

Empowering Women: Teaching Leadership Skills to Youth in Uganda*

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Abstract

Empowering adolescent girls through education has become a priority among numerous stakeholders. However, recent evidence suggests that education alone may not be sufficient if women remain in a low-empowerment equilibrium and face internal constraints as they relate to aspirations, self-efficacy, leadership, and other life (soft) skills. We study the long-term impacts of a school-based upper-secondary intervention, the Educate! Experience, designed to enhance adolescents' leadership and social entrepreneurship skills in Uganda. The program was implemented as a cluster randomized controlled trial (RCT) in 48 schools. Four years post-intervention, we document lasting impacts on a wide array of leadership and soft skills. Overall, Educate! graduates developed skills that are traditionally associated with greater focus on long-term goals; they reported being more in control of aspects of their lives (self-efficacy and grit) and more empowered to implement actions towards their plans. Young women in the treatment group are also more likely to complete secondary education, delay family formation, enroll in tertiary education, and pursue STEM and Business majors relative to their counterparts in the control group. The program yielded socially desirable and gender relevant spillovers, including expansions in women's agency. Both male and female Educate! graduates embraced more progressive views concerning women's standing in the society and women's ability to exercise their agency to engage in the labor market and refuse sex. The incidence of intimate partner violence (IPV) also improved among Educate! graduates, as did their attitudes toward IPV social acceptability.

Keywords: gender, leadership, social entrepreneurship, youth.

JEL Codes: I20, J01, J16, J23, J24, M13, M53, O15

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1 Introduction

Empowering adolescent girls through education has become a priority for numerous stakeholders. Traditional schooling alone, however, may not be sufficient if women remain in a low-empowerment equilibrium and face internal constraints as they relate to aspirations, self-efficacy, leadership, and other life (soft) skills. There is an abundance of evidence showing strong associations between non-cognitive or soft skills and employment and other life outcomes (Bowles et al., 2001; Heckman et al., 2006; Heckman and Kautz, 2012; Groh et al., 2015, e.g.), and a recent review of 28 studies relying on employer surveys across multiple countries finds that employers ranked socioemotional (soft) skills as the number one applicant characteristic for employment.

While many countries have invested heavily in educational programs designed to increase their “stock” of these skills (Deming, 2017; OECD, 2015), it is not clear whether such skills can effectively be taught nor the extent to which they help close male-female gaps (see Groh et al., 2016, , for instance).¹ Hence, how malleable soft skills are and whether training programs that aim to increase the stock of these skills can shape life-outcomes have become priority policy questions.

This paper provides experimental evidence on the effectiveness of an innovative youth skill training program in Uganda. In particular, it documents the medium-term (4 year) impacts of the Educate! Experience program, a gender-blind leadership and social entrepreneurship intervention.

We partnered with *Educate!*, a social enterprise that offers a leadership and social entrepreneurship skills development program across Uganda, Rwanda, and Kenya. Today, Educate! has reached approximately 198,000 youth via their Educate! Experience program. The Educate! Experience is implemented during the last two years of secondary school (in government, private, and community schools) and delivered by practically-trained youth mentors, who use hands-on teaching methods and practical applications. The program teaches youth soft skills, including both interpersonal skills — e.g., communication and teamwork — and intra-personal skills — e.g., self-confidence, critical thinking, creativity, and grit. The Educate! program also has a unique focus on leadership and social entrepreneurship, aiming at leveraging leadership and entrepreneurial approaches and skills to innovatively pursue opportunities that catalyze social change and/or address social needs. Educate! sessions feature an interactive style and are student-centered; they require students to practice skills during group work and activities. This method of teaching is in stark contrast with standard Ugandan passive learning methods. The curriculum places a strong emphasis on mentoring and students’ practical experiences in identifying opportunities and executing social enterprises.

The Educate! Experience program has three main components. First, a 35-lesson leadership and social entrepreneurship course is designed to teach students about socially responsible leadership, business entrepreneurship, and community engagement. Students also complete individual and group “personal projects,” like community initiatives and businesses, along with a group mentorship. A second key component is one-on-one personal development mentorship by a youth mentor. Once every term, mentors held a group mentorship session with the entire class. Finally, students joined Student Business Development Clubs, designed to help students build projects that generate income.

During the 2012–2013 school year, the Educate! Experience program was successfully implemented as a full-scale RCT in Uganda. Forty-eight schools were included in the study. Limited operational budgets meant Educate! was only able to implement the intervention in 24 of these schools, with the remaining 24 constituting the control group. The schools were randomly selected from six of the most populous districts in

¹The literature on entrepreneurship education argues that programs targeting the socio-emotional dimensions of entrepreneurship — e.g., resilience, interpersonal skills, and empathy — are more highly correlated with success along corporate metrics such as sales, firm survival, etc., than programs with a narrow, technical bent — e.g., accounting and finance (Oosterbeek et al., 2010; Marvel et al., 2016; Campos et al., 2017; Chioda et al., 2021).

West, Central, and Eastern Uganda. From each of the chosen districts, eight schools were randomly selected to receive the Educate! program and eight to serve as the control group. Of a total of 1,942 students (43.6 percent female), 966 received the Educate! Experience training program and 976 did not. A follow-up survey was conducted in 2017-2018 to study program impacts on students' skills, educational attainment, economic outcomes, and social spillovers.

Four years post-intervention, we document important and lasting impacts on a wide array of leadership and soft skills: both intrapersonal skills (plasticity, grit, self-efficacy, creativity, self-confidence) and interpersonal skills (prosociality, persuasion), with larger effects for women. The Educate! Experience led to additional investments in education among women: higher secondary completion rates; increased likelihood of being enrolled in tertiary education, and pursuit of STEM and business majors at higher rates. In addition to gendered impacts on educational investments, the program also yielded gender relevant and socially desirable spillovers. Educate! graduates are less likely to engage in risky relationships, report fewer sex partners. They also delay family formation: they are less likely ever to be pregnant and have fewer children. They exhibit more progressive gender views and display lower social acceptability of violence. Female Educate! graduates are less likely to report being victims of physical or threatened violence. Our results point to greater partner selectivity and improvements in the quality of matches in the market for partners. Youth in the treatment group match with higher quality partners in terms of current and future wealth and social standing. Educate! graduates are more likely to initiate conversations regarding family planning (contraception and plans for children), female labor force participation, and spending priorities (expanded agency); they are also more likely to share common views at the beginning of the discussion (assortative matching) and to agree with the final decisions (negotiation and bargaining channels). The difference between the probabilities of initial and final agreement can be thought of as an upper-bound on a "negotiation/persuasion" channel.

The Educate! Experience stands out as a youth skills program along several important dimensions. First, the intervention targets youth at a critical juncture of their cognitive and social lives. Secondary education and the period surrounding the school-to-work transition represent critical windows of opportunity to reach youth and shape their personalities, educational investments, and their future, and set them on improved lifetime trajectories. In particular, during adolescence (approximately age 10 to 21 years old), regions of the brain involved in affect generation and regulation, including the limbic system and the prefrontal cortex, undergo protracted structural and functional development.² Cognitively, high-level executive and social processes needed for emotion regulation, including working memory, inhibitory control, abstract thought, decision making, communication and perspective taking, all undergo significant development during adolescence (e.g., Blakemore and Robbins, 2012; Sebastian et al., 2010; Somerville and Casey, 2010; Choudhury et al., 2006). Namely, the development of these cognitive processes appears to be underpinned by structural and functional transformations at the neural level, particularly in the prefrontal cortex, and the remodeling of connections between prefrontal and limbic regions (Dumontheil, 2014; Somerville and Casey, 2010). Thus, the intervention under study focuses on a pivotal period of brain plasticity especially for the acquisition of soft skills targeted by the Educate! curriculum.

Second, the Educate! program also has a unique focus on leadership and social entrepreneurship. *Social entrepreneurship* aims at pursuing opportunities to create social value, drawing upon both the business and nonprofit worlds to develop strategies that maximize social impact. Emphasis is placed on innovation,

²Emotion regulation is broadly defined as the monitoring, evaluation and modifying of emotional reactions in order to accomplish goals (Thompson, 1994).

resourcefulness, and socially conscious results. Educate!’s curriculum was designed to endow youth with the relevant skills to undertake social enterprises. In particular, youth are taught how to identify, develop, fund, and execute solutions to tackle social, cultural, or environmental problems with the goal of achieving social change by employing entrepreneurial principles.

Historically, there has been debate over whether *leadership* is a skill, a trait, or an innate characteristic. Recent work (Doh, 2003; Channing, 2020) suggests that leadership is both a skill and a behavior and, as such, can be learnt. Furthermore, as mentioned above, the personality traits that form the basis upon which leadership skills are built reach stability by adolescence. However, there is a lack of well-identified and causal evidence on the impacts of leadership training. The notion that leadership can be taught and acquired is indirectly corroborated by studies that map leadership skills to personality traits, as proxied by the Big Five traits (Big 5), which have been shown to be malleable and responsive to effective interventions – with soft skills being modifiable during adolescence (see Heckman et al., 2021, for a review). Studying leaders from over 200 organization, Judge and Bono (2000) found that Extraversion and Agreeableness positively predicted *transformational leadership*, which aims at encouraging, inspiring and motivating to perform in ways that create meaningful change.³ Additional evidence of the mapping between Big 5 personality traits and leadership is provided by two meta-analysis studies, which point to Extraversion as the strongest and most consistent correlate of transformational leadership (Bono and Judge, 2004; Judge et al., 2002).

Leadership is not only a trait that has been linked to firm performance (Bandiera et al., 2020*b*; Kaplan and Sorensen, 2016, 2021), but it has been shown to be a central feature for success in many arenas. Dal Bò et al. (2017) study political leaders and found that politicians are strongly positively selected on all ability measures, with a positive relationship between ability and political power. They also document similar patterns of selection in terms of higher ability and leadership scores for CEOs, lawyers, medical doctors, suggesting that, to some extent, leadership skills, once acquired, can translate to diverse situations and contexts. This paper adds to the literature by shedding light on whether leadership and related skills can be taught and on how these may shape youth’s individual choices and life outcomes, beyond the professional arena.

Our work also contributes to a broad literature that underscores the importance of interventions aimed at endowing youth with critical intra- and inter-personal skills. This critical developmental phase has garnered increased attention (Kautz et al., 2014). Programs targeting the development of youth’s socio-emotional skills have led to improvements in education outcomes (Yeager et al., 2019; Alan and Ertac, 2018; Alan et al., 2019) and have shown promise as effective prevention strategies against crime and antisocial behavior (Blattman et al., 2017; Heller et al., 2017).

Society’s or culture’s informal rules about acceptable behavior for girls and women materialize in the economy not only in the form of economic and educational gaps but also in terms of diminished aspirations and agency in women’s life-domains, including control over resources, fertility decisions, as well as freedom and safety (Jayachandran, 2021). Gender attitudes, even those rooted in centuries-old cultural norms, are amenable to change.⁴ In particular, among youth interventions, recent contributions have also highlighted the role of soft skills – skills such as negotiation and persuasion, that are at the center of the Educate!

³The concept of transformational leadership dates to Burns (1978). Transformational leadership requires leaders to work with teams to identify needed change, create a vision to guide the change through inspiration, and execute the change in tandem with committed members of a group. Burns (1978) distinguished *transformational leaders* from *transactional leaders*. In contrast to transformational leaders, who obtain support by inspiring followers to identify with a vision that reaches beyond their own immediate self-interests, transactional leaders obtain cooperation by establishing exchanges with followers and then monitoring the exchange relationship.

⁴For instance, interventions that boost women’s aspirations, expand their peer networks, and transform their sense of identity also improve their business outcomes (Field et al., 2010, 2016; Lafortune et al., 2018; Brooks et al., 2018).

