

# Soft Skills Training and Social Inclusion of Vulnerable Youth in Post-Conflict Côte d'Ivoire: Evidence from a Randomized Control Trial.



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# Soft-Skills Training and Social Inclusion of Vulnerable Youth in Post-Conflict Côte d'Ivoire: Evidence from a Randomized Control Trial

## Abstract

Soft skills positively affect success and performance in the labor market, especially in a post-conflict context. In Côte d'Ivoire, youth do not take full advantage of strong post-conflict economic recovery. Over 70% of young people are in neither in the education system nor the labor market and therefore develop criminal behaviors as a means of subsistence. Non-cognitive training is likely to reduce antisocial behavior and increase self-esteem and self-confidence, which are valuable for fostering foster positive outcomes from "hard" skills. To test this assumption, we conducted a randomized control trial on a sample of 700 vulnerable youth, including 250 in a beneficiary group and 450 in a control group. The objective of the paper is to determine the causal effect of the Civic Service of Action for Employment and Development program, an initiative that combines soft- and hard-skills training. Our findings indicate a positive impact of the intervention on the reduction of crime, drug-abuse, alcohol consumption, and violence on the one hand, and significant and positive effects on altruism, positive reciprocity, risk preference, and life satisfaction on the other. For women, however, the program had a positive and significant effect on impatience, life dissatisfaction, and impulsivity, suggesting some gender bias. The program is likely to facilitate social inclusion of at-risk youth in Côte d'Ivoire, though future interventions should include a clear gender dimension to take into account the specific needs of women participants.

**Key words:** Côte d'Ivoire, soft skills, social preference, violent attributes, RCT

**JEL Classification:** D90, J21, C93

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## I. Introduction

Post-conflict stabilization is a concern for many countries and the donor's community. Indeed, peace and security is essential to promote economic recovery and avoid a resurgence of the conflict. In that matter, young people are a key focus of many peacebuilding strategies because they are not only the main provider of manpower for insurrections but are very often also the main victims of violent unrests.

Since the end of the 1990s, Côte d'Ivoire has known recurrent periods of socio-political instability, which materialized in a military coup in 1999, as well as of repeated crises, civil war, and the post-electoral turmoil of 2011. During this period, the economy collapsed and violence spread. In the aftermath of the post-electoral crisis, Côte d'Ivoire recovered and the GDP grew, on average, by 8% per annum. Despite this economic performance, the poverty rate declined only slightly, from 48.9% in 2008 to 46.3% in 2015. Over 70% of the poor Côte d'Ivoire are 25 years old or younger (Institut National de la Statistique, 2015). Further, the unemployment rate is higher among the young people aged 14-24 (3.9%) than in those aged 25-35 (3.5%).

At-risk youth, most of whom live in extremely precarious conditions in poor families, come from these age groups. They are young people confronted with harsh challenges to subsistence on a daily basis,, forcing them to invest in the streets for survival from an early age,. Consumption of illegal drugs and other prohibited products lea them to form criminal gangs.

In this context, the Civic Action Service for Employment and Development was established by the government to foster social inclusion, vocational training, and integration of targeted vulnerable youth into the socioeconomic fabric. To do this, the Civic Service of Action for Employment and Development has vowed to open vocational training centers with full support (including housing, food, transportation, and healthcare), implemented using the military model to promote soft skills and social rehabilitation. Although the restoration of civic service is regularly highlighted as an alternative means for recuperating marginalized youth, the effectiveness of the intervention has yet to be assessed.

Our experiment took place in two of the regions most affected by the post-election conflict of 2010-2011: the Abidjan District (the Bimbresso citizen vocational training center) and the Gbêkê Region (the Bouaké vocational training center). The consequences of war in these two areas are long-lasting, despite efforts made by the government to strengthen social cohesion.

Soft skills, life skills, and transferable skills are “high order” cognitive and non-cognitive skills that are valuable to individuals’ success (Brown et al., 2015). They are different from vocational and technical skills (occupation) and basic cognitive skills (knowledge and comprehension) and foundational skills (literacy and numeracy). From labor market perspective, Mitchell, Pritchett, and Skinner (2013) highlighted three broad categories of soft skills such as interpersonal skills (teamwork and customer services), thinking skills (decision-making, knowing how to learn), and personal skills (sociability and self-management). Specifically, for Catalano et al. (2019), a positive youth-development program or soft-skills training program for youth in the developing world could build skills, assets, and competencies; increase youth agency and youth contribution; and strengthen enabling environments. Higher-level transferable skills could therefore improve trust, altruism, reciprocity, motivation, and self-confidence (Heckman & Corbin, 2016; Catalano et al., 2019; Heckman & Kautz, 2013).

Soft-skills training of young people in post-conflict contexts is valuable and multifold. Soft skills lead to emotionally stabilization for traumatized youth; build trust from employers and prospective employees (Adhvaryu, Kala & Nyshadham, 2018); favor social inclusion (in the community); develop self-esteem, trust, and positive reciprocity (Adoho et al., 2014; curb violent behavior; and improve time management (Blattman & Ralston, 2015).

Capturing the impact of soft skills, however, may not only be context-specific but may also change the way the program is designed or the type of beneficiaries targeted. Indeed, significant behavioral changes associated with soft-skills training are different by gender (Groh et al., 2016), local context (Pluim, 2017), and the way the training it is implemented (whether by private businesses or by the public sector; see Adhvaryu, Kala & Nyshadham, 2018); Kumendong, Pangemanan & Pandowo, 2018).

Our paper evaluates the impact of soft-skills training on vulnerable youth in poor living conditions who have developed antisocial behaviors. We conducted a randomized control trial on a sample of 700 vulnerable youth (250 in a beneficiary group and 450 in a control group) to determine the causal effect of the program on the accumulation of soft skills. We show that, overall, the impact of the program on the reduction of antisocial behavior (crime, drug-abuse, alcohol consumption, and violence); the development of such social skills as altruism, risk preference, trust, and time management; and life satisfaction is a positive one. The findings also indicate that the program, on average, increased altruism and positive reciprocity among young women while significantly exacerbating impatience, life dissatisfaction, and impulsivity, suggesting that the quasi-military style of the intervention did not specifically address the concerns of the young women. These results imply that the program is likely to facilitate social inclusion of at-risk youth in Côte d'Ivoire and foster grassroots peacebuilding, but further focus should be put on a broader gender-sensitive design that takes into account conditions specific to women participants.

Our paper contributes to the literature in various ways. First, little evidence exists regarding the importance of soft skills in post-conflict contexts. Our research assesses the impact of soft-skills training on the behavior of at-risk youth by comparing the local impact in two regions (Abidjan and Bouaké) where a decade of civil conflict has been devastating. Another contribution of the paper is the novelty of the program and the way it was managed. We highlight a highly effective intervention program by the Civic Service of Action for Employment and Development, conducted by the government in partnership with community workers and military personnel. The three-month intervention did not provide participants with money which allowed us to exclude the "money motivation" effect by capturing only the impact of the life-skills training intervention. The program was implemented in close collaboration with social workers (for community outreach and vulnerability profiling), medical staff (for checkups and selection of medically fit young people), military personnel (host and mentors), and civil servants (for training in psychosocial support and coordination). Lastly, we used several measurement approaches to limit bias and provide robust estimates. We combined self-reported outcomes with vignettes and other lab-validated instruments

to measure antisocial behavior and social-preferences indicators. This set of outcomes was related to the mental health of participants which was a valuable measure of the emotional transformation of the youth.

## **II. Brief Presentation of the Civic Service of Action for Employment and Development Program**

The Civic Service of Action for Employment and Development program was established by the government and, through a well-tailored training, was designed to foster the social and economic inclusion of young people aged 16-35 who were in a situation of increased vulnerability. The Civic Service of Action for Employment and Development program went into effect in 2014 after a pilot phase covering the southern district of Abidjan (the Bimbresso and M'Bahiakro centers). Subsequently, the program was extended to several areas nationwide including Abidjan (Bimbresso) in the south, M'Bahiakro and Bouaké in the center, Odienné (Guimgreni) in the north, Gagnoa in the center-west, and Sassandra in the southwest.

To guarantee sustainable integration, the Civic Service of Action for Employment and Development program has proposed an operating model based on two essential levers: the development of social or life skills (or citizenship training) and the improvement of professional skills and abilities inspired by a military model.

The beneficiaries were young Ivorians in great social difficulty who were likely to develop antisocial behavior or extreme violence. Criteria used by the Civic Service of Action for Employment and Development include age (between 16 and 35); lack of employment; Ivorian nationality; motivation and willingness to participate voluntarily; illiteracy or school dropouts; extreme economic disadvantage (no income or living on less than one USD /day); precarious social situation (street youth, residing in very poor families or living with friends without professional activity); gang membership; use of drugs and other illegal substances; criminal record; not receiving benefits from another training or employment program; psychologically, physically, and medically fit; and



willing to carry out missions for the benefit of the Civic Service of Action for Employment and Development center of assignment and the surrounding community.

Physical and medical aptitude tests lead to the establishment of a list of suitable candidates for interviews. The final selection is made following the deliberations of the regional recruitment committee. A meeting is organized with parents and beneficiaries to provide information and practical advice. The whole process is free of charge for candidates and beneficiaries. The program is implemented through tight collaboration with social workers and NGOs in charge of identifying and profiling target youth while ensuring that a gender balance is met (at least 30% for women).

The implementation of the initiative is based on the following steps: (i) identification of the target population, (ii) profiling of candidates according to eligibility; (iii) physical and medical aptitude tests; (iv) interviews and recruitment committee deliberations for pre-selected candidates, (iv) final selection of beneficiaries, (iv) life-skills training, (v) "hard" skills training, (vi) internship, and (vii) economic inclusion.

The training center is managed by the Center Manager who is assisted by a Deputy Head of Center who is a military officer. The Deputy Head of Center is in charge of monitoring training, physical activities, work equipment, and planning of all relevant activities. The Deputy Head of Center manages the timetable and ensures the quality-control of the training. The training staff is composed of military personnel, teachers of vocational training, and youth and specialists from the private sector. In addition to the military personnel, social workers are in charge of the psychosocial supervision of the young people. They support military personnel in a joint effort to ensure successful training and integration of the trainees. Beneficiary youth receive food as well as health benefits (regular checkups in an infirmary in the center and immunization against such endemic diseases as yellow fever, meningitis, typhoid fever, tetanus, and hepatitis B.

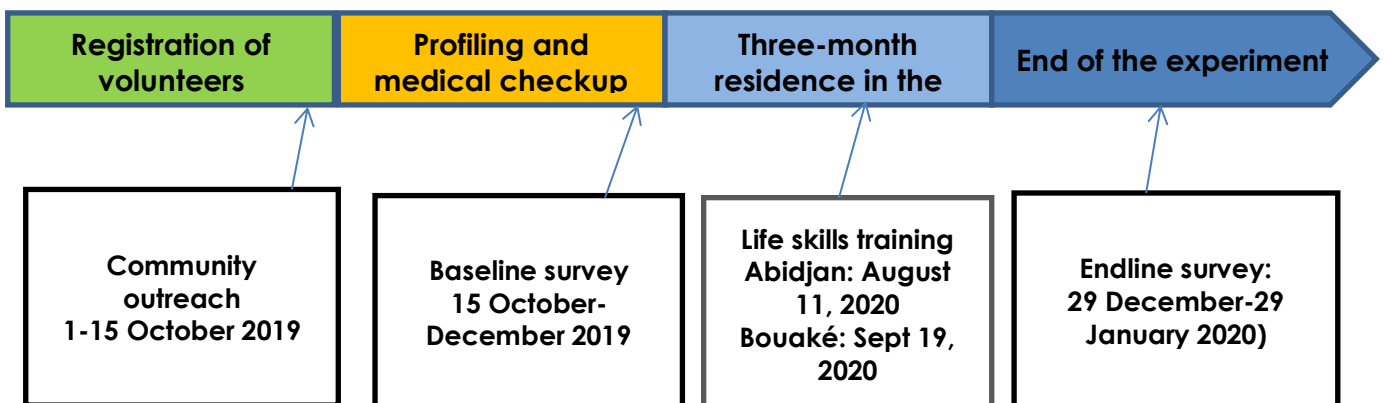
Two sets of trainings are provided in the center: soft skills and vocational. The life-skills training is provided to all participants and includes civics and citizenship education, physical education, driving lessons, training in entrepreneurship and computer skills, and first-aid knowledge. The training modules, developed by specialists, are intended to tackle the specific needs of each young participant and to

inculcate discipline and pro-social behavior—in other words, life skills that allow learners to become models for society. This phase of soft-skills training is critical for the success of the entire intervention.

Vocational training is provided by public- and private-sector instructors, chosen from promising sectors in the local labor market, with proven experience in their fields.

