

Educate! Evaluation: Four-year Follow-up Report
Data Collection and Preliminary Results from the Quantitative Survey

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Contents

Executive Summary	5
1. Project Background	10
1.1. Theory of Change	11
1.2. Intervention	11
2.1. Evaluation Design	13
2.2. Sample	13
2.2.1. School-level Sampling	13
2.2.2. Student-level Sampling	14
2.3. Quantitative Survey Instruments	14
2.3.1. Main Survey	15
2.3.2. Follow-up Survey	15
2.4. Measurement of Quantitative Survey Variables	16
2.4.1. Socio-Demographics	16
2.4.2. Economic Outcomes	17
2.4.3. Hard-Skills Business Knowledge	19
2.4.4. Community Outcomes	23
2.4.5. Measures of Soft skills, Depression, and Self-Reported Wealth and Social Standing	24
2.5. Quantitative Analysis	35
2.6. Research Ethics	35
2.6.1. Study Permissions	35
2.6.2. Confidentiality	36
2.6.3. Possible Risk(s) to Respondents	36
3. Data Collection	36
3.1. Timeline	36
3.2. Phone Tracking Exercise	37
3.3. Training	37
3.3.1. Quantitative Data Collection Training	37
3.4. Logistics	39
3.5. Data Quality	39
3.6. Data Collection Challenges	39
4. Data Collection Summary Statistics	42
4.1. Quantitative Data Collection Summary	42
5. Quantitative Survey: Preliminary Results	47
5.1. Socio-Demographics	47
5.2. Measures of Soft Skills	48
5.3. Hard-Skills Business Knowledge	51
5.4. Prosocial Attitudes and Community and Political Engagement	51
5.5. Education and Labor Market Outcomes	53
5.5.1. Education	53
5.5.2. Labor Market Outcomes	54

5.6.	Social Spillovers	57
5.6.1.	Fertility and Risky Behaviors	58
5.6.2.	Social Norms about Gender Roles and IPV Outcomes.....	59
	Appendix A. Map of School Districts.....	62
	Appendix B. Training Schedule.....	63
	Appendix C. IPA Data Collection Report Notes	64
	Appendix D. Soft and Business Knowledge (Tables for Sections 5.2 and 5.3).....	67
	Appendix E. Prosocial Attitudes and Community and Political Engagement (Tables for Section 5.4).....	72
	Appendix G. Social Spillovers Outcomes (Tables for Section 5.6).....	80
	Appendix H. 2012 Educate! Curriculum	82

Executive Summary

While secondary schools represent a substantial investment for poorer families, graduates face few formal employment opportunities and often lack the entrepreneurial skills required to start or operate their own small business. Teaching students the hard and soft skills required to be successful entrepreneurs or compete in the formal job market has the potential to reduce youth unemployment, drive economic growth, and reduce poverty. However, whether such skills can be taught is an open question, as well as a policy priority. Indeed, a 37-country study reports that roughly one-third of the 35,000 employers interviewed have trouble finding workers with the right skills.¹ A recent review of 28 studies relying on employer surveys across multiple countries finds that socio-emotional (soft) skills are the first priority in 76.5 percent of the studies that rank employer skill preferences.²

How malleable soft skills are in adulthood and whether training programs that aim to increase the stock of these skills can generate improvements in productivity and life-outcomes have only begun to be explored.³ Most of the existing literature examines only the short-run effects of business training.⁴ The few studies that have documented impacts over time often find that effects disappear in the longer term.⁵ To our knowledge this is the first study that rigorously evaluates the long term impacts of a skill development program for youth in school.

The Educate! NGO aims to enhance skills among youth to help them engage and succeed in both formal employment and entrepreneurial activities in East Africa. The Educate! Experience program is implemented during the last two years of secondary school and delivered within existing secondary schools (government, private, and community schools) by practically-trained youth mentors, who use hands-on teaching methods and practical applications in classrooms and in a Student Business Club.⁶ The program's goal is to develop leadership, workforce-readiness and entrepreneurship skills in secondary school students. It 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. It also teaches hard skills such as business planning, budgeting, savings, etc.

¹ Manpower (2010), "Supply/Demand: 2010 Talent Shortage Survey Results," Manpower Group: Milwaukee, WI.

² Groh et al. (2016), "The impact of soft skills training on female youth employment: evidence from an RCT in Jordan," *IZA Journal of Labor & Development*.

³ Campos et al. (2017), "Teaching personal initiative beats traditional training in boosting small business in West Africa." *Science*. Groh et al. (2016) *ibid*.

⁴ McKenzie and Woodruff (2017), "Business practices in small firms in developing countries," *Management Science*, 63(9).

⁵ Blattman et al. (2018), "The Long-Term Impacts of Grants on Poverty: 9-year Evidence from Uganda's Youth Opportunities Program." Blattman et al. (2019) "Impacts of Industrial and Entrepreneurial Jobs on Youth: 5-Year Experimental Evidence on Factory Job Offers and Cash Grants in Ethiopia."

⁶ The program curriculum has been revised since 2012, but the core of soft and hard skills curriculum and components of practical skills training, youth mentorship, and student business clubs remain.

Evaluation: Randomized Control Study

To shed light on the question of whether entrepreneurial skills, particularly soft skills, can be taught, Educate! partnered with researchers Paul Gertler (UC Berkeley), Laura Chioda (World Bank), Dana Carney (UC Berkeley) and Innovations for Poverty Action (IPA) to conduct a clustered randomized controlled trial of the Educate! Experience program in Uganda. The baseline survey was conducted in 2012. Shortly after, researchers randomly assigned 48 schools, stratified by district (6 districts), to either receive the full program or be part of the control group. A total of 1,942 students participated in the study in those schools (966 received the program; 976 did not). The Educate! Program was implemented successfully during the 2012-2013 school years. A 4-year follow-up survey was conducted between September 2017 and February 2018 and measured the impact of the program on students' skills, educational attainment, economic outcomes, and community involvement. The researchers also raised additional funds to study the program's impact on fertility and sexual behaviors, women's empowerment and intimate partner violence (IPV).

Results

Preliminary results from the four-year follow-up point to strong and meaningful impacts on Educate! graduates' soft skills and weaker impacts on knowledge of hard skills, reflecting the program's focus on soft-skills. Evidence points to large and significant impacts on participants' soft skills, such as creativity, grit (0.14 standard deviations, sd), self-efficacy (0.10 sd), and selected Big Five personality traits (e.g., Extroversion 0.08 sd, Openness 0.13 sd, and Agreeableness 0.09 sd).⁷ Business knowledge is assessed along five distinct dimensions: budget elements, profit and loss statements, ability to identify opportunities for business ideas, deliberative dialogue, and win-win situations. When focusing on aggregate measures of business knowledge, Educate! graduates do not score better than youth in the control group. However, when considering individual elements that reflect a mixture of soft and hard skills, Educate! graduates exhibit better mastery concepts related to identifying opportunities for business (0.08 sd), deliberative dialogue (0.08 sd), and win-win strategies (0.11 sd). These findings are consistent with our review of the program's lesson plans, which indicates that its focus is roughly 70/80 percent on soft skills (i.e., leadership and psychosocial development), and 30/20 percent on hard skills (business creation, financial literacy, job readiness).

Educate! graduates are more likely to complete secondary school, select Business and STEM majors, and girls are more likely to make additional investments in tertiary education. Overall, Educate! graduates have developed skills that are traditionally associated to greater focus on long-term goals; they report being more in control of aspects of their lives (self-efficacy and grit) and more empowered to implement actions towards their

⁷ The Big Five is a theory of personality traits that identifies five distinct factors as central to personality, namely: *Openness*: imagination, insight, creativity, openness to new experiences; *Conscientiousness*: thoughtfulness, impulse control, and goal-directed behaviors; *Extroversion*: sociability, talkativeness, assertiveness, and emotional expressiveness; *Agreeableness*: trust, altruism, and other prosocial behaviors; *Neuroticism*: prone to nervous behavior and anxiety.

plans. This shift toward long term planning is accompanied by higher secondary school completion rates (3.7 p.p.), with the impact among young women (6.6 p.p.) helping to close the gender gap in secondary school completion (i.e., 89.9 percent of young women in the treatment group completed high school versus 90.4 percent of young men in the comparison group). Young women in the treatment group are also 8.4 p.p. more likely to be currently enrolled in or have completed tertiary education relative to the control group (75.9 percent). Educate! graduates are 7.2 percentage points more likely to pursue technical degrees, such as business and STEM majors, relative to the 48.7 percent in the control group. Here also, the effects were stronger among young women, who are 12 p.p. more likely to select STEM and business majors than their counterparts in the control group (44.7 percent).

No positive impacts on labor force participation, earnings, or wages/profits among Educate! graduates. However, the observed education and skills impacts offer credible pathways to remain optimistic about future impacts along these dimensions. At the time of data collection, approximately 35% of the sample was still enrolled in tertiary education. As such, the medium-run (4-year) follow-up is not able to fully capture the extent to which the labor market rewards these skills and educational investments. The average (bachelor) program in Uganda ranges between 3 and 5 years, such that at the time of the 4-year follow-up, youth have either just completed or are about to complete their tertiary studies. It is therefore too early to definitively assess Educate!’s long-term labor market impacts. With this important caveat in mind, no improvements in labor force participation are detected among Educate! graduates (self-employment or otherwise). Similarly, we do not observe higher earnings, wages, revenues, or profits.⁸ However, the Educate! program led to important changes in youths’ mindset and soft skills, investments in education, especially among women, and shifts in interest towards business and STEM major. These factors are typically strongly correlated with economic outcomes. In particular, there is ample documentation of the association between soft skills and employment outcomes.⁹

The program generates social spillovers along important dimensions: delayed family formation, lower incidence of risky behaviors, shifts in gender-related social norms, and reductions in intimate partner violence. While not the main focus of the intervention, the Educate! program yielded important social spillovers along several dimensions. Youth in the treatment group have fewer sexual partners (0.11 sd) and delay family formation. They have fewer children than their peers in the control group and are 5.6 p.p. less likely to have ever been

⁸ Impact estimates for wages, profits, and revenues are not methodologically correct because they do not account for the non-random selections of youth into these activities. As such, these finding should be interpreted with caution.

⁹ Bowles et al. (2001) “Incentive-enhancing preferences: personality, behavior and earnings,” *AER*91(2); Heckman et al. (2006) “The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior,” *Journal of Labor Economics*, 24(3): 411–82; Groh M, et al. (2015) “Reducing information asymmetries in the youth labor market of Jordan with psychometrics and skill-based tests,” *World Bank Econ Rev Papers Proc.*; Heckman and Kautz (2012) “Hard Evidence on Soft Skills,” *Labour Economics* 19(4); Heckman et al. (2013) “Understanding the Mechanisms through Which an Influential Early Childhood Program Boosted Adult Outcomes,” *AER*103(6); Groh et al. (2016) *ibid*, Campos et al. (2017) *ibid*.

pregnant, as compared to 26.4 percent of the control group. Overall, Educate! graduates express more egalitarian gender views relative to the control group. Male Educate! graduates are more likely to recognize women's agency and acknowledge their roles outside the home and in society, while female Educate! graduates are more likely to embrace and support views of their roles as equals. Young women who participated in Educate! training were 13.9 p.p. less likely to agree with the statement that men alone could decide whether their wives could participate in the labor market, relative to 47.7 percent of women in the control group. Complementarily, young men in the treatment group were more likely to recognize a woman's right to safe and consensual sex: they were also 5.8 p.p. more likely to say that a woman could ask her husband to use a condom and were 3.2 p.p. more likely to say that a woman could refuse sex with her husband, over 77.4 and 91.3 percent in the control group, respectively. Adoption of more gender egalitarian roles are in some instances still perceived as diminishing men's standing among peers for the treatment group, which could potentially increase tensions within couples. However, these apparent tensions do not seem to translate into higher incidences of IPV. Not only are Educate! graduates less likely to justify IPV (6.9 p.p. lower in acceptability of IPV), but females in the treatment group are also less likely (6.2 p.p.) to report threats and incidences of physical violence, relative to 34.9 percent of women in the control group.

