected predictors, with an R-squared of around 20 per cent. In contrast, for drug consumption, risky sex and criminal-related outcomes between 10 and 13 per cent of the variance is explained.

The four most consistent predictors of risky and criminal behaviours are gender, age, self-esteem and whether the individual comes from a single-parent household. The fact that there are differential patterns by gender and age was already evident in the descriptive statistics. The probability of smoking, drinking and engaging in drinking and violence increases respectively by 21, 22 and 24 percentage points for males compared with females. Similarly, males are 13 and 11 percentage points more likely than females to consume drugs and engage in criminal behaviours respectively. Although the average age is 19, many individuals were aged 18 at the time of the interview. We find that advancing from the age of 18 to the age of 19 increases the likelihood of smoking, drinking and drinking and violence by around 10 percentage points in all cases, whereas the prevalence of drug consumption increases by 5 percentage points.

Beyond the role of gender and age, our main finding is related to the association between self-esteem and risky and criminal behaviours. Given that the estimation controls for demographic and socio-economic characteristics, as well as for schooling achievement and time-invariant community characteristics, among other aspects, the estimated parameter can be interpreted as a robust association. Keeping other factors constant, a 1 standard-deviation increase in self-esteem at age 15 reduces the likelihood of engaging in smoking, drinking and drinking and violence by 6, 7 and 9 percentage points (respectively); it also reduces the likelihood of criminal behaviours and carrying a weapon by 13.8 percentage points and 3.7 percentage points. In contrast, the association with self-efficacy is not statistically significant, though it is interesting to observe that the estimated coefficients have the expected (negative) sign.

About the role of family structure, a specific dimension which plays a role is whether the individual comes from a single-parent household, which increases the likelihood of engaging

in drinking and violence, in criminal behaviours, and in risky sex by 10, 16 and 15 percentage points respectively. In addition, the number of siblings is positively associated with criminal behaviours and with the probability of carrying a weapon.

It is interesting to observe that the role of socio-economic characteristics and schooling achievement is relevant only for certain types of outcome, and that the specific characteristics that matter depend on the nature of the risky behaviours. We find that household wealth (as measured by the wealth index) is not associated with any of the risky behaviours; however, other socio-economic dimensions such as parental education (for criminal behaviours), area of location and migration (for drinking behaviours) are. Specifically, we observe a negative association between father´s education and criminal behaviours.

We also observe that living in a rural area reduces drinking by 27 percentage points, whereas having migrated between the ages of 15 and 19 increases the same probability by 17 percentage points (most of the observed migration implies moving from rural to urban areas). Finally, keeping other factors constant, we do not find a statistically significant association between schooling achievement and risky behaviours. However, there is a strong negative association between school enrolment and criminal behaviours.

From the factors previously mentioned, gender, age, self-esteem and living in a single-parent household stand out as factors that systematically predict risky and criminal behaviours. These are also the factors that predict the (overall) number of risky behaviours in which the individual has engaged.

Also, it is interesting to observe that psychosocial competencies do not play any role in predicting risky sexual behaviours. This is surprising, given that previous literature suggests self-efficacy (or self-confidence) to be one of the key factors for contraceptive use, and particularly for the use of condoms, which, particularly for girls, requires negotiating their use with the partner (see, for example, Salazar et al. 2005).

More generally, unprotected sex is the behaviour for which fewer predictors turn out to be statistically significant (only one, that of coming from a single-parent household), which suggests that other important predictors might have been neglected. Factors such as being born to a teenage mother, knowledge of sexual and reproductive health, access to contraceptive methods, age of the sexual debut, and relationship status are some of the factors commonly correlated with teenage pregnancy and motherhood (see, for example, Azevedo et al. 2001 and Ermisch and Pevalin 2003). Furthermore, being married or in a stable relationship might influence the decision to use contraceptive methods. Nevertheless, these factors have been not included in the analysis, mainly for two reasons: first, the need to preserve comparability across the different risky behaviours considered; second, the fact that some of those variables are collected in Round 4 only.[11]

In Table 6 we report the results for the risky-behaviours models, including educational aspirations. Keeping everything else constant, in this model we observe that aspiring to higher education reduced the likelihood of drinking and engaging in criminal behaviours by 14 and 25 percentage points respectively. Higher aspirations are also negatively correlated

11 It is important to note that by including a dummy for marital/cohabiting status and an indicator for the child's understanding of sexual reproduction the estimated coefficients for self-efficacy and self-esteem do not qualitatively change. However, the inclusion of those variables improves the statistical fit of our model, and the r-squared increases from 0.09 to 0.16.

with the total number of risky behaviours. The role played by the other predictors (the same as in the previous model) remains very similar. One noticeable difference is that, once aspirations are controlled for, school enrolment does not predict criminal behaviours, which suggests that aspirations and school enrolment, both measured at the age of 15, are strongly correlated.

To further explore the possible differential correlation of psychosocial competencies with risky behaviours by gender, in Tables 7 and 8 we replicate the same results, adding an interaction between male gender, self-esteem and self-efficacy, and between male gender and aspirations, respectively. The only noticeable result is that while on average girls are more at risk of unprotected sex than boys, girls aspiring to higher education are less likely to have unprotected sex. Therefore, if the relation between aspirations and risky behaviours proved to be causal, having higher educational aspirations would be likely to prevent girls engaging in unprotected sex relatively more than boys.

So far we have shown that psychosocial competencies and aspirations measured at the age of 15 predict many risky behaviours that occur at the age of 19. An empirical question is whether this correlation is constant over time, and whether psychosocial competencies and aspirations measured earlier in life similarly predict later behaviours.

In Table 9 and Table 10 we report the estimates for the risky- behaviour model where early psychosocial competencies and aspirations are measured at the age of 12. Analogous to previous results, early self-esteem is negatively correlated with drugs consumption, unprotected sex and criminal behaviours, and with intensity of engagement in risky behaviours more generally. Similarly, children aspiring to higher education at the age of 12 are less likely to carry weapons at the age of 19.

On the contrary, children with higher levels of self-efficacy at the age of 12 are relatively more at risk of engaging in risky behaviours. More specifically, an increase of one standard deviation in the self-efficacy indicator is correlated with an increase of 4 and 5 percentage points in relation to smoking and engaging in unprotected sex. This seems to suggest that while higher self-esteem during childhood and throughout adolescence might play a protective role against risky behaviours later on in life, self-efficacy during childhood might indeed have the opposite effect (and not a significant effect during adolescence). The reasons for this might reside in the nature of the two soft skills themselves. Self-efficacy, which reflects the individual's judgment of his or her own capacity to act and exert agency, is also intrinsically related to action and behaviour. This is where it differs from 'self-esteem', which is a more passive concept, without a necessary expression in action, and is about the individual's judgement of self-worth.

Thus, for those adolescents with pre-existing low self-efficacy, the transition to adolescence (and the risky-behaviour experimentation as part of this process of development) can be problematic.

6.1 Fixed-effects estimates

In order to obtain a better identification of the relationship between psychosocial competencies and the outcomes of interest, we report individual fixed effects estimates. We exploit the variation over time (between age 19 and 15) in individual risky and criminal behaviours and we estimate it as a function of a change in psychosocial competencies and in the other control variables between the ages of 12 and 15. These results are reported in Tables 11 and 12. For this part of the analysis, the criminal-behaviours variable is dropped,

because it is not observed at age 15. Gender and parental education do not vary over time, and because age varies uniformly across all children between survey waves, these variables are also dropped.

In Table 11, we report the results for the individual fixed-effects estimates using self-esteem and self-efficacy as predictors of risky behaviours. The results are qualitatively similar to the ones discussed above. An increase in self-esteem is negatively correlated with the prevalence of risky behaviours over time. More specifically, one standard-deviation increase in self-esteem reduces smoking, drinking and engaging in drinking and violence by 5, 10 and 9 percentage points respectively; it does not predict the likelihood of carrying a weapon, but the point estimate is very similar (3 percentage points). In contrast to the results in the previous model, self-efficacy is predictive of carrying a weapon. One standard-deviation increase in self-efficacy reduces the probability of carrying a weapon by 5 percentage points. Besides this, in this set of estimations, educational achievement is found to play a more prominent role. School enrolment reduces the likelihood of drinking alcohol, drugs consumption and risky sex. A similar role is played by vocabulary and maths achievement. In addition, coming from a single-parent household, area of location, and migration remain as important predictors of risky behaviours.

In Table 12, we report the results for the individual fixed-effect model, including aspirations among the predictors. However, in this case we are not able to detect a relationship between aspirations and the outcomes of interest.