The socio-professional integration of learners is the ultimate goal of the Civic Service of Action for Employment and Development, which has developed a strategy for bringing participants into paid work or self-employment through a local consultation committee that includes as community leaders, economic operators, master craftsmen, and other local actors. The three-month soft-skills training was launched in Abidjan on 11 August 2020 and in Bouaké in 19 September 2020 (see Figure 1).

**Figure 1: Timeline of the Experiment**



### III. Related literature

Several papers have investigated the causal effects of soft-skills employment programs, using experimental designs to capture the causal effects of soft skills on antisocial behavior and social preferences.

Blattman, Jamison, and Sheridan (2017), through an experimental evaluation, assessed the impact of Cognitive Behavioral Therapy, an approach that focuses on

helping people assess and change the way they think and make decisions, on crime and violence in Liberia. The intervention consisted of providing therapy and cash through a lottery system. In the short term, 17% of the control group reported selling drugs and admitted to 2.6 acts of theft in the preceding two weeks. With therapy, crime rates dropped by nearly 50% in the short term, and this drop persisted for one year with both therapy and cash.

Deschenes and Esbensen (1999) investigated gender differences in perceptions of and behaviors involving gang violence. They found a significant difference between gang members and non-gang members, with a higher proportion of gang members involved in violent crime in each category (men and women). Over 90% of men and women in gangs had engaged in violent behavior. Self-esteem was more important in explaining violence for women than for men. Having prosocial peers was a greater deterrent to violence for women than for men (0.37 versus 0.31).

McClanahan et al. (2012) studied the effect of a streetworker program targeting violent youth on probation in Philadelphia. They found that youth supported by the intervention were significantly less likely to be arrested than youth in the control group. However, the small sample size did not allow the authors to measure the program's impact on the likelihood of being a victim of violent crime.

The McClanahan group's work highlighted the critical importance of context and implementation to the success of streetworker programs. In situations in which gangs are not already highly interconnected, streetworkers can increase cohesion and, therefore, violence among them. Paradoxically, the presence and visibility of streetworkers may provide opportunities for individuals to be exposed to gangs, and their actions may more clearly define conflicts in the community as gang-related (Wilson & Chermak, 2011). Intensive supervision and individualized positive support can be critical to helping at risk youth avoid violence.

Petitpas et al. (2005) presented a framework for "Sport for Development" programs that ranged from delinquency reduction to pro-social life-skills development. The framework was based on the fact that youth-development programs should help participants identify transferable skills, create opportunities to use these skills in different contexts, and provide participants with the support and resources they need

to do so. As such, “Sport for Development” programs were seen as a mechanism to prepare young adults to use pro-social skills in a variety of long-term applications.

Liu et al. (2015) conducted a systematic review and meta-analysis of the effects of physical-activity intervention on self-esteem in adolescents. Self-esteem is defined as a person’s assessment of her or his own worth (Crocker & Major, 1989). A growing literature suggests that physical activity can improve mental health (Penedo & Dahn, 2005; Hassmén, Koivula & Uutela, 2000), including depression, anxiety, low self-esteem, anger, and stress (Davis et al., 2011; Alpert et al., 1990).

One of the critical drawbacks of these findings is measurement errors associated with many outcomes of interest. Blattman et al. (2016), in “Measuring the Measurement Error,” noted that empirical analyses in the social sciences have relied heavily on self-reporting. This method may be flawed by social-desirability bias (Matteson, Anderson & Boyden, 2016). Subjects may misreport behaviors, particularly sensitive behaviors such as crime, substance abuse, and social-preference outcomes. If a treatment influences survey misreporting, it biases causal estimates.

To circumvent such a limitation, Blattman, Jamison, and Sheridan (2017) and Falk et al. (2016) developed a validated survey tool that helped to capture behavior in an incentivized experiment and was useful for assessing misreporting and for measuring preferences in a standardized way. Along the same lines, Bowen, Roberts, and Kocian (2016) introduced the concept of Social Information Processing (SIP) using vignettes. Vignettes that employ a hypothetical situation act like a stimulus (arousal) to reveal the true behavior of the individual and to limit social-desirability bias (Crick & Dodge, 1996).

Our paper takes the literature into account by addressing measurement challenges. We combined self-reported responses with validated incentivized experiment survey tools. Following (Falk et al., 2016), we used vignettes to measure social preference (risk taking, trust, altruism, positive reciprocity, and negative reciprocity).

## IV. Experimental Design, Data, and Empirical Strategy

### 4.1. Experimental Design

The implementation of the experimental design was as follows: the constitution of the eligible population (profiling), baseline data collection on the eligible population, and random assignment to treatment and control groups before data collection from the follow-up survey.

#### 4.1.1 The Profiling Approach

The overall methodology of our profiling process was in line with what had been so far implemented by the management of the Civic Service of Action for Employment and Development program. The core of the procedure is to work in close collaboration with social workers who regularly interact with communities in the impoverished neighborhoods of Abidjan and Bouaké. In their approach, social workers conduct social surveys to profile vulnerable youth and compile information for a database of eligible youth. Using their connections with community leaders, youth associations and local officials, social workers objectively assess vulnerable groups based on a set of quantitative and qualitative criteria (vulnerability criteria) previously established with stakeholders in the implementation of the project. Several social vulnerability criteria were used, including age, income, household vulnerability, education, access to food, schooling, orphanage, traumatic shocks (family abuse, displacement, etc.), life in the streets, drug consumption, violence and criminal behavior, and other socially undesirable behaviors.

Very often, due to costs and high demand, the process has not been fully publicized, and a very modest number of eligible youth have been targeted (around 200-300).

We used the same procedure, except that we publicized our call in the targeted neighborhoods on community radio, in meetings with local officials and community leaders, through distribution of flyers, etc. in order to have an adequate population for our power calculation. The community outreach was conducted from 1-15 October 2019. Using the same method and teaming up with social workers, medical staff, and

other stakeholders, we targeted 1,000 eligible young men in selected municipalities of Abidjan and 1,500 young women and men in the Gbêkê Region (Bouaké). The data-collection methodology for profiling included steps ranging from the enrollment process, providing information regarding the program, training of enumerators, and instructions for interviews to avoid misreporting and higher expectations from our population of interest. These steps were conducted separately in Abidjan and Bouaké, the two cities with Civic Service of Action for Employment and Development centers selected for this study.

#### 4.1.2 Random Assignment Procedure

In this study, assignment was done at the individual level of the young person. The use of random assignment in the impact evaluation of the Civic Service of Action for Employment and Development program helped define the beneficiary and comparison groups while ensuring, in theory, that the two groups were equivalent.

Duflo, Glennerster, and Kramer (2007), discussed the pros and cons of individual versus group randomization, indicating that, first of all, individual-level randomization may produce spillover effects. For example, non-beneficiary youth could potentially be affected by the treatment received by their treated peers either through contamination (spillover effect) or by working harder to overcome their disadvantage related to their control group status (the John Henry effect). Further, anticipation of being treated in the future could also shift the behavior of young people in the control group (Hawthorne effect). Second, group-level randomization, at the village level, for instance, may be cost-effective, allowing many vulnerable young people to take advantage of the intervention. Last, group-level randomization can reduce resentment toward the implementing partners and help ensure fairness in the treatment. Despite these limitations, Duflo, Glennerster and Kramer (2007), acknowledged that the level of assignment should be context-specific. Therefore, taking into account the limited resources devoted to the experiment and the nature of the intervention (which required living for three months in the CCAD vocational training center), both of which limited spillover effects, we opted for individual-level randomization.

We considered only one treatment arm in this research: the benefit from an internship, civic education, and soft-skills training. Under the full package, the youth received soft-skills development training as well as vocational training for a twelve months divided into three sub-periods: three months of civic education and soft-skills training, six months of vocational training, and a three-months internship. Our experiment focused on the first three-month soft-skills training. The entire intervention program was free of charge to participants who also received a small stipend to cover transportation costs.

The Bouaké Civic Service of Action for Employment and Development center hosts both women and men trainees, and we therefore conducted separate draws for men and women. The first 100 highest random numbers were assigned to the young men's treatment group, while the 200 next highest went into the treatment group. In the group of young women, the first 50 highest random numbers were allocated to the treatment group while the 100 next highest were assigned to the control group. In each city, a waiting list was maintained for potential attrition.

## **4.2. Data**

### **4.2.1. Baseline Survey**

The baseline survey took place over a period of two weeks from 4-21 March 2020 in Abidjan and from 1-15 July 2020 in Bouaké. Out of a population of 751 eligible youth identified in Abidjan from profiling, then, only 543 were surveyed, a completion rate of 72.30%. In Bouaké, profiling and baseline surveys were combined. Of the 1,024 young women and young men who participated in profiling, 916 were considered eligible for the experiment. Because the baseline survey was conducted before the assignment to treatment, the overall sampling frame for the baseline was 1,459 observations.

The questionnaire covered such items as identification and demographics, and contact information was collected for tracking purposes. This section also included a module on education and school attainment; a module on labor market outcome and

entrepreneurship; a module on health status; information regarding the assets and expenditures of the youth; a social preferences module that captured risk aversion/preferences and time management; a module that concerned traumatic events experienced in the family, community, and post-conflict contexts; questions reflecting attitudes toward gangs; a vignette module that measured social preferences and antisocial behavior; and an experiment-based survey questionnaire on soft skills. The last module focused on finance management and savings.

#### 4.2.2. Endline Survey

The endline survey was conducted after the three-month training when youth had returned to their communities of origin. The design of facilities that hosted beneficiary young people led us to conduct a sub-sampling both for young men and young women in Bouaké (mixed facility) while in Abidjan the sampling was only designed for young men (the facility was for men only). Following the assignment order on which the stakeholders agreed (top-down ranking) during the event, random assignment led to the following sample: in Abidjan (young men only) 100 in the beneficiary group and 200 in the control group, and, in Bouake, 150 in the treatment group (100 young men and 50 young women) and 300 in the control group (100 young women and 200 young men).

Another critical issue in individual-level random randomized control trial is attrition. Groh et al. (2016) and Adhvaryu, Kala, and Nyshadham (2018), in order to manage potential biases that resulted from selective attrition in their studies, adopted an approach to test and account for this potential bias. Further, following Bertrand et al. (2021), who implemented an individual level assignment in this context in Côte d'Ivoire, noticed an attrition rate of around 10%. We adjusted our sample accordingly. Anticipating the difficulty in tracking this vulnerable population, we adopted an oversampling approach by doubling the size of the sample in the control group to limit attrition bias.

The survey was implemented from 7-21 December 2020 in the Abidjan area. At the end of this data collection, the completion rate was 93.2%, with 233 interviews conducted out of 250 (i.e., 133 youth in the control group out of 150 and 100 in the beneficiary group out of 100).



The short-term survey in the Bouaké area was conducted from January 18-29, 2021. The survey of the control group included 243 youth out of 300, a completion rate of 81.82%. Regarding the beneficiary group, 144 young people were surveyed out of 150 (a completion rate of 96%). In total, 387 youth were surveyed out of a sample of 450 experimental subjects, for a completion rate of 86%.

The endline survey relied on the same questionnaire as in the baseline, but we focused only on modules related to short-term outcomes (i.e. social preferences and behavior and attitudes toward violence to account for the goal of the first three months of the internship training). To sum up, the endline survey provided 619 responses (244 out of 250 in the treatment group and 375 out of 450 in the control group) for an overall completion rate of 88.42%.

#### 4.2.3. Descriptive Statistics

We used survey data to capture aspects of the behavior of at-risk youth, including alcohol consumption, drug intake, violent behavior, altruism, trust, time management, and positive and negative reciprocity. A large spectrum of our outcomes of interest were therefore related to sensitive issues, which could have led to biased responses in response to social pressures (peer pressure, legal sanctions, fears of retaliation, etc.). To correct noise associated with these responses, Blair (2018) suggested approaches that included building trust with respondents, randomized responses, and list-experiment techniques and vignettes. We combined these approaches by measuring sensitive questions (violence, agency, etc.) using various vignettes and experiment-validated survey tools. The descriptive statistics are presented accordingly.

A decade of conflict may have exposed youth to major threats, which we captured in the conflict-exposure outcomes. Indeed, the baseline survey showed that 3.45% of the youth reported drug consumption, 13.95% reported consumption of alcoholic beverages, 8.7% said they had been victims of physical violence, and 4.6% had a criminal record.

Traumatic shocks were captured through two sets of measurement: childhood difficulties (intra-household challenges) and post-conflict stress (community interactions), both measured by self-reporting.

In terms of labor-market outcomes, 11% of the youth were unemployed and searching for a paid job, while 4.2% said they were unemployed and were looking to run a small business to address their unemployment challenges; 13.09% were employed in their families without payment. In addition to their higher unemployment rate, only 6.47% of the youth had looked for a job during the month preceding the survey.