Main Takeaways & Future Research

Soft skills are malleable; the Educate! Experience Program shows that they can be effectively taught so that improvements persist years after the intervention. The Educate! Experience program's strong focus on soft skills yielded significant and meaningful improvements along several dimensions: stress management, self-actualization, creativity, grit-passion, grit-perseverance, pro-sociality, plasticity, communication and persuasion. The program offers a concrete guide for policy makers interested in embedding soft skills as part of their entrepreneurship/skills training programs. The results presented here also suggest possible areas of improvement in those sections of the curriculum focusing on hard-skills, revisions of which are already under consideration by the Educate! team.

The program led to additional investments in education in the form of secondary completion and enrollment in tertiary for young women. The changes in soft skills indicate that youth adopt a more future-oriented, persistent, and proactive mindset, which is in turn consistent with additional education investments. Youth in the treatment group were more likely to graduate from secondary school and young women in the treatment group increased enrolment in tertiary education.

The program also generated important social spillovers. Youth who participated in the Educate! program reported engaging in less risky behavior, delayed family formation, and selected better partners. Participation in the program led to a reduction in intimate partner violence and favorably shifted gender norms.

Additional research is needed to study the impact of the Educate! Experience program on labor market outcomes. At the time of the 4-year follow-up, 35% of the sample was still enrolled in tertiary education, such

that it is too early to assess the program's impacts on economic activity and its returns. With this caveat in mind, no positive impacts on economic activity and labor market returns were recorded during the 4-year follow-up. However, the existing literature provides credible pathways for the observed changes in skills and education investments, including those related to the choice of business and STEM majors, to translate into future economic impacts.

Future avenues of research: the research team is currently fundraising to carry out a 7-year follow-up to assess long term impacts on an array of outcomes, including labor market outcomes. The follow-up instruments will be designed to shed light on the underlying mechanisms and components through which the intervention operates and yields lasting impacts. More generally, future research is needed to study whether complementary interventions (e.g., grants, business peer groups, additional reinforcement training as youth enter their productive years) may make the Educate! Experience program more impactful in the long run.

1. Project Background

Due in part to limited formal employment options in the developing world, small businesses are perceived to represent gainful opportunities to improve the livelihoods of those living in poverty. In many developing countries, between 50 and 70 percent of poor urban households operate non-agricultural businesses, and up to 40 percent of rural households operate nonfarm businesses. Decades of development research on the livelihoods of those living in poverty in low- and middle-income countries has demonstrated the reliance on agriculture, and has also examined tradeoffs between leisure and labor.^{10,11}

More recent evidence in the past decade suggests that many households (between 20 and 50 percent, depending on the country) do not rely on one single business, but rather choose to diversify across several income-generating activities.¹² It is believed that entrepreneurial skills and competencies are an integral part of successful businesses, since small businesses that often employ less than a handful of employees rely heavily on the skills and inventiveness of the business owner/manager. One of the long-standing debates in the entrepreneurship and business management literature is whether entrepreneurship skills can be taught. If they can be taught, how do they influence business start-ups and successful entrepreneurship compared to other interventions?

The nongovernmental organization (NGO) Educate! aims to enhance the ability of youth to engage and succeed in both formal employment and entrepreneurial activities in East Africa, ultimately leading to improvement in their livelihoods. This report describes the findings of a four-year follow-up data collection process for a long-term impact evaluation of Educate! Experience, a leadership and entrepreneurship education program for students specifically in Ugandan secondary schools. The four-year follow-up was completed in February 2018. This report describes the study design, survey instruments, data collection logistics and challenges, and summary statistics.

This first section of the report describes the project background and the theory of change behind the intervention. Section 2 details the methodology, including the evaluation design, sampling strategy, quantitative survey instruments, and ethics committee approvals. Data collection details from enumerator training to data cleaning are described in Section 3, while Sections 4 and 5 present, respectively, a summary of statistics from data collection and the preliminary results of the quantitative survey.

¹⁰ I. Singh, L. Squire, and J. Strauss (1986) *Agricultural Household Models: Extensions, Applications and Policy*. Baltimore: Johns Hopkins University Press.

¹¹ D. Benjamin (1992) "Household Composition, Labor Markets, and Labor Demand: Testing for Separation in Agricultural Models," *Econometrica* 60(2): 287–322.

¹² International Labour Organization (2002) *Women and Men in the Informal Economy: A Statistical Picture*, Second Edition. Geneva: ILO.

1.1. Theory of Change

The *Educate! Experience* program, implemented during the 2012–2013 school year, was developed around the theory of change as shown in Table 1.1.1.¹³

TABLE 1.1.1. EDUCATE! EXPERIENCE THEORY OF CHANGE

Problems	Target Population	Inputs	Outputs	Outcomes
<p>Many Ugandan Youth:</p> <p>Lack access to high-quality, student-centered education</p> <p>Lack the income, skills, and resources to ensure sustainable livelihoods</p> <p>Are not meaningfully engaged in the civil, social, and cultural life in their communities and are not motivated to do so</p> <p>Have underdeveloped psychosocial skills</p>	Ugandan secondary school students (Senior 5 and Senior 6)	<p>Social Entrepreneurship and Leadership Course (Approximately 45 hours of instruction)</p> <p>Mentorship (One-to-one mentorship with a target minimum of 75 minutes per students – 15 minutes once per term; there is also approximately seven hours of group mentorship)</p> <p>Student Business Club (Four hours of workshops, undefined number of Student Business Club meetings)</p>	<p>Social Entrepreneurship and Leadership Course Attendance Students complete Entrepreneurship and Leadership Course (Target: 80%)</p> <p>Mentorship Received Students have been mentored at least 75 minutes (minimum one time per term for 15 minutes)</p> <p>Participation in Student Business Club Students have participated in these clubs and have created a small business as a group project</p>	<p>Leadership Students feel responsibility for improving their communities and their own well-being</p> <p>Community Engagement Students have increased concern for their community and take action based on this concern</p> <p>Business Planning Students have improved business and financial skills</p> <p>Economic Activity Students increase their economic activity by starting their own business and/or employment and/or continuing further education</p> <p>Psychosocial Development Students have made positive psychosocial adjustments</p>

1.2. Intervention

The Educate! Experience program consists of three components:

1. *Social Entrepreneurship and Leadership Course (SELC)*. The curriculum is taught in English for 80 minutes once per week, and four to nine times per school term for five terms (35 lessons in total). The SELC focuses on developing socially responsible leadership skills, business/entrepreneurship skills, community awareness/engagement, group and individual “personal projects” such as community initiatives and businesses, and group mentorship.
2. *Mentoring: One-on-One and Group Sessions*. Educate! mentors hold one-on-one mentoring sessions, in English, outside of the scheduled SELC lesson time. The goal is for these sessions to happen once or twice a term with each session lasting approximately 15 minutes. These sessions focus on the personal

¹³ For more information, see the [Educate!](#) website.

development of the 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 Student Business Club is focused on business development and meant to help scholars design projects that generate income. Members are responsible for developing and managing the club projects with the guidance of the Educate! mentor. The club starts working by writing a constitution and electing the leadership board. The members decide themselves what kind of business to start and raise funds for this purpose (often through fundraising, their own allowances, contribution from parents, etc.). The Student Business Club meets outside of the scheduled SELC classes. There is no target for the number of times the SBC should meet. The number of meetings depends on the interests and needs of the students. The club is shut down right before the students graduate, with remaining products sold and profits divided between the members. While the mentor oversees decision-making and operations, the students independently manage the entire business creation process from start to end.

At the time of the evaluation, Educate! offered two other supporting components: the Educate! scholarship and Teacher Support Training. The scholarship covers the tuition for one degree at a Ugandan University of the student's choosing. Nominees must have achieved a certain 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 includes providing a coordinator who works with the mentors and teachers at schools to help them comprehend (social) entrepreneurship concepts, and also trains them on working together and showing others how to work together.

2. Methodology

2.1. Evaluation Design

A cluster randomized control trial was designed to evaluate the impact of the Educate! intervention. The unit of randomization is at the school level, while the unit of analysis is at the student level. Based on the theory of change, the evaluation is designed to test whether participation in Educate! programs could lead to improvements in the following outcomes:

- Skills
 - Practical business skills such as business planning, management, basic accounting and finance, and basic financial literacy, including savings behavior and the use of financial institutions
 - Soft skills such as negotiation, persuasion, creativity, patience, risk aversion, and self-efficacy
- Economic outcomes
 - Entrepreneurial success, including starting businesses, investing in and expanding businesses, and boosting business incomes of the self-employed
 - Improving wages for those who work for someone else
 - Increasing total income
- Educational attainment
 - Graduating from secondary school
 - Additional education investment
- Community involvement
 - Participation and leadership in community organizations and projects, political organizations and activities, and school activities
- The lives of women
 - Economic outcomes
 - Reduced or better-timed fertility
 - Improved IPV-related outcomes

In addition to the quantitative data collection, IPA also supervised a qualitative study. The qualitative evaluation is not featured in this report, since the research team was not involved in or responsible for the qualitative study.

2.2. Sample

2.2.1. SCHOOL-LEVEL SAMPLING

Between January and April 2012, six districts were selected out of the 111 districts in Uganda: Iganga, Jinja, Kampala, Masaka, Mbarara, and Mukono. These six districts are the most populous districts that have at least

eight A-level¹⁴ schools with more than 40 students in their first year of upper secondary education (known as S5 students). Eight schools from each district were randomly selected to be included in the Randomized Control Trial, bringing the total sample to 48 schools. Twenty-four schools, stratified by district, were randomly assigned to the treatment group (i.e., to participate in the Educate! program), while the other 24 schools were randomly assigned to the control group. Appendix A presents a map with the location of the school districts included.

2.2.2. STUDENT-LEVEL SAMPLING

In May 2012, a short survey was administered to all S5 students in the selected schools to ascertain interest in participating in a leadership and entrepreneurship course, determine previous leadership and/or entrepreneurial experience, and assess literacy levels and cognitive ability. All 5,048 interviewed students were assigned a score based on the survey, and the top 45 S5 students in each school were invited to participate in the Educate! program for the rest of the academic year and during the following one, conditional on Educate! offering the program in their school. The final sample consisted of 1,942 study participants, including 976 control (50.3 percent) and 966 treatment (49.7 percent) participants, making the sample was well balanced between the two groups (Table 2.2.1). The Educate! program was implemented and successfully completed during the 2012 and 2013 school years, (i.e., five full school terms). Preparation for the four-year follow-up data collection process started in May 2017 with a telephone tracking exercise in which 1,706 respondents (87.4 percent) were tracked. During that data collection process in 2017, 82.2 percent of respondents (1,597 out of 1,942) were interviewed.

TABLE 2.2.1. SAMPLE OVERVIEW

Phase	Total Respondents	Treatment	Control
Listing	5,048	–	–
Baseline	1,942	966 (49.7%)	976 (50.3%)
Four-year follow-up	1,597	805 (50.4%)	792 (49.6%)

2.3. Quantitative Survey Instruments

During the quantitative four-year follow-up data collection from August to December 2017, two survey tools were implemented: a main survey and a follow-up survey. All study participants were invited to participate in the main survey. Since the follow-up survey focuses on relationships, it was only conducted with study participants who were in a relationship at the time of the survey, or who were in a relationship in the past 12 months. The respondent could choose to conduct the follow-up survey on the same day as the main survey, or to continue the next day, and 67 percent of the respondents did the follow-up survey on the same day as the main survey. Both surveys were conducted in English. Table 2.3.1 contains the contents of the main and follow-up surveys.

TABLE 2.3.1. QUANTITATIVE SURVEY – AN OUTLINE

¹⁴ In Uganda, students receive the Uganda Advanced Certificate of Education (UACE) when they finish two-year upper secondary school. UACE is also known colloquially as A-Level.