Experience program – in shaping the education outcomes and gender attitudes of adolescent populations. In Zambia, Ashraf et al. (2020) finds that negotiation training (which taught girls skills to reconcile different interests by looking for “win-win” solutions) led to improvements in human capital outcomes 3 years after the intervention. Bandiera et al. (2020a) document the impact of multifaceted policy interventions attempting to jump-start adolescent women’s empowerment in Uganda by simultaneously providing them with vocational training and information on sex, reproduction, and marriage. Four years post-intervention, adolescent girls in treated communities are more likely to be self-employed, delay family formation and report sex against their will at much lower rates. In India, Dhar et al. (2022) document meaningful impacts on gender attitudes of a school-based *persuasion* intervention for adolescents among the sample of both boys and girls two years after training.⁵ But, they find no evidence that the intervention increased girls’ stated educational and career aspirations, nor behavior change.

Lastly, as noted by Dhar et al. (2022), attitude change might not be sufficient to trigger behavior change if there are concerns about social sanctions should they not conform to social norms and prescriptions. Men who espouse more progressive views may be concerned about losing social standing; women who embrace their agency and progressive roles may trigger potential backlash. Indeed, there is wide consensus surrounding a link between women’s empowerment and men’s violence against them; however, the sign of this relationship and how to expand women’s opportunities to ensure protective outcomes remain open questions (Angelucci and Heath, 2020; Aizer, 2010, 2011; Hidrobo and Fernald, 2013; Heath et al., 2020). Increases in women’s bargaining power (e.g., via more progressive norms, expanded agency and control over resources, improvements in outside options and in the partnership market) may improve intimate partner violence (IPV) outcomes, but risk challenging the status quo, leading to backlash and tensions (Tankard and Paluck, 2016). These may take place within one’s self, within partnerships, or at the societal level.

Intimate partner violence is pervasive in Uganda: approximately 50 percent of women reported ever experiencing physical violence and about 55 percent reported having experienced physical and/or sexual violence (Uganda, Demographic Health Survey, DHS 2021). These figures are likely to understate the true magnitude of the problem given they are self-reported. In Uganda, about 9 percent of violent incidents forced women to miss time from paid work, amounting to approximately 11 days per year – the equivalent of half a month’s salary – affecting not only the victim of the violence but her family and dependents (UN Women). The annual costs of intimate partner violence are estimated to amount to US\$ 30.7 million, or 0.35 percent of Ugandan GDP (Kasirye, 2013). In 2016, the global cost of violence against women was estimated by the UN to be US\$1.5 trillion, equivalent to approximately 2 percent of the global GDP. The status of women in Uganda reflects the broader structural inequalities in the country. A highly gendered distribution of socioeconomic resources in Uganda couples with patriarchal gender norms to create an environment in which IPV may be the norm.

Against this backdrop, we study the impact of the Educate! Experience on gender and IPV norms and IPV incidence. While Educate! is designed as a gender-blind intervention, it has the potential to influence critical gender-relevant outcomes (e.g., norms, family formation, and IPV) through several complementary channels/mechanisms that can operate through she- and he-channels: (i) expanding women’s aspirations and improving bargaining skills could shape human capital investments as well as impact the quality of partners in the marriage markets; (ii) improving both men’s and women’s soft skills, which could have spillovers on

⁵The intervention was specifically designed to tackle gender norms (Dhar et al., 2022): weekly sessions taught facts and endorsed gender equality, and prompted students to reflect on their own views and society’s. Discussion topics included gender stereotypes, gender roles at home, girls’ education, women’s employment outside the home, and harassment. Some sessions taught communication skills to help students convey their views to others so that they can, for example, persuade their parents to permit them to marry at a later age.

personal dimensions of participants’ lives, including conflict resolution, family formation, sexual and fertility behaviors; (iii) shifting the aspirations of women and, by exposing men to women in non-traditional gender roles, also potentially shifting men’s perceptions about women’s productive potential.

The paper is organized as follows. Section 2 details the intervention and its implementation. Section 3 describes the research design. Section 4 presents data and the estimation strategy. Section 5 reports the impacts of the Educate! Experience program on an array of skills assessments and on various outcomes in the medium run (4 years). Section 6 concludes by highlighting the broader implications of our findings for policies and future research.

2 The Intervention

Educate!, a nonprofit organization with extensive experience delivering social entrepreneurship training and mentorship to Ugandan secondary school students, designed and implemented the Educate! Experience program. Educate! tackles youth unemployment by partnering with youth, schools and governments to design and deliver solutions that equip young people in Africa with skills needed for the job market. Educate! advises national governments (Uganda, Kenya, Rwanda) on curriculum design and teacher training initiatives.⁶

The Educate! Experience program is implemented during the last two years of secondary school and delivered in existing secondary schools (government, private, and community schools) by practically-trained youth mentors. Mentors use a combination of classroom-based teaching and practical applications to train students in soft skills (e.g., inter- and intra-personal skills) and hard skills (e.g., business planning, budgeting, savings).

The program has three components:

1. *Social Entrepreneurship and Leadership Course (SELC)*: The curriculum is taught in English for 80 minutes once per week during four to nine weeks of the school term over five terms (35 lessons in total). The SELC focuses on developing socially responsible leadership skills, business and entrepreneurship skills, and community awareness, while supporting group and individual projects (e.g., community initiatives, businesses) through mentorship. The curriculum dedicates two sessions to soft skills for every session dedicated to hard skills (Appendix Table B.1 details the curriculum).
2. *One-on-One and Group Mentoring*: Educate! mentors conduct one-on-one mentoring sessions in English outside of the SELC lesson time. These sessions are meant to occur once or twice a term, with each session lasting approximately 15 minutes. They focus on the personal development of students and are an opportunity to build supportive relationships between the mentors and students. Once per term, the mentor holds a group mentorship session to discuss any issues with the entire class.
3. *Student Business Club (SBC)*: The SBC is focused on business development and supports scholars in designing income-generating projects. Members are responsible for developing and managing the club projects with the guidance of an Educate! mentor. First, the club writes a constitution and elects the leadership board. Then, members choose a business model and raise funds for its creation.⁷ The SBC meets outside of scheduled SELC classes, with the frequency of its meetings depending on the interests

⁶Educate! was recognized by the World Bank (S4YE), Bill Gates, and the UN, receiving the 2015 WISE award and the 2018 Klaus J. Jacobs Prize. In November 2022, it received a USD 12 million donation from MacKenzie Scott.

⁷Funds are commonly raised through fundraising, their own allowances, contributions from parents, etc.

and needs of the students. While the mentor oversees decision-making and operations, the students independently manage the business creation process. The club shuts down before students graduate, with profits divided between the members.

In 2012, total intervention costs per participant, including \$58 for Monitoring and Evaluation, were estimated at \$223 per year. That year, Educate! reached 3,600 youth and spent about \$804,288 on program activities. These costs included the stipend for Educate!-trained mentors' compensation (4%), mentor training (4%), staff transportation costs (10%), program materials (6%), procurement, field distribution, and office costs (10%), school retreats (4%), a school coordinator (16%), staff support, monitoring and evaluation, and program design (26%), and program planning and administration (20%). As the program continued to scale up, Educate! dramatically reduced its costs: today, the total intervention costs were estimated at \$65 per student in 2023. Significant reduction in costs was achieved by taking advantage of economy of scale in terms of program design work, program support and monitoring and evaluation.

At the time of the study, Educate! offered two additional components to support the Educate! Experience: the Educate! scholarship and Teacher Support Training. The scholarship covers tuition for a degree at a Ugandan university of the student's choosing. Nominees must have achieved a minimum score on their final exams, have a community project, attended all SELC classes, and have no way of paying their own tuition. The Teacher Support Training provides a coordinator who trains mentors and teachers at schools in social entrepreneurship concepts and teamwork.

3 Experimental Design

We designed a cluster randomized control trial in Uganda to evaluate the impact of the Educate! intervention, where the unit of randomization is the school.

3.1 Student Recruitment

In May 2012, we administered a short survey to all students in their first year of upper secondary education (known as S5 students) at the schools selected for this study to ascertain interest in participating in a leadership and entrepreneurship course, determine previous leadership or entrepreneurial experience, and assess literacy levels and cognitive ability. We interviewed 5,048 students, assigned each student a score based on the survey, and invited the 45 students with the best scores in each school to participate in the Educate! program for the remainder of the 2012 academic year and the 2013 academic year. Participation was conditional on Educate! offering the program in their school.

3.2 School Assignment to Treatment Arms

This study took place in six of Uganda's 111 districts: Iganga, Jinja, Kampala, Masaka, Mbarara, and Mukono. These are the six most populous districts in the country that have at least eight A-level schools with more than 40 S5 students. Eight schools from each district were randomly selected to be included in the study, bringing the total sample of schools to 48. We stratified by district and randomly assigned 24 schools to participate in the Educate! Experience during the 2012-2013 academic year (i.e., the treatment group) and 24 schools to the control group. Appendix Figure B0 maps the locations of the school districts included in the study.

4 Data and Estimation

We administered a baseline survey to 1,942 study participants in 2012 shortly before schools were assigned to treatment and control groups. The survey collected information on students' demographics, cognitive abilities, soft skills, and family background. The average participant was 18 years old entering the 2012-13 academic year. The majority of participants were male (57%) and boarding students (68%). Entrepreneurship was common among the families of students participating in the study; 43% of families owned their own business.

We constructed 21 baseline indices and other characteristics (Table B.2), the majority of which were balanced on average between the treatment and control groups (Appendix Table B.5). We observe marginally significant differences across treatment and control groups for only three of our 21 characteristics (memory, p -value = 0.06; stability, p -value = 0.06; and leadership, p -value = 0.06). Nonetheless, we fail to reject the hypothesis that baseline characteristics jointly predict treatment status (F -statistic = 1.29, p -value = 0.84).

We followed-up with study participants four years after implementation. In May 2017, we tracked 1,706 participants through a telephone tracking exercise and completed interviews with 1,595 of them from August 2017 to February 2018. Attrition was slightly higher in the control group (81% survey completion) compared to the treatment group (83% survey completion). However, the treatment and control groups remained balanced on baseline characteristics in the sample of participants interviewed in 2017 (see Table B.6). We fail to reject an F -test of joint significance (F statistic = 1.26; p -value = 0.87).

The 2017 data collection featured a main survey and a relationship follow-up survey.⁸ Study participants were administered a comprehensive survey that spanned demographics, hard and soft skills assessments, and economic activity, among other information. Task-based measures included three behavioral games: a five-minute bilateral negotiation game (between respondent and enumerator), a one-minute persuasion game, and a one-minute creativity game. We obtained respondents' consent for any audio or video recordings associated with the games.

The relationship survey modules were administered to those study participants who were in a relationship at the time of the survey or who had been in one in the previous 12 months. The survey collected information on self-perceptions, partner perceptions, attitudes towards intimate partner violence (IPV), health and sexual behaviors, family formation, couples' decision-making, and extensive IPV module. Due the sensitive nature of survey questions, enumerators and respondents were gender-matched, respondents could opt for self-administration, and enumerators were trained to recognize signs of distress and respond appropriately. If the follow-up survey was self-administered, the enumerator would remain nearby to ensure that the respondent could ask questions at any time. The respondent could choose to conduct the follow-up survey on the same day as the main survey or the following day.⁹

Eighty percent (1,271) of the participants interviewed in 2017 were eligible for the relationship survey. We will refer to this subset as the couples sample. Participants in the treatment group were slightly more likely to be in the couples sample than those in the control group (81% and 79% of the main survey respondents, respectively). Although selection into the couples sample is nonrandom, Appendix Table B.8 demonstrates that the treatment and control groups remain balanced on observable baseline characteristics (F -statistic = 1.08, p -value = 0.93). To study decision making in relationships, we further limit the couples sample to those who experienced at least one of the following decision making scenarios: 1) female looking for or taking a job, 2) whether to have children, and 3) condom use. We will refer to this subset as the bargaining

⁸See Table B.7 for details about the survey instruments.

⁹Sixty-seven percent of respondents completed the partnership survey on the same day as the main survey.

sample ($N = 1,251$). Appendix Table B.9 shows the treatment and control groups again remain balanced (F-statistic = 1.26, p-value = 0.86).

