The Effects of Youth Training on Risk Behavior: The Role of Non-Cognitive Skills

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Abstract

This paper employs unique experimental data from a youth training program in the *Favelas*, Brazil, to examine whether vocational training programs can prevent treatment recipients from engaging in risk behavior—i.e., cigarettes, alcohol, and hard drug utilization, as well as witnessing or being a victim of violent crime. Although the program was successful in increasing income, we find that, it only improved risk behavior of those individuals with higher levels of non-cognitive skills. Our results suggest that non-cognitive skills are strong predictors of risk behavior even after controlling for cognitive ability.

JEL Classification: O11, O22, and O17.
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1 Introduction

Can youth training programs modify risk behavior? Most of the empirical evidence on the effects of vocational or youth training programs explore their effects on employment and earnings (see Attanasio et al., 2011, Card et al., 2011, Cho et al., 2013, and Hirshleifer et al., 2015). These studies consistently find no significant effects on employment and modest effects on earnings for the cases of Colombia, the Dominican Republic, Malawi, and Turkey. However, there is little evidence, on the effects of youth training programs on risk behavior. Moreover, despite the fact that recent studies have showed the importance of cognitive and non-cognitive skills in explaining risk behavior, little is known of their role in explaining heterogeneous effects of youth training programs on risk behavior. For instance, using evidence from the United States, the Dominican Republic, and Kenya, Cutler and Lleras-Muney (2006), Jensey and Lleras-Muney (2011), and Duflo et al. (2015) consistently report that better educated young individuals (i.e., those with higher cognitive skills) are less likely to smoke, drink alcohol in excess, use illegal drugs, dropout of school, and get pregnant. Additionally, recent empirical evidence by Heller et al. (2015), Cook et al. (2014), Ludwig and Shah (2014), and Blattman et al. (2015) also suggests that non-cognitive skills may also have a relevant role in preventing individuals from engaging in risk behavior.[1] Moreover, few evidence is available on the relative predictive power of cognitive and non-cognitive skills on risk behavior.

This paper employs unique data from a randomized trial of a vocational youth training program, which attempted to modify employability and income of disadvantaged young individuals in Brazil, to study the effects of youth training programs on risk behavior. Moreover, it explores whether the effects of the youth training program are heterogeneous for individuals with different levels of cognitive and non-cognitive skills. It also studies which specific personality traits (non-cognitive skills) have a higher predictive power on risk behavior, and investigates the correlation between cognitive and non-cognitive skills for individuals with different age, gender, or initial levels of education (initial levels of cognitive skills).

To the best of hour knowledge, the only related paper in this area is Ibarraran et al. (2014), who study the effects of the training program *Juventud y Empleo* on teenage preg-

[1]For example, using three randomized controlled trials, researches from the University of Chicago Crime Lab estimate the impact of this type of interventions. The authors report improvements in schooling outcomes, violent-crime arrests, and return rates to a detention center (Heller et al., 2015; Cook et al., 2014; Ludwig and Shah, 2014). In Liberia, Blattman et al., (2015) apply a similar program for at risk adult men finding that higher non-cognitive skills reduce criminal behavior, and improve impulsive behaviors for treated individuals. After a year these effects started to dissipate, but stayed steady or grew in the group of participants that also received cash transfers.

nancy rates. The authors find that the program effectively reduce teenage pregnancy rates.[2] This paper adds up on their results by studying a more comprehensive list of risk behaviors such as alcohol, cigarettes, marijuana, hard drug consumption, witnessing or being a victim of a violent crime. It also extends the analysis by exploring for heterogeneous effects of the program for individuals with different levels of cognitive and non-cognitive ability.

Brazil is an interesting case to study youth risk behavior because it ranks eleventh among 90 countries in the rate of firearm-related deaths with 21.9 deaths per 100,000 habitants (Waiselfisz, 2015). The number of victims is higher among the youngest, and youth violence has shown a sharp increase in the last three decades. Between 1980 and 2012, the number of young people murdered by firearms rise from 4,415 to 24,882—an increase of 464.3%.[3] Higher violence has also exposed the youth to other types of risks. For instance, the use of illegal drugs (i.e. marijuana, cocaine) has also increase in recent years across the young population,[4] and young individuals are constantly invited to join criminal organization, particularly black younger individuals with low income, low education, and without religious attachment (Carvalho and Soares, 2013).

The vocational youth training program that we study was called *Galpão*. It was designed to improve the employment and the labor income of at-risk youth living in the *Favelas* in Rio de Janeiro, Brazil. The program offered 600 hours of training heavily focused on developing technical and basic skills for work. It mainly aimed at increasing the employability of the recipients by offering training in construction, soldering, or remedial courses in mathematics and Portuguese. Calero et al. (2014) uses the same data to evaluate the effects of this program on employment and earnings finding no effects on employment and significant effects on unconditional income. We take a different approach by analyzing the average and heterogeneous effects of program on risk behavior, cognitive, and non-cognitive skills.

We use the experimental data collected during the implementation of the program. The data consists of a baseline survey and two follow-up surveys. It includes data for 451 young individuals—distributed in three cohorts—were half of them were randomly assigned to the treatment group and the other half to the control group. The data includes the sociodemographic characterization of the individuals as well as information on their cognitive (years of education and a cognitive test), non-cognitive skills (Grit Scale and a Social and Personal

[2]More particularly, they find that remales aged 1619 in the treatment group are on average five percentage points less likely to be pregnant at the moment of the follow up survey. This corresponds to a 45 percent drop in comparison to the average pregnancy rate for the same age group in the control group.

[3]This situation is even worse among males and non-white youth. In 2012, males accounted for 95 percent of the victims, and the rate of deaths for black young people was 28.5 per 100,000 habitants compare to 11.8 per 100,000 habitants for white youth (Waiselfisz, 2015).

[4]For a comprehensive review of crime and violence trends in Brazil see Murray et al. (2013).

Competencies Scale),[5] risk behavior, earnings, and employment status.

We find no evidence that the program was successful in directly modifying cognitive, non-cognitive skills, or risk behavior. However, the program was able to modify the risk behavior of individuals with higher levels of non-cognitive skills, even after controlling for cognitive ability. The strongest effects of the program are observed on reductions of alcohol consumption, marijuana consumption, and crime victimization. When analyzing which type of personality traits (non-cognitive skills) are more important in predicting risk behavior, we find that consistency of interests and empathy show the highest correlation with all measurement of risk behavior. Consistency of interest is defined as the capacity of maintaining constant interest in goals and projects and keeping stability in their actions and thoughts concerning goal achievement (Duckworth et al., 2009). Empathy measures the capacity to understand and accept other individuals, to consider their point of view, as well as showing respect for opinions which differ to your own (Brea, 2011). Thus, consistency of interest and empathy are the personality traits that should receive the higher emphasis when trying to modify the risk behavior of young individuals.

From a policy perspective, the results of the paper suggest that reducing risk behavior for the youth may go beyond helping them in improving their income and cognitive ability. More particularly, socio-emotional skills have a crucial role on the choice of whether to engage in a risk behavior. Hence, further efforts should be directed at understanding how and when in the life-cycle can non-cognitive skills be improved more efficiently.

The rest of the paper is structured in five sections. Section 2 describes the program, section 3 describes the data, and section 4 presents the estimates of the effects of the program on cognitive and non-cognitive skills. Section 5 studies the effects of the program on risk behavior by type of skill. It also studies which types of personality traits (non-cognitive behavior) are better predictors of risk behavior. Section 6 studies the correlation between cognitive and non-cognitive skills. The last section presents conclusions.

[5]The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individual's socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit Scale is a non-cognitive test designed by Duckworth et. al. (2007) and Duckworth and Quinn (2009). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity.

2 The *Galpão* Program

3 Background and context of the intervention

The *Instituto Stimulu Brazil*, a small-scale NGO, and the Inter-American Development Bank's Multilateral Investment Fund (MIF) launched the "Sociocultural and Productive Integration of at-risk Youth Program" in 2009 (referred to as *Galpão*). It was designed to improve the socio-economic and employment situation of at-risk youth living in the *Favelas* (squatters' slum) in Rio de Janeiro, Brazil.[6]

The initiative has been in place since 2004, and has gone through some changes. In its origins, the program consisted of a year immersion in dance, circus, theatre, music, and visual arts activities. During this period, youth also participated in sessions where principles of social harmony and values were presented. At the end of this formative year, youth were offered training courses mainly in the art and culture supply chain. The program was primarily funded through local public resources. However, due to a change in the administration, the partnership with the municipality was discontinued, opening the project to other financing sources.

The partnership with the MIF modified the program by improving the link with the private sector; focusing the treatment on improving employment and earnings; diversifying the supply of technical training in new productive areas; and, reducing the length of the program. These changes did not affect *Galpão's* formative approach based in arts and theater.

3.1 The treatment

In comparison with other youth training programs in Latin America (LAC), the treatment offered by *Galpão* has a long time frame.[7] Participants remained in the program 6 months, 5 hours a day, 5 days a week. The training includes 300 hours of vocational or technical skills, 180 hours of training on academic or basic skills, and 120 hours in socio-emotional

[6] According to the last census, undertaken in 2010, around 11.4 million people live in Favelas representing 6% of Brazil's population. In Rio de Janeiro about 22% of residents live in 630 Favelas (depending on the criteria used this number can go up to 868 Favelas).