MAIN SURVEY		
Module	Module Administrator(s)	Content
1	Enumerator	Enumerator Introduction Demographics (Confirm Identification)
2	Enumerator	Econ Calendar (Work and School Modules) Loans and Savings Management
3	Enumerator	Business Knowledge
4	Enumerator	Trust in Institutions Community Participation Voting Behavior
5	Enumerator	Behavioral Games
6	Enumerator	Psychological Scales
7	Enumerator /Participant	You and Your Relationships
8	Enumerator	Post-survey Reflection
FOLLOW-UP SURVEY		
9	Enumerator	Self and Partner Perception
10	Enumerator /Participant	Attitudes
11	Enumerator /Participant	Health and Sexual Behavior Job and Income Intimate Partner Violence

2.3.1. MAIN SURVEY

The main survey included demographics, business knowledge (to ascertain retention of concepts taught during the intervention), economic activities and time allocation, community participation, personality and attitudes, and reproductive health. To measure soft skills, three behavioral games were played: a five-minute bilateral negotiation game (between respondent and enumerator), a one-minute persuasion game, and a one-minute creativity game. Respondents were asked for their consent for an audio recording (negotiation game) or a video recording (persuasion game). In the negotiation game, both the enumerator and the respondent were given a financial incentive. Depending on their performance, respondents received up to 10,000 Ugandan shillings (UGX) of airtime, while enumerators received their average winnings multiplied by three in airtime at the end of the data collection period. The typical length of administering the entire main survey for a single respondent was between 90 and 120 minutes. As a token of appreciation, respondents received 5,000 UGX of airtime, in addition to the negotiation winnings, after the survey was completed.

2.3.2. FOLLOW-UP SURVEY

The follow-up survey was conducted only for those respondents who were in a relationship at the time of the survey, or who were in a relationship in the past 12 months. The survey included self-perceptions and partner perceptions, attitudes towards IPV, health and sexual behavior indicators (e.g., decision-making related to fertility), questions concerning couples' decision-making (e.g., whether to have children, condom use, spending,

and labor market decision), and different IPV-related outcomes. Because of the sensitive nature of the content of the survey, respondents had the option to self-administer it. The enumerator was trained to stay in the near vicinity to ensure that the respondent felt comfortable and could ask any question at any time. Just as with the main survey, the main respondent received 5,000 UGX of airtime after the survey was completed as a token of appreciation. The typical length of the follow-up survey for a single respondent was 45 minutes.

2.4 Measurement of Quantitative Survey Variables

This section describes (1) the outcomes of interest and (2) variable construction from the quantitative survey. The descriptions are organized by the survey module numbers (see Table 2.3.1 in the previous section).

2.4.1. SOCIO-DEMOGRAPHICS

Basic sociodemographic characteristics were collected in the quantitative survey, including the respondents' age, gender, whether they had some exposure to entrepreneurial training during secondary education, and enrollment and graduation rates from tertiary education programs, namely vocational school and university (Table 2.4.1).

TABLE 2.4.1. MEASUREMENT AND CODING STYLE OF SOCIODEMOGRAPHIC CHARACTERISTICS

Economic Outcomes	Description	Coding Style
Age	In years	As collected
Gender		= 1 if female
Participated in business training	Information collected at baseline	= 1 if respondent answered: "Business Club" to the question "Have you ever participated in/belonged to any of the following type(s) of clubs?" Option answers: No, I have not; Youth club; Business club; Scouts/Girl guides; Sports club; Dancing, singing, music/choir group; Study/Homework club; Student's union; Religious club; Charity group
Vocational school ever attended	Defined as those who were ever enrolled in vocational school, including those who finished, are enrolled, or dropped out	= 1 if answered "Yes" to the question "Did you ever go to vocational school?"
Vocational school currently enrolled in or graduated from	Defined as those who are currently enrolled or finished vocational studies	= 1 if answered "Yes" to the question "Did you ever go to vocational school?" and "I finished;" or if answered "I am still enrolled" to the question "Did you finish your vocational school studies?"
University ever attended	Defined as those who were ever enrolled in university, including those who finished, are enrolled or dropped out	= 1 if answered "Yes" to the question "Did you ever go to university?"
University currently enrolled in or graduated from	Defined as those who are currently enrolled or finished university studies	= 1 if answered "Yes" to the question "Did you ever go to university?" and "I finished;" or if answered "I am still enrolled" to the question "Did you finish your university studies?"

2.4.2. ECONOMIC OUTCOMES

Economic outcomes were derived from the economic calendar module of the survey, which captured the respondents' history of income-generating activities over a period of time that spans from secondary school graduation until the time of the survey (Table 2.4.2). Administration of the economic calendar module was done in a retrospective fashion, starting from the most recent activities until the respondent exhausted his or her list of activities since graduation. Activities were coded as “employed” (which includes training), “self-employed,” “not working but looking for work,” and “not working and not looking for work.” For each activity listed, a set of follow-up questions were asked to assess activity characteristics such as job type, number of hours worked, and earnings. The economic calendar included questions about participation in tertiary education activities.

TABLE 2.4.2. MEASUREMENT AND CODING STYLE OF ECONOMIC OUTCOMES

Economic Outcomes	Description	Coding Style
Currently working	Defined as working for someone else at the time of the survey, regardless of not receiving a wage (i.e., internship)	= 1 if at least one of the current activities was “working for someone else”
Participation in high-skill job	The high-skill job category includes but is not limited to health care, teaching, information technologies, translation services, motor vehicles mechanic, accounting, and social work.	= 1 if job type belongs to the high-skill job category
Economically active	Economically active defined as those who were either working for a wage or self-employed at the time of the survey.	= 1 if at least one of the current activities was “working for someone else” or “working (self-employed)”
NEET	Not in education, employment, or training	= 1 if at least one of the current activities were “searching for work” or “out of work not searching,” combined with no education or employment at the time of the survey
Currently self-employed	Currently self-employed defined as those individuals who reported operating a business (in a sole or shared ownership) and keeping at least part of the profits	= 1 if at least one of the current activities was “working (self-employed)”
High-skill business	High-skill businesses include but are not limited to professional writing, translation services, tour and travel, website development, music production, construction, and mechanical shops	= 1 if business type belongs to the high-skill business category
Number of concurrent businesses	Number of concurrent businesses calculated from the number of current self-employment modules administered.	Count variable of number of businesses currently operating

Total earnings	Total earnings over the recall period estimated as daily wage from all current and past jobs times the number of days worked on each job, plus monthly profit from all current and past businesses times the number of months in operation of each business.	$\sum_{i=1}^k (Monthly\ earnings \times number\ of\ months\ in\ activity),$ where k is the number of activities reported in the economic calendar. The calculation is not time-discounted
Daily wage	An estimation of the daily compensation for working as an employee	Daily wage was estimated with the questionnaire items: (a) “Which of the following describes how you got paid (hour, day, week, month, contract payment)?” and (b) “How much do you earn per (hour, day, week, month, contract payment)?” This measure is not adjusted by full-time-equivalent. Some specifications were winsorized to limit the effect of extreme observations (i.e., all outliers were set to the 1st or 99th percentile).
Revenues	All the money that came in to the business for selling products and services to its clients in the last calendar month, including sales made on credit	Business revenues were estimated from the questionnaire following items: (a) “How much were the business revenues in the last (week, month)?” (b) “Would you say that the last (week, month) was typical in terms of business revenues?” (c) “How much were the business revenues in a typical (week, month)?”
Profits	All the money that is left in the business in the last calendar month, after deducting all operating expenses	Business profits were estimated from the following questionnaire items: (a) “How much were the business profits in the last (week, month)?” (b) “Would you say that the last (week, month) was typical in terms of business profits?” (c) “How much were the business profits in a typical (week, month)?” Seasonal businesses (e.g., agriculture) or businesses that reported zero profits were omitted from the analysis.
Profit/day	A measure of profit adjusted by the number of hours dedicated to the business	$Monthly\ profit / Days\ worked$
Completed secondary school	Completed secondary school defined as having received the Uganda Advanced Certificate of Education.	= 1 if answered “yes” to the question “Did you finish secondary school?”
Score on A-level UACE	Uganda Advanced Certificate of Education exit exam	Standardized measure with respect to the mean of the control group
Some tertiary education	Some tertiary education defined as those who started or completed tertiary studies (i.e., vocational or university studies).	= 1 if responded “I finished” or “I am still enrolled” to the question “Did you finish your University/Vocational school studies?”

Currently enrolled in school	Currently enrolled in school defined as those who were still in university or vocational school at the time of the survey	= 1 if responded “I am still enrolled” to the question “Did you finish your university/vocational school studies?”
Completed tertiary education	Completed tertiary education defined as having completed a vocational or university degree.	= 1 if responded “I finished” to the question “Did you finish your university/vocational school studies?”
Grade point average (GPA)	Grade point average in university/vocational school	Standardized measure with respect to the mean of the control group and conditioning on male/female
Business-technical studies at vocational school		= 1 if the trade type, technical skill, or course in vocational school/university was related to science, engineering, business, accounting/finance, biomedical, agriculture/animal production, or economics and statistics.
Business and STEM majors at the university		= 1 if the trade type, technical skill, or course in vocational school/university was related to science, engineering, business, accounting/finance, biomedical, agriculture/animal production, or economics and statistics.
Humanities majors at the university		= 1 if the trade type, technical skill or course in vocational school/university was related to arts, law, tourism, education, non-quantitative social sciences, secretarial, cosmetology, for fashion and design.
Confidence in wealth	Upper half of current social position	= 1 if individuals answered 5 or higher on the questionnaire item “In terms of wealth, I stand on step number...” [1-10].
Confidence in social standing	Upper half of current wealth position	= 1 if individuals answered 5 or higher on the questionnaire item “In terms of social standing, I stand on step number...” [1-10].
Aspiration in wealth	Upper half of expected wealth position in the future	= 1 if individuals answered 5 or higher on the questionnaire item “In terms of wealth, in 10 years I will stand on step number...” [1-10].
Aspiration in social standing	Upper half of expected social standing in the future	= 1 if individuals answered 5 or higher in the questionnaire item “In terms of social standing, in 10 years I will stand on step number...” [1-10].

2.4.3. HARD-SKILLS BUSINESS KNOWLEDGE

The Business Knowledge (or Hard-Skills) Index includes five measures that captured whether respondents could accurately answer questions related to the following topics: (1) opportunities for generating business ideas, (2)

effects of competition, (3) cost categorization, (4) utility of recordkeeping, and (5) profit and loss statements. The variable construction is shown in Table 2.4.3.

TABLE 2.4.3. MEASUREMENT AND CODING STYLE OF HARD-SKILLS BUSINESS KNOWLEDGE

Hard-Skills Business Knowledge Measures		Coding Style
Business Knowledge Index		Average of K1, K2, K3, K4, and K5 scores as each are computed below
What are opportunities for generating business ideas? List all that come to your mind.	1. Customer complaint 2. Your friend complaining about a need she has for a product that doesn't exist 3. You observe an opportunity to cheaply buy something valuable from someone who desperately needs money 4. Personal skills and experiences 5. Mass media 6. Trade shows 7. Your own research into what the community needs 8. Your own observations about what the community needs 9. Your own personal hobbies or interests 10. A reason to spend time doing something fun and creative with a close friend or relative 11. Don't know	Sum of all response options divided by 10: 1 if mentioned 1 if mentioned 0 if mentioned 1 if not mentioned 1 if mentioned 1 if mentioned 1 if mentioned 1 if mentioned 1 if mentioned 1 if mentioned 1 if mentioned 1 if mentioned
What are the effects of competition in a market economy?	1. Leads to unemployment 2. Provides efficiency (better price-performance ratio) in the market Leads to dominance of large companies Encourages producers to cut costs and provide lower quality 3. Other specify 4. Don't know	1 if participant responded; (2); 0 otherwise
K3: Costs can be classified in categories, for example, staff costs, material costs, capital costs. Please tell us in which cost category the following items fall?		Sum of A-D divided by 4
A. Leather for a footwear factory replacement of stock of goods	1. Staff cost 2. Material cost 3. Capital cost 4. Don't know	1 if participant responded (2); 0 otherwise
B. Six months' repayment for a loan	1. Staff cost 2. Material cost 3. Capital cost 4. Don't know	1 if participant responded (3); 0 otherwise
C. Owner's salary	1. Staff cost 2. Material cost	1 if participant responded (1); 0 otherwise