Respondents received a token of appreciation for their participation in both surveys. Respondents to the main survey received 5,000 Ugandan shillings (UGX) of airtime after the survey was completed. Additionally, enumerators and respondents received a financial incentive in the negotiation game.¹⁰

4.1 Estimation

Our analysis relies on the following regression specification:

$$y_{is} = \beta T_s + g(X) + \varepsilon_{is}$$

where y_{is} is the outcome for individual i enrolled in school s ; T_s is equal to 1 if school s was assigned to the treatment group; $\mathbf{X}$ is a vector of controls; and ε_{is} is an error term that is independent across schools but correlated among individuals within the same school. The coefficient β represents the average treatment effect (ATE) of the Educate! Experience program. For each outcome of interest, we estimate three ATEs: the ATE for the full sample, the ATE for the male subsample, and the ATE for the female subsample.

In the paper, we report estimates for which the controls are chosen using Double/Debiased Machine Learning, DML (Chernozhukov et al., 2018) to maximize precision.¹¹ DML ATEs and standard errors are estimated using a partially linear model in which treatment dummies are not additively separable.¹² DML ATEs and standard errors are estimated using a partially linear regression model (Bach et al., 2021). Because we assign treatment at the school level, standard errors are clustered at the unit of assignment.

Clustering creates a challenge to the DML approach along two dimensions (Bach et al., 2021): it requires (1) adjustment of the formulae used for estimation of the variance covariance matrix, standard errors, p-values etc. as well as (2) an adjusted resampling scheme for the cross-fitting algorithm. The first point equally applies to classical statistical models (see, for example Colin Cameron et al. (2011)). The second point arises because the clustering implies a correlation of errors from train and test samples if the standard cross-fitting as in (Chernozhukov et al., 2018). The DML approach builds on independent sample splits into partitions that are used for training of the machine learning (ML) model learners and generation of predictions that are eventually used for solving the score function. In order to achieve independent data splits in a setting with one-way or multi-way clustering, Chiang et al. (2022) develop an updated K-fold sample splitting procedure that ensures independent sample splits: The data set is split into disjoint partitions in terms of all clustering dimensions. The machine learning models are then trained on a specific fold and used for generation of predictions in hold-out samples. Thereby, the sample splitting procedure ensures that the hold-out samples do not contain observations of the same clusters as used for training.

¹⁰Depending on their performance, respondents received up to 10,000 UGX of airtime, while enumerators received their average winnings multiplied by three in airtime at the end of the data collection period.

¹¹The main results and overall conclusions are preserved when we omit baseline controls, $\mathbf{X}_i$; however, as expected, DML improves precision.

¹²DML estimates rely on K-fold cross-fitting (in our case $K = 5$) to minimize overfitting. In finite samples, the dependence of the estimator on the particular split creates an additional source of variation. Following Chernozhukov et al. (2018), to incorporate a measure of this additional source of variation into estimates and their standard errors, the estimation step is repeated S times ($S = 100$). Sample medians of the estimates and median standard errors obtained across the S replications/splits are reported.

5 Results

This section organizes outcomes into categories related to their causal distance from the training: the theory of change posits that the program impacts youth’s skill sets and that these skills, in turn, shape educational outcomes, youth’s family formation, norms, and partner relationships. We first assess the effect of the training on skills four years after the intervention. The follow-up survey featured modules to test knowledge of hard skills and business practices as well as validated psychological scales to assess a wide array of different socio-emotional skills/traits (e.g., Big Five, Stress, Self-Efficacy, etc.). In addition, it also included task-based measures to assess persuasion and creativity skills. Since the Educate! Experience program took place during the last two years of secondary school, it may have affected secondary school outcomes as well as additional investments in education (e.g, whether or not to enroll in tertiary education and which major to pursue). Finally, we present evidence of social spillovers related to fertility and family formation, gender norms and partnership outcomes, including those related to IPV (i.e., incidence and social acceptability of IPV).

The average (bachelor) program in Uganda takes between three and five years such that, at the time of the 4-year follow-up, youth had either just completed or were about to complete their tertiary studies. At the time of data collection, 35.7 percent of the sample was still enrolled in tertiary education. As such, the medium-run (4-year) follow-up was not able to fully capture the extent to which the labor market rewards these skills and educational investments: it was therefore too early to definitively assess Educate!’s medium-run labor market impacts.

5.1 Skill Formation

Overall, the Educate! Experience was extremely successful in improving youth’s intra- and inter-personal soft skills. Educate! graduates appear to focus more on long-term goals and report being more in control of aspects of their lives, as well as more empowered to implement actions towards achieving their plans. The gains appear stronger among women, suggesting a closing of gender gaps along dimensions such as adaptability, goal orientation, and confidence (as proxied by positive self-perception). Youth in the treatment group appear to be able to leverage these skills, translating them into greater creativity and persuasion. Tables A.1 and A.4 summarize these results.

5.1.1 Inter- and Intra-personal Skills and Traits

Four years post-intervention, Educate! graduates exhibit greater ability to engage flexibly with novelty, both in behavior and in cognition, as proxied by the Big Five Inventory’s (*Plasticity*) construct, which is a function of Extraversion and Openness/Intellect (0.12 sd for the full sample). The impacts are large and significant for young women (0.18 sd), while also positive but not statistically significant for men (one-sided *p-value*, 0.11).¹³ Interestingly, for the second Big Five meta construct, which is a proxy for the ability to maintain stability and avoid disruption in emotional and social domains (*Stability*), all samples exhibit small positive effects, but are not significant.

The Educate! Experience Program also yielded statistically significant improvements in *grit* (12-item scale) for all three samples (0.14, 0.10, and 0.19 for All, Male, and Female samples, respectively) as well as

¹³We use the 44-item scale Big Five personality taxonomy by (John and Srivastava, 1999), which was initially conceptualized as containing orthogonal dimensions. Recent work has revealed the presence of two higher-order personality traits: (1) *Stability, Self-Control, or Alpha* is composed of the shared variance of Emotional Stability (Neuroticism reversed), Conscientiousness, and Agreeableness; (2) *Plasticity, Engagement, or Beta* is composed of the shared variance of Extraversion and Openness/Intellect. For a review of these constructs see De Young (2006), Hirsh et al. (2009) and citations therein.

for the sub-indices of passion (goal commitment) and perseverance (goal striving) (Duckworth et al., 2007).¹⁴ Gritty people are known for their mindset aimed at long-term and performance-oriented goals. In their study of university students, Kannangara et al. (2018) offer suggestive evidence that high grit is also tied to higher levels of self-control and mental well-being, as well as to being more resilient.

Turning our attention to Educate!’s impact, larger effects are observed among females for the main index and for passion. The gender gap in grit appears to be driven by a meaningful (and statistically significant) gender gap in the passion subconstruct (Female: 0.25 sd vs. Male: 0.086 sd). As suggested by Duckworth et al. (2011) and Duckworth and Gross (2014), passion contributes to the necessary focus that is needed for individuals to achieve their goals, is strongly related to the individual’s involvement, commitment and effort over long periods of time.

The Educate! intervention delivered skill gains in terms of both self-efficacy (Table A.1) and self-confidence, as proxied by an index that combines study participants’ own assessments of whether they are well-spoken, expressive, well-dressed and attractive (see Table A.2).¹⁵ Youth who took part in the Educate! Experience exhibit higher levels of self-confidence (0.12 sd), with young women recording larger impacts (0.156 sd). Effects for the male sample are also positive, but lack precision.

Self-efficacy refers to the extent to which an individual is in control of aspects of his or her life and how empowered he or she feels to implement actions directed towards a plan (Bandura, 1982). Self-efficacy is often seen as a complement to grit. Schwarzer and Jerusalem (1995)’s 10-item scale is designed for the general adult population, including adolescents. In contrast to other scales that were designed to assess optimism, this scale was developed to capture personal agency, i.e., the belief that one’s actions are responsible for successful outcomes. Educate! graduates exhibit higher self-efficacy than youth in the control group (0.10 sd). Significant impacts are also estimated within gender subsamples.¹⁶ Similar patterns hold for prosociality (All: 0.16 sd; Male: 0.12 sd; and Female: 0.24 sd).

Skill gains generated by the program ameliorate youth’s abilities to handle stress as measured by Peacock and Wong (1990)’s *Stress Appraisal Measure* (SAM). Unlike previous skills gains, the program impacts are markedly similar across genders (0.14 sd, 0.153 sd, and 0.14.2 sd for All, Male, and Female samples, respectively).¹⁷

In line with the intervention’s strong focus on socially responsible leadership and social enterprises, youth in the treatment group display more prosocial tendencies (All: 0.16 sd; see Table A.3). Here again, larger impacts are observed for the female sample (Male: 0.12 sd vs. Female: 0.22 sd), however the null that the two coefficients are the same cannot be rejected. Caprara et al. (2005)’s prosociality scale was designed to assess the general propensity to behave prosocially from late adolescence to adulthood and was internationally validated. Prosocial behavior refers to voluntary actions undertaken to benefit others. While it can be narrowly thought of as an inter-personal skill, prosociality has also been known to increase individual resilience (inter-personal) by serving as a protective factor against negative consequences of aggression including peer

¹⁴Passion refers to the tendency to remain committed to the same goals over months and years, and perseverance refers to the tendency to work diligently toward those goals, even in the face of setbacks, (Duckworth et al., 2007).

¹⁵These questions were asked only to the “couples” sample; that is, those who were in a relationship at the time of the survey or who had ended one during the 12 months prior. The program did not have any effect on the probability of being in a current/recent relationship. The “couples” sample remains well-balanced; see B.8.

¹⁶Beliefs about self-efficacy determine how people feel, think, motivate themselves and behave (Bandura, 2010). Self-efficacy does not refer to one’s abilities but to how strongly one believes one can use one’s abilities to work toward goals (Latham and Locke, 2007; Bandura, 2010).

¹⁷We use two sub-scales from Peacock and Wong’s (1990) Stress Appraisal Measure to measure the ability to control one’s stress: threat and challenge appraisals. In threat appraisals, one anticipates harm because his or her personal resources are outweighed by the demands of the situation. In contrast, challenge appraisals involve the anticipation of growth from a situation because one’s personal resources outweigh the demands of the situation.

rejection (Bierman et al., 1993), and antisocial behavior (Pulkkinen and Tremblay, 1992)).

5.1.2 Task-based Measures: Creativity and Persuasion

All measures of skills discussed above are self-reported. Self-reported questionnaires are the most common approach to assessing personal qualities. They are reliable and, in many cases, remarkably predictive of objectively measured outcomes. As an alternative to asking youth to self-report behavior, it is possible to observe behavior through performance tasks. A performance task is essentially a situation that has been carefully designed to elicit meaningful differences in behavior of a certain kind. Task-based measures are not only an alternative, but also a best practice to cross-validate self-reports and to overcome possible biases (e.g., social desirability bias as in Holden, 2007). We considered two task-based measures to assess creativity (see Table A.1 and and persuasion (see Table A.4).

Creativity is considered the most innate of the personality traits/soft skills. The creativity task is a lab in the field experiment adapted from Friedman et al. (2003), wherein subjects were asked “to generate a creative alternative use for a brick” as a dependent measure of originality. In our study, respondents were asked to list all the different uses for a pole that they could think of in one minute. Creativity is then measured as the number of non-repetitive, non-vague, and feasible responses, as well as how unique the answers were. In summary, a respondent’s creativity was assessed along three dimensions that served as inputs for a creativity (Anderson, 2008)-style index. Namely, (1) number of items - the number of items mentioned by the respondent (excluding any responses that were redundant or unintelligible); (2) category spanning - the number of categories spanned by the responses; (3) innovation - defined by the sum of inverse-frequency weights for each purpose.

The impacts of Educate! on all three creativity outcomes are statistically significant. In particular, the program yielded a positive significant and impact for all the three samples (All, Male, and Female), with study participants proposing more uses, spanning more categories, and more innovative solutions relative to their peers in the control group. Overall, youth in enrolled in Educate! scored 0.16 sd higher along the creativity index. Effects for the female and male subsamples are 0.23 sd and 0.13 sd, respectively, with the larger difference in male-female performance being along the category spanning dimension.