[7] For example, *Juventud y Empleo* in Dominican Republic includes 225 hours of a wide range of job training courses divided into 75 hours of life skills training and 150 hours of technical or vocational training (Ibarraran et al., 2012; Card et al., 2011). In Argentina, *entra21* comprises 100 hours of technical training, 64 hours of life skills training, and 16 extra hours in function on the type of course (Alzua et al., 2015).

skills. The vocational or technical training prepares youth for jobs related mainly with construction and soldering. The training on academic or basic skills includes remedial courses in mathematics and Portuguese. Some of the concepts that the participants learn in these courses are used in the vocational training. For example, to build a metal bench they use basic concepts of geometry like angles. The socio-emotional skills classes emphasize certain values and basic principles like respect, tolerance, confidence, prudence, courage, ethics, and civic responsibility.

The novel dimension of the project is the pedagogical approach, which made extensive use of arts and theater. Almost all sessions started with group dynamics to facilitate the understanding of skills and concepts. The dynamics include exercises and playful activities that make extensive use of artistic and theatrical techniques, and are delivered by program instructors with an artistic background. For instance, during the socio-emotional training the class is divided into small groups. The instructor has them act out short plays where they demonstrated a value (i.e. courage) in their daily lives. The next session starts with the same exercise but a different value is covered (i.e. prudence). Then they process some of the stories. For example, in a particular session one of the groups dramatized that a youth witnessed an assault and intervened to stop it to show courage. They reflected upon it. It was appropriate to be courageous in such situation? Did he put in danger his own life? Then, they concluded that in such situation he risked his life and that he should have acted with prudence. This type of exercises teaches the participants to reflect, analyze and identify the appropriate value in different situations.

The academic training relies on different playful activities. For example, to introduce the equation concept the instructor uses a weight scale and explains the participants that equilibrium requires both cups of the scale bear equal loads. Thus, an abstract concept is taught in an experimental way.

Unlike other youth training programs, the project did not have an explicit job placement service or a formal internship program. Rather, it relied on informal contacts with private-sector partners and partnerships with local firms.

The program's facilities are located in the port area, away from the *Favelas*. Given the high incidence of violence in the *Favelas*, and that the youth could not move among communities due to the existence of gangs, the location was chosen in a neutral downtown space. Recognizing that this might constraint participation, the program covered the transportation costs of the participants.[8]

[8]Based on administrative data, the cost per participant is R$ 810 (USD 385) a month, or R$ 4,680 (USD 2,225) for the entire training. Transportation costs represent around 27 percent of the monthly cost.

3.2 Selection process

Galpão's participants are selected in a two-stage process. In a first stage all the individuals that are interested in the program fill a "pre-inscription" questionnaire—which includes information related to personal and household situation, current employment, education status, among others. This information is used to identify those with monthly household income under two minimum salaries and between 17 to 29 years old. Those who meet these criteria are considered for the next phase.

In the second stage, individuals are invited to take mathematics and Portuguese tests that examine basic concepts. They also go through an interview process. The interview attempts to identify youth who are involved in criminal activities. If the interview reveals that the person is involved in these activities he is not invited to the program—regardless of his performance on the tests. The youth who best perform in the tests are invited to enroll the program. Given that the number of eligible individuals was greater than the number of slots available in the program, youth were randomly assigned to the program.

4 Data

This paper employs the experimental data collected in the randomized trial of *Galpão*. Given that the number of eligible individuals was greater than the number of slots available in the program, youth were randomly assigned either to the treatment group or the comparison group. In total 451 youth—distributed in three cohorts—were found to be eligible. Approximately half of them were randomly assigned to the treatment group and the other half to the control group. There is data for the three cohorts implemented in 2012: the first cohort began in April, the second in June, and the third one in July. Around 90% of the treatment group attended the training, and none of the individuals of the control group managed to participate in the program.

A baseline survey and two follow-up surveys were conducted by a Brazilian firm (*Overview Pesquisa*). The baseline was collected between June and October 2012 on a rolling basis.[9] *Overview Pesquisa* was able to interview 84% of the initial group. The first follow-up survey took place between 2 and 5 months after the end of training, and the second follow-up survey

[9]In the case of the first cohort the survey was done after the training began. And even though in principle randomization makes baseline surveys unnecessary (Duflo et al., 2007), the questionnaire included retrospective time frames to capture information before the program started. Furthermore, the balance check between the treatment and control group from the first cohort versus the groups of the other two cohorts reveals no differences particularly in time variant variables.

between 11 and 13 months. A total of 348 youth responded the first follow-up survey, and 299 individuals the second one. The attrition rates, relative to the baseline sample, at the first follow-up (8 percent) and the second follow-up (21 percent) are comparable to other impact evaluations of youth training programs.[10]

4.1 Measuring cognitive skills

We use two measures of cognitive skill: i) average years of education, and ii) a cognitive test. The cognitive test was developed by the MIDE UC at the Department of Psychology of the *Pontificia Universidad Católica de Chile* an applied in Bassi et al. (2012). The test has previously been applied in individuals between 25 and 30 years of age in Argentina and Chile, and was chosen among 48 possible questions that were tested in these countries. It measures general intellectual ability in questions designed to test analytic and abstract reasoning. Most of the questions correspond to analogies and figures. Each question presents one pair of related terms, followed by a second term that should be related to one of the four alternatives presented. There is only 1 correct answer per question. For this study we used 12 questions (4 verbal and 8 figures). The total cognitive score was constructed as the sum of the correct answers for each individual—it has a mean of 3.98 (s.e. 2.00). The cognitive test was collected only in the second follow-up survey. This last should not be a source of concern, since as is suggested by Duflo et al. (2007), successful randomization makes baseline surveys unnecessary.

4.2 Measuring non-cognitive skills

We base our analysis in two measures of non-cognitive skills: the Social and Personal Competencies Scale and the Grit Scale. The Social and Personal Competencies Scale (CPS for its acronym in Spanish, *Escala de Competencias Personales y Sociales*) was developed in 2010 (Brea 2010; Ibarraran et al. 2012). It was designed to measure the effectiveness of the life skills module of the youth training program *Juventud y Empleo* in the Dominican Republic, in modifying personality traits. For our study, the test was translated from Spanish to Portuguese and adapted to the local context, a process involving a group of experts in psychology and language.

[10]These attrition rates are comparable to other impact evaluations of youth training programs in Latin America (38 percent in Card et al., 2011; 18.5 percent in Attanasio et al, 2011; 18.5 percent in Alzua et al., 2013; and, 20 percent in Ibarraran et al., 2012).

The CPS scale measures six basic competencies: i) leadership; ii) behavior in situations of conflict; iii) self-esteem; iv) abilities to relate with others; v) order; and vi) empathy and communication skills. It contains 44 questions to which respondents are asked to answer using a four point (i.e. forced) Likert scale, expressing whether they strongly agree, agree, disagree, or strongly disagree with the specific statement. The responses are used to generate a general score as well as specific scores for each of the six dimensions. A higher score reflects a higher level of development in the social and personal competencies.

The Grit scale was developed by Duckworth et al. (2007) and Duckworth and Quinn (2009). Grit is defined by the authors as: "...perseverance and passion for long-term goals. Grit entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity and plateaus in progress". The scale, designed for adolescents and adults, measures persistency of effort, enthusiasm about long term goals, consistency of interests, and ambition. It is a self-reported test. As Duckworth et al. (2007) point out: "...grit is expected to be associated with Big Five Conscientiousness and with self-control but, in its emphasis on focused effort and interest over time, to have incremental predictive validity for high accomplishment over and beyond these other constructs". In general, the authors find that, the Grit scale accounts for more variance in socio-emotional behavior than the Big Five Conscientiousness. The respondent rates herself on a series of items using a five point Likert scale where 1 refers to 'disagree strongly' and 5 to 'agree strongly', i.e. 3 is the neutral option. In the literature, there are several versions of the test ranging from 10 to 17 questions. In this study we used a 13-item scale. Higher scores on the scale are associated with higher levels of motivation and determination over years despite failure or adversity. We also report three subscales: 'Grit 01' measures consistency of interest, 'Grit 02' captures perseverance of effort, and 'Grit 03' captures ambition. Consistency of interest measures the capacity of maintaining constant interest in goals and projects and keeping stability in their actions and thoughts concerning goal achievement. Perseverance is the attitude of maintaining effort in the long-term despite challenges and problems. Ambition is the desire to achieve and power to do so.

4.3 Measuring risk behavior

We use self-reported measures of risk behavior collected in the baseline and all the follow-up surveys. There are seven variables available including indicators variables for: i) ever smoking; ii) consuming alcohol in the last week; iii) smoking marijuana during the last week; iv) ever consuming any type of hard drug including cocaine, heroin, ectasy or any other

substance; v) participating in a physical fight in the last month; vi) witnessing a crime in the last year (including carrying weapons, sexual violence, physical aggression, robberies, homicides, corruption, or police misbehavior); and vii) being victim of a crime in the last year (including verbal or physical abuse, threat, chased, or injured by any weapon).

5 Research Methodology

The motivation for relying on randomized variation to identify the effects of youth training programs (i.e., programs that aim at improving the employability of young individuals) on risk behavior follows standard concerns of selection biases. Individuals who voluntarily enroll in youth training programs may be different, or may be trending different, that those who choose not to engage in these programs. Since at least some of these characteristics may be unobserved for the researcher, the estimates of the causal effects of youth training programs on risk behavior will be biased if these differences are ignored.

Biases are expected to overestimate the effects of the program. In general, individuals who self-select in youth training programs may make better choices, and hence, should show lower levels of risk behavior. Hence, a simple comparison on the risk behavior of individuals who are treated by youth training program and those who are not is likely to overestimate the effects of the program. Additionally, the differences on the risk behavior between the group that decides to receive training and that who does not may be exacerbated in time. As individuals receive more training, they could also become more informed on smart choices related with risk behavior, and hence, could also decide to pursue more training further reducing their risk behavior, and so on.