	3. Capital cost 4. Don't know	
D. Social security for workers	1. Staff cost 2. Material cost 3. Capital cost 4. Don't know	1 if participant selected answer (1); 0 otherwise
K4: Now we are going to go over why the following kinds of record-keeping are useful. Please select whether the answer is true or false.		Sum of A-E divided by 5
A. Payroll is useful because without it how would the owner know when to bill and how much? When to discontinue credit? When to make aggressive efforts to collect overdue bills? When to charge interest, if any?	1. True 2. False 3. Don't know	1 if participant responded False; 0 otherwise
B. Cash balance is useful because the owner has to know the amount of money paid to himself or herself and to employees.	1. True 2. False 3. Don't know	1 if participant responded False; 0 otherwise
C. Accounts receivable is useful because the owner must know how much cash is available at any given time to determine if bills can be paid.	1. True 2. False 3. Don't know	1 if participant responded False; 0 otherwise
D. Accounts payable is useful because only with keeping them will you be able to pay your bills on time. Sometimes by paying a bill on time you may even receive a cash discount, and you will be able to maintain a good reputation in relation to those with whom you do business.	1. True 2. False 3. Don't know	1 if participant responded True; 0 otherwise
E. Inventory records are useful because an owner must have control of the products he or she is selling. What products are selling? What products aren't moving? Is there a good supply on hand?	1. True 2. False 999. Don't know	1 if participant responded True; 0 otherwise
K5: A profit and loss statement helps to determine whether a business is operating at a profit or a loss for a given time period. Please match the five steps of calculating the profit and loss statements with the given explanations by choosing the corresponding choices you're given.		Sum of A-E divided by 5
A. Sales	1. All sales of the business (including sales for cash and credit) This is the amount remaining when the expenses are deducted from the gross profit 2. All costs of operating the business 3. Price paid by the business for merchandise sold 4. Calculated by subtracting the cost of goods sold from sales 5. Don't know	1 if participant responded (1); 0 otherwise

B. Cost of goods	1. All sales of the business (including sales for cash and credit) 2. This is the amount remaining when the expenses are deducted from the gross profit. 3. All costs of operating the business 4. Price paid by the business for merchandise sold 5. Calculated by subtracting the cost of goods sold from sales 6. Don't know	1 if participant responded (2); 0 otherwise
C. Gross profit	1. All sales of the business (including sales for cash and credit) 2. This is the amount remaining when the expenses are deducted from the gross profit. 3. All costs of operating the business 4. Price paid by the business for merchandise sold 5. Calculated by subtracting the cost of goods sold from sales 6. Don't know	1 if participant responded (5); 0 otherwise
D. Expenses	1. All sales of the business (including sales for cash and credit) 2. This is the amount remaining when the expenses are deducted from the gross profit. 3. All costs of operating the business 4. Price paid by the business for merchandise sold 5. Calculated by subtracting the cost of goods sold from sales 6. Don't know	1 if participant responded (3); 0 otherwise
E. Net profit	1. All sales of the business (including sales for cash and credit) 2. This is the amount remaining when the expenses are deducted from the gross profit. 3. All costs of operating the business 4. Price paid by the business for merchandise sold 5. Calculated by subtracting the cost of goods sold from sales 6. Don't know	1 if participant responded (4); 0 otherwise

2.4.4. COMMUNITY OUTCOMES

Community outcomes include individuals' participation and leadership in community organizations, projects, political organizations, and school activities, as well as their prosocial behavior, defined as an individual's care for the community and intent to help others. Community participation is measured by asking participants about the clubs, committees, and activities with which they are involved, as well as through indices indicating their trust in several community and country-level institutions (Table 2.4.4).

TABLE 2.4.4. MEASUREMENT AND CODING STYLE OF COMMUNITY OUTCOMES: TRUST IN INSTITUTIONS

Trust in Institutions	Coding Style
Trust Survey Questions	
CP1: To what extent do you trust teachers in general to teach in your and your family's best interest?	Scale used: 1. I don't trust them at all 2. I somewhat don't trust them 3. I somewhat trust them 4. I trust them a lot
CP2: To what extent do you trust doctors where you live to make decisions in your and your family's best interest?	
CP3: To what extent do you trust banks in general to keep your money safe?	
CP4: To what extent do you trust local politicians to make decisions in the best interest of your community?	
CP5: To what extent do you trust national politicians to make decisions in the best interest of your community?	Any trust is defined as: "I somewhat trust [institution]" or "I trust [institution] a lot"
CP6: To what extent do you trust civil servants to make decisions in the best interest of your community?	

Community Involvement

Community involvement is measured by participation in local councils and other committees in one's community (Table 2.4.5). The survey also asks whether respondents attended a community meeting in the 12 months before the survey date.

TABLE 2.4.5. MEASUREMENT AND CODING STYLE OF COMMUNITY OUTCOMES: COMMUNITY INVOLVEMENT

Community Involvement	Coding Style
CP8: Are you currently a member of any Local Council 1(LC1) committee that makes decisions that affect a large portion of the community, such as a farmers' committee forum, a water source committee, a parish development committee, or a school management committee?	As collected: yes or no
CP9: Are you currently a member of any LC5 committee that makes decisions that affect a large portion of the community?	As collected: yes or no
CP10: Are you a member of any other community committees, such as other local government committees (e.g., LC2, LC3, or L4) or student organizations, such as AIESEC?	As collected: yes or no
CP13: In the past 12 months, did you attend a community meeting for any of the committees you just named?	As collected: yes or no
Is the respondent a member of any local council?	Yes, if member of LC1 and/or member of LC5
Is the respondent a member of any local council or committee?	Yes, if member of LC1, LC5, or any other committee

Political Participation

Political participation is a measure of community involvement. As seen in Table 2.4.6, it is measured here by voting behavior.

TABLE 2.4.6 MEASUREMENT AND CODING STYLE OF COMMUNITY OUTCOMES: POLITICAL PARTICIPATION

Political Participation	Coding Style
CP32: Are you a member of a political party?	As collected: yes or no
CP24: Did you vote in the Local Council 3 (LC3) elections in March 2016?	As collected: yes or no
CP27: Did you vote in the LC5 elections in March 2016?	As collected: yes or no
CP35: During the 2016 general elections, did you attend an election rally?	As collected: yes or no
CP37: During the 2016 general elections, did you donate or lend money/equipment (e.g., cars, bodas, food, clothes, etc.) in support of a candidate or a party?	As collected: yes or no

Prosocial Behavior

Prosocial behavior is included in the community outcomes module and is measured with a seven-item scale that represents an individual's intent to help others (Table 2.4.7). Some literature suggests that individuals who are prosocial often attain higher power in groups. Prosocial individuals also exhibit behavior related to intervening in emergencies and helping others in distress.

TABLE 2.4.7. MEASUREMENT AND CODING STYLE OF COMMUNITY OUTCOMES: PROSOCIAL BEHAVIOR

Prosocial Measure	Coding Style
Prosocial Index	Index
A45: I have love for my peers.	As collected
A46: I help individuals who are younger than me.	As collected
A47: I am helpful to elders/adults.	As collected
A48: I enjoy participating in group/community activities.	As collected
A49: I share with others (for example, a football, book, or pencil).	As collected
A50: Other youth like associating with me.	As collected
A51: I enjoy talking and spending time with my peers.	As collected

2.4.5. MEASURES OF SOFT SKILLS, DEPRESSION, AND SELF-REPORTED WEALTH AND SOCIAL STANDING

Soft skills are a combination of interpersonal and intrapersonal skills. Intrapersonal skills are defined as the ability to manage stress and self-esteem. Self-efficacy is considered to be related to leadership. Interpersonal skills are defined as negotiating ability and persuasive ability. Intrapersonal skills are measured with well-validated scales from the psychometric literature, and the interpersonal skills are measured using lab experiments in the field. These soft-skill measures relate directly to concepts introduced in the training courses. However, the data used to construct the measures were collected three-and-a-half years after the courses were completed. Hence the measures reflect a combination of the training and experience since then.

Big 5: Personality Traits

The Big 5 is a model based on common language descriptors of personality (lexical hypothesis). Five broad dimensions are used by most psychologists to describe the human personality and psyche:

- Openness – inventive and curious vs. consistent and cautious
- Conscientiousness – efficient and organized vs. easygoing and careless
- Extroversion – outgoing and energetic vs. solitary and reserved
- Agreeableness – friendly and compassionate vs. analytical and detached
- Neuroticism – sensitive and nervous vs. secure and confident

This information was collected using 44-item scales, following John, Donahue, and Kentle (1991).¹⁵ These skills are referred to as the “Soft skills” in economics, and they have been found to be strong predictors of labor market success (Heckman et al. 2006).¹⁶ Table 2.4.8 presents the instrument used to measure Big 5 personality traits.

TABLE 2.4.8. MEASUREMENT AND CODING STYLE OF SOFT SKILLS: BIG 5 PERSONALITY MEASURES

Personality Big 5 Measure	Coding Style
Big 5: Extroversion	Index
A1: I am someone who is talkative.	As collected
A6: I am someone who is reserved.	Reverse coding
A11: I am someone who is full of energy (physical and/or mental).	As collected
A16: I am someone who makes other people feel enthusiastic.	As collected
A21: I am someone who tends to be quiet.	Reverse coding
A26: I am someone who is confident.	As collected
A31: I am someone who is sometimes shy.	Reverse coding
A36: I am someone who is outgoing, sociable.	As collected
Big 5: Agreeableness	Index
A2: I am someone who tends to find problems with others.	Reverse coding
A7: I am someone who is helpful and unselfish with others.	As collected
A12: I am someone who starts quarrels with others.	Reverse coding
A17: I am someone who is forgiving.	As collected
A22: I am someone who is generally trusting.	As collected
A27: I am someone who can be distant.	Reverse coding
A32: I am someone who is considerate and kind to almost everyone.	As collected
A37: I am someone who is sometimes rude to others.	Reverse coding
A42: I am someone who likes to cooperate with others.	As collected
Big 5: Conscientiousness	Index
A3: I am someone who does a thorough job.	As collected
A8: I am someone who can be somehow careless	Reverse coding
A13: I am someone who is a reliable worker.	As collected
A18: I am someone who tends to be disorganized.	Reverse coding
A23: I am someone who tends to be lazy.	Reverse coding
A28: I am someone who keeps trying until the task is finished.	As collected

¹⁵ O.P. John, E.M. Donahue, and R.L. Kentle (1991), “The Big Five Inventory—Versions 4a and 54.”

¹⁶ J.J. Heckman, J. Stixrud, and S. Urzua (2006), “The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior,” *Journal of Labor Economics* 24(3): 411–82.

A33: I am someone who does things efficiently.	As collected
A38: I am someone who makes plans and follows through with them.	As collected
A43: I am someone who is easily distracted.	Reverse coding
Big 5: Neuroticism	Index
A4: I am someone who is very unhappy.	As collected
A9: I am someone who is relaxed, handles stress well.	Reverse coding
A14: I am someone who has a lot of stress.	As collected
A19: I am someone who worries a lot.	As collected
A24: I am someone who is emotionally stable, not easily upset	Reverse coding
A29: I am someone who can be easily irritated and sensitive.	As collected
A34: I am someone who remains calm in tense situations.	Reverse coding
A39: I am someone who gets nervous easily.	As collected
Big 5: Openness	Index
A5: I am someone who is original, comes up with new ideas.	As collected
A10: I am someone who is interested in many different things.	As collected
A15: I am someone who comes up with new ideas, a deep thinker.	As collected
A20: I am someone who has an active imagination.	As collected
A25: I am someone who comes up with new ideas	As collected
A30: I am someone who values artistic experiences. (e.g., movies, music, literature)	As collected
A35: I am someone who prefers work that is routine	Reverse coding
A40: I am someone who likes to reflect (to think of ideas)	As collected
A41: I am someone who has few artistic interests	Reverse coding
A44: I am someone who has a good understanding of art, music, or literature.	As collected

Grit

Grit is a personality trait that is defined as “perseverance and passion for long-term goals” according to Duckworth et al. (2007).¹⁷ Grit is measured with a 12-item scale that can be further subdivided into two separate scales for passion and perseverance (Table 2.4.9). The passion scale assesses commitment to a subjectively important activity, and perseverance reflects the positing of effort towards achieving a long-term goal.