Overall, the post-conflict traumatic indicators showed that the conflict and the immediate period afterward seemed to have negatively affected the youth in our experiment. Respondents asserted that their families or households were adversely affected by the post-electoral civil war in terms of the death of their closest relatives (father or mother) (22.8%), dislocation of their families (11.3%), parents' loss of job or income (25.56%), lack of food during the conflict (20.74%), no access to healthcare services (12.76%), and leaving school as a result of the conflict (12.19%). Further, 10.72% were internally displaced due to the war, 5.14% asserted they lived in the street, 15.98% were witnesses of violence, and 6.39% declared they had been threatened by armed groups.

**Table 1: Descriptive Statistics at Baseline**

<b>Variables</b>	<b>Proportion (%)</b>
Unemployed: searching for paid job	0.1150
Unemployed: run a small business	0.0212
Employed in paid job	0.0548
Employed: providing family support with or without a salary	0.1610
Internship (unpaid)	0.0495
Other income-generating activities	0.3522
Searched for job during the last 30 days	0.0796
Loss of social ties	0.0546
Victim of violence	0.0877
Exposure to drugs	0.0345
Exposure to crime	0.0187
Consumed alcoholic beverages	0.1395
Criminal record	0.0460
Death of parent	0.2288
Forced separation of family	0.1103
Lived in an IDP/refugee camp	0.0516
Witnessed violence during the war	0.1598
Victim of violence during the war	0.0490
Perpetrated violence during the war	0.0393
Lacked food and water during the conflict	0.2074
Dropped out of school	0.1219
Displaced due to the war	0.1072
No access to healthcare	0.1276
Wounded and disabled due to the war	0.0198
Loss of job or income	0.2556
Lived in the street for months	0.0514
Threatened by the rebellion	0.0639
Rejected by family/community	0.0348
Took responsibility for others' children	0.0598
Victim of kidnapping	0.0116
Number of observations at baseline	695

#### 4.2.4. Vulnerable Criteria Balance Test At Baseline

One goal of the baseline survey was to conduct balance t-tests between the treated and control groups, to make sure the two groups are statistically identical. Hence, we performed mean and proportion tests difference in relation to selected variables covering each section of the questionnaire.

Table 2 presents balance-test results for vulnerability criteria. No significant difference was observed between the treatment and control groups. Indeed, 32.7% of the youth were orphans (34.97% in the control group and 28.51% in the treatment group). Only 24.4% of youth lived with both parents (26.50% in the treatment group and 23.31% in the control group). In both control and treatment groups, youth came

mostly from large families with five or more siblings. The illiteracy rate was high (38%) among the targeted population. Further, though the national enrollment ratio is 91%, only 84.3% in our sample indicated they had been enrolled in school (no significant differences were noted between beneficiary and control groups, at 83.93% and 84.52%, respectively). The average years of schooling were 7.67 years, indicating that youth in both the control and treatment groups had barely completed junior secondary education. The perceived health status of the youth also indicates that they lived in harsh conditions: 14.1% among them (16.46% in the treated group and 12.78% in the control group) asserted that they felt sick during the four weeks prior to the survey. These results suggest that our sample was balanced between treated and control groups.

**Table 2: Baseline Survey—Balance Mean Test and Vulnerability Criteria (Proportion and t-Tests)**

Variables	Full sample				
	All	Treated (a)	Control (b)	Difference (a-b)	P-value
Orphan		0.2851	0.3497	-0.0646	0.0815
Lives with father only		0.1526	0.1165	0.0360	0.1751
Lives with mother only		0.2008	0.2600	-0.0592	0.0788
Lives with both parents		0.2650	0.2331	0.0318	0.3486
Lives elsewhere		0	0.0022	-0.0022	0.4546
Number of sibling	5.3467	5.2610	5.3946	-0.1335	0.5613
Number of dependent children	0.2258	0.2088	0.2354	0.0265	0.5523
Literate		0.6425	0.5986	0.0439	0.2541
Knows how to use a computer		0.6827	0.6300	0.0526	0.1629
Attends school		0.8393	0.8452	-0.0059	0.8366
Number of years of schooling	7.6735	7.8660	7.5664	0.2995	0.2100
Health status: Fragile		0.0522	0.0313	0.0208	0.1732
Health status: Normal		0.3775	0.3856	-0.0081	0.8323
Health status: Good		0.2771	0.2645	0.0125	0.7209
Health status: Excellent		0.2931	0.3139	-0.0207	0.5698
Felt sick over the previous four weeks		0.1646	0.1278	0.0368	0.1807
<b>Number of observations</b>	<b>695</b>	<b>249</b>	<b>446</b>	<b>-</b>	<b>-</b>

Implementing the same balance test on selected outcomes revealed that, overall, no significant differences existed between control and treated groups at baseline (see Appendices).

## 4.3. Empirical Strategy

### 4.3.1. The Causal Effect of the Civic Service of Action for Employment and Development Program

We investigated the causal effect of soft-skills training on social and antisocial preferences by estimating the following equation:

$$Y_i = \alpha + \beta T_i + \delta X_i + \eta_l + \varepsilon_i \quad (1)$$

where  $Y_i$  is the outcome variable of interest for the individual  $i$ , the error term  $\varepsilon_i$ ,  $T_i$  is a dummy capturing the assignment to the treatment group ( $T=1$ ) or to the control group ( $T=0$ ) and  $X_i$  is a vector of individual characteristics of the youth and  $\eta_l$  are the area fixed effects. In fact, the impact of the decade of instability may differ from these two locations: one city, Bouaké has long been governed by rebel movements with limited investments in infrastructures and social development; the other, Abidjan, has been ruled by the official government who has done its best to provide some kind of “normal life.”

Outcome variables were a set of both categorical and continuous variables. We estimated the equation using OLS to determine the average treatment effect (ATE) because there was no take-up issue. For a robustness check, we performed regressions with covariates and without covariates. No significant changes in the impact estimate were observed.

Lastly, we performed heterogeneous impact analyses by gender by running subsamples for both young women and young men (see Appendix A2 for the results for your men). The gender analysis is useful for policy purposes because, in a fragile context social and antisocial preferences may differ by gender because inherent differences in the level of vulnerability. We also estimated local relative effects for both Abidjan and Bouaké. Only regressions with covariates are presented.

### 4.3.2. Measurement of the Outcomes of Interest

#### 4.3.2.1. Measuring Violent Behavior

We measured violence by combining a set of approaches adopted in the literature. We measured exposure to antisocial behavior and to crime in a post conflict-

context as well as attitudes toward gangs and violent behavior. Information on exposure to crime was collected following Bertrand et al. (2021) in their study on the return of a youth cash-for-work program in post-conflict Côte d'Ivoire. These self-reported data were helpful to gauge criminal record of the respondent youth. Attitudes toward gangs were measured following a guideline provided by the Centers for Disease Control in the United States.

The Centers for Disease Control's compendium of assessment tools suggested by Dahlberg et al. (2005) is useful to measure violence-related attitudes, behaviors, and influence among young people. The gang items measure attitude toward gangs. Respondents were asked how true are certain statements about gangs to them. We generated a binary variable by coding "1" if the statement was true to the respondent and "0" otherwise.

Lastly, we used a set of two vignettes to measure decision-making in an anger context: attribution of hostile intentions (Dahlberg et al., 2005) and social information processing (SIP). Vignettes are standardized examples of situations that require individuals to put themselves in a particular context, allowing all respondents to experience artificially the same situation bounded by individual opportunities (Bowen, Roberts & Kocian, 2016). These vignettes capture a psychological response reflecting a stimulus (arousal) in anger management. We tested the SIP hypothesis using three vignettes that ranged from a slightly hostile hypothetical situation to a more provocative one.

These vignettes refer to the social information processing theory or SIP (Bowen, Roberts & Kocian, 2016), anger, and hostile-attribution bias. The SIP theory identifies six steps in the decision-making process of the youth subjected to that stimulus (the cognitive process). These are:

- (i) The decoding of both internal and external cues contained in the scenario (the vignette).
- (ii) The interpretation of social cues regarding the intentions of others. This interpretation may be influenced by the immediate situation or by past information accumulated in memory, which is decisive for the violent individual.

- (iii) The clarification of the goals/objectives contained in the situation (the arousal).  
Faced with these stimuli, aggressive individuals choose intrapersonal or instrumental (egocentric or antisocial) goals more than interpersonal ones (tolerance, cooperation, non-violence).
- (iv) Evaluation of possible responses from memory or construction of a new reaction in relation to the immediate situation.
- (v) Decision stage on the basis of (a) expected results, (b) degree of self-confidence, and (c) assessment of the relevance of the response.
- (vi) Behavioral implementation of the response.

The vignettes were as follows:

**Vignette 1:** *You start a conversation with a pretty girl/boy at the bar. You don't realize she's/he's with someone. Suddenly her/his boyfriend/girlfriend comes from across the room, and grabs your arm, and asks what you are doing. You've never seen this guy/girl before.*

**Vignette 2:** *You and several friends are listening to music with the volume turned up quite high. A neighbor you don't know well comes to your door and starts shouting: "Turn down your music before I get mad."*

**Vignette 3:** *You are waiting for a bus at a stop. A man you don't know comes out and parks nearby. He doesn't pay attention and hits you with his car door. You yell at the man to come back. He looks back, then ignores you and continues walking toward a store for his shopping."*

#### 4.3.2.2. Measuring Social preference

Using a refined version of the preference module suggested by Falk et al. (2016), we measured social preferences using the experimentally validated tools to measure risk aversion, time discounting, positive and negative reciprocity, and trust and altruism.. People were asked to describe themselves in term of risk taking, trust, and reciprocity using a scale of 0-10. The module included a hypothetical lottery setting to assess time discounting.

In addition, we measured the extent of altruism and positive reciprocity using two vignettes adapted from Falk et al. (2016). While Vignette 1 presented the extent of positive reciprocity, Vignette 2 revealed the scope of altruism. Answers to Vignette

1 were then disaggregated into binary indicators that described the amount of reward donated to express positive reciprocity (answers were coded 1 if respondent gave some amount of money and 0 otherwise). Vignette 2 captures the proportion of donation one is willing to make (dictator game) from an unexpected gain obtained in a lottery.

**Vignette 1 (Reciprocity):** *Think about what you would do in the following situation: You are in an area that you do not know and you realize that you are lost. You request directions from a stranger. The stranger offers to take you to your destination. Helping you get to destination costs around 15,000 F in total. However, the stranger says he or she doesn't want any money from you. You have six gifts with you. The cheapest present costs 3,000 F, the most expensive costs 20,000 F.*

**Vignette 2 (Dictator game):** *Imagine the following situation: Today, you unexpectedly received (you won the lottery) 600,000 F. How much of this amount would you give to a "good cause"? (Values between 0 and 600 000 F are allowed.)*

#### 4.3.2.3. Time Planning and Life Satisfaction

We measured daily time preference, time organization, and life satisfaction using a typical daily-activity reference. These outcomes were captured through categorical variables.



## V. Results

The results are related to several outcomes: violent behavior, social preference (altruism, patience, trust, reciprocity), time preference, time planning, and life satisfaction.

### 5.1 Impact of the Program on Violent Behavior

#### 5.1.1 Self-Reported Exposure to Crime and Attitudes toward Gangs

The program had a negative and significant impact on exposure to crime and tended to reduce the likelihood that youth would be involved in conflict situations or victimized and reduced substance consumption (drug and alcohol) and number of offenses committed (Table 9).

A discrete change from not participation in the program to participation in the program reduced the likelihood that youth would be involved in a conflict by 5.6%, be a victim of crime by 13.1%, would have a criminal record by 1.6%, and alcohol consumption by 14%. Participation also reduced the likelihood of drug consumption by 1.9% for treated youth.

**Table 9: ATE Results—Self-Reported Exposure to Crime (OLS Estimate)**

VARIABLES	(1) Loss of social ties	(2) Loss of social ties	(3) Victim of violence	(4) Victim of violence	(5) Exposure to drugs	(6) Exposure to drugs	(7) Exposure to alcohol	(8) Exposure to alcohol	(9) Criminal record	(10) Criminal record
<b>treatment</b>	<b>-0.052***</b>	<b>-0.056***</b>	<b>-0.129***</b>	<b>-0.131***</b>	<b>-0.017*</b>	<b>-0.019**</b>	<b>-0.130***</b>	<b>-0.141***</b>	<b>-0.014</b>	<b>-0.017*</b>
literate	(0.015)	(0.013) 0.010	(0.022)	(0.018) 0.027	(0.010)	(0.009) 0.001	(0.023)	(0.019) -0.013	(0.009)	(0.009) -0.008
orphan		(0.012) 0.001		(0.024) 0.027		(0.006) -0.002		(0.022) -0.016		(0.010) -0.001
Number of siblings		(0.016) 0.005*		(0.024) 0.003		(0.010) -0.000		(0.022) -0.005*		(0.009) -0.003**
Number of dependent children		(0.003) -0.009		(0.004) -0.005		(0.002) -0.002		(0.003) 0.002		(0.001) -0.006**
Dumcity: Abidjan		(0.009) 0.066***		(0.016) 0.025		(0.005) 0.032***		(0.014) 0.168***		(0.003) 0.029**
Constant	0.056***	(0.019) 0.002	0.133***	(0.026) 0.083***	0.021***	(0.012) 0.011	0.138***	(0.027) 0.122***	0.019***	(0.012) 0.033**
	(0.009)	(0.019)	(0.014)	(0.029)	(0.006)	(0.012)	(0.014)	(0.030)	(0.006)	(0.013)
Observations	618	616	618	616	618	616	618	616	618	616
R-squared	0.019	0.060	0.052	0.061	0.005	0.023	0.051	0.134	0.004	0.027

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

The results are corroborated by the attitudes of young people toward gangs (see Table 10). The program had significant effects on attitudes toward gangs. Participation in the program reduced the likelihood that a young person would have a gang member as a friend by 6.2%. Participation also reduced respondents stated likelihood of (or engaging in a gang as an active member by 3.3%. These findings are aligned with the work by Blattman, Jamison, and Sheridan (2017) who showed that transferable-skills programs tended to reduce violence in the short term.