To summarise, the fixed-effects estimates show that the relationship between self-esteem and risky behaviours is very robust, whereas the relationship between self-efficacy, aspirations and risky behaviours is not. In addition, there seems to be a lot of meaningful variation over time in the control variables, which allows us to show that coming from a single-parent household, the area of location, migration and educational achievement are also important factors which play a role in the determination of risky and criminal behaviours.

7. Conclusions and discussion

There is a growing concern about the prevalence of risky behaviours among young people, which ultimately lead to worse outcomes later in life, including lower salaries and worse socio-economic and life outcomes. On the other hand, there is little evidence about the prevalence of these behaviours and their determinants in the context of developing countries. Our aim is to try to fill this gap, using unique individual-level panel data from Peru, following a cohort of children for over a decade between the ages of 8 and 19.

We constructed indicators to measure the prevalence of smoking and drinking; engaging in risky behaviours when drunk; consumption of illegal drugs; unprotected sex; criminal behaviours; possession of weapons; and total number of risky behaviours. While we do not claim any causal relation, the methods used allow us to deal with bias arising from reverse causality and omitted variables that are constant over time.

Our main findings can be summarised as follows. First, we find that the prevalence of risky behaviours in the Young Lives Peruvian sample is evident and increases with age: by age 15, two out of 10 individuals had engaged in at least one risky behaviour, whereas by age 19 one out of two had done so. Although these results are not claimed to be representative of Peruvian youth, the fact that the Young Lives sample covers the diversity of the country in

terms of living standards suggests that the prevalence of risky conduct among Peruvian youth is likely to be large.

Second, our analysis of the predictors of risky behaviours identifies a group of adolescents vulnerable to pressure to engage in risky behaviours. This is particular relevant for boys living in urban areas who have grown up in single-parent households with a high number of siblings. More specifically, there is a notorious pro-male bias in the prevalence of most of these behaviours. There are also some differences by area of location, particularly in the consumption of alcohol, which is less prevalent in rural areas.

Third, and perhaps most importantly, we find a negative correlation between early self-esteem and a number of risky behaviours, including smoking, drinking, drinking and violence, criminal behaviours, and possession of a weapon. Higher levels of self-esteem at the age of 15 considerably reduce the probability of engaging in risky behaviours at the age of 19. The correlation found is robust to a number of specifications and, when controlled for unobservable individual characteristics, constant over time. We note further that early self-esteem, measured at the age of 12, is already a predictor of later drugs consumption, unprotected sex, criminal behaviours and the number of risky behaviours engaged in by adolescents at the age of 19.

Finally, while no similar link is found with self-efficacy, we find that aspiring to higher education at the age of 15 predicts a lower probability of drinking and engaging in criminal behaviours at the age of 19 by 14 and 25 percentage points respectively. Furthermore, while girls on average are more at risk of unprotected sex, girls aspiring to higher education are less likely to have unprotected sex. Nevertheless, once we control for unobservable individual characteristics, the correlation between aspirations and risky behaviours is no longer significant.

From this analysis we identify a number of drivers of risky behaviours. In particular, there is a specific group of young people who are at risk: boys living in urban areas and growing up in single-parent households. In the case of girls, they are more likely to be exposed to unprotected sex. Although these groups are identified for the Peruvian context, similar patterns are likely to be observed in countries with similar characteristics (middle-income countries with relatively high levels of poverty and low levels of secondary-school attainment).

We also observe a dramatic increase in risky behaviours between the ages of 15 and 19, which suggests that policy interventions aiming at preventing risky behaviour should be put in place at age 15 or earlier, when risky behaviours manifest in only a small segment of the population.

Although the present analysis is not a sufficient basis on which to claim any causal relation between socio-emotional competencies and risky behaviours, it does provide some interesting hints. Our results suggest that psychosocial competencies, and self-esteem and high aspirations in particular, might play a role in reducing risky behaviours. As far as we know, this evidence is unique in the developing-countries context. Policies aimed at promoting soft skills during childhood and adolescence can play an important role as a mechanism to reduce risky and criminal activities among young people.

From a policy perspective, considering the age range analysed as well as the fact that, by age 15, most Peruvian adolescents are still attending school, we argue that it is worth exploring whether interventions designed to take place at secondary-level schools can reduce the engagement of adolescents in risky behaviours.

In terms of more comprehensive interventions, the Ministry of Education in Peru is currently implementing an Extended School Day Programme *(Jornada Escolar Completa,* JEC). This initiative seeks both to extend the length of the school day and to provide better services to students at the secondary level in urban areas.

Theoretically, JEC and similar initiatives can have direct as well as indirect effects on the prevalence of risky behaviours. First of all, longer school hours mean that students spend a greater number of hours per day under adult supervision, which limits the possibility of engaging in risky behaviours. Further, inasmuch as extended school days have been found to improve academic achievement in middle-income countries (Bellei 2009; Aguero and Beleche 2013), this type of programme can be expected to reduce the prevalence of risky behaviours by increasing the opportunity cost of engaging in them (indirect effect).

Finally, as part of the JEC programme in Peru a full-time psychologist has been incorporated into every JEC school to improve students' psychosocial well-being. Our results suggest that improving psychological competencies might be an additional mechanism through which the JEC might reduce the prevalence of risky behaviours.

Similar programmes are currently being implemented in the Latin American region (in Chile, Colombia, Mexico and Uruguay). In the case of Chile, a nationwide educational reform extended the school day from 32 to 39 hours per week. Berthelon and Kruger (2011) find that teens living in municipalities with greater access to full-day high schools had a lower probability of becoming mothers during their adolescence. An increase of 20 percentage points in the municipal share of full-day high schools reduces the probability of motherhood in adolescence by 3.3 per cent.

This encouraging finding from Chile suggests that it is worthwhile exploring the potential effects of this type of reform on risky behaviours. Further research on JEC in Peru and its effect on risky behaviours will be done, using the next round of data.

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Table 1. *Sexual behaviours and unprotected sex among young women in Peru*

	Age 15–17		Age 18–19	
	Mean	n	Mean	n
Ever had sex (in %)	18.0	2800	53.0	1580
Age at first sexual intercourse (in years)	15.0	563	16.5	873
Used condom at last intercourse (in %)	24.0	500	22.0	764

Note: Peru Demographic and Health Survey 2014. Results are nationally representative.

Table 2. *Definitions of variables*

Variable	Description
Risky Behaviours	
Smoking	Dummy variable equal to 1 if she/he is 'smoking at least once a month' (or more frequently), and 0 otherwise. The survey question used is the following: 'How often do you smoke cigarettes now?'.
Drinking	Dummy variable equal to 1 if she/he has been drunk at least once in his/her life, and 0 otherwise. The survey question used is the following: 'Have you ever been drunk from too much alcohol?'.
Drinking & Violence	Dummy variable equal to 1 if she/he engaged in risky behaviours (got into fights/caused trouble, felt sick or fell over, had sex) while drinking and 0 otherwise (including also those who never drank alcohol before). The survey questions used are the following: 'During the past 12 months, how many of these things happened to you because you've been drinking alcohol?' and 'During your life, have you ever been drunk from alcohol while having sex?'.
Drugs Consumption	Dummy variable equal to 1 if she/he has ever consumed any of the drugs listed before, 0 otherwise: 'Have you ever tried any of the following drugs?' i.e. inhalants (terokal, gasoline, etc), marijuana, coca paste, cocaine, ecstasy, methamphetamines, hallucinogens (san pedro, ayahuasca, etc.), other drugs (crack, heroin, opium, ketamine, hashish, etc.).
Unprotected Sex	Dummy variable equal to 1 if she/he did not use condoms in the last sexual relationship (or she/he used other birth-control methods or emergency contraception) and 0 for those who used a condom, or never had sex. The survey questions used are the following: 'The last time you had sex, what did you do to prevent getting pregnant or a disease?' We used a condom Drank infusion or mate Used after morning pill Used injections to prevent getting pregnant I don't know if used any method We did not use any method Other method
Criminal Behaviour	An index measuring the intensity of criminal behaviour, defined by the sum of the following dummy variables: whether the YL child has carried a weapon in the last 30 days, ever been arrested by the police or taken into custody for an illegal or delinquent offence, ever been a member of a gang, or ever sentenced to spend time in a corrections institution such as a jail/prison/youth institution (juvenile hall, reform school, training school).
Carrying a Weapon	Dummy variable equal to 1 if she/he carried a weapon during the last 30 days and 0 otherwise. The survey question used is the following: 'During the last 30 days, on how many days did you carry a weapon such as a knife, machete, or gun to be able to protect yourself?'
No. of Risky Behaviours	An index created to measure the intensity of risky behaviour and equal to the sum of all the dummy variables defined above (smoking, alcohol and drugs consumption, carrying weapons and having unprotected sex).