For the purpose of identifying it effects in different outcomes the *Galpão* program used a fixed program placement, focusing on an area particularly known for its high levels of crime in Brazil (the *Favelas*), and applied individual-level randomization for those individuals that expressed interest in participating in the program to maximize take-up rates. In this context, we identify the effects of the program on risk behavior using the following specification:

$$Y_{it} = \alpha_0 + \beta Tit + \gamma_t + \epsilon_{it} \tag{1}$$

where i stands for individual, t indexes the first and second follow-up surveys collected after the program was implemented, and T_{it} is a dummy variable equal to one if the individual was treated by the *Galpão* program. β will be an unbiased estimate of the effects of the

program if the treatment randomization was effective.

5.1 Evidence on the randomization effectiveness

We first use the baseline sample to show the effectiveness of the randomization in the *Galpão* program. More particularly, we run mean differences test for the observable variables in the baseline sample. The observable covariates in the baseline can be grouped in sociodemographic characteristics, cognitive skills, non-cognitive skills, and risk behavior. Sociodemographic characteristics is comprised of 22 variables that describe the individual (such as gender, age, marital status, race, employment status, and number of jobs held) and the household (like size, income, number of children under four years of age, asset ownership, whether the household is a beneficiary of other social subsidies, or whether they rent or own a house, among other variables). Cognitive skills are measured through years of education. Non-cognitive skills are approximated through the CPS and Grit scales. They are presented in standard deviations to ease interpretation (they correspond to the original index demeaned and divided by the standard deviation of the control group in each period). Finally, risk behavior is approximated through 8 dummy variables that take a value of one if the individual smoked, consumed alcohol, smoked marijuana, consumed any hard drug, participated in a street fight, was witness of a violent crime, or was a victim of a crime.

Table I shows evidence of a successful randomization. In particular, only 2 of the 42 covariates analyzed showed significant differences for the full sample. They correspond to the CPS scale measurements of conflict behavior and order. This differences should not be a source of concern since the full sample remains balanced for the total Grit and CPS scales. When divided by cohorts the sample shows less than 2 significant differences per cohort, which implies that the covariates are balanced for 95% of the observed covariates.

The table also suggests that the individuals targeted by the program were single men of approximately 24 years with low levels of education and income. Additionally, approximately 20% of the individuals in the sample have smoked, 30% consumed alcohol last week, and 50% had more than 5 drinks last week, at least 3% reported smoking marijuana in the last week, had consumed hard drugs, or being part of a fight in the last month. The variables of hard drug consumption or fight participation should be analyzed with caution since it is self-reported and individuals may refrain to report a negative behavior for fear of being excluded from the program. As expected, the variables of witnessing or being a victim of a crime, for which individuals may not have issues to report the truth, show substantially higher risk exposure. More particularly, approximately 50% of the individuals witnessed a

crime and 6% were victims of a crime in the last year.

Since the randomization was successful, equation (1) will effectively identify the effects of the program.

6 Effects of the Youth Training Program

6.1 Effects on cognitive and non-cognitive skills

We first begin our analysis by testing whether the program was successful in modifying cognitive or non-cognitive skills. This is important for our identification strategy since later we will analyze the effects of the program on risk behavior by type of skill. Hence, we first need to show that, cognitive and non-cognitive skills are not endogenous to the program implementation. We use equation (1) to study the effects of the program using the results of the cognitive test, the Grit, and the CPS scales as dependent variables. We find no evidence of a significant effect of the program on cognitive or non-cognitive skills for the full sample (See Table II). Although, there some few significant results for the cognitive test for cohort 2, these effects disappear when all the cohorts are considered at the same time.

We hypothesize that the absence of consistent effects of the program on cognitive and non-cogntive skills suggest that, although these variables are evolving through the life-cycle as shown by Almlund et al. (2011), they may be difficult to shape using short-term interventions such as youth training programs.

6.2 Effects on risk behavior by type of skill

We study the effects of the program on risk behavior on Table III. We first study the direct effects of the program in column (1), finding no direct effects of the program on risk behavior (with the exception of casual alcohol consumption which actually increases for the individuals treated by the program). However, we also find that the program was efficient in reducing the risk behavior of individuals with high levels of non-cognitive scale (as measured by the CPS and Grit scales). The effects of the program are particularly strong for alcohol, marijuana consumption, and crime victimization, even after controlling for cognitive skill. More particularly, the results from columns (6) and (7) of Table III suggest that, individuals who were treated by the program and had 1 additional standard deviation on their CPS scale, showed a 6% to 10% reduction in the probability of drinking at least 1 glass of alcohol;

an 11% reduction in the probability of consuming more than five drinks of alcohol; 2 to 3% reduction on the probability of smoking marijuana; and a 4% reduction on the probability of being victim of a crime. The results using the Grit Scale are somehow weaker, but still suggest reductions on marijuana consumption, witnessing, and being a victim of a crime (as suggested by columns (8) and (9) of Table III).

To understand what types of personality traits (non-cognitive skills) are more related with risk behavior, we test for the correlation between the different types non-cognitive skill and our multiple measures of risk behavior. Table IV presents a panel regression of each risk behavior indicator on the zscores for the non-cognitive tests (including fixed effects by individual and period of data collection—i.e., baseline, first, or second follow-up). In general, the estimates show a strong and negative correlation of the non-cognitive tests and risk behavior. The correlation is particularly strong for the CPS scale measurements of empathy and the Grit Scale measurements of consistency of interest. Empathy measures the capacity to understand and accept other individuals, to consider their point of view, as well as showing respect for opinions which differ to your own. Consistency of interest measures the capacity of maintaining constant interest in goals and projects and keeping stability in their actions and thoughts concerning goal achievement.

Hence, targeting changes in empathy and consistency of effort may be an effective way of reducing risk behavior of young individuals. As is suggested by Duckworth et al. (2011) the Grit scale is correlated with the Big Five conscientiousness personality trait, thus, our results are in line with previous studies that identify the Big Five Factors that subsumed all personality traits (see Costa and McCrae 1988) and identify conscientiousness as the most important predictor of any measure of attainment and achievement (see Almlund et al. 2001, for a detailed literature review).[11]

We also study the predictability of socio-emotional skills on the risk behavior of individuals that belong to different age, gender, or income groups in Appendix A. The results suggest that higher CPS zscores on empathy and and consistency of effort are strongly associated with lower risk behavior for males in their upper twenties (25 to 29 years) with low levels of income.

As found in Carla et al. (2014) and further confirmed in Table V, the *Galpão* program was successful at improving the unconditional labor income of the treated individuals. Hence, our results suggest that, merely increasing income may not be sufficient to help young individuals

[11] Conscientiousness is defined as the tendency to be organized, responsible, and hardworking and is the most similar personality trait to consistency. However, our results are more specific in describing in detail which types of behaviors with conscientiousness are the most important in predicting risky behavior.

in improving their risk behavior. Our results suggest that higher income may be successful in reducing risk behavior only for those individuals who have higher levels of non-cognitive skills. Hence, further research should be focused on understanding when in life can non-cognitive skill be modified more effectively, and what are the most efficient ways of for doing it.

6.3 Falsification Test

To check for the robustness of the results we replicate the results presented in Table III columns (6) through (9) only for the observations in the baseline, collected before the program was implemented. If the results are valid we should see no significant effects for the any of the interactions of treatment assignment and non-cognitive skills. The results are presented in Appendix B and show the expected behavior.

7 Conclusions

Youth training programs have been widely applied in developing countries to help disadvantaged young individuals find employment or improve their earnings. In most countries the poor young are precisely the population with the higher exposure to begin using hard drugs, abuse alcohol, smoke, or being victims or perpetrators of crime. In that sense, it might be expected that, if youth training programs help young individuals in improving their economic conditions (as has been extensively documented across the literature), then they could possibly improve risk behavior of this population.

We use experimental data for the youth training program *Galpão*, implemented in the *Favelas* in Brazil, to explore the causal relationship between youth training programs and risk behavior. Our results suggest that the youth training program was not successful on changing risk behavior directly. However, we find that those individuals that had higher levels of non-cognitive skills show relevant reductions in their risk behavior. The results hold even after controlling for cognitive ability.

From a policy perspective our suggest that improving income may not be enough to help to help young individuals improve their risk behavior. Moreover, we find that non-cognitive skills play a crucial role in the risk choices of young individuals. Future research should focus on determining efficient ways to develop these skills in life.