**Table 10: ATE Results—Perceptions of and attitudes toward gangs (OLS Estimate)**

VARIABLES	(1) Gang security	(2) Gang security	(3) Join gang	(4) Join gang	(5) Friend in gang	(6) Friend in gang	(7) Gang cool	(8) Gang cool	(9) Gang good	(10) Gang good
treatment	-0.001	-0.002	-0.005	-0.005	-0.056**	-0.063***	-0.018	-0.018	0.007	-0.009
literate	(0.012)	(0.012)	(0.005)	(0.003)	(0.022)	(0.021)	(0.013)	(0.013)	(0.041)	(0.040)
orphan		-0.001 (0.011)		0.006 (0.004)		-0.000 (0.024)		0.012 (0.013)		0.088* (0.046)
Number of siblings		0.016 (0.013)		-0.004 (0.003)		0.014 (0.022)		-0.014 (0.013)		0.064 (0.041)
Number of dependent children		0.001 (0.002)		0.002 (0.002)		-0.001 (0.003)		0.001 (0.003)		0.007 (0.006)
Dumcity: Abidjan		-0.014*** (0.005)		-0.003 (0.002)		-0.027*** (0.010)		-0.006 (0.009)		-0.014 (0.033)
Constant	0.021*** (0.007)	0.011 (0.013)	0.005* (0.003)	-0.007 (0.008)	0.101*** (0.014)	0.074*** (0.026)	0.035*** (0.008)	0.027 (0.021)	0.505*** (0.026)	0.302*** (0.054)
Observations	618	616	618	616	618	616	618	616	618	616
R-squared	0.000	0.009	0.002	0.026	0.010	0.053	0.003	0.007	0.000	0.080

VARIABLES	(1) Gang danger	(2) Gang danger	(3) Gang problem	(4) Gang problem	(5) Family gang	(6) Family gang	(7) Gang member	(8) Gang member
<b>treatment</b>	0.055 (0.035)	0.035 (0.033)	0.048 (0.032)	0.033 (0.030)	<b>-0.025*</b> (0.013)	<b>-0.024**</b> (0.012)	<b>-0.032***</b> (0.011)	<b>-0.033***</b> (0.009)
literate		-0.017 (0.041)		0.062 (0.039)		0.024 (0.015)		0.003 (0.012)
orphan		0.095*** (0.033)		0.072** (0.030)		-0.021* (0.012)		-0.001 (0.011)
Number siblings		-0.007 (0.005)		-0.005 (0.005)		-0.001 (0.002)		0.002 (0.002)
Number dependent children		-0.001 (0.030)		-0.007 (0.028)		-0.001 (0.013)		-0.013*** (0.004)
Dumcity: Abidjan		0.297*** (0.032)		0.194*** (0.029)		-0.008 (0.016)		0.015 (0.014)
Constant	0.734*** (0.022)	0.643*** (0.050)	0.795*** (0.020)	0.683*** (0.049)	0.037*** (0.008)	0.037** (0.017)	0.032*** (0.007)	0.015 (0.016)
Observations	618	616	618	616	618	616	618	616
R-squared	0.004	0.129	0.004	0.089	0.005	0.014	0.013	0.023

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

### 5.1.2 Violent Behavior: Vignettes

We tested the SIP theory to capture the behavioral impact of the program using three vignettes ranging from less to more provocative. Our results (see Table 11) suggest that the program had a significant impact on hostile-attribution bias. Regardless of vignette, the program had no significant and positive impact on

respondents' likelihood to consider the act of the individual as hostile. These results suggest that non-hostile attribution bias existed. However, regarding Vignette 1, the program had a positive and significant impact on the likelihood of adopting a peaceful posture in response. Results from Vignette 1 indicate that, on average, the program increased the likelihood to diffuse provocative behavior through cooperation by 8.5%.

Regarding Vignettes 2 and 3, which were more provocative, the program had no significant impact on the likelihood of interpreting the intention as hostile. In Vignette 1, however, youth tended to be less maddened. Indeed, on average, the program tended to reduce the likelihood to respond with anger in the three vignettes by 48%, 44%, and 38%, respectively.

The findings from these vignettes seem to indicate that vulnerable youth who have developed violent behaviors in the post-conflict period may be influenced by information they have stored in their memory (Lansford et al., 2006) which, in turn, shapes their interpretations of hostile intentions.

As a result of the soft skills accumulated through the Civic Service of Action for Employment and Development program, however, young people may have adopted stances that were more non-violent (in Vignette 1) as indicated by Jackson et al. (2020), who showed that attending schools that increased self-emotional development could provide positive short-term behavioral returns such as reduced disciplinary incidents and criminal arrests.

However, results on crime and violent behavior were only reflected in the full sample (for both Abidjan and Bouaké, young men and women included). Attempts at analysis provided poor results because of our small sample and limited observations in self-reported data. Nonetheless, heterogeneity analyses were performed on the causal effect of the program on social preference and time preference.

**Table 11: Impact of the Program, Results—Violence Vignettes (Hostile Intentions ATE)**

VARIABLES	(1) v1_perceiv ed_intent_ bad	(2) v1_perc eived_in tent_bad	(3) V1_Intra personal	(4) V1_Intra personal	(5) V1_Inter personal	(6) V1_Inter personal	(7) v1_violent _reaction	(8) v1_viole nt_reacti on	(9) v1_ange r	(10) v1_ange r
treatment	-0.005 (0.031)	-0.011 (0.031)	-0.031 (0.035)	-0.028 (0.034)	0.083** (0.039)	0.093** (0.039)	0.003 (0.018)	0.000 (0.019)	-0.457** (0.204)	-0.480** (0.200)
literate		0.039 (0.037)		-0.059 (0.042)		0.031 (0.044)		0.001 (0.019)		0.190 (0.233)
orphan		-0.004 (0.031)		0.006 (0.035)		-0.065* (0.039)		0.001 (0.018)		-0.360* (0.203)
Lives elsewhere		-		-		-		-		-
Number siblings		-0.000 (0.005)		0.006 (0.006)		-0.002 (0.006)		-0.002 (0.003)		-0.020 (0.033)
Number dependen t children		-0.030 (0.027)		-0.081*** (0.025)		0.079** (0.033)		-0.014 (0.009)		-0.713*** (0.163)
Dumcity: Abidjan		0.036 (0.032)		-0.080** (0.037)		-0.055 (0.041)		0.037* (0.021)		0.127 (0.211)
Constant	0.835*** (0.019)	0.807*** (0.047)	0.242*** (0.022)	0.299*** (0.051)	0.306*** (0.024)	0.311*** (0.056)	0.051*** (0.011)	0.052** (0.025)	4.077*** (0.127)	4.344*** (0.305)
Observati ons	618	616	618	616	618	616	618	616	618	616
R-squared	0.000	0.010	0.001	0.027	0.007	0.027	0.000	0.010	0.008	0.050

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

VARIABLES	(1) v2_perce ived_inte nt_bad	(2) v2_perc eived_in tent_bad	(3) V2_Intra personal	(4) V2_Intr aperso nal	(5) V2_Inter personal	(6) V2_Inter personal	(7) v2_viole nt_reacti on	(8) v2_viole nt_reacti on	(9) v2_an ger	(10) v2_ange r
treatment	0.129 (0.259)	0.271 (0.246)	0.028 (0.020)	0.027 (0.021)	-0.041 (0.033)	-0.027 (0.032)	0.007 (0.017)	0.001 (0.017)	-0.374* (0.192)	-0.450** (0.186)
literate		0.176 (0.270)		-0.009 (0.021)		-0.026 (0.032)		0.008 (0.015)		0.060 (0.209)
orphan		-0.219 (0.252)		-0.014 (0.020)		-0.002 (0.032)		0.003 (0.017)		-0.145 (0.184)
o.lives_elsewh ere		-		-		-		-		-
number_siblin gs		-0.041 (0.039)		0.003 (0.003)		0.005 (0.005)		-0.000 (0.003)		0.014 (0.028)
number_dep endent_childr en		0.561*** (0.187)		-0.006 (0.014)		0.024 (0.019)		-0.006 (0.008)		-0.556*** (0.144)
dumcity		-2.129*** (0.258)		0.032 (0.021)		-0.210*** (0.036)		0.089*** (0.022)		1.080*** (0.200)
Constant	5.457***	6.216***	0.051***	0.037	0.822***	0.881***	0.043***	0.006	3.205** *	2.918***

	(0.162)	(0.345)	(0.012)	(0.026)	(0.020)	(0.040)	(0.011)	(0.022)	(0.120)	(0.277)
Observations	618	616	618	616	618	616	618	616	618	616
R-squared	0.000	0.130	0.003	0.009	0.003	0.081	0.000	0.047	0.006	0.092

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

VARIABLES	(1) v3_percei ved_inten t_bad	(2) v3_per ceived_ intent_ bad	(3) V3_Intra personal	(4) V3_Intra persona l	(5) V3_Inter personal	(6) V3_Inte rperson al	(7) v3_viole nt_reacti on	(8) v3_viole nt_reacti on	(9) v3_ange r	(10) v3_ang er
treatment	0.135	0.170	0.030	0.021	-0.066	-0.049	0.027	0.009	<b>-0.356*</b>	<b>-0.390*</b>
	(0.166)	(0.161)	(0.034)	(0.035)	(0.041)	(0.040)	(0.041)	(0.040)	(0.203)	(0.200)
literate		-0.127		-0.060		-0.034		0.021		0.076
		(0.152)		(0.039)		(0.046)		(0.044)		(0.239)
orphan		0.292*		-0.035		-0.052		-0.004		-0.161
		(0.160)		(0.034)		(0.040)		(0.040)		(0.202)
o.lives_elsewh ere		-		-		-		-		-
number_siblin gs		0.015		-0.002		0.006		-0.007		-0.017
		(0.025)		(0.005)		(0.006)		(0.006)		(0.033)
number_depe ndent_childre n		0.147		-0.014		0.030		-0.084***		- 0.680***
		(0.104)		(0.028)		(0.033)		(0.031)		(0.169)
dumcity		- 0.586*** (0.192)		0.166*** (0.037)		- 0.263*** (0.042)		0.248*** (0.043)		0.437** (0.205)
Constant	7.580*** (0.104)	7.649*** (0.208)	0.210*** (0.021)	0.221*** (0.050)	0.492*** (0.026)	0.586*** (0.054)	0.436*** (0.026)	0.399*** (0.055)	5.753*** (0.127)	5.891*** (0.301)
Observations	618	616	618	616	618	616	618	616	618	616
R-squared	0.001	0.034	0.001	0.038	0.004	0.085	0.001	0.084	0.005	0.049

Robust Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## 5.2 Social Preferences: Differential Gender Analysis

### 5.2.1 Risk Aversion, Time discounting, Trust, Patience, Impulsivity, and Reciprocity

The program had a positive and significant impact on preference for risk, time discounting, and life satisfaction. Participation to the program increased, on average, the time-discounting score by 35.3%. Increase in time discounting is important for the

purposes of employment policy. Intertemporal risk lovers are likely to embrace entrepreneurship which could, in return, improve their economic inclusion and effectively address youth unemployment. The program positively influenced vulnerable youth to accept some sacrifices today (training, investment, etc.) for an expected reward in the future. This is one trait typical of prospective entrepreneurs.

Further participation in the program highly increased life satisfaction, i.e. by 192 percentage points with a standard deviation of 0.19. This result seems obvious as the result of the harsh conditions in which these young people lived. In the CCAD center, the program provided shelter, food, hygiene supplies, education, and health benefits, all of which literacy improved young people's well-being.