¹⁷ A.L. Duckworth, C. Peterson, M.D. Matthews, and D.R. Kelly (2007), “Grit: Perseverance and Passion for Long-Term Goals,” *Journal of Personality and Social Psychology* 92(6): 1087–101.

TABLE 2.4.9. MEASUREMENT AND CODING STYLE OF SOFT SKILLS: GRIT, PASSION, AND PERSEVERANCE MEASURES

Grit Measure	Coding Style
Grit Index	Index (A61-A72)
Passion (Grit) Scale	Index (A61-A66)
Perseverance (Grit) Scale	Index (A67-A72)
A61: I stay interested in my goals, even if they take a long time (months or years) to complete.	As collected
A62: In 10 words or fewer, I can explain what I'm trying to accomplish in my lifetime.	As collected
A63: My work is aligned to my most dearly held personal values.	As collected
A64: I identify with my work. For me, my work isn't just what I do but an essential part of who I am.	As collected
A65: Somehow, I never get bored with my work. I'm always learning something new.	As collected
A66: I think about my work even in my dreams and daydreams.	As collected
A67: I work very hard. I keep working when others stop to take a break.	As collected
A68: Setbacks don't discourage me. I don't give up easily.	As collected
A69: Every day, I try to do one thing better than I did the day before.	As collected
A70: I am constantly asking other people for feedback about how I can improve.	As collected
A71: I'm never fully satisfied with my performance.	As collected
A72: I finish whatever I begin.	As collected

Self-Efficacy

Self-efficacy is measured with a self-reported 10-item measure of an individual's disposition toward his or her own ability to perform particular behaviors (Table 2.4.10).

TABLE 2.4.10. MEASUREMENT AND CODING STYLE OF SOFT SKILLS: SELF-EFFICACY

Self-Efficacy Measure	Coding Style
Self-Efficacy Index	Index
SE1: I can always manage to solve difficult problems if I try hard enough.	As collected
SE2: If someone opposes me, I can find the means and ways to get what I want.	As collected
SE3: It is easy for me to stick to my aims and accomplish my goals.	As collected
SE4: I am confident that I could deal efficiently with unexpected events.	As collected
SE5: Thanks to my resourcefulness, I know how to handle unforeseen situations.	As collected
SE6: I can solve most problems if I invest the necessary effort.	As collected
SE7: I can remain calm when facing difficulties because I can rely on my coping abilities.	As collected
SE8: When I am confronted with a problem, I can usually find several solutions.	As collected
SE9: If I am in trouble, I can usually think of a solution.	As collected
SE10: I can usually handle whatever comes my way.	As collected

Stress

The ability to control one's stress is measured with the Stress Appraisal Measure (Peacock and Wong 1990) (Table 2.4.11).¹⁸ This measure is an eight-item scale that assesses anxiety or stress levels of participants along two dimensions: (1) threat, or when the participant thinks his or her personal resources were outweighed by the

¹⁸ E.J. Peacock, and P.T. Wong (1990), "The Stress Appraisal Measure (SAM): A Multidimensional Approach to Cognitive Appraisal," *Stress Medicine* 6(3): 227–36.

demands of the situation (i.e., bad stress); and (2) challenge, or when the participant thinks his or her personal resources outweighed the demands of the situation (i.e., good stress). The threat items assessed include whether the participant feels anxious about the situation, that the outcome is likely to be negative, threatened from the situation, or that the situation will have a negative impact. The challenge items assessed include whether the participant feels positive about the situation, eager to tackle this situation, that he or she will be a stronger person because of the situation, or excited about the situation.

TABLE 2.4.11. MEASUREMENT AND CODING STYLE OF SOFT SKILLS: STRESS MEASURES

Stress Measure	Coding Style
Stress Index	Index
ST1: How anxious do you feel? Do you negatively anticipate (anxiously) this interview?	As collected
ST2: Do you feel positive about this interaction?	Reverse coding
ST3: How eager are you to tackle this interaction?	Reverse coding
ST4: Do you think you will be a stronger person because of this interaction?	Reverse coding
ST5: Do you think the outcome of this interaction be negative?	As collected
ST6: How excited are you about this interview interaction?	Reverse coding
ST7: How threatened do you feel about this interview interaction?	As collected
ST8: Is this interaction having a negative impact on you?	As collected

Depression

Depression is measured with a nine-item scale, displayed in Table 2.4.12.

TABLE 2.4.12. MEASUREMENT AND CODING STYLE OF SOFT SKILLS: DEPRESSION MEASURES

Depression Measure	Coding Style
Depression Index	Index
A52: I feel very sad when I remember bad things from the past.	As collected
A53: I find life difficult even when I am at home or somewhere else.	As collected
A54: I feel sad most of the time.	As collected
A55: I think about bad things from the past.	As collected
A56: I have restless nights.	As collected
A57: I get chest pains when I am overthinking /worrying.	As collected
A58: I have difficulty when I try to concentrate.	As collected
A59: My body shakes uncontrollably from over-thinking /worrying.	As collected
A60: I feel helpless.	As collected

Creativity

The creativity task is a lab in the field experiment adapted from Friedman et al. (2003),¹⁹ who asked participants “to generate a creative alternative use for a brick” as a dependent measure of originality. In the present study, respondents were asked to tell the enumerator all the different uses for a pole that they could think of in one

¹⁹ R.S. Friedman, A. Fishbach, J. Förster, and L. Werth (2003), “Attentional Priming Effects on Creativity,” *Creativity Research Journal* 15(2-3): 277–86.

minute. The enumerator wrote the responses down by hand as they were given and later inputted the answers from each respondent into the electronic survey. The answers were tracked per respondent.

The creativity of a respondent is measured based on the number of non-repetitive, non-vague, and feasible answers as well as how unique the answers were. Uniqueness is judged based on whether each answer is similar or not to other answers given by the same respondent, as well as by whether or not the responses are popular responses across the field of respondents. Similarity across answers will be judged by placing each answer into categories. Respondents who have answers from many different categories will have a higher score. Popularity of answers will be judged based on the number of answers given by all respondents in each category. Those categories with fewer responses will be deemed more creative.

In summary, the creativity of a respondent was assessed in three ways:

- Number of items: The number of items mentioned by the respondent was counted (excluding any responses that were redundant or unintelligible).
- Category spanning: The number of categories mentioned by the respondent was counted
- Innovative: How original or innovative each response was as determined by how common or uncommon each item mentioned by the respondent was (calculated by assigning a weight (1 divided by the number of people who mention the item)).

The protocol for coding the responses was as follows:

1. To generate the categories: Categories constructed from responses in a creativity task module from the SEED impact evaluation were used for this survey. The final categories are listed in Table 2.4.13 with their descriptions.

TABLE 2.4.13. CREATIVITY CATEGORIES

Advertisement places	For advertising, hanging posters/signs, or displaying information
Agriculture	For agriculture, farming, fishing, food, gardening, or harvesting
Animals	For animal-related uses
Art and design	For art, crafts, design, decoration, fashion, or sculpture
Boats	For making a boat
Bridging	For making bridges or bridging
Charcoal	For charcoal
Climbing	For climbing
Construction	For building and construction: houses, windows, doors, roofs, or latrines
Electricity	For electricity, energy, power, or connecting to TV, Internet, telecommunication, or other electronic devices

Fencing	For creating a fence or fencing in objects
Firewood	For burning, cooking, or fuel (not charcoal)
Furniture	For furniture
Games	For sports and recreation
Hanging objects	For hanging objects
Hard to classify	Hard-to-classify objects
Income	For the sale or generation of income
Landmark	For serving as a landmark as demarcation or directions
Measuring tool	For measuring
Medicine	For medicinal purposes
Music	For making music
Other	Other responses
Other1 (CRAZY)	Crazy responses
Piping	For piping or transporting liquids
Posts	For use as a post
Pounding	For pounding
Raising objects	For raising objects
Reaching objects	For reaching objects
Redundant	Redundant responses
Security	For fighting, security, defense, or protection
Shelter	For shelter
Study purposes	For studying purposes
Support	For support or for supporting objects
Timber	For timber or lumber-related purposes
Transportation	For transportation purposes or in a transportation vehicle
Wind breakers	For breaking the wind

2. To generate the subcategories (subcategories were defined as items or groupings within a category that described different ways a pole could be used within a category): Subcategories were also generated from previous implementation of the creativity task in a different survey.
3. To code responses: During data collection, data quality checkers for the full survey were also assigned to code up all the responses for the creativity task based on the categories and subcategories listed above.
4. To analyze the data:
 - i. For subcategory counting – Categories for redundancy and hard-to-classify were excluded, and all other subcategories in other categories were analyzed.
 - ii. For category counting/spanning – Categories for redundancy and hard-to-classify were excluded, and all other categories were analyzed.

- iii. For originality – Each of the subject's response (as identified by category-item pairing) was weighted by $1/N$, where N is the number of subjects who also provided that response (category-item pair).

Negotiation

The negotiation game is a lab in the field experiment to assess whether the program had an effect on participants' negotiation skills. There are two players: a buyer who is played by the enumerator and a seller who is played by the survey respondent. The Buyer is the Commissioner of the Ministry of Lands who is purchasing the Butagira Farms to construct a rail line. The Seller is the owner of Butagira Farms. The Buyer and Seller have already agreed that the land is worth 600 million UGX, but the two still have to negotiate (1) how much of the full price is paid up front, with the remainder being paid in equal installments over a 12-month period, and (2) the project start date between two and 12 months. The Buyer prefers to give the 100 million UGX up front (less important to the Buyer) and a project start date that would begin in two months (more important). The Seller prefers to get all 600 million UGX up front (more important to the Seller) and a project start date in 12 months (less important).

Both Buyer and Seller are informed that they will be entered into a lottery with a probability of winning a function of the number of points obtained in the final deal based on the payoff tables in Figure 2.4.1. During the survey, the Buyer (enumerator) can see both payoff tables, but the Seller/Respondent can only see his or her payoff table (right). As shown in the payoff tables, the maximum number of points (the best scenario) the Buyer can earn is 1,500 associated points with 100 million UGX financing paid up front and a project start date in two months. The best scenario for the Seller is 1,500 points and is associated with 600 million UGX financing received up front and a project start date in 12 months.

FIGURE 2.4.1. NEGOTIATION GAME: BUYER AND SELLER PAYOFF TABLES

Buyer's Best Scenario

BUYER PAYOFF TABLE				SELLER PAYOFF TABLE			
FINANCING ISSUE		START DATE		FINANCING ISSUE		START DATE ISSUE	
OUTCOME (UGX in millions buyer pays upfront)	POINTS	OUTCOME (date the project starts)	POINTS	OUTCOME (UGX in millions seller gets upfront)	POINTS	OUTCOME (date the project starts)	POINTS
100	500	2 months	1000	100	0	2 months	0
150	450	3 months	900	150	100	3 months	50
200	400	4 months	800	200	200	4 months	100
250	350	5 months	700	250	300	5 months	150
300	300	6 months	600	300	400	6 months	200
350	250	7 months	500	350	500	7 months	250
400	200	8 months	400	400	600	8 months	300
450	150	9 months	300	450	700	9 months	350
500	100	10 months	200	500	800	10 months	400
550	50	11 months	100	550	900	11 months	450
600	0	12 months	0	600	1000	12 months	500

Seller's Best Scenario

The Buyer (enumerator) goes first, offering an upfront payment of 100 million UGX and a start date of two months. The Buyer and Seller are given five minutes to negotiate a deal. Before the negotiation begins, the parties are informed that if an agreement is not made, the government might take the land without giving anything to the participant and neither is entered into the lottery.

In order to extract outcome measures, the actual negotiations were audio recorded during the survey in the field. The recordings were then transcribed in Word documents. For analysis, the following variables were constructed and then extracted from each transcript: (1) first counteroffer made by respondent for financing and start date, (2) number of words spoken by the enumerator and the parties, separately, (3) whether they reached an agreement, (4) the terms of the agreement, and (5) the number of payoff points associated with the final agreement.