Table 2. *Definitions of variables* continued

Variable	Description
Child's Educational Aspirations	'Imagine you had no constraints and could study for as long as you liked, or go back to school if you have already left. What level of formal education would you like to complete?' Child's educational aspirations are collected at the age of 12, 15, and 18. We define a dummy variable equal to 1 for those children with high aspirations (aspiring to university) and 0 otherwise.
Psychosocial Competencies	This is the procedure adopted to compute the self-efficacy and self-esteem indicators: (i) All relevant questions are recoded to be positive outcomes, (ii) relevant questions are all normalised to z-scores (subtract mean and divide by SD) and then (iii) an average of the relevant z-scores is taken across the non-missing values of the questions. All the questions are on Likert-type scales going from 1 to 4 in Round 2 (R2) and from 1 to 5 in Round 3 (R3). The questions differ a little from round to round as specified below.
Self-efficacy Index	If I try hard, I can improve my situation/life. Other people in my family make all the decisions about how I spend my time. I like to make plans for my future studies and work. If I study hard at school, I will be rewarded by a better job in future. I have no choice about the work I do – I must work.
Self-esteem Index	I feel proud to show my friends or other visitors where I live. I am ashamed of my clothes. I feel proud of the job my [caregiver/household head] does. I am often embarrassed because I do not have the right books, pencils, and other equipment for school. I am proud of my achievements at school. I am ashamed of my shoes. I am worried that I don't have the correct uniform. I am proud of the work I have to do. I feel my clothing is right for all occasions.
Other Controls	
Gender	Dummy variable equal to 1 for boys and 0 for girls
Age	Age in years
Residency – rural	Dummy variable equal to 1 if the child's household resides in rural areas and 0 otherwise
Migration	A dummy variable equal to 1 if he/she migrated between age 15 and 19 and 0 if at age 19 she/he still lives in the same community as at age 19
Wealth Index	A composite measure of living standards. The variable takes values between 0 and 1, such that a larger value reflects a wealthier household. The wealth index is the simple average of three sub-indexes: a housing-quality index (quality of floor, wall, roof, and number of rooms per capita), an access-to-services index (access to drinking water, electricity, sanitation, and type of fuel used for cooking) and a consumer-durables index (TV, radio, fridge, microwave, computer, etc.). In the analysis we use the wealth index segmented in tertiles: bottom, middle, and top tertiles.
Parents' education	Father's and mother's education, segmented into three categories for none or primary education (less than grade 8), secondary education (grade 10) and higher education (above grade 10) as their highest level of education completed
Single parent	Dummy variable equal to 0 if she/he is living with both biological parents, and 1 if he/she is living with only one biological parent, the biological parent and his/her partner, or is an orphan
Child has older siblings	A dummy equal to 1 if she/he has older siblings
Number of siblings	Number of siblings
Delayed enrolment	Dummy variable which indicates 1 if the YL child has ever delayed school enrolment and 0 if not
Raven's test score (z-score)	Total number of correct responses in the Raven test, standardised by round
PPVT (z-score)	Standardised score for the Peabody Picture Vocabulary Test by rounds
Maths (z-score)	Standardised score for the maths test by rounds
Enrolment	Dummy variable which indicates 1 if the YL child is enrolled in school or not

Table 3. *Risky behaviours by gender and rural/urban at age 15 and 19*

Age 15	Total	Mean		p-value t-test	Mean		p-value t-test
		Urban	Rural		Female	Male	
Smoking	0.06	0.06	0.07	0.797	0.04	0.09	0.023
Drinking	0.08	0.09	0.05	0.085	0.09	0.07	0.472
Drinking & Violence	0.12	0.13	0.10	0.288	0.12	0.12	0.973
Drugs Consumption	0.02	0.03	0.00	0.041	0.02	0.03	0.260
Unprotected Sex	0.06	0.06	0.05	0.712	0.05	0.06	0.625
Carrying a Weapon	0.07	0.06	0.10	0.158	0.06	0.08	0.436
No. of Risky Behaviours: 0	0.78	0.78	0.80	0.514	0.81	0.76	0.214
No. of Risky Behaviours: 1	0.16	0.17	0.15	0.621	0.15	0.18	0.409
No. of Risky Behaviours: 2	0.03	0.03	0.02	0.628	0.03	0.03	0.829
No. of Risky Behaviours: 3	0.02	0.02	0.02	0.976	0.02	0.03	0.260
Observations	**524**	**391**	**133**		**259**	**265**	

Age 19	Total	Mean		p-value t-test	Mean		p-value t-test
		Urban	Rural		Female	Male	
Smoking	0.19	0.20	0.16	0.350	0.08	0.29	0.000
Drinking	0.34	0.37	0.24	0.012	0.22	0.45	0.000
Drinking & Violence	0.40	0.43	0.30	0.016	0.27	0.52	0.000
Drugs Consumption	0.13	0.13	0.14	0.631	0.07	0.18	0.000
Unprotected Sex	0.27	0.28	0.25	0.554	0.30	0.25	0.280
Carrying a Weapon	0.05	0.04	0.08	0.106	0.05	0.05	0.930
Criminal behaviour	0.19	0.18	0.22	0.474	0.13	0.24	0.027
No. of Risky Behaviours: 0	0.45	0.44	0.49	0.319	0.57	0.35	0.000
No. of Risky Behaviours: 1	0.27	0.27	0.26	0.815	0.22	0.31	0.040
No. of Risky Behaviours: 2	0.16	0.16	0.14	0.588	0.15	0.16	0.795
No. of Risky Behaviours: 3	0.12	0.13	0.11	0.556	0.05	0.18	0.000
Observations	**471**	**359**	**112**		**220**	**251**	

Table 4. *Descriptive statistics*

	Total		Not at risk		At risk		t-test
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	p-value
Child is male	0.53	0.499	0.41	0.493	0.63	0.483	0.000
Age in Round 4	18.41	0.549	18.35	0.544	18.45	0.550	0.064
Father's education: primary school/none N/None	0.31	0.462	0.32	0.468	0.30	0.458	0.584
Father's education: secondary school	0.47	0.500	0.44	0.497	0.49	0.501	0.230
Father's education: higher education	0.20	0.403	0.22	0.416	0.19	0.392	0.385
Mother's education: primary school/none	0.34	0.473	0.33	0.470	0.35	0.477	0.616
Mother's education: secondary school	0.42	0.493	0.40	0.490	0.43	0.496	0.429
Mother's education: higher education	0.15	0.362	0.19	0.388	0.13	0.338	0.116
Characteristics at the age of 15							
Type site: rural	0.22	0.415	0.24	0.426	0.21	0.407	0.477
Migrated between 15 and 19	0.07	0.256	0.07	0.249	0.07	0.261	0.757
First tercile of wealth	0.32	0.469	0.31	0.464	0.34	0.473	0.572
Second tercile of wealth	0.34	0.473	0.34	0.475	0.33	0.472	0.863
Third tercile of wealth	0.34	0.474	0.35	0.478	0.33	0.472	0.699
Single parent, age 15	0.24	0.425	0.19	0.392	0.27	0.447	0.030
Child has older siblings	0.34	0.476	0.34	0.475	0.35	0.477	0.858
Number of siblings	1.96	1.270	2.00	1.288	1.93	1.257	0.533
Self-efficacy	0.02	0.519	0.08	0.529	-0.03	0.506	0.023
Self-esteem	0.01	0.599	0.05	0.603	-0.02	0.596	0.236
Child aspirations	0.93	0.259	0.95	0.213	0.91	0.291	0.058
Mother´s aspirations	0.94	0.244	0.95	0.213	0.92	0.267	0.185
Child is enrolled	0.94	0.229	0.97	0.179	0.93	0.261	0.057
PPVT (standardised)	-0.01	1.008	0.04	1.021	-0.05	0.999	0.353
Maths (standardised)	0.00	1.004	0.09	1.064	-0.07	0.947	0.093
Observations		471		212		259	
Characteristics at the age of 12							
Child started school late	0.13	0.338	0.13	0.334	0.14	0.343	0.790
Migrated between ages 7 and 15	0.24	0.427	0.23	0.421	0.25	0.433	0.581
Self-efficacy	0.02	0.506	0.05	0.450	-0.01	0.546	0.195
Self-esteem	0.04	0.667	0.07	0.647	0.01	0.683	0.270
Child aspirations	0.93	0.260	0.94	0.241	0.92	0.275	0.378
Mother´s aspirations	0.95	0.212	0.95	0.224	0.96	0.203	0.600
Raven (standardised)	0.02	0.997	0.06	1.058	-0.01	0.946	0.485
Observations		509		228		281	

Table 5. *Predictors of risky behaviours at age 19 controlling for psychosocial competencies and other characteristics at age 15*