8 References

UNDER CONSTRUCTION

Table I: Testing for Balanced Covariates - Mean Difference Test

	Cohort 1				Cohort 2				Cohort 3				Full Sample			
	Control	Treat.	Diff.	SE	Control	Treat.	Diff.	SE	Control	Treat.	Diff.	SE	Control	Treat.	Diff.	SE
Socio-demographic																
Female	0.1	0.1	0.0	(0.0)	0.1	0.0	0.0	(0.1)	0.3	0.3	-0.0	(0.1)	0.1	0.1	0.0	(0.0)
Age	22.8	22.5	0.4	(0.5)	24.1	24.6	-0.6	(0.7)	22.8	23.8	-1.0	(0.8)	23.2	23.1	0.1	(0.4)
Single	0.8	0.8	-0.0	(0.1)	0.6	0.6	-0.1	(0.1)	0.6	0.8	-0.2	(0.1)	0.7	0.8	-0.1	(0.0)
White	0.2	0.2	-0.0	(0.1)	0.3	0.4	-0.1	(0.1)	0.2	0.1	0.1	(0.1)	0.2	0.2	-0.0	(0.0)
Unemployed	0.2	0.2	-0.0	(0.1)	0.2	0.2	0.0	(0.1)	0.1	0.1	-0.0	(0.1)	0.2	0.2	-0.0	(0.0)
Ever Worked	0.9	0.9	0.0	(0.0)	1.0	0.9	0.0	(0.0)	1.0	0.9	0.0	(0.1)	1.0	0.9	0.0	(0.0)
N. of Jobs	5.0	4.9	0.0	(0.6)	4.6	5.7	-1.1	(0.7)	4.6	5.3	-0.7	(1.0)	4.8	5.1	-0.4	(0.4)
H. Size	3.6	4.0	-0.5	(0.2)	3.6	3.5	0.0	(0.3)	3.5	3.7	-0.2	(0.4)	3.5	3.9	-0.3	(0.2)
H. Income	1674.4	1686.4	-12.1	(169.0)	1434.4	1948.2	-513.7*	(253.3)	1464.3	1660.4	-196.1	(325.8)	1554.2	1729.5	-175.3	(127.2)
N. Children	0.4	0.6	-0.2	(0.1)	0.7	0.6	0.0	(0.2)	0.6	0.5	0.2	(0.2)	0.5	0.6	-0.1	(0.1)
H. Literate	1.0	1.0	-0.0	(0.0)	1.0	1.0	-0.0	(0.0)	1.0	1.0	0.0	(0.0)	1.0	1.0	-0.0	(0.0)
N. Rooms	4.8	4.9	-0.1	(0.2)	4.5	4.6	-0.1	(0.3)	4.7	4.9	-0.3	(0.3)	4.7	4.8	-0.2	(0.1)
Rent	362.5	335.0	27.5	(44.1)	330.7	347.1	-16.4	(73.9)	370.9	336.7	34.2	(58.3)	348.3	338.1	10.2	(32.5)
Has TV	1.0	1.0	-0.0	(0.0)	1.0	1.0	-0.0	(0.0)	1.0	1.0	0.0	(0.0)	1.0	1.0	-0.0	(0.0)
Has DVD	0.8	0.9	-0.1	(0.0)	0.9	0.8	0.1	(0.1)	0.9	0.9	-0.0	(0.1)	0.9	0.9	-0.0	(0.0)
Has Fridge	1.0	1.0	-0.0	(0.0)	1.0	1.0	-0.0	(0.0)	1.0	1.0	0.0	(0.0)	1.0	1.0	-0.0	(0.0)
Has Freezer	0.2	0.2	-0.0	(0.1)	0.1	0.3	-0.2*	(0.1)	0.3	0.3	-0.1	(0.1)	0.2	0.3	-0.1	(0.0)
Has Computer	0.5	0.6	-0.1	(0.1)	0.4	0.3	0.1	(0.1)	0.5	0.5	-0.0	(0.1)	0.5	0.5	-0.0	(0.1)
Has Car	0.2	0.1	0.1	(0.1)	0.1	0.2	-0.1	(0.1)	0.1	0.2	-0.1	(0.1)	0.2	0.2	-0.0	(0.0)
Has Motorcycle	0.1	0.1	-0.0	(0.0)	0.1	0.1	-0.0	(0.1)	0.0	0.1	-0.0	(0.1)	0.1	0.1	-0.0	(0.0)
Bolsa Carioca	0.0	0.0	-0.0	(0.0)	0.0	0.0	0.0	(0.0)	0.0	0.0	0.0	(0.0)	0.0	0.0	-0.0	(0.0)
Bolsa Familia	0.1	0.1	-0.0	(0.0)	0.1	0.1	0.0	(0.1)	0.1	0.1	0.0	(0.1)	0.1	0.1	-0.0	(0.0)
Observations	85	96			60	26			33	28			178	150		

Table I (Continued): Testing for Balanced Covariates - Mean Difference Test

	Cohort 1				Cohort 2				Cohort 3				Full Sample			
	Control	Treat.	Diff.	SE	Control	Treat.	Diff.	SE	Control	Treat.	Diff.	SE	Control	Treat.	Diff.	SE
Cognitive																
Years Education	3.29	3.17	0.13	(0.30)	3.17	4.04	-0.87	(0.46)	3.04	3.50	-0.46	(0.42)	3.21	3.41	-0.20	(0.22)
Non-cognitive																
CPS: Leadership	-0.05	-0.08	0.03	(0.13)	0.15	0.30	-0.16	(0.24)	-0.14	-0.28	0.14	(0.27)	-0.00	-0.05	0.05	(0.11)
CPS: Conflict beh.	-0.20	-0.52	0.32*	(0.13)	0.35	0.17	0.18	(0.22)	-0.14	-0.34	0.20	(0.27)	-0.00	-0.36	0.36***	(0.10)
CPS: Self-esteem	-0.07	-0.03	-0.04	(0.15)	0.04	0.31	-0.27	(0.20)	0.12	-0.05	0.18	(0.25)	-0.00	0.03	-0.03	(0.11)
CPS: Relations	-0.07	-0.12	0.05	(0.14)	0.10	0.09	0.01	(0.21)	-0.00	-0.17	0.17	(0.27)	0.00	-0.09	0.09	(0.11)
CPS: Order	-0.31	-0.44	0.12	(0.15)	0.30	0.25	0.06	(0.20)	0.26	-0.45	0.70**	(0.24)	0.00	-0.31	0.31**	(0.11)
CPS: Empathy	0.07	-0.03	0.10	(0.14)	0.06	0.09	-0.03	(0.20)	-0.31	-0.07	-0.25	(0.26)	0.00	-0.01	0.01	(0.10)
CPS: Total	-0.14	-0.32	0.18	(0.15)	0.26	0.27	-0.01	(0.21)	-0.12	-0.34	0.21	(0.25)	-0.00	-0.21	0.21	(0.11)
Grit: Consistency	-0.05	-0.07	0.02	(0.14)	-0.01	0.03	-0.04	(0.22)	0.15	0.08	0.07	(0.22)	0.00	-0.02	0.02	(0.10)
Grit: Perseverance	-0.16	-0.01	-0.15	(0.15)	0.23	0.24	-0.01	(0.19)	-0.01	-0.24	0.23	(0.26)	0.00	-0.01	0.01	(0.11)
Grit: Ambition	-0.15	-0.04	-0.12	(0.14)	0.27	0.21	0.06	(0.17)	-0.11	-0.20	0.10	(0.29)	-0.00	-0.02	0.02	(0.10)
Grit: Total	-0.16	-0.11	-0.05	(0.14)	0.20	0.33	-0.13	(0.18)	0.05	-0.14	0.19	(0.26)	-0.00	-0.04	0.04	(0.10)
Risky Behavior																
Smoked	0.27	0.24	0.03	(0.06)	0.25	0.20	0.05	(0.09)	0.26	0.13	0.13	(0.10)	0.26	0.21	0.05	(0.05)
Casual Alcohol	0.32	0.40	-0.07	(0.07)	0.27	0.33	-0.06	(0.10)	0.34	0.38	-0.03	(0.12)	0.31	0.38	-0.07	(0.05)
High Alcohol	0.53	0.53	0.01	(0.12)	0.61	0.50	0.11	(0.20)	0.58	0.58	0.00	(0.21)	0.57	0.53	0.03	(0.09)
Marijuana	0.04	0.02	0.02	(0.02)	0.06	0.03	0.03	(0.05)	0.06	0.06	-0.01	(0.06)	0.05	0.03	0.02	(0.02)
Any Substance	0.02	0.00	0.02	(0.01)	0.04	0.07	-0.02	(0.05)	0.03	0.03	-0.00	(0.04)	0.03	0.02	0.01	(0.02)
Fight	0.05	0.04	0.01	(0.03)	0.00	0.00	0.00	(0.00)	0.00	0.00	0.00	(0.00)	0.03	0.02	0.00	(0.02)
Witness (any crime)	0.53	0.51	0.01	(0.07)	0.43	0.53	-0.10	(0.11)	0.49	0.47	0.02	(0.12)	0.49	0.51	-0.02	(0.05)
Victim (any crime)	0.14	0.07	0.07	(0.04)	0.09	0.07	0.02	(0.06)	0.09	0.00	0.09	(0.05)	0.11	0.06	0.06	(0.04)
Observations	85	96			60	26			33	28			178	150		

Notes: The baseline data was collected between June and October of 2012. The treatment was implemented in three different cohorts. Each cohort was treated for six months. Cohort 1 began to be treated in April of 2012, Cohort 2 in June of 2012, and Cohort 3 in July of 2012. H. stands for household. *Bolsa Carioca* and *Bolsa Familia* take a value of 1 if the household is a beneficiary of each program. N. Children counts the number of household members ages 14 and lower. The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individuals socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit Scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation. *** significant at the 1%, ** significant at the 5%, * significant at the 10%.