The second of the task-based measures considered is *persuasion*; that is, the process of changing (without duress) a person’s opinion, feelings, behaviors, or general evaluations (attitudes) toward some object, issue, or person (Cialdini, 2001). Communication, emotional intelligence, active listening, logic, and reasoning are some of the key skills for persuasion (Cialdini, 2018).¹⁸ Recent work has also highlighted the role of negotiation and persuasion skills – skills that are at the center of the Educate! intervention – in shaping education outcomes and gender attitudes of adolescent girls. In Zambia, Ashraf et al. (2020) finds that negotiation training (which taught girls skills to reconcile different interests by looking for “win-win” solutions) led to improvements in human capital outcomes 3 years after the intervention. In India, Dhar et al. (2022) document meaningful impacts on gender attitudes of a school-based *persuasion* intervention for adolescents among the sample of both boys and girls two years after training. No labor market outcomes were reported by either study.

¹⁸Cialdini (2018) describes six principles that are related to persuasion: (1) Liking – people like those who like them (uncover real similarities and offer genuine praise); (2) Reciprocity – people repay in kind (give what you want to receive); (3) Social proof – people follow the lead similar to that of others (use peer power whenever it’s available); (4) Consistency – people align with their clear commitments (make their commitments active, public, and voluntary); (5) Authority – people defer to experts (expose your expertise; don’t assume it’s self-evident); and (6) Scarcity – people want more of what they can have less of (highlight unique benefits and exclusive information).

During the persuasion task, study participants were asked to convince a group of hypothetical government officials who intend to distribute more land to farmers that they (i.e. the participant) should be granted more land which, in turn, will make their business more profitable. Youth were allotted one minute to make a persuasive pitch, with their conversations being audio recorded. To assess the quality of the case they made, MBA students and business professionals recruited in Uganda were asked to score youth’s performance during the *persuasion task*. This particular measure is closest to simulating how the acquired skills translate to and may impact real-life outcomes. Educate! graduates are deemed more persuasive along two specific dimensions. They are more likely to be identified as someone to whom land should be granted by government officials in this hypothetical scenario (5.9 pp, or a 7.1 percent increase), and they are more likely to be identified as someone with whom Ugandan professionals would like to do business (8.7 pp, or a 16.2 percent increase). However, there are no statistically significant impacts on the likelihood of hiring the respondent, possibly because hiring decisions are based on multiple dimensions of job candidates’ characteristics, the relevance of which is occupation-specific rather than based on personality or how persuasive the candidates are in a given context. Overall, youth in the treatment group were more persuasive than youth in the control group with very similar effect sizes of around 0.17 sd across all three samples (treatment effects: All 0.18 sd, Male 0.18 sd, and Female 0.20 sd, see Table A.4).

To summarize, Educate! led to meaningful intra-personal (grit, plasticity (BFI), ability to manage stress, self-efficacy, self-confidence, and creativity) and inter-personal (prosociality, persuasion). The program had a role not only in increasing passion and commitment to long-term goals but also in shaping youth’s attitudes and beliefs about how they can use their abilities to work toward goals, as well as execute plans for and investments in their future. These are consistent with the patterns discussed in the next sections, whereby female Educate! graduates made additional investments in education and delayed family formation relative to their peers in the control group.

While the study is underpowered to detect gender differences, it is worth noting that, in the majority of cases, the estimated treatment effects on skills for the female sample are larger (in some instances twice as large) than those for the male sample, suggesting larger gains for female Educate! study participants. One possible explanation for this pattern may lie in differences in gender roles and male vs. female socialization of personality traits in Uganda, some of which the intervention appears to re-balance, thereby narrowing gender (skills) gaps.

5.1.3 Business Knowledge

Business knowledge was assessed along five distinct dimensions: budget elements, profit and loss statements, ability to identify opportunities for business ideas, deliberative dialogue, and win-win situations. The first three dimensions correspond to more traditional hard-skill business elements, while the last two pertain to knowledge of soft skills that may be relevant for business operations and management. A knowledge index of hard skills for business is very similar across treatment and control groups (see Tables A.5 and A.4); however, youth in the treatment group display better understanding and mastery of business soft skills, with effect sizes for the full sample around 0.12 sd (while Male and Female effect sizes are 0.156 sd and 0.10 sd, respectively).

The asymmetry between soft and hard skills and the heterogeneity within hard skills reflect the Educate! curriculum’s strong emphasis on soft skills and leadership relative to typical vocational training and business practices. A review of Educate!’s lesson plans indicates that its focus is roughly 70/80 percent on soft skills (i.e., leadership, community engagement, and psycho-social development), and 30/20 percent on hard skills

for social enterprises (business creation, financial literacy, job readiness, social entrepreneurship).

5.2 Educational Attainment

In terms of the education trajectories of participants in the study, Educate! trainees graduate from secondary school at higher rates than youth in the control group, with most of the effect driven by female participants. In addition, women are more likely to go onto tertiary education. Furthermore, the program influenced the choice of field of study at university by increasing the likelihood of enrolling in business or STEM majors (see Table A.6).¹⁹

The high rates of secondary school graduation among youth in both treatment and control groups are noteworthy, but also reflect the fact that study participants are positively selected by virtue of being in their last year of secondary school. Nonetheless, Educate! graduates are 3.7 pp (or 4.3 percent) more likely to complete secondary school relative to the control group (87.6 percent graduation rate). The point estimate for the female subsample is nearly three times as large as that for the male subsample (6.9 pp or 8.3 percent), thereby virtually closing the gender gap in secondary school graduation.

In terms of enrollment in and completion of tertiary education, most young people in the study go onto post-secondary education: 74 percent of the control group has completed or was enrolled in some form of tertiary education (vocational or university) at the time of the 4-year follow-up. Even among this highly educated group, female Educate! graduates are 8 pp (10.5 percent, one-sided p -value = 0.04) more likely than females in control group to have completed or to be enrolled in tertiary education. Notably, no statistically significant differences are estimated for the full sample nor for the male subsample. The program also significantly influenced young women’s choice of field of study in tertiary education. Educate! graduates are 7.2 pp more likely to select business and STEM degrees, representing a 22.5 percent increase. The full sample effect is largely driven by the impact on females, which is large in magnitude and highly significant: female Educate! graduates are a staggering 14.4 pp (55.7 percent) more likely to enroll in a business or technical track.

While the Educate! Experience program delivers meaningful skill gains to both males and females, only young women translate the new skills into additional education and are more likely to pursue STEM and business majors. This pattern is consistent with the hypothesis that the newly acquired soft skills may benefit women in overcoming social barriers or the self-perception of these barriers that may traditionally discourage them from pursuing additional education, especially in more technical fields. The skills upgrade for men is smaller in magnitude but they also face fewer or no personal or societal barriers, such that the newly acquired skills may be less critical in shaping educational choices.

5.3 Family Formation and Sexual Behaviour

The Educate! program has the potential to shape relationships and reproductive behavior (such as fertility, family formation, number of sexual partners, and contraception use) through several channels: increased forward-looking behavior linked to better soft skills, better planning for the future, improved female agency and decision-making, better partner quality, and additional education, which results in higher opportunity costs of starting a family and of reducing participation in (or withdrawing from) the labor market. These pathways and mechanisms are particularly meaningful for women.

¹⁹Science, technology, engineering, and mathematics (STEM).

Indeed, relative to the control group, Educate! graduates engage in less risky (sexual) behaviors, with large effects among males (see Table A.7). Since graduating from secondary school, young men in the treatment group are less likely to have sex partners (-5.2 pp or 10.7 percent) and have also fewer sex partners (0.168 sd) relative to their peers in the control group. They are also more likely to abstain from sex (7.7 pp) and appear to delay family formation. While we do not detect any significant impacts for women along risky sexual behaviors, young women in the Educate! program are less likely to have ever been pregnant (-6.3 pp or -20.5 percent) and have fewer children (-0.165 sd, *p-value* 0.105).

To better appreciate these results, some additional background is helpful: 81.4 percent of respondents were in a relationship or had been in a relationship that ended within 12 months of the four-year follow-up. These relationships are relatively recent and on average started when respondents were 21 years old (for context, respondents are on average 23 years old at follow-up). Close to 65 percent of the youth have used family planning methods and 16 percent abstained with their current or most recent partner. On average, respondents report 1.93 sexual partners since graduating from secondary school. Only 15.5 percent of respondents have children and study participants on average have 0.18 children. To put these magnitudes into context, consider the study by (Keats, 2018) that looked at the impact of the 1997 reform that eliminated primary school fees in Uganda. The reform not only resulted in increased educational attainment (by nearly one year on average), with impacts across all grade levels through the end of secondary school, but also led to reduced fertility. In 2006, when women who were first exposed to the reform reached 23 years of age, an additional year of schooling decreased their number of children by 0.09. Larger impacts are expected in the broader population, since the youth who are eligible for the study and for the Educate! intervention are positively selected relative to the average youth in Uganda, as proxied by their educational attainment outcomes (e.g., completion of secondary, enrollment in tertiary education, etc.).

5.4 Gender Norms, IPV Social Acceptability and IPV incidence

Eighty percent of the participants interviewed in 2017 (1,271 participants) were eligible for the relationship survey. Henceforth, we will refer to this subset as the couples sample. As alluded to earlier, the sample remains well-balanced even in the couples sample (see Table B.8), with no impact of the intervention on the likelihood of being in a current or recently dissolved relationship.

When addressing culturally sensitive topics, we rely on the well established and piloted gender specific endline questionnaires for the SASA! program ²⁰ evaluation in Kampala (Abramsky et al. (2016) and Abramsky et al. (2014)). The SASA! endline questions on norms and IPV outcomes are the same as those used in the World Health Organization (WHO) Multi-country Study on Women’s Health and Domestic Violence (Garcia-Moreno, 2001), and are similar to those in the Uganda Demographic and Health Survey (Garcia-Moreno et al., 2005). The SASA! questionnaire adapted some of the original instruments in order to increase their validity and reliability within the Ugandan context.

5.4.1 Gender Norms

Overall, Educate! graduates express more egalitarian gender views than their counterparts in the control group (see Tables A.8 and A.9). When combining the SASA! seven-item module (Abramsky et al., 2014)

²⁰SASA!, Start Awareness Support Action, is a community mobilization intervention that seeks to change community attitudes, norms and behaviors that result in gender inequality, violence and increased HIV vulnerability for women (Abramsky et al., 2014). SASA! was designed by Raising Voices and was implemented in Kampala by the Centre for Domestic Violence Prevention (CEDOVIP).

to capture gender norms surrounding acceptable behaviors for men and women in a Anderson (2008)’s style index, such that higher values indicate less gender egalitarian views, the program fostered more progressive gender norms. The effects are significant in all three samples (All: 0.16 sd; Male: 0.12 sd; Female: 0.22 sd). The relative magnitude of the gender specific effects mimic previous patterns, with women recording effect sizes twice as large as those for men.

However the aggregate index masks potential tensions related to the new set of norms and values. In particular, reviewing individual questions, we note that the program lead to greater optimism and support for views of society valuing men and women equally relative to the control group. Gender-specific and complementary dimensions of these shifts in social norms are also observed. Female Educate! graduates are more likely to claim a right to more agency in joint decision-making within the household (4 pp, 4 percent) as well as to their participation in the labor market (13.3 pp, 27.9 percent). In turn, men who received Educate! training are more likely to recognize women’s right to safe sex (i.e., to ask to use a condom: 5.9 pp, 7.2 percent) and to consensual sexual relationships (i.e., right to refuse sex, 3.1 pp, 3.3 percent).

In summary, relative to their peers in the control group, male Educate! graduates are more likely to recognize women’s agency and acknowledge their roles outside the home. Similarly, female Educate! graduates more readily embrace views of their roles as equals in making decisions within the household, including with regards to their participation in the labor market. However, men in the treatment group are also more aware that joint decision-making may lead to diminished reputation among their peers (male sample: -5.4 pp of -6.6 percent). Therefore, increased female agency in conjunction with persistent traditional male roles may increase tensions within partnerships, leading to psychological and/or physical violence, as predicted by *male backlash* theories (Tankard and Paluck, 2016; Tankard et al., 2019).²¹ The next section explores whether the shift towards more egalitarian gender norms may have resulted in adverse impacts in the form of IPV and related outcomes.