	Smoking	Drinking	Drinking & violence	Drugs consumption	Unprotected sex	Criminal beh.	Carried a weapon	No. of risky beh.
Self-efficacy, age 15	-0.038	-0.039	-0.020	-0.021	-0.022	0.010	-0.014	-0.133
	(0.284)	(0.369)	(0.688)	(0.681)	(0.627)	(0.840)	(0.456)	(0.292)
Self-esteem, age 15	-0.056**	-0.066*	-0.085**	-0.020	-0.025	-0.138*	-0.037**	-0.205**
	(0.029)	(0.054)	(0.017)	(0.488)	(0.581)	(0.084)	(0.044)	(0.020)
Child is male	0.207***	0.217***	0.237***	0.130***	-0.034	0.111**	0.001	0.521***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.480)	(0.019)	(0.970)	(0.000)
Age in R4	0.095***	0.102**	0.101**	0.049**	-0.006	0.007	-0.016	0.225**
	(0.009)	(0.031)	(0.021)	(0.038)	(0.914)	(0.849)	(0.558)	(0.045)
Type site: rural, age 15	-0.049	-0.269***	-0.232**	0.045	0.078	0.119	0.039	-0.156
	(0.599)	(0.000)	(0.014)	(0.551)	(0.249)	(0.332)	(0.334)	(0.430)
Migrated between 15 and 18	0.074	0.171**	0.216**	-0.022	0.134	-0.080	-0.073*	0.283
	(0.446)	(0.037)	(0.018)	(0.794)	(0.127)	(0.531)	(0.063)	(0.313)
Second tercile of wealth, age 15	0.008	0.081	0.054	-0.006	0.019	-0.051	0.005	0.107
	(0.912)	(0.228)	(0.468)	(0.792)	(0.721)	(0.455)	(0.884)	(0.539)
Third tercile of wealth, age 15	-0.079	0.076	0.033	-0.010	0.093	-0.022	-0.017	0.062
	(0.255)	(0.324)	(0.744)	(0.851)	(0.244)	(0.734)	(0.602)	(0.730)
Father's education - Secondary School	-0.016	0.044	0.081	-0.024	-0.009	-0.086*	-0.018	-0.024
	(0.766)	(0.472)	(0.162)	(0.423)	(0.885)	(0.076)	(0.524)	(0.879)
Father's education: higher education	-0.013	0.012	0.051	-0.023	-0.072	-0.076	-0.056*	-0.151
	(0.818)	(0.860)	(0.484)	(0.606)	(0.356)	(0.282)	(0.074)	(0.350)
Mother's education: secondary school	0.040	-0.034	-0.000	0.042	0.044	0.012	-0.012	0.080
	(0.297)	(0.309)	(0.999)	(0.179)	(0.457)	(0.725)	(0.611)	(0.387)
Mother's education: higher education	0.054	0.004	0.046	0.073	-0.019	0.128	0.057*	0.170
	(0.495)	(0.964)	(0.568)	(0.261)	(0.768)	(0.168)	(0.056)	(0.424)
Single parent, age 15	0.080	0.039	0.103*	0.076	0.154***	0.159**	0.028	0.377**
	(0.285)	(0.508)	(0.079)	(0.198)	(0.005)	(0.047)	(0.307)	(0.026)
Child has older siblings	0.019	0.057	0.067	0.027	-0.026	0.008	-0.001	0.076
	(0.549)	(0.212)	(0.125)	(0.434)	(0.479)	(0.921)	(0.947)	(0.453)
Number of siblings, age 15	-0.010	-0.017	-0.007	0.013	-0.004	0.045*	0.022*	0.004
	(0.496)	(0.357)	(0.741)	(0.233)	(0.773)	(0.098)	(0.095)	(0.905)
Child is enrolled, age 15	-0.086	-0.080	-0.130	-0.014	-0.047	-0.272**	-0.062	-0.289
	(0.310)	(0.452)	(0.155)	(0.887)	(0.507)	(0.011)	(0.492)	(0.135)
PPVT z-score, age 15	-0.041	-0.039	-0.015	-0.037	0.040	-0.027	0.014	-0.063
	(0.180)	(0.388)	(0.699)	(0.277)	(0.254)	(0.650)	(0.413)	(0.549)
Maths z-score, age 15	0.010	0.001	-0.023	-0.012	-0.018	-0.011	-0.016	-0.035
	(0.663)	(0.956)	(0.283)	(0.553)	(0.516)	(0.663)	(0.174)	(0.444)
Number of observations	471	471	471	471	471	471	471	471
R-squared	0.209	0.185	0.189	0.124	0.107	0.133	0.097	0.174

Note: The table reports the estimates of the linear probability model with standard errors (in parentheses) clustered at cluster level, * p<0.1 ** p<0.05 ***p<0.1. All controls were included as reported, together with dummy variables for the cluster that individuals were recruited in the 2002 round; coefficients for these are not reported.

Table 6. *Predictors of risky behaviours at age 19 controlling for educational aspirations and other characteristics at age 15*

	Smoking	Drinking	Drinking & violence	Drugs consumption	Unprotected sex	Criminal beh.	Carried a weapon	No. of risky beh.
Child aspired to higher education, age 15	-0.119	-0.142*	-0.124	-0.109	-0.100	-0.245*	-0.064	-0.534*
	(0.292)	(0.070)	(0.171)	(0.251)	(0.155)	(0.051)	(0.347)	(0.054)
Child is male	0.209***	0.219***	0.237***	0.130***	-0.034	0.104**	0.001	0.526***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.514)	(0.020)	(0.954)	(0.000)
Age in R4	0.092**	0.100**	0.098**	0.048**	-0.007	0.005	-0.017	0.215**
	(0.013)	(0.036)	(0.027)	(0.041)	(0.888)	(0.887)	(0.520)	(0.049)
Type site: rural, age 15	-0.057	-0.278***	-0.240**	0.038	0.072	0.105	0.035	-0.191
	(0.551)	(0.000)	(0.012)	(0.598)	(0.271)	(0.382)	(0.319)	(0.323)
Migrated between 15 and 18	0.088	0.187**	0.232***	-0.012	0.144*	-0.051	-0.065	0.342
	(0.300)	(0.011)	(0.006)	(0.875)	(0.089)	(0.645)	(0.129)	(0.140)
Second tercile of wealth, age 15	0.001	0.073	0.045	-0.008	0.016	-0.063	0.001	0.084
	(0.988)	(0.243)	(0.526)	(0.688)	(0.759)	(0.309)	(0.969)	(0.603)
Third tercile of wealth, age 15	-0.088	0.065	0.019	-0.011	0.089	-0.038	-0.023	0.032
	(0.203)	(0.386)	(0.844)	(0.830)	(0.245)	(0.575)	(0.476)	(0.856)
Father's education: secondary school	-0.018	0.042	0.077	-0.023	-0.008	-0.089*	-0.020	-0.027
	(0.740)	(0.500)	(0.173)	(0.462)	(0.895)	(0.078)	(0.487)	(0.864)
Father's education: higher education	-0.019	0.004	0.044	-0.027	-0.077	-0.085	-0.059*	-0.178
	(0.721)	(0.954)	(0.529)	(0.542)	(0.333)	(0.219)	(0.067)	(0.285)
Mother's education: secondary School	0.036	-0.039	-0.005	0.041	0.043	0.010	-0.014	0.067
	(0.370)	(0.264)	(0.884)	(0.154)	(0.453)	(0.736)	(0.503)	(0.382)
Mother's education: higher education	0.043	-0.010	0.027	0.072	-0.022	0.100	0.049	0.132
	(0.599)	(0.904)	(0.736)	(0.262)	(0.708)	(0.347)	(0.109)	(0.520)
Single parent, age 15	0.078	0.037	0.100*	0.075	0.154***	0.154**	0.027	0.372**
	(0.285)	(0.521)	(0.084)	(0.188)	(0.006)	(0.046)	(0.327)	(0.026)
Child has older siblings	0.010	0.047	0.058	0.024	-0.030	-0.001	-0.006	0.046
	(0.739)	(0.280)	(0.177)	(0.480)	(0.359)	(0.991)	(0.742)	(0.622)
Number of siblings, age 15	-0.014	-0.021	-0.012	0.012	-0.006	0.039	0.020	-0.009
	(0.378)	(0.264)	(0.607)	(0.313)	(0.688)	(0.134)	(0.130)	(0.823)
Child is enrolled, age 15	-0.054	-0.041	-0.094	0.017	-0.020	-0.196	-0.044	-0.143
	(0.596)	(0.716)	(0.332)	(0.867)	(0.799)	(0.117)	(0.660)	(0.530)
PPVT z-score, age 15	-0.043	-0.041	-0.017	-0.035	0.042	-0.024	0.013	-0.064
	(0.143)	(0.372)	(0.658)	(0.265)	(0.224)	(0.672)	(0.430)	(0.517)
Maths z-score, age 15	0.012	0.004	-0.018	-0.012	-0.017	-0.001	-0.014	-0.027
	(0.547)	(0.811)	(0.387)	(0.564)	(0.556)	(0.967)	(0.238)	(0.545)
Number of observations	471	471	471	471	471	471	471	471
R-squared	0.204	0.180	0.181	0.127	0.108	0.124	0.090	0.169

Note: The table reports the estimates of the linear probability model with standard errors (in parentheses) clustered at cluster level, * p<0.1 ** p<0.05 ***p<0.1. All controls were included as reported, together with dummy variables for the cluster that individuals were recruited in the 2002 round; coefficients for these are not reported.