Table II: Effects of the Program on Cognitive and Non-Cognitive Skills

	Cognitive Skills			Non-cognitive Skills: CPS Scale							Non-cognitive Skills: Grit Scale			
	Analogies	Figures	Total	Leadership	Conflict	Self-esteem	Relations	Order	Empathy	Total	Cons.	Pers.	Ambition	Grit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Full Sample:	0.036	-0.162	-0.109	-0.037	-0.016	-0.046	-0.013	0.021	-0.112	-0.059	-0.222**	0.080	0.055	-0.040
	(0.058)	(0.159)	(0.167)	(0.083)	(0.086)	(0.081)	(0.077)	(0.084)	(0.080)	(0.081)	(0.086)	(0.083)	(0.084)	(0.080)
N	552	552	554	610	610	610	610	610	610	610	610	610	610	610
Cohort 1:	0.121	-0.372*	-0.207	-0.043	-0.009	0.018	-0.022	0.114	-0.201*	-0.067	-0.337***	0.151	0.128	-0.016
	(0.081)	(0.201)	(0.210)	(0.112)	(0.113)	(0.110)	(0.105)	(0.115)	(0.110)	(0.109)	(0.116)	(0.114)	(0.116)	(0.110)
N	310	308	310	339	339	339	339	339	339	339	339	339	339	339
Cohort 2:	-0.055	1.000***	0.913**	0.087	0.212	-0.073	0.119	0.145	0.041	0.136	0.079	0.109	-0.057	0.043
	(0.103)	(0.340)	(0.360)	(0.173)	(0.153)	(0.157)	(0.138)	(0.159)	(0.137)	(0.139)	(0.165)	(0.164)	(0.164)	(0.145)
N	136	138	138	155	155	155	155	155	155	155	155	155	155	155
Cohort 3:	-0.121	-0.413	-0.534	-0.096	-0.148	-0.136	-0.052	-0.230	0.244	-0.049	-0.174	0.018	0.061	-0.045
	(0.139)	(0.371)	(0.416)	(0.191)	(0.222)	(0.205)	(0.180)	(0.212)	(0.185)	(0.204)	(0.214)	(0.181)	(0.185)	(0.182)
N	106	106	106	116	116	116	116	116	116	116	116	116	116	116

Notes: The Table presents a simple regression for the data collected after the program implementation. The regression includes a dummy variable for the period in which the information was collected (first or second follow-up). The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individuals socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit Scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation. Robust standard errors are presented in parenthesis. *** significant at the 1%, ** significant at the 5%, * significant at the 10%.

Table III: Effects of the Program on risk behavior by Type of Skill

	Smoke (Ever Smoked?)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	-0.023	-0.031	0.147	-0.024	-0.023	-0.032	0.189	-0.032	0.158
	(0.035)	(0.064)	(0.231)	(0.035)	(0.035)	(0.063)	(0.239)	(0.063)	(0.230)
Treatment*Cognitive Test		-0.001				-0.000		-0.000	
		(0.013)				(0.013)		(0.013)	
Treatment*Years Education			-0.012				-0.015		-0.013
			(0.019)				(0.020)		(0.019)
Treatment*CPS Scale				-0.017		-0.009	-0.035		
				(0.025)		(0.027)	(0.031)		
Treatment*Grit Scale					-0.005			-0.006	-0.020
					(0.024)			(0.025)	(0.027)
N	610	541	455	610	610	541	455	541	455
	Casual Alcohol (Drank alcohol last week?)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	0.078**	0.097	0.148	0.076*	0.078**	0.088	0.273	0.092	0.157
	(0.039)	(0.075)	(0.270)	(0.039)	(0.039)	(0.075)	(0.270)	(0.075)	(0.268)
Treatment*Cognitive Test		-0.004				-0.002		-0.003	
		(0.016)				(0.016)		(0.016)	
Treatment*Years Education			-0.005				-0.015		-0.006
			(0.023)				(0.023)		(0.023)
Treatment*CPS Scale				-0.063**		-0.060*	-0.103***		
				(0.029)		(0.031)	(0.034)		
Treatment*Grit Scale					-0.004			-0.020	-0.017
					(0.030)			(0.032)	(0.035)
N	610	541	455	610	610	541	455	541	455

Notes: The Table presents a simple regression for the data collected after the program implementation. The regression includes a dummy variable for the period in which the information was collected (first or second follow-up). The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individuals socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit Scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation. The cognitive test was developed by the MIDE UC at the Department of Psychology of the *Pontificia Universidad Católica de Chile* an applied in Bassi et al. (2012). It measures general intellectual ability. Questions correspond to analogies and figures. For this study we used 12 questions (4 verbal and 8 figures). Each of the risk behavior variables was defined as a dummy variable that takes the value of one if the individual incurred in the risk behavior. Robust standard errors are presented in parenthesis. *** significant at the 1%, ** significant at the 5%, * significant at the 10%.

Table III (Continued): Effects of the Program on risk behavior by Type of Skill

	High Alcohol (Consumed at least 5 or more drinks last week?)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	-0.038	-0.126	-0.577	-0.056	-0.039	-0.173	-0.373	-0.141	-0.586
	(0.066)	(0.114)	(0.430)	(0.066)	(0.066)	(0.114)	(0.478)	(0.114)	(0.433)
Treatment*Cognitive Test		0.028				0.035		0.030	
		(0.023)				(0.023)		(0.024)	
Treatment*Years Education			0.050				0.031		0.050
			(0.036)				(0.041)		(0.036)
Treatment*CPS Scale				-0.103**		-0.116**	-0.070		
				(0.046)		(0.047)	(0.056)		
Treatment*Grit Scale					-0.011			-0.042	0.009
					(0.040)			(0.043)	(0.041)
N	216	199	170	216	216	199	170	199	170
	Marijuana (Consumed marijuana last week?)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	-0.007	0.009	-0.050***	-0.008	-0.008	0.005	-0.012	0.004	-0.037*
	(0.012)	(0.022)	(0.019)	(0.011)	(0.011)	(0.021)	(0.030)	(0.020)	(0.021)
Treatment*Cognitive Test		-0.006*				-0.005		-0.005*	
		(0.003)				(0.003)		(0.003)	
Treatment*Years Education			0.004*				0.001		0.003
			(0.002)				(0.002)		(0.002)
Treatment*CPS Scale				-0.021*		-0.024*	-0.032*		
				(0.013)		(0.014)	(0.018)		
Treatment*Grit Scale					-0.019*			-0.018	-0.024*
					(0.011)			(0.012)	(0.014)
N	607	538	453	607	607	538	453	538	453

Notes: The regression includes a dummy variable for the period in which the information was collected (first or second follow-up). The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individuals socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit Scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation. The cognitive test was developed by the MIDE UC at the Department of Psychology of the *Pontificia Universidad Católica de Chile* an applied in Bassi et al. (2012). It measures general intellectual ability. Questions correspond to analogies and figures. For this study we used 12 questions (4 verbal and 8 figures). Each of the risk behavior variables was defined as a dummy variable that takes the value of one if the individual incurred in the risk behavior. Robust standard errors are presented in parenthesis. *** significant at the 1%, ** significant at the 5%, * significant at the 10%.

Table III (Continued): Effects of the Program on risk behavior by Type of Skill

	Any Substance (Ever consumed cocaine, heroin, ecstasy, hard drugs?)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	-0.007	-0.003	-0.017**	-0.008	-0.008	-0.002	-0.024**	-0.003	-0.018**
	(0.007)	(0.013)	(0.008)	(0.009)	(0.008)	(0.014)	(0.012)	(0.013)	(0.009)
Treatment*Cognitive Test		-0.001				-0.001		-0.001	
		(0.002)				(0.002)		(0.002)	
Treatment*Years Education			0.001				0.001		0.001
			(0.001)				(0.001)		(0.001)
Treatment*CPS Scale				0.007		0.008	0.003		
				(0.006)		(0.006)	(0.004)		
Treatment*Grit Scale					0.002			0.003	-0.002
					(0.004)			(0.004)	(0.002)
N	716	554	546	610	610	541	455	541	455
	Participation in Street Fight (Last month)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	-0.008	-0.016	0.055	-0.008	-0.008	-0.016	0.067	-0.018	0.057
	(0.012)	(0.012)	(0.076)	(0.012)	(0.012)	(0.012)	(0.080)	(0.012)	(0.077)
Treatment*Cognitive Test		0.002				0.002		0.002	
		(0.001)				(0.001)		(0.001)	
Treatment*Years Education			-0.005				-0.006		-0.005
			(0.006)				(0.006)		(0.006)
Treatment*CPS Scale				-0.003		-0.003	-0.010		
				(0.007)		(0.008)	(0.006)		
Treatment*Grit Scale					-0.008			-0.010	-0.004
					(0.006)			(0.007)	(0.003)
N	609	541	454	609	609	541	454	541	454

Notes: The regression includes a dummy variable for the period in which the information was collected (first or second follow-up). The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individuals socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit Scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation. The cognitive test was developed by the MIDE UC at the Department of Psychology of the *Pontificia Universidad Católica de Chile* an applied in Bassi et al. (2012). It measures general intellectual ability. Questions correspond to analogies and figures. For this study we used 12 questions (4 verbal and 8 figures). Each of the risk behavior variables was defined as a dummy variable that takes the value of one if the individual incurred in the risk behavior. Robust standard errors are presented in parenthesis. *** significant at the 1%, ** significant at the 5%, * significant at the 10%.

Table III (Continued): Effects of the Program on risk behavior by Type of Skill

	Witness Any Crime (Last Year)[a]								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	0.036	0.027	0.084	0.023	0.022	0.021	0.163	0.017	0.136
	(0.035)	(0.074)	(0.254)	(0.040)	(0.040)	(0.075)	(0.288)	(0.075)	(0.282)
Treatment*Cognitive Test		-0.005				-0.004		-0.004	
		(0.016)				(0.016)		(0.016)	
Treatment*Years Education			-0.002				-0.010		-0.007
			(0.022)				(0.024)		(0.024)
Treatment*CPS Scale				-0.030		-0.040	-0.049		
				(0.031)		(0.032)	(0.037)		
Treatment*Grit Scale					-0.034			-0.039	-0.060*
					(0.029)			(0.030)	(0.032)
N	716	554	546	610	610	541	455	541	455
	Victim of Any Crime (Last Year)[b]								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	0.016	0.053	0.045	0.015	0.015	0.048	0.105	0.046	0.065
	(0.015)	(0.039)	(0.169)	(0.017)	(0.017)	(0.038)	(0.183)	(0.038)	(0.195)
Treatment*Cognitive Test		-0.009				-0.008		-0.008	
		(0.008)				(0.008)		(0.008)	
Treatment*Years Education			-0.003				-0.008		-0.005
			(0.014)				(0.015)		(0.017)
Treatment*CPS Scale				-0.032*		-0.041**	-0.044**		
				(0.017)		(0.018)	(0.021)		
Treatment*Grit Scale					-0.031**			-0.035**	-0.023
					(0.015)			(0.015)	(0.016)
N	716	554	546	610	610	541	455	541	455

Notes: The regression includes a dummy variable for the period in which the information was collected (first or second follow-up).The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individuals socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit Scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation. The cognitive test was developed by the MIDE UC at the Department of Psychology of the *Pontificia Universidad Católica de Chile* an applied in Bassi et al. (2012). It measures general intellectual ability. Questions correspond to analogies and figures. For this study we used 12 questions (4 verbal and 8 figures). Each of the risk behavior variables was defined as a dummy variable that takes the value of one if the individual incurred in the risk behavior.