Persuasion

The purpose of this task was to assess whether the program's persuasion soft-skills training had an effect on the participants' ability to persuade others of their point of view on an issue, sell goods, and trade upward from a small object to a valuable object. In psychology, Cialdini (2007)²⁰ 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).

For the persuasion task, the participant was asked to convince a group of people (in the scenario presented, these people were hypothetical government officials) about his or her opinion and persuade them to agree with that opinion. The subject was allotted one minute to make a persuasive case, and the conversation was video recorded. After data collection, the persuasion video files were transcribed, and the non-verbal actions of participants captured by the videos were also coded by business professionals recruited in Uganda, as well as by the computer software *Praat*® (Table 2.4.14).

²⁰ R.B. Cialdini, (2007), *Influence: The Psychology of Persuasion*. New York: Collins.

TABLE 2.4.14. VIDEO ANALYSIS OF NON-VERBAL ACTIONS OF PARTICIPANTS IN THE PERSUASION TASK

English Fluency [Two Ugandan coders fully fluent in English should code all stimuli, and we will use the average]

1. How **confident** is the person in voice, words, and body posture—do you feel they truly know what they are talking about and believe it? A ***LACK* of confidence might involve swallowing often, uncontrolled breathing, heavy breathing, looking away from the camera, some shaking or clear signs of lacking confidence.**

Not at all confident	A tiny bit confident	Somewhat confident	Completely confident
0	1	2	3

2. How confident do you think this person is with speaking English?

Not at all confident	A tiny bit confident	Somewhat confident	Completely confident
0	1	2	3

Confidence/Power Variables [OBJECTIVE]

1. How much time (in seconds) did the person **spend looking DOWN, UP, AWAY (i.e., clearly *not* at the camera OR the enumerator)**? Use a stopwatch that accumulates time even if the coder starts and stops the accumulating stopwatch.

 |_|_|_|_| seconds

2. How much time (in seconds) did the person spend **speaking/talking**? Use a stopwatch that accumulates time even if the coder starts and stops the accumulating stopwatch.

 |_|_|_|_| seconds

3. How many times did the enumerator ask the respondent to continue?

 |_|_| number of times (e.g., 0, 1, 2, ...)

Confidence/Persuasion Variables [SUBJECTIVE]

1. Should this person be given the land? Coded/Answered by a Ugandan expert

0. No

1. Yes

2. Is this a person with whom you'd do business? Coded/Answered by a Ugandan expert

0. No

1. Yes

3. Would you hire this person? Coded/Answered by a Ugandan expert

0. No

1. Yes

4. How persuasive is the person in voice, words, and body posture—do you feel persuaded by their story and need for the land?

Not at all	A very tiny bit	Somewhat	Complete
0	1	2	3

5. How did they present themselves—did they look “smartly dressed”? How did they best present themselves:

 a. Like a Politician

 b. Like a Musician

 c. Like an Ordinary Person in a casual outfit

 d. In “Business smart” attire

6. How **confident** is the person in voice, words, and body posture—do you feel they truly know what they are talking about and believe it? A ***LACK* of confidence might involve swallowing often, uncontrolled breathing, heavy breathing, looking away from the camera, some shaking or clear signs of lacking confidence.**

Not at all confident	A tiny bit confident	Somewhat confident	Completely confident
0	1	2	3

7. How **controlled** is the person's nonverbal behavior—facial expressions, gestures, body posture? Does the person move around in a way that seems random or lacking in control? Or do they move with decisiveness and deliberateness and control with face, hands, and body? **Were their vocal pauses *deliberate* like a politician or preacher? Did they seem in control of voice, face, body and words?**

Uncontrolled	Largely uncontrolled	Somewhat controlled	Very controlled
0	1	2	3

8. Is this person's speech mimic (seem like a) high-profile political person such as a president, a minister, or an opposition leader)?
0. No
1. Yes

Nervous/Cognitively "Taxed" Variables [Semi OBJECTIVE / Semi SUBJECTIVE]

1. How many **speech disturbances** did the person make while speaking? A speech disturbance is an awkward pause, "um," "ah," or a speech "fumble" in which the subject has to start again or appears to stutter, stammer, or have a false start or an unusual pause. **Indications of speech disturbances also include swallowing often, uncontrolled breathing in between words, or heavy breathing in between words.** Use a stopwatch that can count number of speech disturbances by clicking the special type of stop watch.

|_|_| number of times (e.g., 0, 1, 2, ...)

2. How quickly did the person speak without breaks in-between words/sentences?

Spoke slowly Spoke slow but somewhat normally Spoke faster but somewhat normally Spoke very quickly

0 1 2 3

3. How many times did the person engage in self-soothing behavior? Self-soothing behavior is touching ones clothing, face, hair, skin, or any part of the body or adornments/clothing on the body. Use a stopwatch that can count by clicking.

|_|_| number of times (e.g., 0, 1, 2, ...)

4. Use the free computer program *Praat* to look at acoustic properties of voices (videos need to be saved as audio files that can be read into *Praat*):

- a. Voice onset time, which, is a measure of cognitive load/thinking (i.e., a lack of fluidity; we would have to edit out the initial enumerator voice to have this be meaningful).

|_|_|_|_|

- b. Pitch (higher means more uncomfortable/anxious, is associated with deception).

|_|_|_|_|

- c. Intensity/amplitude (is associated with either being or at least projecting confidence/dominance)

|_|_|_|_|

2.5 Quantitative Analysis

In the absence of nonrandom attrition, the cluster randomized design (where the cluster is the school) allows for estimating the impact of the Educate! intervention (treatment) by comparing the sample means of the treatment and control groups, which is equivalent to estimating the following linear regression model

$$y_{is} = \alpha + \beta_1 T_s + \varepsilon_{is}, \quad (1)$$

where y_{is} = the outcome for individual i in school s ; T_s is equal to 1 if individual i is enrolled in school s , which was assigned to the treatment group; ε_{is} denotes the error term that is independent across schools but correlated among individuals within the same school; and for a given outcome, the coefficient β_1 represents the impact of the intervention.

Because assignment to treatment took place at the school level, standard errors are clustered at the unit of assignment. This permits heteroskedasticity and within-cluster error correlation. A practical limitation of inference with clustered standard errors is that the asymptotic justification assumes that the number of clusters goes to infinity. Yet in some applications, as in this case, there may be relatively few clusters. We use wild bootstrap procedures with Rademacher weights to obtain more accurate cluster-robust inference and to allow for a relatively small number of clusters (Cameron et al. 2008).²¹

For each outcome of interest, three average treatment effects (ATEs) are estimated: the ATE for the full sample, the ATE for the male subsample, and the ATE for the female subsample.

2.6. Research Ethics

2.6.1. STUDY PERMISSIONS

The research team successfully obtained all necessary permissions and authorizations prior to commencing the field activities. The trial is registered with the American Evaluation Association (AEA, 2134) and the Uganda National Council Science and Technology (UNCST, SS 4310). Ethical clearance was given by the IPA Institutional Review Board (IPA IRB, 9850) and the Mildmay Uganda Ethics Review (MUREC, 0104 2017). The research team also visited the Resident District Commissioners in districts with over 50 respondents (e.g., Iganga, Jinja, Kampala, Masaka, Mbarara, Mukono, Wakiso) for their permission and to notify them of the presence of the enumerator team in their districts. All field enumeration staff is trained in accordance with the principles of ethical research involving human subjects.

²¹ A.C. Cameron, J.B. Gelbach, and D.L. Miller (2008), “Bootstrap-based Improvements for Inference with Clustered Errors,” *The Review of Economics and Statistics* 90(3): 414–27.

2.6.2. CONFIDENTIALITY

Only authorized individuals have access to the collected data. During data collection, the data were transferred daily to secure, password-protected computers, and all data were erased from the tablets at the end of data collection. The data were additionally encrypted using *Boxcryptor*®. In the dataset, all personal identifying information was removed so that the de-identified data can be used for analysis and publication, and possibly to inform the design of other questionnaires and studies.

2.6.3. POSSIBLE RISK(S) TO RESPONDENTS

Since the follow-up survey includes sensitive topics, the research team took special precautions to ensure that the risks from participation for both the respondent and the enumerator would be minimal. In accordance with the IPA Guidelines for Safe and Ethical Conduct of Violence Research, the research team set out the following guidelines:

1. Ensuring participant safety: The interviews were conducted in a private area (allowing only children under 2 years old to be in the same area as the respondent). Enumerators were trained to change questions to non-sensitive subjects when the survey was interrupted and/or they noticed someone else was listening. Moreover, no one else in the household or community was informed that the research included questions on violence.
2. Minimizing participant distress: Due to the sensitive subject matter, it was possible that the interview itself could provoke a powerful emotional response among participants. The enumerators were trained to be sensitive to a respondent's experiences and recognize signs of distress and take appropriate steps to support the respondent and/or to terminate the interview. Enumerators and respondents were gender-matched.
3. Referral provision: The research team has an ethical obligation (not legal obligation) to provide information to participants regardless of whether they report experiencing violence. Enumerators gave out the toll-free hotline of the Communication for Development Foundation Uganda for information, counseling, and referral to health services. Moreover, enumerators were trained to help understand their role in relation to respondents who reported experiencing violence.

3. Data Collection

3.1. Timeline

The baseline survey took place in May 2012. Preparation for the four-year follow-up data collection process started in May 2017 with a phone tracking exercise. The four-year follow-up data collection took place from August 2017 to February 2018. The quantitative data collection started in August 2017 and ended in December 2017, with the transcription of behavioral games starting in October 2017 and continuing until early January 2018.

3.2. Phone Tracking Exercise

The aim of the phone tracking exercise was to obtain the location of the respondents and to record their contact information for use during data collection. After cleaning all contact information collected at baseline and midline (e.g., removing invalid phone numbers), 10 enumerators worked for one month (from April to May 2017) to call all respondents. First, the enumerator would try the personal phone number, then the parents, and finally any other contact persons. All phone numbers were tried three times, and in cases when the respondent was not found, their classmates were asked to help get the contact information. When respondents were found, a short survey was administered to record their current location, the location they anticipated to be in during the months of data collection, whether they were in school or working (and if so, the locations of the workplace or school), their personal phone number(s), and contact information of other people always aware of their whereabouts.

As shown in Table 3.2.1, 84.7 percent of the respondents were tracked directly (i.e., IPA staff spoke to the main respondent) and 1.3 percent were tracked indirectly (i.e., IPA staff spoke to someone who knew the main respondent). The remaining 10.9 percent of respondents were out of the country, had died, or were not found by phone.

TABLE 3.2.1. PHONE TRACKING OVERVIEW

Category	Total Sample	
Direct surveys	1,706	84.7%
Indirect surveys	25	1.3%
Out of the country	46	2.4%
Died	10	0.5%
Not found	155	8.0%
Total	1,942	100%

3.3. Training

3.3.1. QUANTITATIVE DATA COLLECTION TRAINING

Prior to beginning field activities, enumerators participated in a seven-day training session from August 18-24, 2017. The training was jointly led by the Research Associate on the project, Afke Jager, and the Field Manager, Mathew Kato Ahimbisibwe. David Contreras, Rita Cuckovich, and Ada Kwan from the University of California Berkeley research team were also in attendance to support the training. In total, 46 potential enumerators were invited to the training, 40 of whom were selected to participate in the study based on their performance throughout the training. There were also five team leaders and two auditors in attendance who were responsible for supervising enumerators, assisting the trainers, and conducting periodic review sessions throughout the training. The quantitative survey training schedule is shown in Appendix B.

The training was organized to focus on two primary elements for which the enumerators would be responsible: the study protocol (i.e., reviewing the detailed procedures for completing the different survey components); and

survey questions (i.e., reviewing questions and responses one by one). The first day of the training focused exclusively on the study protocol element. Enumerators were trained on the objective of the study, the best practices for each survey section, the different types of surveys to be carried out, and how to deal with possible scenarios that may arise in the field. An Educate! representative introduced the organization and the characteristics of the Educate! program.