5.4.2 Norms Surrounding IPV and the Incidence of IPV

As alluded to in earlier sections, the theoretical predictions regarding the effects of expanded women’s agency and economic opportunities on IPV-related outcomes is a priori undetermined. Improvements in bargaining power may ameliorate IPV indicators through changes in attitudes and norms, increased control over resources, and improved options outside the relationship. However, such changes could also challenge the status quo, leading to new tensions within relationships, to emotional backlash, and to men using violence to restore authority and extract resources (Angelucci and Heath, 2020). As such, studying the impacts of the program on these outcomes is an important empirical question that could shed light on the social spillovers of the intervention and inform curriculum design, for instance to mitigate unintended consequences.

Furthermore, this study offers a unique perspective by studying program impacts not only on women but also on men. Indeed, our results highlight the possibility that fostering gender progressive attitudes and behaviors can be achieved through interventions designed for the general population while mitigating backlash linked to expanding women’s agency and empowerment (Bobonis et al., 2013; Hidrobo and Fernald, 2013; Aizer, 2010).

We study program impacts on norms governing the social acceptability of men’s use of violence against their partners, as well as the appropriate response to it (see Table A.10). We consider three separate dimen-

²¹Theories of “male backlash”, which have been proposed in psychology, are special cases of instrumental and expressive violence. Male backlash refers to cases where the partner engages in violence in response to an increase in their female partner’s empowerment (Buller et al., 2018).

sions: (1) social acceptability;²² (2) women’s perceived role and response to IPV;²³ and (3) the community’s role in preventing and mitigating violence against women.²⁴

Social Acceptability of IPV. Social acceptance of violence is high even among our sample of highly educated Ugandan youth: 56 percent of the sample stated that use of violence against a female partner is justified in one or more of the circumstances catalogued above. Notably, the program significantly reduced acceptance of violence (-0.13 sd for the full sample) for youth in the Educate! program compared to their control group counterparts. The effect is larger in magnitude for the female sample (-0.18 sd), though men’s attitudes toward the use of IPV also improve, but the effect size is smaller (-0.10) and insignificant at conventional levels (p -value 0.128). However, the null that the two effect sizes are equal cannot be rejected.

Norms governing women’s roles and responses to IPV. Turning our attention to norms relating to whether women should passively accept violence or are to blame for male behavior, the program contributed to an improvement in these beliefs norms (0.081 sd for the full sample). Once again, the shift in norms is stronger and more significant for women in the treatment group (-0.126 sd). Men who participated in Educate! training also hold better views along this dimension, but the effect size is smaller in magnitude (-0.05 sd) and is not statistically significant.

Views about the community’s role in IPV. On average, 92 percent of the control group believes that other individuals or the community should intervene to stop or prevent violence against women. Youth in the treatment group are marginally more likely to believe that outsiders can and should play a role in curbing IPV; however, the effect are not statistically significant. A large majority of our study participants, regardless of treatment assignment, correctly identifies IPV as harmful behavior. This can be interpreted as indirect evidence that the program’s impacts on norms surrounding IPV in the two other domains for which we find statistically significant effects are not driven by differential social desirability bias induced by the treatment.²⁵

More progressive norms pertaining to gender and IPV are also accompanied by encouraging, albeit sometimes insignificant, reductions in all forms of violence. Table A.11 summarizes the results. To put these into context, even among the positively selected youth in our study, a sobering 34.7 percent of the women in control group reported having experienced threats of or incidences of physical violence. The Educate! Experience program led to a 6.1 pp (or 17.5 percent) reduction in the incidence or threats of physical violence, as reported by treated women. Males in the treatment group are 2.4 percent less likely to perpetrate or threaten violence against women, but the effect is not statistically significant.

5.5 Partner Selection and Relationship Dynamics

Educate! youth were exposed to the intervention in their last two years of secondary school so that the training could not only shape education and fertility decisions, but it could also influence their decisions in the relationship market and affect partner matching/sorting. In this section, we investigate to which extent

²²That is, whether the respondents think that a man has good reason to strike his partner in at least one of the following 12 scenarios: she disobeys him; she answers back to him; she disrespects his relatives; he suspects that she is unfaithful; he finds out she has been unfaithful; she spends time gossiping with neighbors; she neglects taking care of the children; she does not complete her household work to his satisfaction; she refuses to have sex with him; she accuses him of infidelity; she tells his secrets to others in the community; he is angry with her.

²³That is, whether women are to blame for violence, or should tolerate violence to keep the family together, or whether it is acceptable for a woman to tell others if she has been beaten.

²⁴That is, whether others should intervene if a husband beats his wife; whether it would be meddling if the respondent intervened in favor of a wife beaten by her husband; whether the community can play a role in preventing violence against women.

²⁵The intervention targeted individual skills and expanded individual agency about women’s abilities to act upon it, such that a null effect on norms underlying the community’s role in IPV is not surprising.

Educate! graduates are involved in better relationships, with more compatible and higher quality partners, which could in turn explain the improvements in the incidence of IPV.

Indeed, there is evidence that youth in the treatment group are more selective in their relationships (see Table A.12). Treated women are less likely to enter a relationship with an older partner (3 pp), and their partners have approximately 26.8 percent higher earnings than their peers in the control group. In turn, program impacts on the earnings of treated male’s partners have the correct sign, but are not statistically significant (one-sided *p-value* 0.21).

To measure respondents’ perceptions of their *partner’s wealth status* (see Table A.13), we asked respondents to assess their *partner’s wealth and social standing* within the community at the time of the survey and their expectations of their statuses in 10 years using a 10-step ladder. Educate! participants assessed their partner’s current wealth status more favorably (effects for current wealth standings: All: 0.14 sd, Male: 0.15 sd, and Female 0.09 sd), and had higher expectations of them for the future (All: 14.9 sd, Male: 11.4 sd, and Female: 15.9 sd).

In the full sample, we note similar patterns for *current and future social standing*. Educate! youth express more favorable assessments of their partners’ current and future social standings (current: 0.11sd; future: 0.12 sd) compared to the views of those control group. The direction of the effects in the gender-specific subsamples are also consistent with the findings for wealth. However, we only precisely estimate program effects on the anticipated social standing of the partners of men in the treatment group, with male respondents ranking the *future social standing* of their partners 0.12 sd higher than their control group counterparts. In both cases, we cannot reject the null that female and male effects were equal.

5.5.1 Couples’ Decision Making Process

To better understand whether higher quality partners also translates into improved and more cooperative decision making within the couple, youth were asked to recall the last conversation they had with their partner concerning the following topics: female labor force participation (whether and when to take a job in the labor market); fertility decisions (whether and when to have a child); and condom use. 98 percent (1,251 out of the 1,271) of study participants in current or recent relationships stated that they had one or more of these conversations. As documented in Table B.9, the treatment and control groups again remain balanced (F-statistic = 1.26, p-value = 0.86).

For each of these scenarios, we collected information on several steps of joint decision making: (i) who initiated the conversation; (ii) initial alignment/agreement; (iii) whether adequate reasons were provided for one’s initial stance, and (iv) agreement with the final decision.²⁶ Results are reported in Table A.14.

Consistent with their perceived and expanded agency, female Educate! graduates are more likely (5.3 pp or 32.8 percent) to *initiate conversations* with their partners about the three topics. Interestingly, while not significant, male Educate! graduates appear to be in relationships in which the conversation is also initiated by their (female) partners. All youth in the treatment group are also more likely to *explain their initial positions adequately well* at the onset of discussion: the effect sizes and significance are notably uniform across genders (Male: 5.9 pp or 16.8 percent, Female: 5.4 or 14.5 percent). However, only women in the Educate! Experience report that their partners were also better and more forthcoming in communicating the rationale underlying their initial opinions.

²⁶Pooled results are derived by aggregating individual responses across the three scenarios in which they participated. Outcomes of interest include: (i) respondent exactly agreed with partner’s initial preference (in all scenarios); (ii) respondent significantly agreed with the final decision (in all scenarios); (iii) respondent described their initial stance well or better than well (in all scenarios); (iv) partner described their initial stance well or better than well (in all scenarios).

On average, 40 percent of couples (in the control group) shared the same views about the three topics at the beginning of the conversations. Reflecting the intervention’s impact on assortative matching, women in the treatment group are also more likely (11.4 pp or 29.5 percent) to share their partner’s initial positions, relative to their peers in the control group. The effect is large statistically significant for women (the male and female estimates are statistically distinguishable from each other). The same pattern is replicated and precision further improved when attention is turned to partners’ agreement with the final decisions (across all three scenarios). Indeed, Educate! meaningfully impacted the degree to which women agreed with the final outcomes of the three conversations (the effect size for female sample is 12.9 pp or 30.6 percent). The effect size for the full sample is driven entirely by females, with the male and female effects being statistically different from each other.

6 Concluding Remarks

In this paper, we study the medium run (4-year follow-up) impacts of the Educate! Experience implemented during the last two years of secondary school and delivered in existing secondary schools by practically-trained youth mentors. Mentors use a combination of classroom-based teaching and practical applications to train secondary school students in soft skills (i.e., inter- and intra-personal skills) and hard skills (e.g., business planning, budgeting, savings).

Educate! led to lasting gains in youth’s soft skills. Youth in the treatment group experienced meaningful improvements in intra- and inter-personal soft skills, leading to expanded focus on long-term goals, control over aspects of their lives, as well as greater self-efficacy to implement actions towards achieving their plans. Women in the treatment group also made additional investments in education, and oriented their course of study more towards STEM and business. The treatment also led to delayed family formation (for women) and safer relationships, with men having fewer sexual relationships along the extensive and intensive margins. The program yielded socially desirable gender-relevant spillovers. Both male and female Educate! graduates had more egalitarian views toward women’s standing in the society and toward their ability to exercise their agency. Attitudes towards IPV also improved, as did its incidence. The evidence suggests greater partner selectivity and improvements in the quality of matches in the market for partners. Further, this study offers a unique perspective by assessing the impacts of the program not only on women but also on men. Our results indeed highlight the possibility of fostering progressive gender behavior and attitudes via an intervention that is designed for the general populations, while also attenuating unintended consequences of expanding women’s agency (Bobonis et al., 2013; Hidrobo and Fernald, 2013; Aizer, 2010).

Educate! graduates were more likely to end relationships if they did not share common goals with their partner. They were more likely initiate conversations regarding family planning (contraception and plans for children), female labor force participation, and spending priorities (expanded agency); they are also more likely to share common views at the beginning of the discussion (assortative matching) and to agree with the final decisions (negotiation and bargaining channels). The difference between the probabilities of initial and final agreement can be thought of as an upper-bound on a “negotiation/persuasion” channel.

The average (bachelor) program in Uganda ranges between 3 and 5 years, such that at the time of the 4-year follow-up, youth had either just completed or were about to complete their tertiary studies. At the time of data collection, 35.7 percent of the sample was still enrolled in tertiary education. As such, the medium-run (4-year) follow-up was not able to fully capture the extent to which the labor market rewards the skills imparted by Educate! and subsequent educational investments: it was too early to definitively

assess Educate!'s medium-run labor market impacts. However, its effects on education and skills offer credible pathways for future impacts along these dimensions.