[a]: Any crime includes robbery, murder, bribes, physical fight or abuse, sexual assault, or carrying illegal weapons.

[b]: Any crime includes discrimination, any form of assault, robbed, injured, threatened, or chased. Robust standard errors are presented in parenthesis.

*** significant at the 1%, ** significant at the 5%, * significant at the 10%.

Table IV: Correlation between risk behavior and Non-Cognitive Skills

	Smoke	C. Alcohol	High Alcohol	Marijuana	Any Substance	Fight	Witness	Victim
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CPS: Leadership	-0.007	-0.006	0.036	-0.003	0.001	0.001	-0.010	-0.002
	(0.011)	(0.013)	(0.025)	(0.006)	(0.003)	(0.003)	(0.015)	(0.013)
CPS: Conflict beh.	-0.002	-0.014	0.011	-0.007	-0.005	-0.008*	-0.014	-0.014
	(0.010)	(0.014)	(0.023)	(0.007)	(0.003)	(0.004)	(0.015)	(0.013)
CPS: Self-esteem	0.002	0.005	-0.001	-0.003	-0.000	-0.006	-0.020	-0.012
	(0.013)	(0.014)	(0.024)	(0.005)	(0.004)	(0.004)	(0.016)	(0.013)
CPS: Relations	0.006	0.010	0.071***	-0.001	0.002	0.005	-0.008	0.005
	(0.013)	(0.015)	(0.024)	(0.008)	(0.005)	(0.005)	(0.015)	(0.014)
CPS: Order	0.007	-0.002	0.020	-0.003	0.003	-0.004	-0.031**	-0.009
	(0.011)	(0.013)	(0.023)	(0.006)	(0.004)	(0.004)	(0.015)	(0.013)
CPS: Empathy	-0.020	-0.011	-0.019	-0.008*	-0.002	-0.013***	-0.041***	-0.036***
	(0.012)	(0.014)	(0.026)	(0.005)	(0.003)	(0.005)	(0.016)	(0.014)
CPS: Total	-0.006	-0.008	0.022	-0.008	-0.001	-0.008**	-0.032**	-0.020
	(0.012)	(0.015)	(0.024)	(0.007)	(0.004)	(0.004)	(0.015)	(0.014)
Grit: Consistency	-0.028**	-0.038***	-0.047**	-0.009*	-0.003	-0.009**	-0.036**	-0.038***
	(0.012)	(0.014)	(0.024)	(0.005)	(0.004)	(0.004)	(0.016)	(0.012)
Grit: Perseverance	0.016	-0.007	-0.024	-0.008	0.001	0.002	-0.006	-0.018
	(0.013)	(0.015)	(0.026)	(0.006)	(0.003)	(0.004)	(0.016)	(0.014)
Grit: Ambition	0.009	-0.011	-0.034	-0.011*	0.000	0.000	-0.009	-0.030**
	(0.012)	(0.015)	(0.024)	(0.006)	(0.004)	(0.004)	(0.015)	(0.014)
Grit: Total	-0.009	-0.027*	-0.034	-0.014**	-0.002	-0.000	-0.018	-0.042***
	(0.013)	(0.016)	(0.027)	(0.007)	(0.005)	(0.005)	(0.016)	(0.014)

Notes: Each coefficient of the Table presents the estimates of a panel regression of a given risk behavior variable on each of the socio-emotional skill scores. Each regression includes fixed effects by individual and year. Robust standard errors are presented in parenthesis. The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individual's socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation i.e., the mean was subtracted to each observation and the result was divided by the standard deviation. *** significant at the 1%, ** significant at the 5%, * significant at the 10%.

Table V: Effects of the Program on Income and Employment

	Unemployed	Monthly Hours Worked	Monthly Labor Income (conditional on working)
	(1)	(2)	(3)
Full Sample:	0.00	-0.07	139.06**
	(0.03)	(4.11)	(58.79)
N	714	458	466
Cohort 1:	0.02	-1.00	138.91***
	(0.04)	(5.47)	(47.77)
N	386	250	244
Cohort 2:	-0.04	3.37	299.13
	(0.06)	(6.15)	(193.79)
N	194	120	142
Cohort 3:	0.04	1.89	42.31
	(0.05)	(11.85)	(92.81)
N	134	88	80

Notes: The regression includes a dummy variable for the period in which the information was collected (first or second follow-up). Robust standard errors are presented in parenthesis. Hours worked and labor income are expressed in monthly figures. *** significant at the 1%, ** significant at the 5%, * significant at the 10%.

Appendix A: Non-cognitive Skills and Risky Behavior

Table A.1: Correlation between Risky Behavior and Non-Cognitive Skill (Ages < 20)

	Smoke	Alcohol	Marijuana	Any Substance	Fight	Witness Crime	Victim
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CPS: Leadership	0.000	0.000	-0.004	0.009	-0.001	0.000	-0.021
	(0.014)	(0.014)	(0.025)	(0.007)	(0.025)	(0.008)	(0.029)
CPS: Conflict beh.	0.002	0.002	-0.053**	0.009	-0.043	-0.010	-0.005
	(0.017)	(0.017)	(0.026)	(0.007)	(0.029)	(0.013)	(0.031)
CPS: Self-esteem	-0.004	-0.004	0.013	0.004	0.017	-0.005	-0.008
	(0.021)	(0.021)	(0.028)	(0.004)	(0.029)	(0.011)	(0.033)
CPS: Relations	0.006	0.006	0.028	0.014	0.027	0.005	-0.022
	(0.019)	(0.019)	(0.028)	(0.009)	(0.029)	(0.014)	(0.029)
CPS: Order	-0.005	-0.005	-0.007	0.001	-0.014	0.000	-0.021
	(0.020)	(0.020)	(0.023)	(0.007)	(0.026)	(0.010)	(0.028)
CPS: Empathy	-0.002	-0.002	-0.020	-0.007	-0.034	-0.032**	-0.044*
	(0.013)	(0.013)	(0.024)	(0.005)	(0.024)	(0.013)	(0.026)
CPS: Total	-0.001	-0.001	-0.018	0.006	-0.022	-0.016	-0.034
	(0.018)	(0.018)	(0.026)	(0.006)	(0.031)	(0.010)	(0.030)
Grit: Consistency	-0.010	-0.010	-0.038	-0.001	-0.045*	-0.020**	-0.045
	(0.019)	(0.019)	(0.026)	(0.003)	(0.024)	(0.009)	(0.029)
Grit: Perseverance	0.031	0.031	0.005	0.002	0.018	0.008	-0.021
	(0.020)	(0.020)	(0.030)	(0.005)	(0.031)	(0.010)	(0.030)
Grit: Ambition	0.014	0.014	0.021	0.003	0.018	0.008	-0.015
	(0.021)	(0.021)	(0.032)	(0.003)	(0.034)	(0.011)	(0.028)
Grit: Total	0.027	0.027	-0.009	0.000	-0.005	-0.007	-0.037
	(0.020)	(0.020)	(0.032)	(0.003)	(0.030)	(0.010)	(0.030)

Notes: Each coefficient of the table presents the estimates of a panel regression of a given risk behavior variable on each of the socio-emotional skill scores. Each regression includes fixed effects by individual and year. Robust standard errors are presented in parenthesis. The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individual's socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation i.e., the mean was subtracted to each observation and the result was divided by the standard deviation. Estimates with *** are significant at the 1%, those with ** are significant at the 5%, and those with * are significant at the 10%.