The training also appeared to improve young women's preferences for risk. Their participation in the program increased their preference-for-risk score by 285 percentage points with a standard deviation of 0.46, which was significantly higher than the overall impact of the program. No significant impact was observed on time discounting, however; rather the program had a positive and significant effect on impatience, life dissatisfaction, and impulsivity. The program increased impatience and impulsivity (because of positive effects on patience and impulsivity for participating women) respectively by 71% and 95%. This finding is in accordance with the work of Dohmen et al. (2010), who noted that their measures of impatience increased significantly for women (corresponding to greater impatience in women than in men).

In contrast, according to Eckel and Grossman (2002, 2008), most (but not all) experimental studies have shown that women are more risk-averse than men. There is considerable heterogeneity in the literature in estimates of the association between gender and risk attitudes (see, e.g., Eckel & Grossman, 2008; and Schubert et al., 1999).

Such heterogeneity could result from different data sets, time periods, or cultural factors. Eckel and Grossman (2008) noted that field and laboratory experiments generally failed to control for knowledge, wealth, marital status, and other demographic factors that might bias gender differences in risk choices.

Thus, given Eckel and Grossman's analysis (2002), our results could be explained by the fact that many of our young women respondents were mothers.

Indeed, 45.77% of the single young women in our sample reported being mothers of one to three children. Entry into the center required them to make the choice to be separated from their communities, children, and families. In addition, when they entered the center, both young women and men were confronted with the same rules regarding hair styles, uniforms, and equipment. Young women may not have appreciated these rules, which required them to change their physical appearance and conform to a style of dress in order to attend the training. Impatience, however, did not mean that they did not enjoy the training; rather, it may have demonstrated that they were eager to finish the training so they could see their children and families again.

In addition, unlike previous results related to the full sample, the program had a significant and negative effect on young women by increasing their impulsivity by ninety percentage points. At the same time, young women seemed unwilling to punish someone who had treated them unfairly, even though the behavior may have involved a cost to them. This shows that, generally speaking, they were unwilling to engage in negative reciprocity by inflicting costly punishment on those who had hurt them (Lane, 2017).

Furthermore, although no significant effects were found on altruism (i.e., in the full sample), there was a positive causal effect of the program on the altruistic behavior of vulnerable young women. The program, on average increased altruism of young women by 44.3 percent point with 0.22 standard deviation. Some experimental studies have also shown that women are, on average, more altruistic than men (Bolton & Katok, 1995; Eckel & Grossman, 1998); Andreoni & Vesterlund, 2001); Rand et al. (2016), through a meta-analysis of twenty-two studies, suggested that women have internalized altruism as a spontaneous response.

The program caused a positive effect on positive reciprocity of young women by seventy-three percentage points at a standard deviation of 0.15. This finding is in accordance with the work of Eckel and Grossman (2008), who pointed out that non-cognitive skills mattered in communities where women were at a social disadvantage.



**Table 12: Results—Social Preferences, OLS Regression  
(Heterogeneous Gender Analysis)**

VARIABLES	(1) Pref risk	(2) Pref risk	(3) Time discounting	(4) Time discounting	(5) Reciprocity revenge	(6) Reciprocity revenge	(7) Protect others	(8) Protect others	(9) Free donation	(10) Free donation
Treatment	<b>0.396*</b> (0.229)	0.304 (0.215)	<b>0.357*</b> (0.194)	<b>0.334*</b> (0.190)	-0.059 (0.183)	-0.080 (0.184)	0.128 (0.216)	0.082 (0.212)	0.048 (0.136)	0.021 (0.133)
Literate		0.766*** (0.256)		0.076 (0.226)		0.333* (0.200)		0.859*** (0.226)		0.119 (0.157)
Orphan		0.494** (0.219)		-0.282 (0.203)		-0.139 (0.184)		-0.375* (0.208)		0.225* (0.131)
Lives elsewhere		-		-		-		-		-
Number siblings		0.074** (0.034)		0.007 (0.031)		-0.003 (0.027)		-0.009 (0.031)		-0.020 (0.019)
Number dependent children		-0.433** (0.173)		0.027 (0.179)		-0.164 (0.143)		-0.016 (0.149)		0.269*** (0.087)
Dumcity: Abidjan		1.375*** (0.219)		0.254 (0.201)		0.407** (0.203)		0.899*** (0.236)		0.457*** (0.138)
Constant	5.013*** (0.143)	3.528*** (0.317)	6.040*** (0.121)	5.951*** (0.292)	2.737*** (0.115)	2.468*** (0.250)	3.372*** (0.135)	2.626*** (0.288)	7.572*** (0.085)	7.276*** (0.193)
<b>Observations</b>	<b>618</b>	<b>616</b>	<b>618</b>	<b>616</b>	<b>618</b>	<b>616</b>	<b>618</b>	<b>616</b>	<b>618</b>	<b>616</b>
<b>R-squared</b>	<b>0.005</b>	<b>0.128</b>	<b>0.005</b>	<b>0.012</b>	<b>0.000</b>	<b>0.021</b>	<b>0.001</b>	<b>0.070</b>	<b>0.000</b>	<b>0.033</b>

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

VARIABLES	(1) Reciprocity: donation	(2) Reciprocity: donation	(3) Preference: revenge general	(4) Preference revenge general	(5) Trust others	(6) Trust others
treatment	0.127 (0.111)	0.095 (0.108)	-0.213 (0.184)	-0.246 (0.189)	0.020 (0.176)	0.031 (0.179)
literate		-0.043 (0.125)		-0.118 (0.208)		-0.513** (0.200)
orphan		0.289*** (0.105)		-0.081 (0.189)		-0.013 (0.183)
Lives elsewhere		-		-		-
Number siblings		-0.019 (0.016)		0.017 (0.030)		0.006 (0.027)
Number dependent children		0.151* (0.077)		-0.418*** (0.129)		0.112 (0.134)
Dumcity: Abidjan		0.474*** (0.116)		0.380* (0.203)		0.096 (0.188)
Constant	7.931*** (0.070)	7.748*** (0.152)	2.301*** (0.115)	2.314*** (0.269)	4.707*** (0.110)	4.974*** (0.252)
<b>Observations</b>	<b>618</b>	<b>616</b>	<b>617</b>	<b>615</b>	<b>618</b>	<b>616</b>
<b>R-squared</b>	<b>0.002</b>	<b>0.045</b>	<b>0.002</b>	<b>0.024</b>	<b>0.000</b>	<b>0.012</b>

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 12: Results—Social Preferences (OLS estimates, continued)**

VARIABLES	(1) patience	(2) patience	(3) impulsivity	(4) impulsivity	(5) Life satisfaction	(6) Life satisfaction
treatment	0.047 (0.166)	0.045 (0.169)	0.030 (0.203)	0.026 (0.206)	<b>1.937***</b> <b>(0.195)</b>	<b>1.945***</b> <b>(0.195)</b>
literate		0.074 (0.181)		-0.102 (0.238)		0.015 (0.220)
orphan		0.107 (0.166)		-0.084 (0.206)		-0.151 (0.200)
Lives elsewhere		-		-		-
Number siblings		0.004 (0.025)		-0.014 (0.033)		-0.012 (0.030)
Number dependent children		0.402*** (0.123)		-0.271* (0.161)		0.228 (0.162)
Dumcity: Abidjan		0.284 (0.182)		0.069 (0.221)		0.328 (0.216)
Constant	6.742*** (0.104)	6.420*** (0.224)	3.404*** (0.127)	3.634*** (0.299)	3.931*** (0.122)	3.857*** (0.268)
<b>Observations</b>	<b>618</b>	<b>616</b>	<b>618</b>	<b>616</b>	<b>618</b>	<b>616</b>
R-squared	0.000	0.018	0.000	0.006	0.138	0.147

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 12: Results—Social Preferences (OLS Estimates, Subsample of Young Women) (end)**

VARIABLES	(1) patience	(2) patience	(3) impulsivity	(4) impulsivity	(5) life_satisfaction	(6) life_satisfaction
<b>treatment</b>	<b>-0.678**</b> (0.317)	<b>-0.707**</b> (0.353)	<b>0.901*</b> (0.497)	<b>0.867</b> (0.538)	<b>-0.719*</b> (0.431)	-0.687 (0.418)
literate		0.310 (0.295)		0.348 (0.493)		1.195*** (0.412)
orphan		0.289 (0.306)		0.390 (0.541)		0.508 (0.487)
o.lives_elsewhere		-		-		-
number_siblings		0.127** (0.053)		-0.007 (0.094)		0.013 (0.087)
number_dependent_children		0.174 (0.165)		-0.289 (0.247)		0.290 (0.232)
Dumcity		-		-		-
Constant	7.612*** (0.192)	6.622*** (0.431)	2.513*** (0.300)	2.430*** (0.643)	4.763*** (0.260)	3.675*** (0.639)
Observations	126	124	126	124	126	124
R-squared	0.036	0.093	0.026	0.044	0.022	0.101

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. ‡Covariates: literacy, orphan, live in the street, number of siblings, and number of dependent children.

## 5.2.2 Extent of Altruism and Positive Reciprocity

We noted a positive and significant impact on the likelihood to reward a good deed (Table 13). On average, the program increased the likelihood of positive

reciprocity by 3.7% with a standard deviation of 0.019. The extent of the reward also mattered, indicating a higher level of positive reciprocity.

The same trend was observed for young women participants, whose likelihood of giving the most valuable gift increased by 15%, indicating an important level of positive attributes. Attending training at the center thus had a positive effect on young women’s positive reciprocity and increased their willingness to give gifts of higher value (Bolton & Katok, 1995).

**Table 13: Altruism and Positive Reciprocity—OLS Estimate**

VARIABLES	(1) altruism	(2) altruism	(3) value_gi ft_3000F	(4) value_gift_ 3000F	(5) value_g ift_5000 F	(6) value_gift_5 000F	(7) value_gift_ 10000F	(8) value_gift_ 10000F
treatment	<b>0.037*</b> (0.021)	<b>0.036*</b> (0.020)	-0.008 (0.023)	-0.004 (0.023)	-0.007 (0.026)	-0.003 (0.026)	0.002 (0.028)	-0.003 (0.028)
literate		-0.017 (0.022)		0.019 (0.027)		0.014 (0.029)		-0.025 (0.032)
orphan		0.021 (0.020)		0.013 (0.024)		-0.026 (0.025)		0.018 (0.029)
Lives elsewhere		-		-		-		-
Number siblings		0.001 (0.003)		0.004 (0.004)		0.001 (0.005)		-0.005 (0.004)
Number dependent children		0.030** (0.012)		-0.011 (0.019)		0.010 (0.024)		-0.012 (0.021)
Dumcity: Abidjan		0.029 (0.021)		-0.066*** (0.024)		0.001 (0.028)		0.002 (0.029)
Constant	0.918*** (0.013)	0.896*** (0.031)	0.090*** (0.015)	0.077** (0.034)	0.114*** (0.016)	0.103*** (0.038)	0.130*** (0.017)	0.173*** (0.039)
Observations	618	616	618	616	618	616	618	616
R-squared	0.005	0.015	0.000	0.014	0.000	0.003	0.000	0.004

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 13: Altruism and Positive Reciprocity—OLS Estimate (continued)**

VARIABLES	(1) value_gi ft_15000 F	(2) value_gift_ 15000F	(3) value_gi ft_18000 F	(4) value_gi ft_18000 F	(5) value_gif t_20000F	(6) value_ gift_20 000F	(7) Reciprocity gift_reward	(8) reciprocity_gift_ reward
treatment	0.011 (0.037)	0.019 (0.037)	-0.016 (0.030)	-0.023 (0.030)	<b>0.055*</b> <b>(0.031)</b>	0.050 (0.031)	6,562.081 (10,470.047)	6,100.288 (10,465.248)
literate		-0.026 (0.045)		0.016 (0.031)		-0.016 (0.034)		12,865.153 (12,870.735)
orphan		0.037 (0.038)		-0.059** (0.030)		0.039 (0.032)		-374.734 (10,361.204)
o.lives_elsewhere		-		-		-		-
number_siblings		0.000 (0.006)		-0.005 (0.005)		0.006 (0.005)		-86.521 (1,599.352)
number_dependent_children		0.034 (0.032)		0.026 (0.024)		-0.016 (0.022)		38,972.339*** (9,444.402)
dumcity		-0.112*** (0.039)		0.134*** (0.034)		0.069** (0.033)		24,577.871** (10,140.131)
Constant	0.274*** (0.023)	0.308*** (0.051)	0.165*** (0.019)	0.146*** (0.042)	0.144*** (0.019)	0.089** (0.045)	195,906.669* (6,540.586)	167,964.088*** (15,407.618)
Observations	618	616	618	616	618	616	615	613
R-squared	0.000	0.023	0.000	0.040	0.005	0.019	0.001	0.041

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 13: Altruism and Positive Reciprocity—OLS Estimate  
(Young Women Subsample, continued)**