A Appendix: Main Tables and Figures

Table A.1: Intrapersonal Skills

	Plasticity index			Stability index			Grit index		
	All	Male	Female	All	Male	Female	All	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
β	0.121	0.091	0.183	0.057	0.073	0.051	0.141	0.118	0.199
Mean control group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	1,582	921	661	1,583	922	661	1,586	925	661
Two-sided p-value (H_0 : ATE = 0)	0.062	0.228	0.051	0.350	0.361	0.526	0.010	0.092	0.011
One-sided p-value (H_0 : ATE $\geq$ 0)	0.032	0.114	0.026	0.175	0.181	0.263	0.005	0.047	0.006
One-sided p-value (H_0 : ATE $\leq$ 0)	0.968	0.886	0.974	0.825	0.819	0.737	0.995	0.953	0.994
Two-sided p-value (H_0 : male = female)	0.443			0.843			0.438		

	Self-efficacy index			Stress index			Creativity index		
	All	Male	Female	All	Male	Female	All	Male	Female
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
β	0.096	0.089	0.122	-0.140	-0.153	-0.142	0.160	0.130	0.231
Mean control group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	1,582	923	659	1,581	921	660	1,574	918	656
Two-sided p-value (H_0 : ATE = 0)	0.072	0.205	0.105	0.007	0.007	0.151	0.020	0.147	0.011
One-sided p-value (H_0 : ATE $\geq$ 0)	0.036	0.103	0.053	0.996	0.996	0.924	0.011	0.074	0.006
One-sided p-value (H_0 : ATE $\leq$ 0)	0.964	0.897	0.947	0.004	0.004	0.076	0.989	0.926	0.994
Two-sided p-value (H_0 : male = female)	0.743			0.922			0.429		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.2: Positive self-perception

	Positive self-perception index		
	All (1)	Male (2)	Female (3)
β	0.102	0.054	0.158
Mean control group	0.000	0.000	0.000
N	1,261	696	565
Two-sided p-value (H_0 : ATE = 0)	0.124	0.493	0.109
One-sided p-value (H_0 : ATE $\geq$ 0)	0.063	0.247	0.055
One-sided p-value (H_0 : ATE $\leq$ 0)	0.937	0.753	0.945
Two-sided p-value (H_0 : male = female)	0.407		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.3: Prosocial behavior

	Prosocial behavior index		
	All (1)	Male (2)	Female (3)
β	0.163	0.124	0.224
Mean control group	0.000	0.000	0.000
N	1,584	923	661
Two-sided p-value (H_0 : ATE = 0)	0.004	0.096	0.007
One-sided p-value (H_0 : ATE $\geq$ 0)	0.002	0.049	0.004
One-sided p-value (H_0 : ATE $\leq$ 0)	0.998	0.951	0.996
Two-sided p-value (H_0 : male = female)	0.372		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.4: Interpersonal Skills

	Persuasion index			Business Strategies: Knowledge index		
	All (1)	Male (2)	Female (3)	All (4)	Male (5)	Female (6)
β	0.176	0.177	0.196	0.124	0.156	0.101
Mean control group	0.000	0.000	0.000	0.000	0.000	0.000
N	1,333	782	551	1,595	930	665
Two-sided p-value (H_0 : ATE = 0)	0.082	0.117	0.181	0.053	0.058	0.212
One-sided p-value (H_0 : ATE $\geq$ 0)	0.041	0.059	0.091	0.027	0.029	0.106
One-sided p-value (H_0 : ATE $\leq$ 0)	0.959	0.941	0.909	0.973	0.971	0.894
Two-sided p-value (H_0 : male = female)	0.915			0.635		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.5: Business Knowledge: Hard skills

	Business knowledge index		
	All (1)	Male (2)	Female (3)
β	0.086	0.082	0.121
Mean control group	0.000	0.000	0.000
N	1,595	930	665
Two-sided p-value (H_0 : ATE = 0)	0.309	0.396	0.344
One-sided p-value (H_0 : ATE $\geq$ 0)	0.155	0.199	0.172
One-sided p-value (H_0 : ATE $\leq$ 0)	0.845	0.801	0.828
Two-sided p-value (H_0 : male = female)	0.808		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.6: Education

	Completed secondary school (UACE)			Some tertiary (enrolled or completed)			Business/STEM program in a university		
	All	Male	Female	All	Male	Female	All	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
β	0.037	0.019	0.069	0.017	-0.025	0.080	0.072	0.032	0.144
Mean control group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	1,595	930	665	1,594	929	665	1,595	930	665
Two-sided p-value (H_0 : ATE = 0)	0.050	0.360	0.017	0.698	0.659	0.078	0.145	0.608	0.011
One-sided p-value (H_0 : ATE $\geq$ 0)	0.975	0.820	0.991	0.651	0.330	0.961	0.927	0.696	0.994
One-sided p-value (H_0 : ATE $\leq$ 0)	0.025	0.180	0.009	0.349	0.670	0.039	0.073	0.304	0.006
Two-sided p-value (H_0 : male = female)	0.158			0.151			0.179		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.7: Fertility and Sexual Behavior

	Number of sexual partners since graduating			Abstinence			Ever pregnant (respondent or partner)			Number of children		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
β	-0.114	-0.168	-0.024	0.058	0.077	0.032	-0.040	-0.032	-0.063	-0.086	-0.059	-0.165
Mean control group	0.000	0.000	0.000	0.129	0.112	0.155	0.229	0.177	0.310	0.000	0.000	0.000
N	1,496	872	624	1,595	930	665	1,595	930	665	1,564	912	652
Two-sided p-value (H_0 : ATE = 0)	0.032	0.034	0.621	0.008	0.003	0.363	0.163	0.391	0.171	0.248	0.403	0.209
One-sided p-value (H_0 : ATE $\geq$ 0)	0.984	0.983	0.690	0.004	0.002	0.182	0.918	0.804	0.914	0.875	0.798	0.895
One-sided p-value (H_0 : ATE $\leq$ 0)	0.016	0.017	0.310	0.996	0.998	0.818	0.082	0.196	0.086	0.125	0.202	0.105
Two-sided p-value (H_0 : male = female)	0.119			0.303			0.598			0.480		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.8: Gender norms

	Gender norms index		
	All	Male	Female
	(1)	(2)	(3)
β	-0.160	-0.120	-0.219
Mean control group	0.000	-0.035	0.048
N	1,271	701	570
Two-sided p-value (H_0 : ATE = 0)	0.018	0.135	0.018
One-sided p-value (H_0 : ATE $\geq$ 0)	0.991	0.932	0.991
One-sided p-value (H_0 : ATE $\leq$ 0)	0.009	0.068	0.009
Two-sided p-value (H_0 : male = female)	0.421		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.9: Components of gender norms index

	A husband who makes decisions jointly with his wife is respected by friends			A husband's role is to decide whether his wife can work outside the home			A wife can ask her husband to use a condom (respondent or partner)			A wife can refuse to have sex with her husband if she doesn't feel like it		
	All (1)	Male (2)	Female (3)	All (4)	Male (5)	Female (6)	All (7)	Male (8)	Female (9)	All (10)	Male (11)	Female (12)
β	-0.013	-0.054	0.040	-0.092	-0.056	-0.133	0.038	0.059	0.017	0.022	0.031	0.017
Mean control group	0.813	0.825	0.798	0.490	0.499	0.477	0.750	0.777	0.714	0.902	0.914	0.885
N	1,271	701	570	1,271	701	570	1,271	701	570	1,271	701	570
Two-sided p-value (H_0 : ATE = 0)	0.493	0.068	0.093	0.039	0.324	0.009	0.224	0.083	0.640	0.198	0.119	0.509
One-sided p-value (H_0 : ATE $\geq$ 0)	0.753	0.965	0.047	0.980	0.838	0.995	0.113	0.042	0.320	0.099	0.060	0.255
One-sided p-value (H_0 : ATE $\leq$ 0)	0.247	0.035	0.953	0.020	0.162	0.005	0.887	0.958	0.680	0.901	0.940	0.745
Two-sided p-value (H_0 : male = female)	0.013			0.314			0.405			0.684		

	One day women and men in my community will be valued equally			A married man needs other women, even if things with his wife are fine			Strange for friends to see a married man regularly washing dishes at home		
	All (13)	Male (14)	Female (15)	All (16)	Male (17)	Female (18)	All (19)	Male (20)	Female (21)
β	0.071	0.062	0.081	-0.013	-0.023	-0.001	0.008	0.031	-0.027
Mean control group	0.646	0.641	0.653	0.105	0.128	0.073	0.469	0.423	0.531
N	1,271	701	570	1,271	701	570	1,271	701	570
Two-sided p-value (H_0 : ATE = 0)	0.010	0.089	0.031	0.475	0.319	0.974	0.765	0.331	0.448
One-sided p-value (H_0 : ATE $\geq$ 0)	0.005	0.045	0.016	0.762	0.840	0.513	0.383	0.166	0.776
One-sided p-value (H_0 : ATE $\leq$ 0)	0.995	0.955	0.984	0.238	0.160	0.487	0.617	0.834	0.224
Two-sided p-value (H_0 : male = female)	0.709			0.486			0.226		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.10: IPV Acceptability

	Social acceptability of IPV index			Individual acceptability of IPV index			Community acceptability of IPV index		
	All	Male	Female	All	Male	Female	All	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
β	-0.127	-0.101	-0.178	-0.081	-0.050	-0.126	-0.048	-0.028	-0.088
Mean control group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	1,271	701	570	1,271	701	570	1,271	701	570
Two-sided p-value (H_0 : ATE = 0)	0.121	0.256	0.140	0.190	0.506	0.177	0.473	0.741	0.358
One-sided p-value (H_0 : ATE $\geq$ 0)	0.939	0.872	0.930	0.904	0.747	0.911	0.763	0.629	0.821
One-sided p-value (H_0 : ATE $\leq$ 0)	0.061	0.128	0.070	0.096	0.253	0.089	0.237	0.371	0.179
Two-sided p-value (H_0 : male = female)	0.609			0.528			0.638		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.11: IPV Experience

	Any physical violence			Any physical violence or threat of violence			Any emotional violence			Any financial violence		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
β	-0.022	-0.023	-0.024	-0.028	-0.006	-0.061	-0.004	-0.020	0.002	-0.014	-0.010	-0.018
Mean control group	0.116	0.103	0.134	0.303	0.270	0.347	0.773	0.741	0.817	0.522	0.560	0.469
N	1,271	701	570	1,271	701	570	1,271	701	570	1,271	701	570
Two-sided p-value (H_0 : ATE = 0)	0.211	0.261	0.350	0.352	0.876	0.113	0.856	0.540	0.936	0.653	0.801	0.672
One-sided p-value (H_0 : ATE $\geq$ 0)	0.894	0.869	0.824	0.824	0.562	0.943	0.572	0.730	0.468	0.674	0.600	0.664
One-sided p-value (H_0 : ATE $\leq$ 0)	0.106	0.131	0.176	0.176	0.438	0.057	0.428	0.270	0.532	0.326	0.400	0.336
Two-sided p-value (H_0 : male = female)	0.978			0.332			0.609			0.886		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.12: Characteristics of Partner

	Partner older than respondent			Partner completed tertiary school			Partner income (inverse hyperbolic sine)		
	All (1)	Male (2)	Female (3)	All (4)	Male (5)	Female (6)	All (7)	Male (8)	Female (9)
β	-0.006	0.006	-0.032	0.010	-0.004	0.030	0.417	0.322	0.268
Mean control group	0.449	0.084	0.950	0.500	0.362	0.690	11.470	10.382	12.498
N	1,271	701	570	1,269	701	568	724	327	397
Two-sided p-value (H_0 : ATE = 0)	0.711	0.786	0.062	0.807	0.943	0.531	0.071	0.415	0.050
One-sided p-value (H_0 : ATE $\geq$ 0)	0.645	0.393	0.969	0.403	0.529	0.266	0.036	0.208	0.025
One-sided p-value (H_0 : ATE $\leq$ 0)	0.355	0.607	0.031	0.597	0.471	0.734	0.964	0.792	0.975
Two-sided p-value (H_0 : male = female)	0.176			0.627			0.896		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.13: Perception of partner

	Partner wealth ranking today (1-10)			Partner wealth ranking in 10 years (1-10)			Partner social standing today (1-10)			Partner social standing in 10 years (1-10)		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
β	0.138	0.154	0.093	0.149	0.114	0.159	0.114	0.091	0.102	0.109	0.118	0.066
Mean control group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	1,267	699	568	1,260	696	564	1,266	698	568	1,263	697	566
Two-sided p-value (H_0 : ATE = 0)	0.052	0.098	0.219	0.009	0.119	0.016	0.071	0.244	0.221	0.045	0.065	0.331
One-sided p-value (H_0 : ATE $\geq$ 0)	0.026	0.050	0.110	0.005	0.060	0.008	0.036	0.123	0.111	0.023	0.033	0.166
One-sided p-value (H_0 : ATE $\leq$ 0)	0.974	0.950	0.890	0.995	0.940	0.992	0.964	0.877	0.889	0.977	0.967	0.834
Two-sided p-value (H_0 : male = female)	0.610			0.652			0.923			0.582		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