Table 7. *Predictors of risky behaviours at age 19: heterogeneity in psychosocial competencies by gender*

	Smoking	Drinking	Drinking & violence	Drugs consumption	Unprotected sex	Criminal beh.	Carried a weapon	No. of risky beh.
Self-efficacy, age 15	-0.067	-0.003	0.014	-0.048	-0.068	-0.006	-0.042	-0.228
	(0.232)	(0.941)	(0.778)	(0.243)	(0.371)	(0.924)	(0.156)	(0.101)
Self-esteem, age 15	-0.012	-0.061	-0.051	-0.024	-0.040	-0.093	-0.035*	-0.171*
	(0.659)	(0.161)	(0.331)	(0.514)	(0.483)	(0.136)	(0.094)	(0.059)
Male x self-efficacy, age 15	0.052	-0.063	-0.059	0.048	0.081	0.030	0.051	0.168
	(0.556)	(0.391)	(0.369)	(0.468)	(0.446)	(0.751)	(0.179)	(0.510)
Male x self-esteem, age 15	-0.092	-0.012	-0.071	0.006	0.030	-0.095	-0.003	-0.071
	(0.143)	(0.848)	(0.388)	(0.888)	(0.732)	(0.355)	(0.949)	(0.610)
Child is male	0.206***	0.220***	0.240***	0.128***	-0.037	0.110**	-0.001	0.516***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.441)	(0.023)	(0.960)	(0.000)
Age in R4	0.098***	0.100**	0.099**	0.051**	-0.002	0.010	-0.014	0.234**
	(0.006)	(0.036)	(0.027)	(0.027)	(0.963)	(0.788)	(0.614)	(0.037)
Type site: rural, age 15	-0.037	-0.262***	-0.215**	0.040	0.066	0.134	0.036	-0.157
	(0.705)	(0.000)	(0.030)	(0.591)	(0.358)	(0.256)	(0.351)	(0.441)
Migrated between 15 and 18	0.066	0.167*	0.205**	-0.019	0.141*	-0.088	-0.070**	0.284
	(0.498)	(0.051)	(0.033)	(0.824)	(0.095)	(0.483)	(0.050)	(0.306)
Second tercile of wealth, age 15	0.014	0.082	0.059	-0.007	0.017	-0.045	0.005	0.112
	(0.839)	(0.229)	(0.426)	(0.776)	(0.743)	(0.511)	(0.883)	(0.523)
Third tercile of wealth, age 15	-0.069	0.075	0.037	-0.009	0.093	-0.012	-0.015	0.075
	(0.306)	(0.326)	(0.706)	(0.871)	(0.239)	(0.839)	(0.652)	(0.677)
Father's education: secondary School	-0.018	0.045	0.081	-0.025	-0.010	-0.087*	-0.019	-0.027
	(0.738)	(0.466)	(0.151)	(0.420)	(0.876)	(0.070)	(0.510)	(0.865)
Father's education: higher education	-0.016	0.014	0.052	-0.024	-0.075	-0.079	-0.057*	-0.158
	(0.765)	(0.833)	(0.468)	(0.557)	(0.353)	(0.254)	(0.067)	(0.321)
Mother's education: secondary School	0.040	-0.034	-0.001	0.042	0.044	0.011	-0.012	0.080
	(0.308)	(0.304)	(0.982)	(0.177)	(0.458)	(0.742)	(0.605)	(0.385)
Mother's education: higher education	0.054	0.000	0.042	0.076	-0.014	0.127	0.059**	0.176
	(0.484)	(0.996)	(0.593)	(0.246)	(0.817)	(0.156)	(0.030)	(0.402)
Single parent, age 15	0.080	0.039	0.103*	0.076	0.154***	0.159**	0.028	0.377**
	(0.285)	(0.512)	(0.082)	(0.193)	(0.006)	(0.047)	(0.302)	(0.025)
Child has older siblings	0.018	0.054	0.062	0.029	-0.022	0.005	0.000	0.080
	(0.586)	(0.238)	(0.148)	(0.429)	(0.550)	(0.943)	(0.986)	(0.440)
Number of siblings, age 15	-0.010	-0.017	-0.008	0.013	-0.004	0.045*	0.022*	0.004
	(0.482)	(0.361)	(0.738)	(0.233)	(0.769)	(0.096)	(0.099)	(0.917)
Chils is enrolled, age 15	-0.071	-0.076	-0.115	-0.016	-0.055	-0.255***	-0.063	-0.281
	(0.422)	(0.492)	(0.228)	(0.867)	(0.460)	(0.009)	(0.475)	(0.164)
PPVT z-score, age 15	-0.040	-0.040	-0.015	-0.037	0.041	-0.026	0.014	-0.062
	(0.166)	(0.384)	(0.687)	(0.275)	(0.247)	(0.651)	(0.387)	(0.552)
Maths z-score, age 15	0.011	0.001	-0.022	-0.013	-0.018	-0.011	-0.016	-0.035
	(0.632)	(0.943)	(0.319)	(0.546)	(0.505)	(0.697)	(0.174)	(0.445)
Number of observations	471	471	471	471	471	471	471	471
R-squared	0.214	0.186	0.192	0.125	0.110	0.135	0.100	0.175

Note: The table reports the estimates of the linear probability model with standard errors (in parentheses) clustered at cluster level, * p<0.1 ** p<0.05 ***p<0.1. All controls were included as reported, together with dummy variables for the cluster that individuals were recruited in the 2002 round; coefficients for these are not reported.

Table 8. *Predictors of risky behaviours at age 19: heterogeneity in educational aspirations by gender*

	Smoking	Drinking	Drinking & Violence	Drugs consumption	Unprotected sex	Criminal beh.	Carried a weapon	No. of risky beh.
Child aspired for higher education, age 15	-0.134	-0.230	-0.210	-0.010	-0.278**	-0.303	-0.196	-0.848*
	(0.423)	(0.103)	(0.231)	(0.909)	(0.015)	(0.209)	(0.157)	(0.050)
Male x Child aspired for higher education, age 15	0.027	0.150	0.146	-0.169	0.303*	0.099	0.226	0.536
	(0.886)	(0.443)	(0.524)	(0.163)	(0.061)	(0.689)	(0.134)	(0.288)
Child is male	0.185	0.079	0.101	0.288**	-0.316*	0.012	-0.209	0.026
	(0.287)	(0.659)	(0.639)	(0.012)	(0.081)	(0.963)	(0.169)	(0.956)
Age in R4	0.092**	0.098**	0.097**	0.050**	-0.010	0.004	-0.020	0.210*
	(0.015)	(0.040)	(0.031)	(0.035)	(0.837)	(0.912)	(0.467)	(0.060)
Type site - Rural, age 15	-0.058	-0.285***	-0.247***	0.045	0.058	0.100	0.025	-0.215
	(0.529)	(0.000)	(0.010)	(0.532)	(0.367)	(0.385)	(0.448)	(0.245)
Migrated between 15 and 18	0.089	0.193***	0.237***	-0.018	0.155*	-0.047	-0.056	0.362*
	(0.288)	(0.009)	(0.005)	(0.815)	(0.064)	(0.657)	(0.234)	(0.090)
Second tercile of wealth, age 15	0.002	0.076	0.048	-0.012	0.022	-0.061	0.006	0.094
	(0.983)	(0.221)	(0.505)	(0.583)	(0.672)	(0.322)	(0.871)	(0.553)
Third tercile of wealth, age 15	-0.088	0.066	0.021	-0.013	0.092	-0.037	-0.021	0.036
	(0.207)	(0.377)	(0.836)	(0.808)	(0.228)	(0.586)	(0.505)	(0.836)
Father's education - Secondary School	-0.018	0.039	0.074	-0.019	-0.015	-0.091*	-0.024	-0.037
	(0.735)	(0.531)	(0.185)	(0.547)	(0.818)	(0.084)	(0.445)	(0.815)
Father's education - Higher education	-0.020	0.002	0.043	-0.025	-0.080	-0.086	-0.061*	-0.184
	(0.720)	(0.972)	(0.538)	(0.583)	(0.299)	(0.215)	(0.065)	(0.266)
Mother's education - Secondary School	0.036	-0.038	-0.004	0.040	0.044	0.010	-0.013	0.070
	(0.367)	(0.271)	(0.902)	(0.159)	(0.448)	(0.721)	(0.533)	(0.367)
Mother's education - Higher education	0.042	-0.015	0.022	0.077	-0.031	0.097	0.042	0.115
	(0.602)	(0.861)	(0.786)	(0.223)	(0.586)	(0.369)	(0.163)	(0.571)
Single parent, age 15	0.079	0.038	0.100*	0.075	0.155***	0.154**	0.028	0.374**
	(0.286)	(0.509)	(0.078)	(0.198)	(0.005)	(0.046)	(0.313)	(0.023)
Child has older siblings	0.010	0.044	0.054	0.028	-0.037	-0.003	-0.011	0.034
	(0.757)	(0.310)	(0.197)	(0.391)	(0.279)	(0.966)	(0.507)	(0.725)
Number of siblings, age 15	-0.013	-0.021	-0.012	0.012	-0.006	0.039	0.021	-0.008
	(0.379)	(0.250)	(0.603)	(0.318)	(0.719)	(0.130)	(0.107)	(0.834)
Chils is enrolled, age 15	-0.054	-0.040	-0.093	0.015	-0.017	-0.195	-0.042	-0.137
	(0.599)	(0.734)	(0.364)	(0.878)	(0.828)	(0.120)	(0.683)	(0.566)
PPVT z-score, age 15	-0.043	-0.042	-0.018	-0.034	0.039	-0.025	0.011	-0.069
	(0.132)	(0.346)	(0.623)	(0.290)	(0.257)	(0.660)	(0.534)	(0.478)
Math z-score, age 15	0.013	0.005	-0.016	-0.014	-0.014	0.000	-0.012	-0.021
	(0.520)	(0.745)	(0.439)	(0.512)	(0.634)	(0.998)	(0.359)	(0.641)
Number of observations	471	471	471	471	471	471	471	471
R-squared	0.204	0.182	0.183	0.131	0.115	0.124	0.106	0.172