VARIABLES	(1) altruism	(2) altruism	(3) value_gift_ _3000F	(4) value_gift_ 3000F	(5) value_gift_ 5000F	(6) value_gift_50 00F	(7) value_gift_ 10000F	(8) value_gift_ 10000F
treatment	0.016 (0.033)	0.012 (0.031)	-0.038 (0.028)	-0.032 (0.019)	<b>-0.116**</b> <b>(0.054)</b>	<b>-0.100**</b> <b>(0.046)</b>	-0.026 (0.073)	-0.033 (0.072)
literate		0.001 (0.028)		0.020 (0.030)		0.042 (0.052)		-0.075 (0.071)
orphan		-0.013 (0.028)		0.024 (0.030)		0.003 (0.057)		-0.129* (0.071)
Lives elsewhere		-		-		-		-
Number siblings		0.003 (0.008)		-0.004 (0.004)		0.001 (0.010)		-0.001 (0.010)
Number dependent children		-0.014 (0.016)		0.033 (0.030)		0.033 (0.039)		0.022 (0.044)
Dumcity: Abidjan		-		-		-		-
Constant	0.963*** (0.020)	0.964*** (0.043)	0.038** (0.017)	0.011 (0.030)	0.138*** (0.032)	0.072 (0.086)	0.200*** (0.044)	0.276*** (0.097)
Observations	126	124	126	124	126	124	126	124
R-squared	0.002	0.009	0.014	0.060	0.036	0.046	0.001	0.038

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 13: Altruism and Positive Reciprocity— Subsample of Young Women  
(OLS Estimates, end)**

VARIABLES	(1) value_gif _15000F	(2) value_gif _15000F	(3) value_gif _18000F	(4) value_gif _18000F	(5) value_gif _20000F	(6) value_gif t_20000F	(7) reciprocity_gif_re ward	(8) reciprocity_gif t_reward
treatment	0.091 (0.088)	0.092 (0.091)	-0.057 (0.069)	-0.080 (0.071)	0.161** (0.067)	0.165** (0.078)	-42,361.111 (26,924.144)	-34,173.864 (27,313.746)
literate		-0.040 (0.087)		-0.014 (0.068)		0.068 (0.065)		37,180.857 (26,046.216)
orphan		0.102 (0.094)		0.039 (0.076)		-0.052 (0.072)		-37,326.807 (27,118.775)
o.lives_elsewhere		-		-		-		-
number_siblings		-0.008 (0.015)		0.014 (0.015)		0.001 (0.013)		1,186.102 (4,429.470)
number_dependent_children		-0.025 (0.051)		-0.079** (0.033)		0.002 (0.037)		42,254.032*** (15,127.930)
o.dumcity		-		-		-		-
Constant	0.300*** (0.053)	0.348*** (0.115)	0.187*** (0.042)	0.178* (0.101)	0.100** (0.040)	0.080 (0.083)	255,250.000*** (16,154.486)	213,449.631*** (38,037.931)
Observations	126	124	126	124	126	124	125	123
R-squared	0.009	0.030	0.005	0.041	0.045	0.061	0.020	0.109

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses.

## 5.3 Daily Organization and Life Satisfaction

### 5.3.1 Daily Life Satisfaction

We measured daily time preference, time organization, and life satisfaction using a typical daily-activity reference. On average, the program had a positive and significant impact on daily life satisfaction in terms of happiness, pride, and reduction of anger. Youth tended to thrive in the center because they could develop better interpersonal skills and build helpful social capital (see Tables 14 and 15).

This trend was also observed when gender was taken into consideration. The program had an effect on young women’s happiness and sense of pride throughout the day. In their work on adolescents’ daily routines, Fogel et al. (2021) showed that high overall life satisfaction was associated with greater adjustment among facets of academic and intrapersonal functioning, and Roe and Aspinall (2012), through their study of adolescents’ daily activities, indicated that the most significant (important)

activities were interpersonal and educational projects while the least significant were leisure and sports/health projects.

**Table 14: Daily Life Satisfaction—ATE (Happiness during the Day)**

VARIABLES	(1) happy_m orning	(2) happy_m orning	(3) happy_affe rnoon	(4) happy_affe rnoon	(5) happy_e vening	(6) happy_e vening	(7) happy_ night	(8) happy_ night
treatment	0.082** (0.036)	0.071** (0.034)	0.030 (0.036)	0.015 (0.034)	0.058* (0.033)	0.045 (0.031)	0.059 (0.041)	0.041 (0.040)
literate		0.048 (0.043)		0.084** (0.042)		0.074* (0.040)		0.047 (0.046)
orphan		0.027 (0.035)		-0.002 (0.035)		0.009 (0.031)		0.054 (0.040)
o.lives_elsewhere		-		-		-		-
number_siblings		-0.005 (0.006)		-0.006 (0.006)		-0.012** (0.005)		-0.003 (0.007)
number_dependent_children		0.047 (0.029)		0.003 (0.031)		0.032 (0.026)		-0.049 (0.033)
dumcity		0.207*** (0.036)		0.249*** (0.033)		0.225*** (0.029)		0.259*** (0.043)
Constant	0.707*** (0.023)	0.607*** (0.053)	0.734*** (0.022)	0.620*** (0.052)	0.777*** (0.021)	0.701*** (0.048)	0.457*** (0.026)	0.341*** (0.058)
Observations	618	616	618	616	618	616	618	616
R-squared	0.008	0.071	0.001	0.102	0.005	0.107	0.003	0.088

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses.

**Anger during the Day (continued)**

VARIABLES	(1) anger_m orning	(2) anger_m orning	(3) anger_affe rnoon	(4) anger_affe rnoon	(5) anger_ev ening	(6) anger_ev ening	(7) anger_ night	(8) anger_ night
treatment	<b>-0.018</b> <b>(0.021)</b>	<b>-0.016</b> <b>(0.021)</b>	<b>-0.028*</b> <b>(0.017)</b>	<b>-0.028*</b> <b>(0.015)</b>	<b>-0.042**</b> <b>(0.018)</b>	<b>-0.040**</b> <b>(0.016)</b>	<b>-0.004</b> <b>(0.007)</b>	<b>-0.004</b> <b>(0.006)</b>
literate		0.040 (0.025)		-0.019 (0.021)		-0.015 (0.022)		-0.010 (0.011)
orphan		0.014 (0.022)		0.003 (0.017)		0.006 (0.019)		-0.003 (0.007)
o.lives_elsewhere		-		-		-		-
number_siblings		-0.000 (0.003)		-0.004 (0.003)		-0.003 (0.002)		0.001 (0.001)
number_dependent_children		-0.007 (0.018)		-0.012 (0.013)		-0.018 (0.014)		-0.005* (0.003)
dumcity		-0.040* (0.024)		-0.016 (0.017)		-0.044*** (0.017)		0.006 (0.009)
Constant	0.080*** (0.013)	0.064** (0.030)	0.053*** (0.010)	0.098*** (0.027)	0.066*** (0.011)	0.114*** (0.032)	0.008* (0.004)	0.009 (0.010)
Observations	618	616	618	616	618	616	618	616
R-squared	0.001	0.009	0.005	0.014	0.009	0.024	0.001	0.008

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses.

**Pride during the Day (end)**

VARIABLES	(1) pride_morning	(2) pride_morning	(3) pride_afternoon	(4) pride_afternoon	(5) pride_evening	(6) pride_evening	(7) pride_night	(8) pride_night
<b>treatment</b>	<b>0.131***</b> (0.038)	<b>0.120***</b> (0.036)	<b>0.054</b> (0.038)	<b>0.040</b> (0.036)	<b>0.079**</b> (0.036)	<b>0.068*</b> (0.035)	<b>0.089**</b> (0.041)	<b>0.072*</b> (0.039)
literate		0.089** (0.044)		0.137*** (0.045)		0.057 (0.043)		0.064 (0.045)
orphan		0.037 (0.036)		0.026 (0.037)		0.051 (0.035)		0.051 (0.040)
o.lives_elsewhere		-		-		-		-
number_siblings		-0.009 (0.006)		-0.007 (0.006)		-0.010* (0.006)		-0.002 (0.007)
number_dependent_children		0.076*** (0.028)		0.006 (0.033)		0.045 (0.027)		-0.000 (0.034)
dumcity		0.190*** (0.038)		0.220*** (0.037)		0.178*** (0.036)		0.264** (0.043)
Constant	0.646*** (0.023)	0.528*** (0.054)	0.673*** (0.024)	0.524*** (0.054)	0.702*** (0.023)	0.623*** (0.052)	0.407** (0.026)	0.261** (0.056)
Observations	618	616	618	616	618	616	618	616
R-squared	0.019	0.084	0.003	0.095	0.008	0.064	0.008	0.090

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses.

**Table 14: Results—Daily Life Satisfaction, Subsample of Young Women (ATE)  
(Happiness during the Day)**

VARIABLES	(1) happy_morning	(2) happy_morning	(3) happy_afternoon	(4) happy_afternoon	(5) happy_evening	(6) happy_evening	(7) happy_night	(8) happy_night
treatment	0.145* (0.085)	0.159* (0.084)	-0.038 (0.091)	-0.041 (0.095)	-0.008 (0.084)	0.002 (0.086)	0.245*** (0.073)	0.259*** (0.080)
literate		0.187** (0.082)		0.235*** (0.087)		0.254*** (0.079)		-0.084 (0.070)
orphan		0.011 (0.087)		0.005 (0.097)		-0.004 (0.089)		-0.115 (0.070)
o.lives_elsewhere		-		-		-		-
number_siblings		-0.008 (0.017)		-0.018 (0.017)		-0.015 (0.017)		-0.022 (0.014)
number_dependent_children		0.041 (0.053)		-0.039 (0.056)		0.025 (0.048)		-0.058* (0.035)
o.dumcity		-		-		-		-
Constant	0.638*** (0.052)	0.554*** (0.116)	0.625*** (0.055)	0.628*** (0.125)	0.725*** (0.050)	0.655*** (0.121)	0.125*** (0.044)	0.364*** (0.102)
Observations	126	124	126	124	126	124	126	124
R-squared	0.023	0.072	0.001	0.073	0.000	0.086	0.082	0.144

Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

### Anger during the Day, Sub-Sample of Young Women (ATE, continued)

VARIABLES	(1) anger_m orning	(2) anger_m orning	(3) anger_afte rnoon	(4) anger_afte rnoon	(5) anger_ev ening	(6) anger_ev ening	(7) anger_ night	(8) anger_ night
treatment	0.065** (0.028)	0.073* (0.040)	0.000 (0.000)	0.000 (0.000)	0.009 (0.023)	0.016 (0.029)	0.000 (0.000)	0.000 (0.000)
literate		0.043* (0.024)		0.000 (0.000)		0.001 (0.024)		0.000 (0.000)
orphan		-0.043* (0.024)		0.000 (0.000)		-0.001 (0.030)		0.000 (0.000)
o.lives_elsewhere		-		-		-		-
number_siblings		-0.000 (0.002)		0.000 (0.000)		-0.005 (0.004)		0.000 (0.000)
number_dependent_children		0.030 (0.024)		0.000 (0.000)		0.022 (0.017)		0.000 (0.000)
o.dumcity		-		-		-		-
Constant	0.000 (0.017)	-0.030 (0.027)	0.000 (0.000)	0.000 (0.000)	0.013 (0.014)	0.020 (0.035)	0.000 (0.000)	0.000 (0.000)
Observations	126	124	126	124	126	124	126	124
R-squared	0.042	0.104			0.001	0.030		

Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

### \* Pride during the Day, Subsample of Young Women (ATE, end)

VARIABLES	(1) pride_mo rning	(2) pride_mo rning	(3) pride_after noon	(4) pride_after noon	(5) pride_ev ening	(6) pride_ev ening	(7) pride_n ight	(8) pride_n ight
treatment	0.195** (0.087)	0.218** (0.085)	0.037 (0.092)	0.037 (0.096)	0.080 (0.088)	0.095 (0.089)	0.158** (0.071)	0.176** (0.075)
literate		0.195** (0.082)		0.206** (0.089)		0.176** (0.085)		-0.139** (0.069)
orphan		0.057 (0.087)		0.009 (0.099)		-0.025 (0.095)		-0.058 (0.070)
o.lives_elsewhere		-		-		-		-
number_siblings		-0.007 (0.017)		-0.017 (0.017)		-0.014 (0.017)		-0.017 (0.014)
number_dependent_children		0.100** (0.048)		-0.033 (0.057)		0.028 (0.051)		-0.011 (0.041)
o.dumcity		-		-		-		-
Constant	0.588*** (0.052)	0.428*** (0.115)	0.550*** (0.056)	0.554*** (0.125)	0.638*** (0.053)	0.608*** (0.125)	0.125** (0.043)	0.309** (0.102)
Observations	126	124	126	124	126	124	126	124
R-squared	0.039	0.118	0.001	0.056	0.007	0.048	0.039	0.090

Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## 5.3.2 Daily Organization and Planning

Overall, there was a positive and significant impact of the program on youth daily activities planning (from morning to evening), even though there is no significant gender difference. This is an important finding for policy implication because this was



one of the expected outcome of the program. Efficacy in time management is key for prospective job seekers and entrepreneurs.