Table A.2: Correlation between Risky Behavior and socio-emotional Skills (Age 20 to 24)

	Smoke	Alcohol	Marijuana	Any Substance	Fight	Witness Crime	Victim
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CPS: Leadership	-0.008	-0.008	-0.010	-0.003	-0.008	0.002	-0.018
	(0.017)	(0.017)	(0.022)	(0.009)	(0.021)	(0.005)	(0.023)
CPS: Conflict beh.	-0.014	-0.014	0.012	-0.009	0.004	-0.004	-0.027
	(0.014)	(0.014)	(0.022)	(0.010)	(0.020)	(0.005)	(0.021)
CPS: Self-esteem	0.018	0.018	0.012	-0.008	0.016	-0.005	-0.017
	(0.021)	(0.021)	(0.022)	(0.009)	(0.023)	(0.005)	(0.025)
CPS: Relations	0.020	0.020	0.013	0.001	0.010	0.006	-0.016
	(0.019)	(0.019)	(0.023)	(0.013)	(0.023)	(0.005)	(0.023)
CPS: Order	0.008	0.008	0.022	-0.006	0.016	-0.002	-0.030
	(0.016)	(0.016)	(0.022)	(0.009)	(0.020)	(0.005)	(0.023)
CPS: Empathy	-0.023	-0.023	0.001	-0.014	-0.010	-0.000	-0.025
	(0.023)	(0.023)	(0.027)	(0.010)	(0.026)	(0.004)	(0.027)
CPS: Total	-0.006	-0.006	0.011	-0.011	0.004	-0.001	-0.034
	(0.019)	(0.019)	(0.025)	(0.011)	(0.025)	(0.004)	(0.024)
Grit: Consistency	-0.020	-0.020	-0.045**	-0.015	-0.023	-0.003	-0.031
	(0.018)	(0.018)	(0.022)	(0.010)	(0.019)	(0.005)	(0.025)
Grit: Perseverance	-0.014	-0.014	-0.022	-0.019	-0.014	0.007	0.012
	(0.020)	(0.020)	(0.025)	(0.012)	(0.022)	(0.006)	(0.026)
Grit: Ambition	-0.001	-0.001	-0.041*	-0.018*	-0.010	0.001	0.004
	(0.019)	(0.019)	(0.024)	(0.011)	(0.022)	(0.007)	(0.024)
Grit: Total	-0.019	-0.019	-0.062**	-0.030**	-0.039*	0.006	0.001
	(0.021)	(0.021)	(0.027)	(0.015)	(0.024)	(0.008)	(0.029)

Notes: Each coefficient of the table presents the estimates of a panel regression of a given risk behavior variable on each of the socio-emotional skill scores. Each regression includes fixed effects by individual and year. Robust standard errors are presented in parenthesis. The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individual's socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation i.e., the mean was subtracted to each observation and the result was divided by the standard deviation. Estimates with *** are significant at the 1%, those with ** are significant at the 5%, and those with * are significant at the 10%.

Table A.3: Correlation between Risky Behavior and socio-emotional Skills (Age 25 to 29)

	Smoke	Alcohol	Marijuana	Any Substance	Fight	Witness Crime	Victim
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CPS: Leadership	-0.010	-0.010	-0.011	-0.018	-0.013	0.003	0.015
	(0.027)	(0.027)	(0.022)	(0.013)	(0.026)	(0.004)	(0.027)
CPS: Conflict beh.	0.010	0.010	-0.036	-0.024*	-0.018	-0.009	0.003
	(0.025)	(0.025)	(0.024)	(0.013)	(0.025)	(0.007)	(0.028)
CPS: Self-esteem	-0.009	-0.009	-0.018	-0.008	-0.029	-0.007	-0.034
	(0.027)	(0.027)	(0.026)	(0.011)	(0.025)	(0.008)	(0.027)
CPS: Relations	-0.013	-0.013	-0.016	-0.022	-0.043*	0.004	0.013
	(0.028)	(0.028)	(0.027)	(0.014)	(0.025)	(0.006)	(0.026)
CPS: Order	0.012	0.012	-0.042*	-0.004	-0.002	-0.009	-0.030
	(0.023)	(0.023)	(0.023)	(0.013)	(0.023)	(0.009)	(0.028)
CPS: Empathy	-0.052**	-0.052**	-0.021	-0.008	-0.055**	-0.007	-0.055*
	(0.026)	(0.026)	(0.021)	(0.008)	(0.023)	(0.007)	(0.029)
CPS: Total	-0.017	-0.017	-0.039*	-0.022	-0.042*	-0.006	-0.022
	(0.027)	(0.027)	(0.023)	(0.014)	(0.025)	(0.007)	(0.028)
Grit: Consistency	-0.063**	-0.063**	-0.036	-0.013	-0.052**	-0.001	-0.023
	(0.027)	(0.027)	(0.025)	(0.010)	(0.025)	(0.007)	(0.028)
Grit: Perseverance	0.035	0.035	-0.013	-0.012	0.017	-0.005	-0.008
	(0.026)	(0.026)	(0.025)	(0.010)	(0.026)	(0.007)	(0.026)
Grit: Ambition	0.024	0.024	-0.004	-0.021*	0.015	-0.007	-0.016
	(0.027)	(0.027)	(0.025)	(0.013)	(0.029)	(0.007)	(0.027)
Grit: Total	-0.031	-0.031	-0.021	-0.018	-0.025	0.004	-0.015
	(0.027)	(0.027)	(0.026)	(0.012)	(0.026)	(0.007)	(0.027)

Notes: Each coefficient of the table presents the estimates of a panel regression of a given risk behavior variable on each of the socio-emotional skill scores. Each regression includes fixed effects by individual and year. Robust standard errors are presented in parenthesis. The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individual's socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation i.e., the mean was subtracted to each observation and the result was divided by the standard deviation. Estimates with *** are significant at the 1%, those with ** are significant at the 5%, and those with * are significant at the 10%.

Table A.4: Correlation between Risky Behavior and socio-emotional Skills (Men)

	Smoke	Alcohol	Marijuana	Any Substance	Fight	Witness Crime	Victim
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CPS: Leadership	-0.014	-0.014	-0.007	-0.007	-0.014	0.001	-0.008
	(0.012)	(0.012)	(0.015)	(0.006)	(0.014)	(0.004)	(0.016)
CPS: Conflict beh.	-0.012	-0.012	-0.020	-0.012*	-0.025*	-0.007*	-0.017
	(0.011)	(0.011)	(0.015)	(0.007)	(0.014)	(0.004)	(0.016)
CPS: Self-esteem	-0.000	-0.000	0.008	-0.006	0.003	-0.005	-0.016
	(0.014)	(0.014)	(0.016)	(0.005)	(0.016)	(0.005)	(0.017)
CPS: Relations	-0.000	-0.000	0.015	-0.006	-0.006	0.006	-0.008
	(0.014)	(0.014)	(0.016)	(0.008)	(0.016)	(0.006)	(0.017)
CPS: Order	-0.001	-0.001	-0.005	-0.008	-0.007	-0.004	-0.037**
	(0.012)	(0.012)	(0.014)	(0.006)	(0.014)	(0.005)	(0.016)
CPS: Empathy	-0.031**	-0.031**	-0.011	-0.010*	-0.033**	-0.015***	-0.040**
	(0.014)	(0.014)	(0.016)	(0.006)	(0.016)	(0.006)	(0.017)
CPS: Total	-0.018	-0.018	-0.010	-0.013*	-0.026	-0.008*	-0.033*
	(0.014)	(0.014)	(0.016)	(0.007)	(0.017)	(0.004)	(0.017)
Grit: Consistency	-0.028**	-0.028**	-0.039**	-0.012**	-0.036***	-0.010**	-0.036**
	(0.013)	(0.013)	(0.015)	(0.006)	(0.014)	(0.005)	(0.017)
Grit: Perseverance	0.007	0.007	-0.007	-0.012**	-0.000	0.003	-0.001
	(0.014)	(0.014)	(0.017)	(0.006)	(0.016)	(0.005)	(0.017)
Grit: Ambition	0.001	0.001	-0.013	-0.016**	-0.003	0.001	-0.007
	(0.014)	(0.014)	(0.017)	(0.007)	(0.017)	(0.005)	(0.016)
Grit: Total	-0.016	-0.016	-0.030*	-0.019**	-0.030*	-0.000	-0.015
	(0.015)	(0.015)	(0.018)	(0.007)	(0.016)	(0.005)	(0.017)

Notes: Each coefficient of the table presents the estimates of a panel regression of a given risk behavior variable on each of the socio-emotional skill scores. The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individual's socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation i.e., the mean was subtracted to each observation and the result was divided by the standard deviation. Each regression includes fixed effects by individual and year. Robust standard errors are presented in parenthesis. Estimates with *** are significant at the 1%, those with ** are significant at the 5%, and those with * are significant at the 10%.

Table A.5: Correlation between Risky Behavior and socio-emotional Skills (Women)

	Smoke	Alcohol	Marijuana	Any Substance	Fight	Witness Crime	Victim
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CPS: Leadership	0.043*	0.043*	0.027	0.022	0.068**	-0.004	-0.010
	(0.023)	(0.023)	(0.028)	(0.014)	(0.034)	(0.010)	(0.037)
CPS: Conflict beh.	0.066**	0.066**	0.035	0.023	0.090**	-0.011	0.008
	(0.027)	(0.027)	(0.044)	(0.015)	(0.046)	(0.013)	(0.037)
CPS: Self-esteem	0.031	0.031	0.010	0.016	0.036	-0.012	-0.026
	(0.037)	(0.037)	(0.031)	(0.013)	(0.031)	(0.009)	(0.042)
CPS: Relations	0.054**	0.054**	0.023	0.025	0.063*	0.002	0.021
	(0.023)	(0.023)	(0.028)	(0.017)	(0.033)	(0.006)	(0.035)
CPS: Order	0.061**	0.061**	0.037	0.028	0.096***	-0.004	0.033
	(0.029)	(0.029)	(0.026)	(0.019)	(0.033)	(0.004)	(0.038)
CPS: Empathy	0.032**	0.032**	0.008	-0.000	0.011	-0.005	-0.040
	(0.016)	(0.016)	(0.034)	(0.010)	(0.033)	(0.011)	(0.042)
CPS: Total	0.073***	0.073***	0.033	0.024	0.087**	-0.007	-0.009
	(0.028)	(0.028)	(0.040)	(0.016)	(0.044)	(0.011)	(0.041)
Grit: Consistency	-0.027	-0.027	0.001	0.010	-0.025	-0.001	-0.032
	(0.033)	(0.033)	(0.039)	(0.008)	(0.042)	(0.012)	(0.043)
Grit: Perseverance	0.071**	0.071**	0.022	0.016	0.075*	-0.000	-0.040
	(0.030)	(0.030)	(0.034)	(0.011)	(0.041)	(0.009)	(0.037)
Grit: Ambition	0.065**	0.065**	0.025	0.011	0.079**	-0.007	-0.010
	(0.028)	(0.028)	(0.029)	(0.008)	(0.036)	(0.013)	(0.034)
Grit: Total	0.049	0.049	0.026	0.013	0.061	-0.000	-0.029
	(0.037)	(0.037)	(0.037)	(0.011)	(0.044)	(0.017)	(0.040)

Notes: Each coefficient of the table presents the estimates of a panel regression of a given risk behavior variable on each of the socio-emotional skill scores. Each regression includes fixed effects by individual and year. The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individual's socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation i.e., the mean was subtracted to each observation and the result was divided by the standard deviation. Robust standard errors are presented in parenthesis. Estimates with *** are significant at the 1%, those with ** are significant at the 5%, and those with * are significant at the 10%.