Note: The table reports the estimates of the linear probability model with standard errors (in parentheses) clustered at cluster level, * p<0.1 ** p<0.05 *** p<0.1. All controls were included as reported together with dummy variables for the cluster that individuals were recruited in the 2002 round; coefficients for these are not reported.

Table 9. *Early social competencies and other predictors of the participation in risky behaviours at age 19*

	Smoking	Drinking	Drinking & violence	Drugs consumption	Unprotected sex	Criminal beh.	Carried a weapon	No. of risky beh.
Agency index, age 12	0.037*	-0.021	0.012	0.006	0.052*	0.022	0.005	0.078
	(0.089)	(0.473)	(0.726)	(0.852)	(0.099)	(0.332)	(0.743)	(0.201)
Pride index, age 12	-0.016	-0.021	-0.050	-0.037*	-0.082*	-0.015	-0.022*	-0.177**
	(0.573)	(0.452)	(0.148)	(0.090)	(0.052)	(0.577)	(0.061)	(0.025)
Child is male	0.229***	0.231***	0.259***	0.120***	-0.019	0.108**	0.009	0.569***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.682)	(0.017)	(0.651)	(0.000)
Age in R4	0.107***	0.129**	0.123**	0.054**	-0.009	-0.005	-0.016	0.264**
	(0.008)	(0.014)	(0.011)	(0.031)	(0.858)	(0.894)	(0.480)	(0.023)
Type site - Rural, age 8	-0.057	-0.135	-0.139	0.047	0.030	-0.001	-0.058	-0.173
	(0.244)	(0.268)	(0.189)	(0.382)	(0.780)	(0.987)	(0.244)	(0.307)
Migrated between age 8 and 15	0.028	0.123	0.129	0.064	0.125*	0.028	-0.026	0.314*
	(0.643)	(0.145)	(0.125)	(0.253)	(0.071)	(0.660)	(0.483)	(0.087)
Second tercile of wealth, age 8	0.007	0.111**	0.091	0.044	0.006	-0.004	-0.005	0.163*
	(0.848)	(0.043)	(0.111)	(0.170)	(0.880)	(0.952)	(0.826)	(0.094)
Third tercile of wealth, age 8	0.010	0.065	0.071	0.094**	0.062	-0.037	-0.026	0.205*
	(0.827)	(0.226)	(0.208)	(0.031)	(0.169)	(0.605)	(0.333)	(0.076)
Father's education - Secondary School	-0.013	0.025	0.062	-0.015	-0.003	-0.106*	-0.026	-0.033
	(0.796)	(0.679)	(0.240)	(0.651)	(0.953)	(0.078)	(0.335)	(0.830)
Father's education - Higher education	-0.039	-0.022	0.017	-0.038	-0.041	-0.104*	-0.057**	-0.197
	(0.427)	(0.723)	(0.815)	(0.383)	(0.545)	(0.053)	(0.040)	(0.177)
Mother's education - Secondary School	0.018	-0.051	-0.004	0.023	0.011	-0.022	-0.022	-0.020
	(0.684)	(0.152)	(0.898)	(0.437)	(0.844)	(0.566)	(0.281)	(0.797)
Mother's education - Higher education	0.001	-0.024	0.013	0.005	-0.031	0.053	0.030	-0.018
	(0.991)	(0.779)	(0.892)	(0.941)	(0.575)	(0.629)	(0.278)	(0.935)
Single parent, age 8	0.055	-0.021	-0.013	0.080	0.084	0.102	0.014	0.214
	(0.374)	(0.663)	(0.832)	(0.159)	(0.236)	(0.309)	(0.638)	(0.287)
Child has older siblings	0.014	0.039	0.060	0.008	-0.008	-0.007	-0.015	0.038
	(0.605)	(0.392)	(0.215)	(0.809)	(0.796)	(0.905)	(0.266)	(0.683)
Number of siblings, age 8	-0.016	-0.027	-0.033*	0.001	-0.005	0.017	0.008	-0.040
	(0.272)	(0.100)	(0.079)	(0.954)	(0.755)	(0.452)	(0.518)	(0.299)
Child started school late	0.076	0.074	0.124**	0.121**	0.003	0.147	0.047	0.321
	(0.338)	(0.271)	(0.042)	(0.031)	(0.966)	(0.161)	(0.325)	(0.121)
Standardised values of Raven, age 8	-0.008	-0.000	-0.005	0.011	-0.002	0.036	-0.001	0.001
	(0.721)	(0.982)	(0.791)	(0.534)	(0.936)	(0.276)	(0.946)	(0.988)
Number of observations	509	509	509	509	509	509	509	509
R-squared	0.166	0.167	0.179	0.120	0.106	0.078	0.075	0.164

Note: The table reports the estimates of the linear probability model with standard errors (in parentheses) clustered at cluster level, * p<0.1 ** p<0.05 ***p<0.1. All controls were included as reported together with dummy variables for the cluster that individuals were recruited in the 2002 round; coefficients for these are not reported

Table 10. *Early educational aspirations and other predictors of the participation in risky behaviours at age 19*