Table A.14: Couples bargaining

	Respondent initiated conversation in all scenarios			Partner described initial stance in all scenarios			Respondent described initial stance in all scenarios		
	All	Male	Female	All	Male	Female	All	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
β	0.015	-0.016	0.053	0.012	-0.007	0.038	0.058	0.059	0.054
Mean control group	0.185	0.203	0.161	0.295	0.296	0.295	0.360	0.352	0.372
N	1,251	687	564	1,251	687	564	1,251	687	564
Two-sided p-value (H_0 : ATE = 0)	0.516	0.564	0.096	0.601	0.832	0.196	0.016	0.090	0.163
One-sided p-value (H_0 : ATE $\geq$ 0)	0.258	0.718	0.049	0.301	0.584	0.098	0.008	0.045	0.082
One-sided p-value (H_0 : ATE $\leq$ 0)	0.742	0.282	0.951	0.699	0.416	0.902	0.992	0.955	0.918
Two-sided p-value (H_0 : male = female)	0.101			0.308			0.914		

	Initial agreement (exact) in all scenarios			Respondent agreed with final decision in all scenarios		
	All	Male	Female	All	Male	Female
	(10)	(11)	(12)	(13)	(14)	(15)
β	0.060	0.010	0.114	0.068	0.016	0.129
Mean control group	0.403	0.414	0.387	0.459	0.487	0.421
N	1,251	687	564	1,251	687	564
Two-sided p-value (H_0 : ATE = 0)	0.051	0.782	0.014	0.020	0.687	0.000
One-sided p-value (H_0 : ATE $\geq$ 0)	0.026	0.391	0.007	0.011	0.344	0.000
One-sided p-value (H_0 : ATE $\leq$ 0)	0.974	0.609	0.993	0.989	0.656	1.000
Two-sided p-value (H_0 : male = female)	0.079			0.037		

Note: Results are based on one-way cluster (school-level) robust DML (K-fold=5, Splits=100) using partially linear regression models; point estimates and standard errors are aggregated across splits using the median method as in (Chernozhukov et al., 2018).

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B Appendix: Supplemental Figures and Tables

Figure B0: Map of school districts

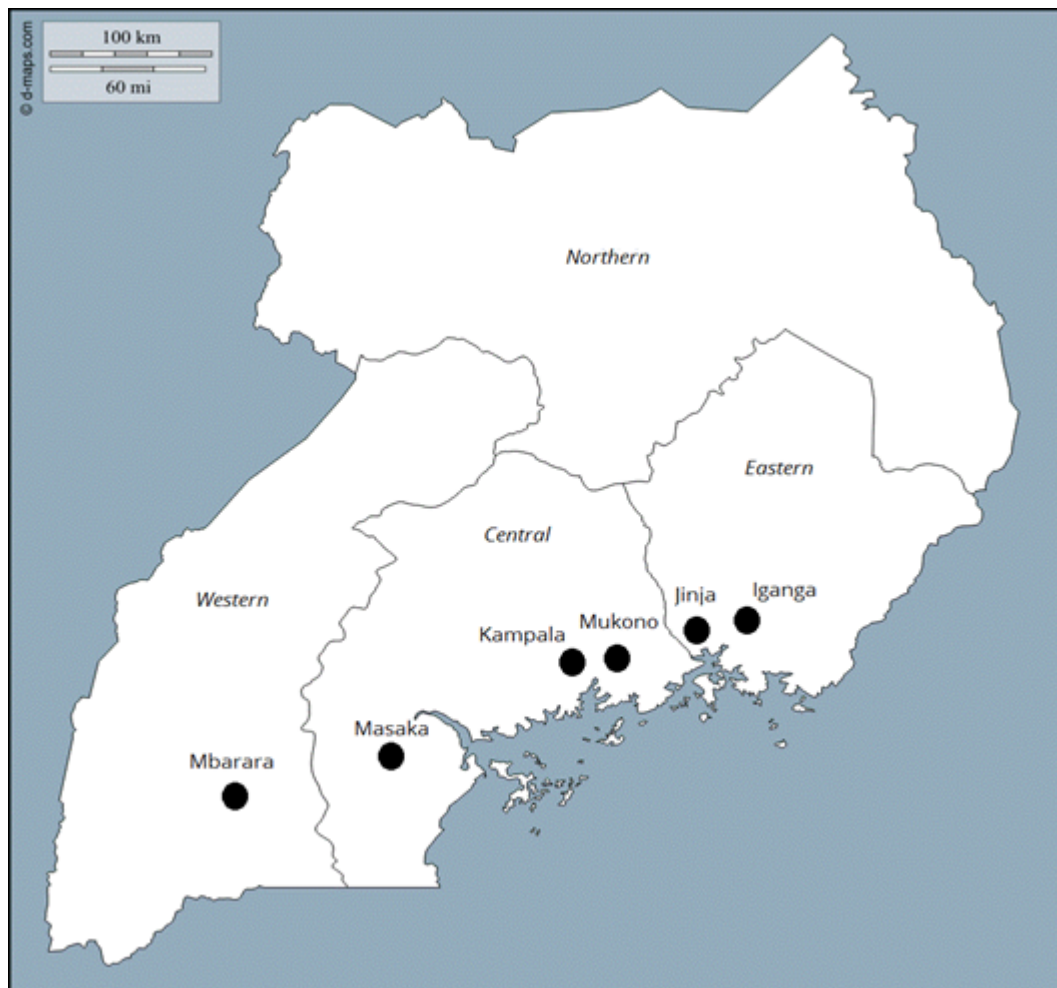


Table B.1: Educate! Curriculum by Skill Type

Type of Skill	Skill	Number of Sessions
Hard	Opportunity identification	9
	Resource mobilization	7
	Budgeting and bookkeeping	5
	Business planning	5
	Savings	4
	Product making	1
	Total	32 (33%)
Soft	Critical thinking and problem solving	11
	Self-awareness and confidence	10
	Social responsibility	10
	Teamwork	9
	Public speaking and communication	7
	Creativity	3
	Networking	3
	Project management, goal setting, and prioritization	2
	Research	2
	Resilience	2
	Health and home management	2
	Initiative and being proactive	2
	Total	88 (67%)

Note: TBD..

Table B.2: Definitions of Baseline Characteristics

Characteristic	Definition
Age	Age in years at baseline.
Female	Binary indicator equal to one if female and zero if male.
Boarding student	Binary indicator equal to one if boarding student and zero if day student.
Memory score	Number of digits the respondent could recite backwards (0-10). Standardized to full sample.
Intelligence	Number of Raven’s matrices answered correctly (0-10). Standardized to full sample.
Plasticity	Apply confirmatory factor analysis to extraversion and openness, where each trait is the average score (1-5) on two Likert scales.
Stability	Apply confirmatory factor analysis to emotional stability, agreeable, and conscientious, where each trait is the average score (1-5) on two Likert scales.
Patience	Agreement with five patience statements (i.e., self-control in intertemporal decisions) are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I will spend an afternoon waiting just to get a free medical exam 2. If I am sick, I would prefer buying medicine today that will make me feel somehow better, to getting medicine that would cure me entirely one week later (reversed) 3. I think it’s important to take warnings seriously even if the negative outcome won’t occur for many years 4. Most activities that I plan to do, I tend to do them at the last minute (reversed) 5. Two tasks need to be done today. I prefer to do the hard task before I do the easier task
Prosocial attitudes	Agreement with seven statements about prosocial attitudes are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I have love for my peers 2. I help younger ones 3. I am helpful to elders/adults 4. I enjoy participating in group/community activities 5. I share with others (for example, a football, book, or pencil) 6. Other youth like associating with me 7. I enjoy talking and spending time with my peers
Anxiety	Agreement with nine statements about anxiety are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I cry when I remember bad things from the past 2. I find life difficult even when I am at home or somewhere else 3. I feel sad most of the time 4. I think about bad things from the past 5. I have restless nights 6. I get chest pains when I am over-thinking/worrying 7. I have difficulty when I try to concentrate 8. My body shakes uncontrollably from over-thinking/worrying 9. I feel helpless

Note: TBD...

Table B.3: Definitions of Baseline Characteristics (continued)

Characteristic	Definition
Confidence	Agreement with three statements about confidence are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I have confidence to be responsible for others 2. I have confidence about my future 3. I think I can do most things as well as others
Aggression	Agreement with three statements about hostility are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I threaten to hurt others 2. I frequently argue or fight with others 3. I take things from other places without permission
Peer connectedness	Agreement with two statements about peer connectedness are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I feel that my peers/fellow students understand me 2. I consider my friends to be like my brothers and sisters
Risk aversion	Agreement with seven statements about risk aversion are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I sometimes act quickly instead of thinking too much about the results of my actions (reversed) 2. I regret many choices that I have made in the past (reversed) 3. I am good at resisting temptation (for example, I would not skip school just because my friends ask me to) 4. I am sometimes not able to stop myself from doing something I think is wrong (reversed) 5. If I get money, I spend it too quickly (reversed) 6. If you are not sure about the risks of a job/business, do you get very worried? For example, a business risk could be starting your own business when you are not sure if there is demand for the thing you are selling. 7. Compared to your friends, are you willing to take risks in your life? For example, a risk in your life could be escaping from school or walking alone at night although you are not sure if it is safe. (reversed)
Creativity	Agreement with four statements about creativity are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I believe that thinking in unique and creative ways helps you do well at school 2. I think I show a lot of creativity in my schoolwork 3. I like lessons that make me think creatively 4. A strong desire to discover motivates much of what I do
Empowerment	Agreement with three statements about empowerment are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I am given lots of chances to make my community better 2. I am given chances to work with other young people and adults in my community to make it better 3. Young people my age are able to make a difference in my community

Note: TBD...

Table B.4: Definitions of Baseline Characteristics (continued)

Characteristic	Definition
Leadership	Agreement with seven statements about leadership are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. I am good at getting people to work well together 2. I take responsibility for organizing people in group work 3. I am good at motivating people in my class/community 4. I believe I can persuade my peers to agree on a plan 5. I trust my own judgment when solving problems 6. I can get my classmates/community members to listen to what I say 7. I consider myself to be a leader
Perceived control	Agreement with six statements about perceived control are summed and standardized, where agreement is measured on a Likert scale (1-5) and the statements are: 1. It is important to plan my future career 2. I have a lot of faith in my own ability to succeed in my future career 3. I work hard to make my projects successful 4. I think that God/Allah has more control over my future career success than I do 5. There are factors other than me that determine the success of my business 6. Misfortunes I face in business are consequences of my mistakes
Wealth	Weighted average of inputs, where weights are calculated with the Anderson (2008) method and the inputs are standardized versions of – Binary: indicators for the highest ordered category of roof, floor, and house; motorcycle, laptop, water heater, generator, boat engine, and fridge ownership – Ordinal: 0, 1, or more than 2 bicycles, buildings/houses, TVs, car/truck/tractor, and car/home battery – Count: number of animals, domestic birds, acres of land, and trees right tail winsorized at the 5% level
Family owns business	Indicator for individuals who currently have a small business or income generating activity that they started themselves and run.
Socioeconomic status	Weighted average of inputs, where weights are calculated with the Anderson (2008) method and the inputs are standardized versions of – Indicator for individuals with fathers who completed secondary or higher education, including vocational school or university. – Indicator for individuals with mothers who completed secondary or higher education, including vocational school or university. – Indicator for individuals with fathers whose major source of income was commerce or professional work, where 1) commerce includes owning a shop or hotel, buying and selling items, or trade, and 2) professional work includes a profession or government job. – Indicator for individuals with mothers whose major source of income was commerce or professional work, where 1) commerce includes owning a shop or hotel, buying and selling items, or trade, and 2) professional work includes a profession or government job.