Table A.6: Correlation between Risky Behavior and socio-emotional Skills (Income Quintile 1)

	Smoke	Alcohol	Marijuana	Any Substance	Fight	Witness Crime	Victim
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CPS: Leadership	0.016	0.016	-0.034	-0.004	-0.003	0.016*	-0.074*
	(0.028)	(0.028)	(0.040)	(0.023)	(0.049)	(0.009)	(0.040)
CPS: Conflict beh.	0.006	0.006	-0.046	-0.006	-0.050	-0.002	-0.024
	(0.027)	(0.027)	(0.040)	(0.019)	(0.041)	(0.013)	(0.033)
CPS: Self-esteem	0.020	0.020	-0.069	-0.018	-0.033	-0.005	-0.041
	(0.039)	(0.039)	(0.045)	(0.020)	(0.046)	(0.008)	(0.042)
CPS: Relations	0.001	0.001	0.001	-0.018	-0.030	0.021*	-0.050
	(0.028)	(0.028)	(0.032)	(0.028)	(0.037)	(0.013)	(0.035)
CPS: Order	0.018	0.018	-0.033	-0.018	-0.012	-0.016	-0.090***
	(0.025)	(0.025)	(0.032)	(0.015)	(0.036)	(0.011)	(0.029)
CPS: Empathy	-0.014	-0.014	-0.024	-0.031**	-0.039	-0.030*	-0.096***
	(0.030)	(0.030)	(0.039)	(0.013)	(0.041)	(0.018)	(0.035)
CPS: Total	0.003	0.003	-0.046	-0.023	-0.048	-0.010	-0.093***
	(0.028)	(0.028)	(0.037)	(0.019)	(0.048)	(0.009)	(0.031)
Grit: Consistency	-0.059	-0.059	-0.068	-0.021	-0.084**	-0.015	-0.092**
	(0.038)	(0.038)	(0.044)	(0.014)	(0.038)	(0.012)	(0.044)
Grit: Perseverance	0.019	0.019	-0.013	-0.023	0.024	0.019	-0.039
	(0.044)	(0.044)	(0.043)	(0.019)	(0.048)	(0.014)	(0.037)
Grit: Ambition	0.008	0.008	-0.018	-0.029	0.001	0.018	-0.024
	(0.046)	(0.046)	(0.041)	(0.020)	(0.049)	(0.013)	(0.034)
Grit: Total	-0.012	-0.012	-0.065	-0.034*	-0.047	0.009	-0.064*
	(0.046)	(0.046)	(0.047)	(0.019)	(0.046)	(0.011)	(0.037)

Notes: Each coefficient of the table presents the estimates of a panel regression of a given risk behavior variable on each of the socio-emotional skill scores. Each regression includes fixed effects by individual and year. The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individual's socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions, each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Scores are presented in standard deviations to ease interpretation i.e., the mean was subtracted to each observation and the result was divided by the standard deviation. Robust standard errors are presented in parenthesis. Estimates with *** are significant at the 1%, those with ** are significant at the 5%, and those with * are significant at the 10%.

Table A.7: Correlation between Risky Behavior and socio-emotional Skills (Income Quintile 5)

	Smoke	Alcohol	Marijuana	Any Substance	Fight	Witness Crime	Victim
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CPS: Leadership	-0.003	-0.003	0.014	-0.008	-0.000	0.009	0.067
	(0.028)	(0.028)	(0.048)	(0.026)	(0.041)	(0.009)	(0.042)
CPS: Conflict beh.	0.010	0.010	0.004	-0.005	-0.013	-0.012	0.040
	(0.022)	(0.022)	(0.043)	(0.024)	(0.041)	(0.010)	(0.041)
CPS: Self-esteem	-0.022	-0.022	0.055	-0.031	-0.006	0.004	0.009
	(0.043)	(0.043)	(0.060)	(0.033)	(0.063)	(0.004)	(0.048)
CPS: Relations	0.032	0.032	0.043	-0.015	0.015	0.013	0.070
	(0.042)	(0.042)	(0.064)	(0.040)	(0.061)	(0.017)	(0.044)
CPS: Order	-0.003	-0.003	0.013	-0.026	0.026	0.016	0.007
	(0.028)	(0.028)	(0.047)	(0.022)	(0.042)	(0.012)	(0.051)
CPS: Empathy	-0.038	-0.038	-0.049	-0.005	-0.049	0.003	-0.013
	(0.028)	(0.028)	(0.050)	(0.022)	(0.040)	(0.004)	(0.038)
CPS: Total	-0.006	-0.006	0.009	-0.019	-0.011	0.004	0.047
	(0.031)	(0.031)	(0.056)	(0.039)	(0.049)	(0.006)	(0.045)
Grit: Consistency	0.010	0.010	0.004	-0.001	0.001	0.004	-0.055
	(0.022)	(0.022)	(0.049)	(0.016)	(0.035)	(0.006)	(0.046)
Grit: Perseverance	0.054	0.054	0.072	-0.029	0.052	0.024	0.063
	(0.037)	(0.037)	(0.048)	(0.024)	(0.047)	(0.016)	(0.050)
Grit: Ambition	0.026	0.026	0.052	-0.039	0.025	0.020	0.003
	(0.025)	(0.025)	(0.044)	(0.028)	(0.040)	(0.015)	(0.040)
Grit: Total	0.025	0.025	0.062	-0.026	0.017	0.022	0.022
	(0.034)	(0.034)	(0.053)	(0.023)	(0.043)	(0.015)	(0.052)

Notes: Each coefficient of the table presents the estimates of a panel regression of a given risk behavior variable on each of the socio-emotional skill scores. Each regression includes fixed effects by individual and year. The Social and Competence Personal Scale (CPS) is a non-cognitive test designed and tested by Brea (2010) and Ibarraran et al. (2014). It measures an individual's socio-emotional skill in six basic competencies: leadership, behavior in situations of conflict, self-esteem, abilities to relate with others, order, and empathy and communication skills. It is composed of 44 questions. Each question has a scale of 0 to 3 describing personal competencies of the individual. It produces a general score and a specific score for each of the six dimensions. A higher CPS score is associated with a higher level of development in the social and personal competencies. The Grit scale is a non-cognitive test designed by Duckworth et. al. (2007). It measures determination and strength of mind through the dimensions of: consistency of interests, persistency of effort, and ambition. It is composed of 13 questions. Higher scores on the Grit scale are associated with higher levels of determination and motivation during long periods of time despite failure or adversity. Non-cognitive scores are presented in standard deviations to ease interpretation i.e., the mean was subtracted to each observation and the result was divided by the standard deviation. Robust standard errors are presented in parenthesis. ***: Significant at 1%, ** : significant at 5%, *: significant at 10%.

Appendix B: Falsification Test

	Smoke (Ever Smoked?)			
	(1)	(2)	(3)	(4)
Treatment*CPS Scale	0.020	-0.031		
	(0.038)	(0.047)		
Treatment*Grit Scale			0.019	0.003
			(0.034)	(0.039)
N	277	273	277	273
	Casual Alcohol			
	(5)	(6)	(7)	(8)
Treatment*CPS Scale	-0.042	-0.047		
	(0.045)	(0.050)		
Treatment*Grit Scale			0.043	0.046
			(0.042)	(0.042)
N	277	273	277	273
	High Alcohol			
	(9)	(10)	(11)	(12)
Treatment*CPS Scale	-0.065	0.023		
	(0.063)	(0.074)		
Treatment*Grit Scale			0.018	-0.010
			(0.065)	(0.065)
N	102	97	102	97
	Marijuana			
	(13)	(14)	(15)	(16)
Treatment*CPS Scale	-0.002	-0.031		
	(0.014)	(0.024)		
Treatment*Grit Scale			-0.022	-0.033
			(0.020)	(0.021)
N	277	273	277	273
	Any Substance			
	(17)	(18)	(19)	(20)
Treatment*CPS Scale	0.014	-0.009		
	(0.010)	(0.014)		
Treatment*Grit Scale			0.011	-0.009
			(0.009)	(0.010)
N	277	273	277	273
	Witness			
	(21)	(22)	(23)	(24)
Treatment*CPS Scale	0.032	0.038		
	(0.048)	(0.053)		
Treatment*Grit Scale			-0.017	-0.031
			(0.043)	(0.044)
N	277	273	277	273
	Victim			
	(25)	(26)	(27)	(28)
Treatment*CPS Scale	-0.022	-0.037*		
	(0.020)	(0.022)		
Treatment*Grit Scale			0.017	0.001
			(0.015)	(0.020)
N	277	273	277	273
Years Education		X		X
Cognitive Test	X		X	
Treatment	X	X	X	X

Notes: The table presents a Falsification test that replicates the regression presented in Table III columns (6) through (9). All regression include controls for a treatment dummy and a proxy for cognitive ability as described in last 3 rows of the table. Robust standard errors are presented in parentheses. *** significant at the 1%, ** significant at the 5%, * significant at the 10%.