	Smoking	Drinking	Drinking & violence	Drugs consumption	Unprotected sex.	Criminal beh.	Carried a weapon	No. of risky beh.
Child aspired for higher education, age 12	-0.101	-0.011	0.020	-0.070	-0.012	-0.128***	-0.272**	-0.322*
	(0.183)	(0.806)	(0.718)	(0.290)	(0.880)	(0.004)	(0.044)	(0.069)
Child is male	0.224***	0.230***	0.254***	0.116***	-0.028	0.004	0.101**	0.545***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.550)	(0.821)	(0.015)	(0.000)
Age in R4	0.103**	0.129**	0.120**	0.051**	-0.015	-0.019	-0.011	0.248**
	(0.013)	(0.013)	(0.012)	(0.047)	(0.763)	(0.394)	(0.782)	(0.039)
Type site - Rural, age 8	-0.058	-0.142	-0.154	0.037	0.008	-0.061	0.001	-0.216*
	(0.207)	(0.240)	(0.131)	(0.485)	(0.937)	(0.198)	(0.987)	(0.095)
Migrated between age 8 and 15	0.043	0.125	0.137*	0.075	0.146**	-0.012	0.054	0.377**
	(0.431)	(0.138)	(0.090)	(0.161)	(0.029)	(0.761)	(0.435)	(0.022)
Second tercile of wealth, age 8	0.009	0.112**	0.087	0.045	-0.000	-0.002	0.005	0.164
	(0.825)	(0.038)	(0.130)	(0.193)	(0.999)	(0.947)	(0.944)	(0.107)
Third tercile of wealth, age 8	0.015	0.064	0.068	0.096**	0.059	-0.020	-0.023	0.214*
	(0.746)	(0.219)	(0.219)	(0.028)	(0.198)	(0.426)	(0.757)	(0.053)
Father's education - Secondary School	-0.007	0.024	0.057	-0.013	-0.009	-0.019	-0.087	-0.024
	(0.898)	(0.689)	(0.291)	(0.700)	(0.877)	(0.487)	(0.131)	(0.885)
Father's education - Higher education	-0.034	-0.027	0.009	-0.041	-0.051	-0.056*	-0.093*	-0.209
	(0.506)	(0.670)	(0.908)	(0.325)	(0.455)	(0.054)	(0.094)	(0.149)
Mother's education - Secondary School	0.018	-0.050	-0.005	0.023	0.010	-0.021	-0.021	-0.020
	(0.684)	(0.154)	(0.892)	(0.445)	(0.859)	(0.224)	(0.547)	(0.800)
Mother's education - Higher education	-0.001	-0.023	0.009	0.004	-0.038	0.030	0.054	-0.029
	(0.986)	(0.788)	(0.921)	(0.955)	(0.477)	(0.281)	(0.627)	(0.898)
Single parent, age 8	0.051	-0.021	-0.009	0.078	0.089	0.009	0.089	0.207
	(0.387)	(0.660)	(0.882)	(0.168)	(0.181)	(0.770)	(0.356)	(0.283)
Child has older siblings	0.014	0.038	0.056	0.006	-0.014	-0.015	-0.005	0.030
	(0.627)	(0.396)	(0.230)	(0.845)	(0.656)	(0.239)	(0.930)	(0.744)
Number of siblings, age 8	-0.015	-0.026	-0.030	0.002	-0.001	0.009	0.018	-0.031
	(0.294)	(0.116)	(0.112)	(0.809)	(0.953)	(0.470)	(0.417)	(0.409)
Child started school late	0.062	0.077	0.136**	0.117**	0.016	0.031	0.107	0.303
	(0.419)	(0.254)	(0.022)	(0.031)	(0.843)	(0.492)	(0.257)	(0.127)
Standardized values of (raven) , age 8	-0.005	-0.002	-0.004	0.012	0.002	-0.001	0.037	0.007
	(0.804)	(0.932)	(0.843)	(0.498)	(0.906)	(0.966)	(0.242)	(0.885)
Number of observations	509	509	509	509	509	509	509	509
R-squared	0.168	0.166	0.176	0.119	0.094	0.092	0.093	0.160

Note: The table reports the estimates of the linear probability model with standard errors (in parentheses) clustered at cluster level, * p<0.1 ** p<0.05 ***p<0.1. All controls were included as reported together with dummy variables for the cluster that individuals were recruited in the 2002 round; coefficients for these are not reported.

Table 11. *Fixed-effects estimates of risky behaviours at age 19: including psychosocial competencies*

	Smoking	Drinking	Drinking & violence	Drugs consumption	Unprotected sex.	Carried a weapon	No. of risky beh.
Self-efficacy	-0.030	0.027	0.042	0.015	-0.026	-0.053**	-0.068
	(0.422)	(0.480)	(0.263)	(0.606)	(0.467)	(0.045)	(0.456)
Self-esteem	-0.048*	-0.096***	-0.090**	-0.010	0.009	-0.030	-0.174**
	(0.074)	(0.003)	(0.012)	(0.696)	(0.793)	(0.204)	(0.024)
Type site - Rural	-0.259***	-0.581***	-0.718***	-0.246***	-0.338***	0.034	-1.391***
	(0.002)	(0.000)	(0.000)	(0.000)	(0.001)	(0.578)	(0.000)
Migrated between rounds	0.150**	0.276***	0.359***	0.096*	0.131	-0.038	0.616***
	(0.022)	(0.000)	(0.000)	(0.059)	(0.107)	(0.503)	(0.001)
Wealth tercile : middle	-0.047	0.050	0.012	-0.023	0.048	0.018	0.046
	(0.410)	(0.410)	(0.853)	(0.465)	(0.450)	(0.659)	(0.735)
Wealth tercile: top	-0.132*	0.085	0.012	-0.087**	0.022	-0.007	-0.120
	(0.057)	(0.280)	(0.887)	(0.044)	(0.791)	(0.888)	(0.488)
Single parent	0.079	0.139	0.193**	0.044	0.133*	0.029	0.424**
	(0.264)	(0.111)	(0.025)	(0.277)	(0.092)	(0.261)	(0.018)
Number of siblings	-0.011	-0.011	-0.009	0.002	-0.043*	0.000	-0.063
	(0.547)	(0.610)	(0.708)	(0.910)	(0.064)	(0.972)	(0.250)
Child is enrolled	-0.095	-0.210**	-0.160	-0.148*	-0.256**	0.110	-0.598***
	(0.222)	(0.046)	(0.157)	(0.086)	(0.013)	(0.231)	(0.006)
PPVT z-score	-0.029	-0.087***	-0.049	-0.049***	0.000	0.000	-0.166**
	(0.247)	(0.007)	(0.179)	(0.009)	(0.999)	(0.983)	(0.015)
Math z-score	-0.028	-0.068**	-0.071**	0.018	-0.028	-0.020	-0.127*
	(0.276)	(0.015)	(0.016)	(0.376)	(0.342)	(0.269)	(0.071)
Number of observations	872	872	872	872	872	872	872
R-squared	0.064	0.139	0.156	0.074	0.097	0.033	0.168

Note: The table reports the estimates for the individual fixed effects model, * p<0.1 ** p<0.05 *** p<0.1. All controls were included as reported.

Table 12. *Fixed-effects estimates of risky behaviours at age 19: including educational aspirations*

	Smoking	Drinking	Drinking & violence	Drugs consumption	Unprotected sex.	Carried a weapon	No. of risky beh.
Child aspired for higher education	0.071	0.060	0.041	0.028	-0.035	0.035	0.160
	(0.367)	(0.459)	(0.641)	(0.682)	(0.629)	(0.598)	(0.431)
Type site – Rural	-0.237***	-0.527***	-0.665***	-0.235***	-0.352***	0.040	-1.312***
	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.520)	(0.000)
Migrated between rounds	0.141**	0.248***	0.331***	0.091*	0.138*	-0.038	0.579***
	(0.025)	(0.002)	(0.000)	(0.068)	(0.090)	(0.501)	(0.003)
Wealth tercile : middle	-0.059	0.032	-0.004	-0.024	0.048	0.008	0.005
	(0.308)	(0.606)	(0.952)	(0.461)	(0.455)	(0.848)	(0.972)
Wealth tercile: top	-0.145**	0.070	0.001	-0.089**	0.024	-0.017	-0.157
	(0.038)	(0.379)	(0.995)	(0.046)	(0.779)	(0.749)	(0.379)
Single parent	0.073	0.135	0.191**	0.044	0.133*	0.023	0.409**
	(0.314)	(0.124)	(0.026)	(0.275)	(0.090)	(0.354)	(0.023)
Number of siblings	-0.012	-0.013	-0.011	0.001	-0.042*	0.000	-0.065
	(0.519)	(0.538)	(0.640)	(0.936)	(0.069)	(0.974)	(0.227)
Child is enrolled	-0.128	-0.229**	-0.170	-0.151*	-0.255**	0.081	-0.682***
	(0.116)	(0.045)	(0.171)	(0.079)	(0.013)	(0.386)	(0.004)
PPVT z-score	-0.026	-0.088***	-0.050	-0.051***	0.003	0.005	-0.157**
	(0.307)	(0.006)	(0.157)	(0.005)	(0.935)	(0.789)	(0.019)
Math z-score	-0.021	-0.058**	-0.062**	0.019	-0.029	-0.015	-0.104
	(0.399)	(0.045)	(0.037)	(0.346)	(0.324)	(0.400)	(0.138)
Number of observations	872	872	872	872	872	872	872
R-squared	0.055	0.123	0.141	0.074	0.096	0.011	0.156

Note: The table reports the estimates for the individual fixed effects model, * p<0.1 ** p<0.05 *** p<0.1. All controls were included as reported.