On day two of the training, the main survey was introduced in paper form, and each question was reviewed individually. During this review, both in plenary and group sessions, the meaning of each question was explained, important questions were emphasized, and edits to the language were made to better align with the local context based on feedback from enumerators. On days three and four, enumerators broke off into pairs and practiced conducting the surveys on the tablets that were to be used in the field. Enumerators practiced reading the consent form, filling out the economic calendar, and asking other survey questions. Throughout the training, at a random time of the day, the training team conducted periodic quizzes, which were graded and returned, in order to review key concepts and ascertain enumerators' comprehension of the lessons. Feedback on the quizzes was given the following day.

During day five of the training, the follow-up survey was introduced in paper form, and just as with the main survey, each question was reviewed individually. Prior to the survey training, the Survey Coordinator, Stevins Kizza, trained the team on IPV content based on the World Health Organization's Ethical and Safety Recommendations for Research on Domestic Violence Against Women.²² The training included a basic introduction to domestic violence issues and an overall orientation to the concepts of gender and gender discrimination/inequality. Opportunity was given for enumerators to come to terms with their own experiences with abuse. Regardless of an enumerator's personal experiences, listening to stories of violence and abuse can be draining and even overwhelming. During the training it was made clear that the subject of violence can always be openly discussed, and enumerators can withdraw from the project without prejudice. Lastly, enumerators were trained to understand their role in relation to respondents who report experiencing violence. They should be open to assisting her if asked, but they should not tell her what to do or to take on the personal burden of trying to "save her." Interviewers should not take on a role as a counselor, and any counseling activity that may be offered in the context of the study should be entirely separate from the data collection.

²² World Health Organization (2001), "Putting Women First: Ethical and Safety Recommendations for Research on Domestic Violence Against Women," Document WHO/FCH/GWH/01.1, WHO, Geneva.
<http://www.who.int/gender/violence/womenfirtseng.pdf>.

Day six consisted of practicing both surveys using the tablets. During feedback sessions, the survey questions continued to be refined based on feedback, and any issues with the programming of the surveys on the tablet was addressed.

The final day of training consisted of a field practice day. The team travelled to the Nsamiz vocational school in Mpigi, where each enumerator interviewed at least one respondent. The practice day helped enumerators deepen their understanding and flow of the survey, whereas the training team used this day to select the best candidates.

3.4. Logistics

The quantitative survey team included one Research Associate, one Field Manager, one Accountability Officer, five Team Leaders, two Auditors, 30 enumerators, five trackers, and five mobilizers.

The Research Associate was responsible for overseeing all activities related to the study and worked closely with the Field Manager and Accountability Officer. The three of them were responsible for the coordination of all field work. During the quantitative data collection, the mobilizers called respondents to schedule an appointment for the next day or the days after. Together with the team leaders, the mobilizers clustered the respondents based on their geographical location and gender because of enumerator-respondent gender matching. Auditors were responsible for checking that every interview was conducted to the highest standard by doing spot-checks and back-checks.

3.5. Data Quality

IPA ensures data quality through two processes: survey audits and high-frequency checks of recorded data. Audit surveys repeat a small subset of questions from the original surveys. Auditors called 10 percent of the respondents one or two days after the survey and probed whenever the answer they received differed from the one originally recorded by the enumerator. This helps to assess whether there were any issues in survey administration, comprehension, or completion. High-frequency checks were performed daily on incoming data, using Stata, and a code was written to look for data outliers, logical inconsistencies, key variables, and missing data. Once these issues were identified, enumerators were asked to clarify or correct answers.

3.6. Data Collection Challenges

While preparing for and carrying out the data collection activities, the field team was presented with numerous challenges that required diligence and an adaptive mentality. The challenges, by activity, are shown below.

3.6.1. PHONE TRACKING EXERCISE CHALLENGES

- Most of the phone numbers collected during baseline and midline were from the respondents' parents. Some parents needed extra convincing to provide their child's phone number, since they didn't want to give it away without their child's permission. Additionally, parents were less likely to give male

enumerators information about female respondents, since Ugandan parents (especially fathers) are very protective. Within the team, male enumerators would ask female enumerators to take over in those particular cases.

- Respondents with non-Ugandan nationality (e.g., Kenya, Tanzania) were harder to track because most had returned to his or her country after graduation and so were less likely to be in touch with their former classmates. We called all foreign phone numbers using Skype, but most of those phone numbers were disconnected. Finally, we asked their classmates for other phone numbers (from the respondent him or herself, or from someone who would know, such as a friend or family member) or for a Facebook account. We also went to the respondent's school to check if any other contact information was recorded in the school's administrative records.
- Some of the phone numbers gathered during baseline and midline were no longer accurate – either the lines were disconnected, or the phone number was invalid (e.g., only six digits). If a phone number was not working, we would try all other phone numbers available. If still unsuccessful, we asked respondents' classmates for other phone numbers (from the respondent him or herself, or from someone who would know, such as a friend or family member) or for a Facebook account. We also went to the respondent's school to check if any other contact information was available in the school's administrative records.

3.6.2. QUANTITATIVE DATA COLLECTION CHALLENGES

- When the quantitative data collection started, network providers in Uganda (e.g., MTN, Airtel) disconnected lines from people who didn't register their sim card with a valid ID. Some phone numbers collected during baseline, midline, and the phone tracking exercise were (temporarily) disconnected. Fortunately, we could mitigate this challenge by using other personal phone numbers, the contact information from their contact persons, or the respondent's school/work location for physical tracking.
- Mobilization was done over the phone, and some respondents simply did not pick up any calls, stopped picking up calls, or hung up after a few seconds. The team decided to not over-call people and gave them two or three weeks before trying again. Additionally, for respondents who were hard to reach, male enumerators mobilized female respondents and vice versa. Probably motivated by curiosity, respondents were more likely to agree to a survey when mobilized by the opposite sex. In cases where it was impossible to reach the respondent over the phone, but a home, work, or school location was known, we attempted physical tracking.
- Although all respondents attended S5, some had trouble expressing themselves in English, especially during the negotiation and persuasion games. Enumerators were trained to be patient and reduce the pace of the survey to enable respondents to understand the survey questions.

- After the first two weeks of data collection, the order of consent for the recordings of the persuasion game (video/audio) was reversed. Initially, the respondent was asked to do a video recording, and if consent was not given, he or she was asked to do an audio recording. After changing the order to make the first request for an audio recording and then, if consent was given, a video recording, the consent rate for video recordings increased. The rationale behind this is that after giving consent for an audio recording, it's only a small step to agreeing to a video.
- Enumerators accidentally recorded videos without sound (eight negotiation games, nine persuasion games) or canceled complete recordings (24 persuasion games). During morning briefings, enumerators were reminded on a regular basis to always test the tablets before doing the actual recordings. Additionally, the Accountability Officer did daily checks on the recordings to check the quality and give feedback to the responsible enumerator.
- The follow-up survey was designed for self-administration with specific survey question per gender (male/female) and relationship status (current relationship/past 12 months). Since the follow-up survey was not necessarily conducted on the same day as the main survey, the enumerator had to enter this information at the start of the follow-up survey to enable the appropriate survey questions. Unfortunately, enumerators sometimes accidentally entered the wrong gender or the wrong relationship status (e.g., a male respondent answering a survey programmed for a female respondent). Daily checks were put in place to immediately flag these “mismatched” surveys. Additionally, enumerators were fined 5,000 UGX. This fine was given to the respondent, since the survey had to be re-done. From the 16 mismatched surveys, 13 surveys were successfully re-done and the three remaining mismatched surveys had to be dropped.
- The transcription of the negotiation games required more time than anticipated. Based on previous IPA projects, we expected one transcriber to do five or six negotiation games per day, but it turned out to be an average of four negotiation games per day. The size of the transcription team was increased by four people to meet the deadline.

4. Data Collection Summary Statistics

4.1. Quantitative Data Collection Summary

Table 4.1.1 shows the breakdown of the tracking rate of the main survey. During the quantitative four-year follow-up data collection, 82.2 percent of respondents (1,597 out of 1,942) were interviewed. Two respondents were interviewed over the phone, as they were abroad. The short phone survey only included questions concerning their current economic activities and the reason(s) for moving abroad. Of the universe of respondents, 2.8 percent of them were not available for an interview, meaning the respondent was either too busy, ill, or in prison; 3.7 percent of respondents were out of the country, with most in other East African countries and the United Arab Emirates; and 3.8 percent of respondents were not found during the entire data collection period. Most respondents not found provided little contact information during baseline and midline, or provided contact information that was invalid at the time of the four-year follow-up data collection. Even the secondary schools did not have any contact information in their administrative records. In summary, we located 96.2 percent of all respondents five years after the baseline survey, but completed surveys with 82.2 percent of all respondents.

TABLE 4.1.1. TRACKING RATE MAIN SURVEY

Category	Total Sample		Treatment		Control	
Completed surveys	1,595	82.1%	804	83.2%	791	81.0%
Completed phone surveys	2	0.1%	1	0.1%	1	0.1%
Refusals	135	7.0%	68	7.0%	67	6.9%
Not available	54	2.8%	31	3.2%	23	2.5%
Passed away	11	0.6%	4	0.4%	7	0.7%
Out of the country	71	3.7%	30	3.1%	41	4.2%
Not found	74	3.8%	28	2.9%	46	4.7%
Total	1,942	100%	966	49.7%	976	50.3%

Table 4.1.2 shows the breakdown of the tracking rate of the follow-up survey: 81.4 percent of respondents who completed the main survey were in a relationship at the time of the survey or had been in a relationship in the 12 months prior to the survey; and 99 percent of respondents who were eligible for the follow-up survey completed it.

TABLE 4.1.2. TRACKING RATE FOLLOW-UP SURVEY

Category	Total sample		Treatment		Control	
Eligible for follow-up survey	1,298	81.4%	658	81.7%	640	80.8%
Completed surveys	1,285	99.0%	655	99.5%	630	98.4%
Refusals	13	1.0%	3	0.5%	10	1.6%

4.1.1 ATTRITION

Attrition refers to the failure (or inability) to collect outcome data on some individuals who were part of the original sample. Random attrition will only reduce a study's statistical power; however, attrition that is correlated with the treatment under question may result in biased estimates. For example, if those who are benefiting least from a program tend to drop out of the sample, ignoring this fact will lead to overestimating a program's effect.

Non-random attrition will be inconsistent with observable characteristics, measured at baseline, of the four-year follow-up being approximately equal. That is, the baseline characteristics of individuals in the treatment and control groups need to be studied for the sample of 1,597 respondents who participated in the four-year follow-up (Table 4.1.3) and formal testing needs to be conducted to determine whether any observed (mean) difference is statistically significant.²³ Overall, we find no evidence of non-random attrition in our sample. Out of 38 baseline characteristics, there were differences in two variables (employment experience, significant at the 5 percent level, and memory test, significant at the 10 percent level), which is attributable to sampling variation.

We repeated the same check/test for the gender subsamples. Tables 4.1.4 and 4.1.5 report the balance test for the male and female subsamples, respectively. The male subsample is well balanced. Differences in means of six out of the 38 indicators measured at baseline are significant for the female subsample (namely, memory, number of people living at home, father's education, father's income source, and mother's income source). These differences also do not raise concerns and are consistent with sample variation, especially in light of the fact that randomization was not stratified by gender.

²³ The standard errors of the difference in means between treatment and control groups were clustered at the school level and were bootstrapped using the wild bootstrap method, with Rademacher weights.