Note: TBD...

Table B.5: Baseline Covariate Balance: Baseline Sample

		Total (N=1,942)			Male (N=1,097)			Female (N=842)		
		Mean		p-value	Mean		p-value	Mean		p-value
		Control	Treatment		Control	Treatment		Control	Treatment	
Individual characteristics										
	Age	18.15	18.09	0.63	18.39	18.41	0.87	17.80	17.73	0.60
	Female	0.40	0.46	0.38	-	-	-	-	-	-
	Boarding student	0.65	0.72	0.53	0.62	0.64	0.85	0.70	0.80	0.29
Cognitive characteristics										
	Memory score	-0.13	0.13	0.06	-0.14	0.08	0.15	-0.11	0.19	0.06
	Intelligence score	5.29	5.42	0.55	5.47	5.43	0.89	5.04	5.40	0.18
Soft skills										
	Plasticity index	-0.02	0.02	0.14	-0.02	0.03	0.11	-0.02	0.02	0.45
	Stability index	-0.01	0.01	0.06	-0.01	0.01	0.15	-0.01	0.01	0.24
	Patience index	-0.01	0.01	0.77	0.03	0.03	0.94	-0.06	-0.01	0.62
	Prosocial attitudes index	-0.02	0.02	0.62	0.01	-0.11	0.15	-0.05	0.15	0.03
	Anxiety index	-0.02	0.02	0.67	-0.06	0.02	0.52	0.04	0.03	0.89
	Confidence index	0.02	-0.02	0.58	-0.02	-0.08	0.51	0.08	0.05	0.74
	Aggression index	-0.01	0.01	0.89	0.08	0.15	0.57	-0.14	-0.16	0.86
	Peer connectedness index	0.00	0.00	0.88	-0.01	-0.01	0.95	0.04	0.01	0.68
	Risk aversion index	-0.01	0.01	0.75	-0.07	0.00	0.56	0.07	0.02	0.54
	Creativity index	0.01	-0.01	0.84	0.05	0.04	0.87	-0.06	-0.06	1.00
	Empowerment index	0.01	-0.01	0.65	0.03	-0.01	0.57	-0.01	-0.01	0.94
	Leadership index	-0.05	0.06	0.06	0.04	0.04	0.97	-0.19	0.07	0.00
	Perceived control index	0.01	-0.01	0.81	0.06	-0.01	0.20	-0.08	0.00	0.46
Family background										
	Socio-economic status index	-0.01	0.01	0.83	-0.02	-0.10	0.33	0.01	0.14	0.21
	Wealth index	0.00	0.00	0.77	0.01	-0.02	0.31	-0.01	0.02	0.58
	Family owns business	0.45	0.42	0.38	0.54	0.50	0.34	0.31	0.32	0.83
F-test of joint significance (F-statistic)		1.29			2.29			4.74		
p-value		0.84			0.42			0.05		

Note: All soft skills are z-scores.

Table B.6: Baseline Covariate Balance: Endline Sample

		Total (N=1,595)			Male (N=930)			Female (N=665)		
		Mean		p-value	Mean		p-value	Mean		p-value
		Control	Treatment		Control	Treatment		Control	Treatment	
Individual characteristics										
	Age	18.16	18.08	0.55	18.39	18.37	0.91	17.81	17.71	0.51
	Female	0.39	0.44	0.52	-	-	-	-	-	-
	Boarding student	0.66	0.71	0.57	0.62	0.64	0.84	0.72	0.80	0.35
Cognitive characteristics										
	Memory score	-0.13	0.13	0.08	-0.15	0.07	0.17	-0.10	0.20	0.10
	Intelligence score	5.32	5.44	0.60	5.52	5.45	0.78	5.01	5.43	0.13
Soft skills										
	Plasticity index	-0.02	0.02	0.23	-0.03	0.02	0.13	0.00	0.01	0.82
	Stability index	-0.01	0.01	0.24	-0.01	0.01	0.38	-0.01	0.01	0.39
	Patience index	0.00	0.00	0.90	0.03	0.02	0.94	-0.04	-0.04	0.97
	Prosocial attitudes index	0.00	0.00	0.97	0.02	-0.09	0.20	-0.03	0.10	0.22
	Anxiety index	-0.03	0.03	0.57	-0.08	0.04	0.34	0.05	0.01	0.72
	Confidence index	0.03	-0.03	0.49	-0.01	-0.08	0.50	0.09	0.04	0.60
	Aggression index	-0.02	0.02	0.61	0.07	0.16	0.47	-0.17	-0.15	0.90
	Peer connectedness index	0.00	0.00	0.92	-0.02	-0.01	0.85	0.03	0.01	0.87
	Risk aversion index	-0.01	0.01	0.77	-0.06	0.00	0.65	0.06	0.03	0.71
	Creativity index	0.02	-0.02	0.56	0.07	0.04	0.69	-0.05	-0.09	0.70
	Empowerment index	0.00	0.00	0.92	0.03	-0.02	0.54	-0.03	0.02	0.46
	Leadership index	-0.03	0.03	0.26	0.05	0.03	0.80	-0.17	0.03	0.03
	Perceived control index	0.01	-0.01	0.75	0.09	-0.04	0.08	-0.11	0.02	0.27
Family background										
	Socio-economic status index	-0.01	0.01	0.76	-0.03	-0.09	0.42	0.01	0.15	0.20
	Wealth index	0.00	0.00	0.94	0.02	-0.03	0.25	-0.02	0.03	0.23
	Family owns business	0.46	0.44	0.50	0.55	0.51	0.37	0.32	0.35	0.67
F-test of joint significance (F-statistic)		1.26			1.91			3.45		
p-value		0.87			0.61			0.19		

Note: All soft skills are z-scores.

Table B.7: Quantitative surveys

Module	Administrator(s)	Content
<i>Main survey</i>		
1	Enumerator	Enumerator introduction Demographics (confirm identification) Economic calendar (work and school modules)
2	Enumerator	Loans and savings Management
3	Enumerator	Business knowledge Trust in institutions
4	Enumerator	Community participation Voting behavior
5	Enumerator	Behavioral games
6	Enumerator	Psychological scales
7	Enumerator/participant	You and your relationships
8	Enumerator	Post-survey reflection
<i>Follow-up survey</i>		
9	Enumerator	Self and partner perception
10	Enumerator/participant	Attitudes Health and sexual behavior
11	Enumerator/participant	Job and income Intimate partner violence (IPV)

Table B.8: Baseline Covariate Balance: Couples Sample

		Total (N=1,271)			Male (N=701)			Female (N=570)		
		Mean		p-value	Mean		p-value	Mean		p-value
		Control	Treatment		Control	Treatment		Control	Treatment	
Individual characteristics										
	Age	18.17	18.09	0.52	18.43	18.44	0.95	17.82	17.70	0.37
	Female	0.42	0.47	0.48	-	-	-	-	-	-
	Boarding student	0.66	0.70	0.74	0.62	0.60	0.85	0.72	0.81	0.35
Cognitive characteristics										
	Memory score	-0.16	0.09	0.08	-0.17	0.02	0.23	-0.14	0.17	0.08
	Intelligence score	5.26	5.35	0.69	5.43	5.36	0.79	5.03	5.35	0.22
Soft skills										
	Plasticity index	-0.01	0.01	0.44	-0.02	0.01	0.42	0.00	0.01	0.74
	Stability index	0.00	0.01	0.50	0.00	0.00	0.73	0.00	0.01	0.52
	Patience index	-0.02	-0.03	0.94	0.01	-0.01	0.85	-0.07	-0.06	0.92
	Prosocial attitudes index	0.00	-0.01	0.89	0.05	-0.11	0.09	-0.07	0.10	0.11
	Anxiety index	0.00	0.03	0.74	-0.05	0.03	0.53	0.07	0.04	0.77
	Confidence index	0.05	-0.02	0.34	0.04	-0.07	0.28	0.07	0.03	0.72
	Aggression index	-0.02	0.03	0.62	0.07	0.18	0.44	-0.14	-0.13	0.89
	Peer connectedness index	0.00	-0.01	0.86	-0.01	-0.03	0.77	0.02	0.02	0.97
	Risk aversion index	-0.02	-0.03	0.87	-0.08	-0.05	0.82	0.06	-0.01	0.41
	Creativity index	0.00	-0.03	0.67	0.06	0.02	0.67	-0.09	-0.09	0.95
	Empowerment index	0.03	-0.02	0.39	0.07	-0.04	0.21	-0.03	0.00	0.69
	Leadership index	-0.02	0.01	0.65	0.07	0.01	0.55	-0.15	0.01	0.05
	Perceived control index	0.00	-0.03	0.70	0.10	-0.05	0.09	-0.14	-0.02	0.30
Family background										
	Socio-economic status index	-0.03	0.01	0.59	-0.04	-0.11	0.43	-0.03	0.15	0.15
	Wealth index	0.00	0.01	0.95	0.03	-0.02	0.21	-0.03	0.04	0.21
	Family owns business	0.48	0.42	0.11	0.57	0.50	0.11	0.35	0.33	0.81
F-test of joint significance (F-statistic)		1.08			1.33			2.69		
p-value		0.93			0.85			0.34		

Note: All soft skills are z-scores.

Table B.9: Baseline Covariate Balance: Bargaining Sample

		Total (N=1,251)			Male (N=687)			Female (N=564)		
		Mean		p-value	Mean		p-value	Mean		p-value
		Control	Treatment		Control	Treatment		Control	Treatment	
Individual characteristics										
	Age	18.17	18.09	0.54	18.43	18.44	0.93	17.82	17.71	0.40
	Female	0.42	0.48	0.48	-	-	-	-	-	-
	Boarding student	0.67	0.70	0.74	0.63	0.60	0.80	0.72	0.81	0.31
Cognitive characteristics										
	Memory score	-0.16	0.09	0.09	-0.18	0.02	0.21	-0.14	0.16	0.10
	Intelligence score	5.26	5.35	0.67	5.43	5.37	0.84	5.03	5.33	0.24
Soft skills										
	Plasticity index	-0.01	0.02	0.35	-0.02	0.01	0.41	-0.01	0.02	0.63
	Stability index	0.00	0.01	0.51	0.00	0.00	0.87	0.00	0.01	0.42
	Patience index	-0.02	-0.03	0.91	0.01	-0.02	0.76	-0.06	-0.05	0.90
	Prosocial attitudes index	0.00	-0.01	0.94	0.05	-0.11	0.10	-0.06	0.11	0.11
	Anxiety index	0.00	0.04	0.71	-0.05	0.02	0.55	0.07	0.05	0.86
	Confidence index	0.05	-0.02	0.36	0.04	-0.07	0.31	0.07	0.03	0.72
	Aggression index	-0.03	0.03	0.56	0.06	0.18	0.35	-0.15	-0.13	0.90
	Peer connectedness index	0.00	-0.01	0.83	-0.01	-0.04	0.71	0.02	0.02	0.95
	Risk aversion index	-0.02	-0.04	0.77	-0.08	-0.06	0.84	0.06	-0.03	0.31
	Creativity index	0.00	-0.04	0.59	0.06	0.01	0.63	-0.08	-0.10	0.88
	Empowerment index	0.03	-0.03	0.32	0.06	-0.06	0.15	-0.03	0.01	0.62
	Leadership index	-0.02	0.01	0.67	0.07	0.01	0.53	-0.14	0.01	0.05
	Perceived control index	0.00	-0.03	0.78	0.10	-0.05	0.08	-0.14	0.00	0.23
Family background										
	Socio-economic status index	-0.04	0.02	0.52	-0.04	-0.10	0.52	-0.03	0.15	0.14
	Wealth index	0.00	0.01	0.87	0.03	-0.02	0.26	-0.02	0.04	0.21
	Family owns business	0.48	0.42	0.10	0.58	0.49	0.09	0.35	0.34	0.86
F-test of joint significance (F-statistic)		1.26			1.53			2.56		
p-value		0.86			0.76			0.38		

Note: All soft skills are z-scores.