Appendix

Table A.1. *Consumption of cigarettes, alcohol and drugs*

	Age 15		Age 19	
	%	n	%	n
Alcohol consumption				
How often do you drink alcohol?				
Every day	0.5	3	0.7	4
At least once a week	1.6	10	3.0	18
At least once a month	3.6	23	5.9	35
Only on special occasions	16.2	104	31.8	190
Hardly ever	13.1	84	29.1	174
I never drink alcohol	65.1	417	29.6	177
How much do you usually drink per day?				
I never drink alcohol	69.5	417	35.5	177
1 cup/glass or less	18.3	152	28.8	213
2 cups/glasses	6.5	38	13.2	76
3 cups/glasses or more	5.7	34	22.6	132
Have you ever been drunk for too much alcohol?				
Yes	11.5	68	35.2	211
No	88.5	522	64.8	388
Cigarettes consumption				
How old were you when you tried a cigarette for the first time?				
Average age	NA		16.0	
How often do you smoke cigarettes now?				
Every day	0.6	4	1.0	6
At least once a week	3.0	19	6.8	40
At least once a month	3.7	24	12.2	72
Hardly ever	14.0	90	27.1	160
I never smoke cigarettes	78.7	505	53.0	313
How many cigarettes do you usually smoke per day?				
I never smoke cigarettes	78.7	505	67.3	313
1 cigarette or less per day	18.5	119	27.1	248
2 to 5 cigarettes per day	2.3	15	5.0	27
6 or more per day	0.5	3	0.5	3
Drugs consumption				
Have you ever tried drugs?				
Yes	3.1	20	14.2	84
No	96.7	617	85.8	508

Table A.1. *Consumption of cigarettes, alcohol and drugs* continued

	Age 15		Age 19	
	%	n	%	n
Sexual behaviours				
How old were you when you had sex for the first time?				
Average age	NA			16.0
Ever had sex?				
Yes	19.4	109	67.2	391
No	80.6	453	32.8	191
Used condom in last sexual relation				
Yes	12.6	71	40.5	236
No	6.8	38	26.5	155
Never had sex	80.6	453	32.8	191
Criminal behaviours				
During the last 30 days, on how many days did you carry a weapon?				
Never	91.9	588	3.2	567
1 day	5.6	36	0.7	19
2 to 3 days	0.8	5	1.5	4
More than 4 days	1.7	11	94.7	9
Have you ever been member of a gang?				
Yes	NA		5.5	33
No	NA		94.5	565
Have you ever been arrested by the police for illegal behaviour?				
Yes	NA		5.8	35
No	NA		94.2	567
Have you ever been sentenced to spend time in a corrections institution?				
Yes	NA		6.7	10
No	NA		93.4	591

Table A.2. *Consumption of cigarettes, alcohol and drugs at age 19 by gender and location*

	Female		Male			Urban		Rural		
	%	n	%	n	test	%	n	%	n	test
Alcohol consumption										
How often do you drink alcohol?										
Every day	0.4	1	0.7	2	-0.3	0.5	2	0.7	1	-0.3
At least once a week	0.8	2	5.3	16	-4.5***	3.9	17	0.7	1	3.1*
At least once a month	3.3	9	7.9	24	-4.6**	5.7	25	5.8	8	-0.1
Only on special occasions	30.6	83	32.9	100	-2.3	33.5	148	26.8	37	6.7
Hardly ever	24	65	34.5	105	-10.55***	30.8	136	25.4	35	5.4
I never drink alcohol	41	111	18.8	57	22.21***	25.8	114	40.6	56	-14.8***
How much do you usually drink per day?										
I never drink alcohol	41	111	18.8	57	22.21***	31.2	114	46.3	56	-14.8***
1 cup/glass or less	38.4	104	32.9	100	5.48	29.5	160	27.2	46	2.87
2 cups/glasses	8.9	24	16.5	50	-7.59***	14.2	60	10.3	14	3.43
3 cups/glasses or more	11.8	32	31.9	97	-20.10***	25.1	108	16.2	22	8.49**
Have you ever been drunk for too much alcohol?										
Yes	22.4	60	44.4	134	-22.0***	37.7	165	22.6	31	15.0***
No	77.6	208	55.6	168		62.3	273	77.4	106	
Cigarettes consumption										
How old were you when you tried a cigarette for the first time?										
Average age		16.1		16			14.1		16.5	
How often do you smoke cigarettes now?										
Every day	0.7	2	1.3	4	-0.6	1.4	6	0	0	1.4
At least once a week	2.6	7	10.7	32	-8.1***	7.5	33	5.1	7	2.4
At least once a month	4.4	12	18.4	55	-14.0***	11.6	51	11.7	16	0
Hardly ever	18.8	51	35.1	105	-16.3***	27.2	119	28.5	39	-1.3
I never smoke cigarettes	73.4	199	34.5	103	39.0***	52.3	229	54.7	75	-2.5
How many cigarettes do you usually smoke per day?										
I never smoke cigarettes	73.4	199	34.4	103	39.0***	52.3	229	54.7	75	-2.5
1 cigarette or less per day	25.1	68	57.5	172	-32.4***	42	184	42.3	58	-0.3
2 to 5 cigarettes per day	1.5	4	7	21	-5.6***	5.3	23	2.2	3	3.6
6 or more per day	0	0	1	3	-1.0*	0.5	2	0.7	1	-0.3
Drugs consumption										
Have you ever tried drugs?										
Yes	7.6	20	18.8	57	-11.23***	14	61	12.4	17	1.6
No	92.4	244	81.2	246		86	374	87.6	120	
Sexual behaviours										
How old were you when you had sex for the first time?										
Average age		16.6		16			16.1		16.5	
Ever had sex?										
Yes	55.1	146	78.8	231	-23.7***	66.7	288	70.2	92	-3.56
No	44.9	119	21.2	62		33.3	144	29.8	39	
Used condom in last sexual relation										
Yes	24.2	64	55.6	163	-31.5 ***	39.8	172	43.5	57	-3.7
No	30.9	82	23.2	68	7.7 **	26.9	116	26.7	35	0.1
Never had sex	44.9	119	21.2	62	23.7 ***	33.3	144	29.8	39	3.6

Table A.2. *Consumption of cigarettes, alcohol and drugs at age 19 by gender and location* continued

	Female		Male			Urban		Rural		
	%	n	%	n	test	%	n	%	n	test
Criminal behaviours										
During the last 30 days, on how many days did you carry a weapon?										
Never	96	262	93.7	284	2.2	95.3	422	93.5	129	1.8
1 day	2.2	6	4	12	-1.8	3.2	14	2.9	4	0.3
2 to 3 days	0.8	2	0.7	2	0.1	0.5	2	1.5	2	-1
More than 4 days	1.1	3	1.7	5	0.6	1.1	5	2.2	3	-1
Have you ever been member of a gang?										
Yes	2.9	8	7.6	23	-4.7**	5.9	26	3.6	5	2.3
No	97.1	264	92.4	280		94.1	416	96.4	133	
Have you ever been arrested by the police for illegal behaviour?										
Yes	2.6	7	8.2	25	-5.6***	5.4	24	5.8	8	-0.4
No	97.4	267	91.8	280		94.6	421	94.2	131	
Have you ever been sentenced to spend time in a corrections institution?										
Yes	4	11	8.5	26	-4.5**	5.9	26	7.9	11	-2.1
No	96	262	91.5	279		94.1	418	92.1	128	

Psychosocial Competencies and Risky Behaviours in Peru

There is a growing concern about the prevalence of risky behaviours among young people, which ultimately lead to worse outcomes later in life, including lower salaries and worse socio-economic and life outcomes. On the other hand, there is little evidence about the prevalence of these behaviours and their determinants in the context of developing countries.

Our aim is to try to fill this gap, using unique individual-level panel data from Peru, following a cohort of about 700 children for more than a decade between the ages of 8 and 19. More specifically, the aim of this study is to get a better understanding of the link between psychosocial competencies related to the concepts of self-esteem, self-efficacy and aspirations, and risky behaviours at a crucial period of transition between adolescence and early adulthood.

- We document a high prevalence of risky behaviours, with one in two individuals engaging in at least one risky activity by the age of 19, and a dramatic increase between ages 15 and 19.
- Our analysis of the predictors of risky behaviours identifies a group of adolescents vulnerable to engaging in risky behaviours. This is particular relevant for boys living in urban areas who have grown up in single-parent households with a large number of siblings.
- Most importantly, we find a negative correlation (robust to a number of specifications) between early self-esteem (measured at the ages of 12 and 15) and later risky behaviours. Further, aspiring to higher education at the age of 15 is correlated with a lower probability of drinking alcohol and of engaging in criminal behaviours at the age of 19. Similarly, such aspirations protect girls from risky sexual behaviours.

Although the present analysis is not sufficient to claim any causal relation between socio-emotional competencies and risky behaviours, our results suggest that psychosocial competencies, and self-esteem and high aspirations in particular, might play a role in reducing risky behaviours. Policies aimed at promoting soft skills during childhood and adoles¬cence constitute an important mechanism for reducing risky and criminal activities among young people. To our knowledge this evidence is unique in the developing-countries context.

Young Lives

An International Study of Childhood Poverty

About Young Lives

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

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

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

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