It should be noted thank to the military-style of the program, the daily activities are well planned and youth are advised and motivated to adhere to the schedule set during the day in the center. Young women and men are fully involved in organizing those activities at each moment of the day. Thus, the training has a real influence on the planning of youth activities in the center.

These results appear to corroborate the idea that, when students engage in activities (e.g., learning), they are affected by personal influences (such as goals and cognitive processing) as well as situational influences (such as instruction and feedback). Self-efficacy and personal growth are enhanced when youth overcome challenges and achieve their goals. Adolescents' resilience and sense of self-efficacy in overcoming challenges will serve them well during adolescence and beyond. Self-efficacy has thus been considered a major resource that facilitates adolescents' adjustment and affects their life satisfaction during the transition to adulthood.

**Table 15: Results—Time Management (ATE)**

VARIABLES	(1) early_ morning	(2) early_ morning	(3) noon	(4) noon	(5) afternoon	(6) afternoon	(7) evening	(8) evening	(9) night	(10) night
<b>Treatment</b>	<b>0.172***</b> (0.030)	<b>0.166***</b> (0.027)	<b>0.248***</b> (0.034)	<b>0.244***</b> (0.031)	<b>0.240***</b> (0.034)	<b>0.239***</b> (0.031)	<b>0.370***</b> (0.033)	<b>0.365***</b> (0.028)	<b>0.314***</b> (0.032)	<b>0.310***</b> (0.027)
literate		0.078** (0.037)		0.022 (0.039)		0.037 (0.038)		0.016 (0.038)		0.068* (0.037)
orphan		0.002 (0.030)		-0.002 (0.035)		-0.016 (0.035)		-0.025 (0.033)		-0.010 (0.032)
o.lives_elsewhere		-		-		-		-		-
number_siblings		0.004 (0.004)		0.003 (0.005)		0.001 (0.006)		-0.001 (0.005)		-0.007 (0.005)
number_dependent _children		-0.019 (0.027)		-0.025 (0.030)		-0.010 (0.028)		0.042 (0.026)		-0.028 (0.028)
dumcity		0.037 (0.031)		0.016 (0.036)		-0.027 (0.036)		0.080** (0.034)		0.011 (0.033)
Constant	0.766*** (0.019)	0.682*** (0.047)	0.657*** (0.021)	0.627*** (0.052)	0.665*** (0.021)	0.651*** (0.051)	0.601*** (0.020)	0.567*** (0.048)	0.657*** (0.020)	0.653*** (0.048)
Observations	618	616	618	616	618	616	618	616	618	616
R-squared	0.051	0.067	0.079	0.081	0.075	0.076	0.172	0.182	0.137	0.147

\*Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses.

## VI. Conclusion and Policy Implications

Côte d'Ivoire witnessed a decade of instability that hindered economic and social development. In the aftermath of the conflict, the pattern of economic recovery was sustained but benefit vulnerable populations little, including at risk-youth. To accelerate the socioeconomic inclusion of these categories, the government launched a tailored employment program that combined both soft-skills and hard-skills training under military-style mentoring. Our research investigated the impact of such a program. We used a randomized experiment implemented in Abidjan and Bouaké, two cities that have suffered the most from the period of turmoil, to assess the causal effects of the program on non-cognitive skills. Non cognitive skills, also known as soft or transferable skills, are important in a fragile context because they contribute to positive personal attributes that are valuable in creating better returns to labor markets outcomes.

Further, we used a set of measurements that combined self-reporting with vignettes and other experimentally validated survey tools. The research also implemented heterogeneity analyses by assessing differential gender bias and local variations across the two areas of the experiment. We showed that the program contributed to the reduction of violence and improved socially desirable behavior in risk preferences, positive reciprocity, and organization. We also found a significant differential gender bias. The program had negative and significant effects on life satisfaction, patience, and impulsivity, however. Because most eligible young women had at least one child from whom they were forced to separate in order to participate in the program, the program clearly did not integrate a gender-sensitive dimension into its design. For instance, including childcare services in the center or allowing women to receive the visits from their children could improve their life satisfaction in the center. Future designs need to take the gender dimension into account.

## References

- Adhvaryu, A., Kala, N., and Nyshadham, A. (2018). The Skills to Pay the Bills: Returns to On-The-Job Soft Skills Training. National Bureau of Economic Research (NBER) Working Paper 24313, DOI 10.3386/w24313.
- Adoho, F., Chakravarty, S., Korkoyah, D. T., Lundberg, M. K. A., and Tasneem, A. (2014). The Impact of an Adolescent Girls Employment Program: The EPAG Project in Liberia. World Bank Policy Research Working Paper No. 6832. The World Bank Africa Region Poverty Reduction and Economic Management Unit & Human Development Network Social Protection and Labor Unit.
- Alpert, B., Field, T., Goldstein, S., and Perry, S. (1990). Aerobics Enhances Cardiovascular Fitness and Agility in Preschoolers. *Health Psychology, 9*, 48-57.
- Andreoni, J. and Vesterlund, L. (2001). Which Is the Fair Sex? Gender Differences in Altruism. *The Quarterly Journal of Economics, 116*, 293-312.
- Bertrand, M., Crépon, B., Marguerie, A., and Premand, P. (2021). Do Workfare Programs Live Up to Their Promises? Experimental Evidence from Cote D'Ivoire; National Bureau of Economic Research Working Paper 28664. Cambridge, MA: NBER. Available at <https://www.nber.org/papers/w28664>.
- Blair, R. A. (2018). Legitimacy After Violence: Evidence from Two Lab-in-the-Field Experiments in Liberia. Unpublished manuscript. SSRN.com. Available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2326671](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2326671).
- Blattman, C., Jamison, J. C., and Sheridan, M. (2017). Reducing Crime and Violence: Experimental Evidence from Cognitive Behavioral Therapy in Liberia. *American Economic Review, 107*(4), 1165-1206.
- Blattman, C., Jamison, B.J., Koroknay-Palicz, T., Rodrigues, K., and Sheridan, M. (2016). Measuring the Measurement Error: A Method to Qualitatively Validate Survey Data. *Journal of Development Economics, 120*, 99-112.
- Bolton, G. E. and Katok, E. (1995). An Experimental Test for Gender Differences in Beneficent Behavior. *Economics Letters, 48*(3), 287-292.
- Bowen, K. N., Roberts, J. J., and Kocian, E. J. (2016). Decision Making of Inmates: Testing Social Information Processing Concepts Using Vignettes. *Applied Psychology in Criminal Justice, 12*(1), 1-17.
- Brown, A. N., Rankin, K., Picon, M., and Cameron, D. (2015). The State of Evidence on the Impact of Transferable Skills Programming on Youth in Low- and Middle-Income Countries. International Initiative for Impact Evaluation Scoping Paper 4. New Delhi, London, and Washington, DC: 3ie. Available at DOI: 10.13140/RG.2.1.2539.9522.
- Catalano, R. F., Sexton, M. L. M. Skinner, A.G., Olenik, C., Petroni, S., Kapungu, C., Reavley, N., and Patton, G. C. (2019). Positive Youth-Development Programs in Low- and Middle-Income Countries: A Conceptual Framework and Systematic Review of Efficacy. *Journal of Adolescent Health, 65*(1), 15-31.

- Crick, N. R. and Dodge, K. A. (1996). Social Information-Processing Mechanisms in Reactive and Proactive Aggression. *Child Development*, 67, 993-1002.
- Crocker, J. and Major, B. (1989). Social Stigma and Self-Esteem: The Self-Protective Properties of Stigma. *Psychological Review*, 96, 608-630.
- Dahlberg, L. L, Toal, S. B., Swahn, M., and Behrens, C.B. (2005). *Measuring Violence-Related Attitudes, Behaviors, and Influences Among Youths: A Compendium of Assessment Tools*, 2nd ed. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.
- Davis, C.L., Tomporowski, P.D., McDowell, J.E., Austin, B.P., Miller, P.H., Yanasak, N.E., Allison, J.D., and Naglieri, J.A. (2011). Exercise Improves Executive Function and Achievement and Alters Brain Activation in Overweight Children. A Randomized, Controlled Trial. *Health Psychology*, 30(1), 91-98
- Deschenes, E. P. and Esbensen, F.A. (1999). Violence and Gangs: Gender Differences in Perceptions and Behavior. (*Journal of Quantitative Criminology* 15, 63-96..
- Dohmen, T. J., Falk, A., Huffman, D., and Sunde, U. (2010). Are Risk Aversion and Impatience Related to Cognitive Ability? *American Economic Review*, 3, 1238-1260.
- Duflo, E., Glennerster, R., and Kremer, M. (2007). Using Randomization in Development Economics Research: A Toolkit. In T. P. Schultz and J. A. Strauss, Eds., *Handbook of Development Economics*, 3895-3962. Cambridge, MA: Elsevier.
- Eckel, C. C. and Grossman, P. J. (1998). Are Women Less Selfish Than Men? Evidence from Dictator Experiments. *The Economic Journal*, 108(448), 726-735.
- Eckel, C. C. and Grossman, P. J. (2002). Sex Differences and Statistical Stereotyping in Attitudes toward Financial Risk. *Evolution and Human Behavior*, 23(4), 281-295.
- Eckel, C. and Grossman, P. (2008). Men, Women and Risk Aversion: Experimental Evidence. In C. R. Plott and V. L. Smith, Eds., *Handbook of Experimental Economics Results*, Vol. 1, 1061-1073. Cambridge, MA: Elsevier.
- Falk, A., Becker, A., Dohmen, T., Huffman, D. B., and Uwe, E. S. (2016).:The Preference Survey Module: A Validated Instrument for Measuring Risk, Time, and Social Preferences. Institute for the Study of Labor Discussion Paper No. 9674. Bonn, Germany: IZA.
- Fogel, Y., Gross, H., Adler, M., and Rosenblum, S. (2021). Adolescents' Daily Routines: Reliability and Validity of the DAY-OPP Questionnaire—An Exploratory Study. *The Open Journal of Occupational Therapy*, 9(1), 1-11. Available at <https://doi.org/10.15453/2168-6408.1767>.
- Groh, M., Krishnan, N., McKenzie, D. and Vishwanath, T. (2016). The Impact of Soft Skills Training on Female Youth Employment: Evidence from a Randomized Experiment in Jordan. *IZA Journal of Labor & Development*, 5(9). Available at <https://izajold.springeropen.com/articles/10.1186/s40175-016-0055-9>.
- Hassmén, P., Koivula, N., and Uutela, A. (2000). Physical Exercise and Psychological Well-Being: A Population Study in Finland. *Preventive Medicine*, 30(1), 17-25. Available at doi: 10.1006/pmed.1999.0597.

- Heckman, J. J. and Corbin, C. O. (2016). Capabilities and Skills. *Journal of Human Development and Capabilities*, 17(3), 342-359.
- Heckman, J. J. and Kautz, T. (2014). Fostering and Measuring Skills: Interventions that Improve Character and Cognition. In J. J. Heckman, J. E. Humphries, and T. Kautz, Eds., *The Myth of Achievement Tests: The GED and the Role of Character in American Life*, 293-317. Chicago, IL: University of Chicago Press.
- Institut National de la Statistique (2015). Enquête sur le Niveau de Vie des Ménages 2015. Côte d'Ivoire: INS.
- Jackson, C. K., Porter, S. C., Easton, J. Q., Blanchard, A., and Kiguel, S. (2020). School Effects on Socioemotional Development, School-Based Arrests, and Educational Attainment. *American Economic Review: Insights*, 2 (4), 491-508. Available at doi 10.1257/aeri.20200029.
- Kumendong, A. S., Pangemanan, S., and Pandowo, M. (2018). The Analysis of Soft Skill for Employee Performance in Banking Industry. *Jurnal EMBA*, 6(4), 3813-3822.
- Lane, T. (2017). How Does Happiness Relate to Economic Behaviour? A Review of the Literature. *Journal of Behavioral and Experimental Economics*, 68, 62-78.
- Lansford, J. E., Malone, P. S., Dodge, K. A., Crozier, J. C., Pettit, G. S., and Bates, J. E. (2006). A 12-Year Prospective Study of Patterns of Social Information Processing Problems and Externalizing Behaviors. *Journal of Abnormal Child Psychology*, 34, 715-724.
- Liu, J. C., Pereira, G., Uhl, S. A., Bravo, M. A., and Bell, M. L. (2015). A Systematic Review of the Physical Health Impacts from Non-Occupational Exposure to Wildfire Smoke. *Environmental Research*, 136, 120-132. Available at <https://doi.org/10.1016/j.envres.2014.10.015>.
- Matteson, M. L., Anderson, L., and Boyden, C. (2016). "Soft Skills": A Phrase in Search of Meaning. *Portal: Libraries and the Academy*, 16(1), 71-88.
- McClanahan, W. S., Kauh, T.J., Manning, A.E., Campos, P., and Farley, C. (2012). *Illuminating Solutions: The Youth Violence Reduction Partnership*. Philadelphia, PA: Public/Private Ventures.
- Mitchell, G. W., Pritchett, C. C., and Skinner, L. B. (2013). The Importance of the Integration of Soft Skills into the Curriculum as Identified by MBA Students. *Academy of Business Research Journal*, 2, 87-103.
- Penedo, F. J. and Dahn, J. R. (2005). Exercise and Well-Being: A Review of Mental and Physical Health Benefits Associated With Physical Activity. *Current Opinion Psychiatry*, 18, 189-193.
- Petitpas, A. J, Cornelius, A. E., Van Raalte, J. L., and Jones, T. (2005). A Framework for Planning Youth Sport Programs that Foster Psychosocial Development. *The Sport Psychologist*, 19(1), 63-80.
- Pluim, G. W. J. (2017) Citizenship Education in a Fragile State: NGO Programs For Democratic Development and Youth Participation in Haiti. *Comparative and International Education/Éducation Comparée et Internationale*, 46(2). Special Issue:

50 Years of Comparative and International Education: Looking Back and Envisioning Forward.

- Rand, D. G., Brescoll, V. L., Everett, J. A. C., Capraro, V., and Barcelo, H. (2016). Social Heuristics and Social Roles: Intuition Favors Altruism for Women But Not for Men. *Journal of Experimental Psychology: General*, 145(4), 389-396.
- Roe, J. and Aspinall, P. (2012). Adolescents' Daily Activities and the Restorative Niches That Support Them. *International Journal of Environmental Research and Public Health*, 9, 3227-3244. Available at <https://www.semanticscholar.org/paper/Adolescents%E2%80%99-Daily-Activities-and-the-Restorative-Roe-Aspinall/1aa3ce880f4c133a17ed9c46de2d1757196132a9>.
- Schubert, R., Brown, M., Gysler, M., and Brachinger, H. W. (1999). Financial Decision-Making: Are Women Really More Risk-Averse? *American Economic Review*, 89(2), 381-385.
- Wilson, J. M. and Chermak, S. (2011). Community-Driven Violence Reduction Programs: Examining Pittsburgh's One Vision One Life. *Criminology and Public Policy*, 10(4), 993-1027. Available at <https://ur.booksc.eu/book/10114009/a2cc10>.

## Appendices

### Appendix A1: Balance Test on Selected Outcomes

**Table A1: Social Preferences, Outcomes at Baseline**

Variables	Full sample				P-value
	All	Treated (a)	Control (b)	Difference (a-b)	
Preference for risk: general	5.0230	5.0160	5.0269	-0.0109	0.9679
Intertemporal preference for time: time discounting	5.9294	6.0040	5.8878	0.1161	0.6188
Reciprocity: preference for revenge	2.4661	2.4216	2.4910	-0.0693	0.7529
Heroism: willingness to protect others	3.0287	2.9397	3.0784	-0.1387	0.5586
Altruism: make a free donation	7.4043	7.2409	7.4955	-0.2545	0.1683
Positive reciprocity	7.7122	7.6867	7.7264	-0.0397	0.8059
Negative reciprocity (revenge)	2.4215	2.2168	2.5358	-0.3190	0.1617
Trust others (people have good intentions)	5.1165	5.1004	5.1255	-0.0251	0.9081
Patience	6.4388	6.7028	6.2914	0.4113	0.060
Impulsivity	3.5208	3.6224	3.4641	0.1583	0.5147
Life satisfaction	3.7784	3.8594	3.7331	0.1262	0.5911
<b>Number of observations</b>	<b>695</b>	<b>249</b>	<b>446</b>	-	-

**Table A2: Self-Reported Crime Outcomes at Baseline: Proportion Test Difference**

Variables	Full sample			
	Treated (a)	Control (b)	Difference (a-b)	P-value
Loss of social ties	0.0281	0.0695	-0.0413	0.0214
Victim of violence	0.0803	0.0919	-0.0116	0.6041
Exposure to drugs	0.0281	0.0381	-0.0100	0.4886
Exposure to crime	0.0321	0.0112	0.0209	0.0510
Exposure to alcohol beverages	0.1485	0.1345	0.0140	0.6079
Criminal record	0.0401	0.0493	-0.0091	0.5803
<b>Number of observations</b>	<b>249</b>	<b>446</b>	-	-

**Table A3: Altruism and Reciprocity Scores at Baseline—Proportion Test Difference**

Vignette	<i>Think about what you would do in the following situation: You are in an area that you do not know and you realize that you are lost. You request directions from a stranger. The stranger offers to take you to your destination. Helping you to get to your destination costs around 15,000 F in total. However, the stranger says he or she doesn't want any money from you. You have six gifts with you. The cheapest present costs 3,000 F, the most expensive costs 20,000 F.</i>			
Variables	Treated (a)	Control (b)	Difference (a-b)	P-value
Reciprocity: gift as a reward	0.9759	0.9820	-0.0061	0.5795
Value of the gift: 3,000 F	0.0763	0.0807	-0.0044	0.8363
Value of the gift: 5,000 F	0.1646	0.1816	-0.0169	0.5732
Value of the gift: 10,000 F	0.2168	0.1771	0.0397	0.2016
Value of the gift: 15,000 F	0.1646	0.1636	0.0009	0.9733
Value of the gift: 18,000 F	0.1004	0.0941	0.0062	0.7896
Value of the gift: 20,000 F	0.2530	0.2847	-0.0317	0.3680
Altruism: donation to good cause	172584.6	180646.5	-8061.838	0.4164
<b>Number of observations</b>	<b>249</b>	<b>446</b>	-	-

**Table A4: Vignette 1—Hostile-Attribute Bias at Baseline**

<b>Vignette 1</b>	<i>Vignette 1: You start a conversation with an attractive girl/boy at the bar. You don't realize she's/he's with someone. Suddenly her/his boyfriend/girlfriend comes from across the room, grabs your arm, and angrily asks what you are doing. You've never seen this guy/girl before.</i>			
<b>Variables</b>	<b>Treated (a)</b>	<b>Control (b)</b>	<b>Difference (a-b)</b>	<b>P-value</b>
Perceived intent: bad	0.8152	0.8071	0.0080	0.7944
Intrapersonal	0.2289	0.1928	0.0360	0.2591
Interpersonal	0.4538	0.4237	0.0300	0.4435
Violent reaction	0.0562	0.0717	-0.0155	0.4299
Anger	3.9839	3.9192	0.0646	0.7905
<b>Number of observations</b>	<b>249</b>	<b>446</b>	-	-

**Table A5: Vignette 2—Hostile-Attribute Bias at Baseline**

<b>Vignette 2</b>	<b>Full sample</b>				
	<i>Vignette 2: You and several friends are listening to music with the volume turned up quite high. A neighbor you don't know well, comes to your door and starts shouting: " Turn down your music before I react.</i>				
<b>Variables</b>	All	Treated (a)	Control (b)	Difference (a-b)	P-value
Perceived intent: bad	5.4143	5.1485	5.5627	-0.4141	0.1645
Intrapersonal	-	0.0522	0.0493	0.0028	0.8677
Interpersonal	-	0.8032	0.8475	-0.0443	0.1343
Violent reaction	-	0.0722	0.0426	0.0296	0.0946
Anger	2.8676	2.9156	2.8408	0.0748	0.7422
<b>Number of observations</b>	<b>695</b>	249	446	-	-

**Table A6: Vignette 3—Hostile-Attribute Bias at Baseline**

<b>Vignette 3</b>	<b>Full sample</b>				
	<i>Vignette 3: You are waiting for a bus near a shelterless stop. A man you don't know comes out close to where you stand. He doesn't pay attention and hits you with his car door. You yell at the man to come back. He looks back, then ignores you and continues walking toward a store for his shopping."</i>				
<b>Variables</b>	All	Treated (a)	Control (b)	Difference (a-b)	P-value
Perceived intent: bad	7.6834	7.6506	7.7017	-0.0511	0.7902
Intrapersonal	-	0.2449	0.2107	0.0342	0.2988
Interpersonal	-	0.3775	0.4484	-0.0709	0.0696
Violent reaction	-	0.5140	0.4506	0.0633	0.1086
Anger	5.6287	5.8192	5.5224	0.2968	0.2074
<b>Number of observations</b>	<b>695</b>	<b>249</b>	<b>446</b>	-	-



## Appendix A2: Gender Analysis, Impact on Young Men

**Table A7: ATE Results—Social Preferences (OLS Estimates, continued)**

VARIABLES	(1) patience	(2) patience	(3) impulsivity	(4) impulsivity	(5) life_satisfaction	(6) life_satisfaction
treatment	0.248 (0.189)	0.209 (0.190)	-0.206 (0.218)	-0.209 (0.221)	2.590*** (0.208)	2.569*** (0.209)
literate		0.077 (0.218)		-0.371 (0.270)		-0.416* (0.246)
orphan		0.114 (0.191)		-0.205 (0.219)		-0.284 (0.211)
o.lives_elsewhere		-		-		-
number_siblings		-0.005 (0.027)		-0.027 (0.035)		-0.004 (0.031)
number_dependent_children		0.179 (0.175)		0.044 (0.225)		0.077 (0.232)
dumcity		0.536*** (0.194)		-0.055 (0.224)		0.345 (0.217)
Constant	6.507*** (0.119)	6.166*** (0.264)	3.645*** (0.138)	4.173*** (0.339)	3.706*** (0.132)	3.983*** (0.292)
Observations	492	492	492	492	492	492
R-squared	0.004	0.024	0.002	0.010	0.240	0.249

Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table A8: Altruism and Positive Reciprocity (OLS Estimates for Young Men)**

VARIABLES	(1) altruism	(2) altruism	(3) value_gif † _3000F	(4) value_gif † _3000F	(5) value_gif † _5000F	(6) value_gif † _5000F	(7) value_gif † _10000F	(8) value_gif † _10000F
treatment	0.044* (0.025)	0.040* (0.023)	-0.003 (0.028)	0.004 (0.028)	0.019 (0.030)	0.021 (0.030)	0.011 (0.030)	0.009 (0.030)
literate		-0.018 (0.028)		0.007 (0.036)		0.001 (0.035)		0.003 (0.034)
orphan		0.030 (0.024)		0.008 (0.028)		-0.033 (0.029)		0.056* (0.032)
o.lives_elsewhere		-		-		-		-
number_siblings		0.001 (0.003)		0.004 (0.004)		0.001 (0.006)		-0.006 (0.004)
number_dependent_children		0.044** *		0.000 (0.024)		-0.001 (0.029)		-0.068*** (0.014)
dumcity		0.045* (0.024)		-0.100*** (0.028)		-0.008 (0.030)		0.016 (0.030)
Constant	0.905** *	0.874** *	0.105***	0.118***	0.108***	0.116***	0.111***	0.124***
	(0.015)	(0.039)	(0.018)	(0.045)	(0.019)	(0.044)	(0.019)	(0.041)
Observations	492	492	492	492	492	492	492	492
R-squared	0.006	0.022	0.000	0.028	0.001	0.004	0.000	0.023

Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table A8: Altruism and Positive Reciprocity (OLS Estimates for Young Men, continued)**

VARIABLES	(1) value_g ift _15000F	(2) value_g ift _15000F	(3) value_g ift _18000F	(4) value_g ift _18000F	(5) value_g ift _20000F	(6) value_g ift _20000F	(7) Reciprocity _gift_rewar d	(8) Reciprocity _gift_rewar d
treatment	-0.007 (0.041)	-0.002 (0.040)	-0.006 (0.034)	-0.017 (0.033)	0.028 (0.034)	0.024 (0.034)	20,250.540* (10,975.937)	17,339.455 (11,073.337)
literate		-0.020 (0.053)		0.035 (0.034)		-0.045 (0.041)		10,522.014 (14,132.548)
orphan		0.017 (0.041)		-0.076** (0.032)		0.058 (0.036)		9,384.314 (11,117.705)
o.lives_elsewhere		-		-		-		-
number_siblings		0.002 (0.006)		-0.006 (0.005)		0.006 (0.006)		307.871 (1,724.358)
number_dependent_chil dren		0.083* (0.045)		0.066* (0.040)		-0.036 (0.027)		13,030.424 (10,984.545)
dumcity		-0.109** (0.043)		0.156*** (0.034)		0.090*** (0.034)		41,316.910* (11,038.695)
Constant	0.267*** (0.026)	0.300*** (0.059)	0.159*** (0.021)	0.114** (0.046)	0.155*** (0.022)	0.101* (0.055)	179,813.563 *** (6,924.061)	146,023.472 *** (16,070.667)
Observations	492	492	492	492	492	492	490	490
R-squared	0.000	0.027	0.000	0.070	0.001	0.026	0.007	0.045

Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.