TABLE 4.1.3. SAMPLE CHARACTERISTICS BY TREATMENT STATUS, FULL SAMPLE (BALANCE TABLE)

Covariates	Control	Treatment	
	Mean	Mean	Difference
<i>Individual characteristics</i>			
Age	23.46	23.36	0.10
Female	0.39	0.44	-0.05
Boarding student	0.67	0.72	-0.05
Ever took entrepreneurship coursework	0.34	0.32	0.02
Working for wage	0.31	0.26	0.06**
<i>Cognitive characteristics</i>			
Memory score (standardized)	-0.11	0.14	-0.26*
Intelligence (standardized)	-0.01	0.04	-0.05
O-level score: 1	0.29	0.32	-0.03
O-level score: 2	0.42	0.42	0.00
O-level score: 3 or higher	0.28	0.26	0.02
<i>Non-cognitive characteristics</i>			
Time preferences score (standardized)	0.02	-0.04	0.05
Prosocial behavior (standardized)	-0.01	0.02	-0.03
Anxiety (standardized)	-0.03	0.03	-0.06
Confidence (standardized)	0.02	-0.02	0.04
Hostility (standardized)	-0.04	0.02	-0.06
Extroversion (standardized)	-0.03	0.01	-0.04
Agreeableness (standardized)	0	-0.01	0.00
Conscientiousness (standardized)	0.02	-0.02	0.04
Emotional stability (standardized)	-0.03	-0.01	-0.02
Openness (standardized)	0.01	0	0.01
<i>Family background</i>			
Father is alive	0.81	0.8	0.01
Mother is live	0.91	0.9	0.01
Number of people living at home	7.59	7.74	-0.15
Family owns business	0.46	0.44	0.02
Father education level: no formal education	0.25	0.24	0.02
Father education level: completed primary	0.2	0.22	-0.01
Father education level: secondary	0.16	0.15	0.01
Father education level: higher education	0.37	0.38	-0.01
Mother education level: no formal education	0.29	0.29	0.01
Mother education level: completed primary	0.28	0.28	0.00
Mother education level: secondary	0.17	0.17	0.00
Mother education level: higher education	0.24	0.26	-0.02
Father income source: Manual work	0.45	0.42	0.03
Father income source: Commerce	0.22	0.23	0.00
Father income source: Professional work	0.31	0.34	-0.03
Mother income source: Manual work	0.58	0.59	-0.01
Mother income source: Commerce and business	0.23	0.21	0.02
Mother income source: Professional work	0.19	0.2	-0.01
Observations	792	805	-
Number of clusters	24	24	-
F-test of joint significance (F-stat)	-	-	15.86***

Note: The values displayed are the differences in means across groups; proportions reported unless otherwise noted; standard errors are clustered at the school level. Asterisks denote significance levels based on bootstrapped standard errors: *** (0.01), ** (0.05), and * (0.1).

TABLE 4.1.4. SAMPLE CHARACTERISTICS BY TREATMENT STATUS, MALES (BALANCE TABLE)

Covariates	Control	Treatment	
	Mean	Mean	Difference
<i>Individual characteristics</i>			
Age	23.69	23.73	-0.04
Boarding student	0.63	0.65	-0.02
Ever took entrepreneurship coursework	0.35	0.32	0.03
Working for wage	0.41	0.32	0.09*
<i>Cognitive characteristics</i>			
Memory score (standardized)	-0.13	0.09	-0.22
Intelligence (standardized)	0.07	0.04	0.03
O-level score: 1	0.35	0.35	-0.01
O-level score: 2	0.40	0.40	0.00
O-level score: 3 or higher	0.24	0.24	0.00
<i>Non-cognitive characteristics</i>			
Time preferences score (standardized)	0.00	-0.04	0.04
Prosocial behavior (standardized)	0.01	-0.03	0.04
Anxiety (standardized)	-0.08	0.05	-0.13
Confidence (standardized)	-0.02	-0.02	0.00
Hostility (standardized)	0.04	0.16	-0.12
Extroversion (standardized)	-0.02	-0.09	0.07
Agreeableness (standardized)	-0.05	-0.11	0.05
Conscientiousness (standardized)	0.04	-0.02	0.06
Emotional stability (standardized)	-0.01	0.00	-0.01
Openness (standardized)	0.07	0.04	0.02
<i>Family background</i>			
Father is alive	0.82	0.77	0.05
Mother is live	0.92	0.90	0.02
Number of people living at home	7.71	7.49	0.22
Family owns business	0.54	0.51	0.04
Father education level: no formal education	0.25	0.28	-0.03
Father education level: completed primary	0.22	0.22	0.00
Father education level: secondary	0.17	0.16	0.02
Father education level: higher education	0.35	0.33	0.02
Mother education level: no formal education	0.31	0.33	-0.02
Mother education level: completed primary	0.28	0.28	0.00
Mother education level: secondary	0.17	0.18	-0.01
Mother education level: higher education	0.23	0.20	0.03
Father income source: Manual work	0.46	0.49	-0.03
Father income source: Commerce	0.22	0.24	-0.02
Father income source: Professional work	0.31	0.26	0.05
Mother income source: Manual work	0.58	0.61	-0.04
Mother income source: Commerce and business	0.22	0.23	-0.02
Mother income source: Professional work	0.21	0.15	0.05
Observations	481	449	-
Number of clusters	23	22	-
F-test of joint significance (F-stat)	-	-	6.77***

Note: The values displayed are the differences in means across groups; proportions reported unless otherwise noted; standard errors are clustered at the school level. Asterisks denote significance levels based on bootstrapped standard errors: *** (0.01), ** (0.05), and * (0.1).

TABLE 4.1.5. SAMPLE CHARACTERISTICS BY TREATMENT STATUS, FEMALES (BALANCE TABLE)

Covariates	Control	Treatment	
	Mean	Mean	Difference
<i>Individual characteristics</i>			
Age	23.10	22.90	0.21
Boarding student	0.73	0.81	-0.08
Ever took entrepreneurship coursework	0.32	0.33	-0.01
Working for wage	0.17	0.18	-0.01
<i>Cognitive characteristics</i>			
Memory score (standardized)	-0.09	0.22	-0.30*
Intelligence (standardized)	-0.14	0.03	-0.17
O-level score: 1	0.19	0.27	-0.08
O-level score: 2	0.45	0.44	0.01
O-level score: 3 or higher	0.34	0.28	0.06
<i>Non-cognitive characteristics</i>			
Time preferences score (standardized)	0.04	-0.03	0.07
Prosocial behavior (standardized)	-0.05	0.09	-0.13
Anxiety (standardized)	0.04	0.00	0.05
Confidence (standardized)	0.09	-0.02	0.11
Hostility (standardized)	-0.16	-0.16	0.01
Extroversion (standardized)	-0.03	0.14	-0.17
Agreeableness (standardized)	0.07	0.12	-0.04
Conscientiousness (standardized)	-0.01	-0.02	0.01
Emotional stability (standardized)	-0.07	-0.03	-0.05
Openness (standardized)	-0.08	-0.06	-0.02
<i>Family background</i>			
Father is alive	0.79	0.83	-0.03
Mother is live	0.90	0.91	0.00
Number of people living at home	7.40	8.06	-0.66**
Family owns business	0.32	0.35	-0.02
Father education level: no formal education	0.26	0.19	0.07**
Father education level: completed primary	0.18	0.21	-0.02
Father education level: secondary	0.15	0.15	0.01
Father education level: higher education	0.39	0.44	-0.05
Mother education level: no formal education	0.27	0.22	0.04
Mother education level: completed primary	0.28	0.27	0.01
Mother education level: secondary	0.18	0.16	0.02
Mother education level: higher education	0.25	0.33	-0.08
Father income source: Manual work	0.44	0.34	0.11*
Father income source: Commerce	0.22	0.21	0.01
Father income source: Professional work	0.30	0.44	-0.13*
Mother income source: Manual work	0.59	0.56	0.03
Mother income source: Commerce and business	0.25	0.19	0.06
Mother income source: Professional work	0.16	0.25	-0.09*
Observations	311	356	-
Number of clusters	23	22	-
F-test of joint significance (F-stat)	-	-	4.13***

Note: The values displayed are the differences in means across groups; proportions reported unless otherwise noted; standard errors are clustered at the school level. Asterisks denote significance levels based on bootstrapped standard errors: *** (0.01), ** (0.05), and * (0.1).

5 Quantitative Survey: Preliminary Results

This section presents preliminary results of the four-year quantitative follow-up survey. Analysis began during data collection and continued through the first and second quarters of 2018. Each of the subsections contains descriptive statistics and then results from preliminary analyses. (For survey module numbering, refer to Table 2.3.1.)

The section begins with a description of the socio-demographic characteristics of the youth in the sample and then organizes the outcomes of interest into categories related to their causal distance from the training. The Educate! theory of change model posits that the program will impact the skill sets of graduating youth, and that these skills, in turn, will affect education investments, labor market outcomes, and ultimately the livelihoods of these young people.

The results point to strong and meaningful impacts on Educate! graduates' soft skills and weaker impacts on knowledge of hard 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 their plans. The shift toward long-term planning is also accompanied by additional investments in tertiary education, especially among women. In particular, Educate! graduates are more likely to select business and STEM majors. At the time of data collection, approximately 35 percent of the sample was still enrolled in tertiary education. As such, the medium-run (four-year) follow-up cannot fully capture the extent to which the labor market values these skills and educational investments. In other word, it is too early to definitively assess the long-term labor market impact of Educate! With this important caveat in mind, no improvements in labor force participation are detected among Educate! graduates (self-employment or otherwise). Similarly, no higher wages, earnings, revenues, or profits are observed. However, the program generates important social spillovers along several dimensions: delayed family formation, less risky behavior, shifts in social norms, and reductions in intimate partner violence.

5.1. Socio-Demographics

This section provides a snapshot of youth in the sample. Table 5.1 shows the socio-demographic characteristics of the respondents: 41.7 percent of respondents are female, which is just below the share of female respondents at baseline (43.6 percent); and the average age of respondents is approximately 23 years old. In Uganda, students receive the Uganda Advanced Certificate of Education (UACE) when finishing upper secondary school; 89.5 percent of respondents in the sample received their certificate. Many of the respondents continued to study after secondary school: about a quarter attended vocational school, and almost 60 percent attended a university. Finally, 38.3 percent of the respondents had some exposure to business, entrepreneurship, or microfinance during school (not through the Educate! program).

TABLE 5.1. SOCIO-DEMOGRAPHIC CHARACTERISTICS

	Total Sample	Treatment	Control
Female respondent	667 (41.7%)	356 (44.2%)	311 (39.3%)
Average age (standard deviation)	23.41 (1.61)	23.36 (1.64)	23.46 (1.56)
Ever attended vocational school	387 (24.3%)	194 (24.1%)	193 (24.4%)
Currently enrolled in or graduated from vocational school	353 (22.1%)	173 (21.5%)	180 (22.7%)
Ever attended university	932 (58.4%)	487 (60.5%)	445 (56.2%)
Currently enrolled in or graduated from a university	887 (55.6%)	461 (57.3%)	426 (53.8%)
Participated in business training	611 (38.3%)	326 (40.5%)	285 (36.0%)
Currently enrolled in school	558 (34.9%)	274 (34.0%)	284 (35.9%)

5.2. Measures of Soft Skills

Overall, the survey shows large and significant effects of the Educate! curriculum on soft skills, in line with its strong emphasis on soft skills training (self-efficacy, leadership skills, etc.). The text below details specific impacts for Big 5 personality traits, grit, self-efficacy, and stress and depression. To facilitate the interpretation of the results, we standardize the score for each measure/scale relative to the mean of the control group. As a rule of thumb, an effect size between 0.1 and 0.2 standard deviations (sd) is typically considered a large effect.

Across the **Big 5 personality traits** (Table 5.2.1), statistically significant effects are observed for extroversion (0.082 sd, one-sided p -value = 0.088), agreeableness (0.086 sd, one-sided p -value = 0.058), and openness (0.129 sd, one-sided p -value = 0.029). Furthermore, interesting patterns emerge when the analysis is conducted separately by gender. The impacts on openness in both the male and female subsamples are statistically significant, with the effect among females twice as large as that among males (0.192 and 0.098 sd, respectively).²⁴ However, we estimate statistically significant impacts on agreeableness only for the male subsample and on extroversion only for the female subsample. A possible explanation for the asymmetry may lie in differences in gender roles and male vs. female socialization of personality traits in Uganda, where women are generally taught to be more agreeable than men while men tend to be more extroverted. The Educate! intervention appears to rebalance some of these differences.

Grit and self-efficacy. Grit – defined as perseverance and passion for long-term goals – entails working strenuously toward goals, and maintaining effort and interest over years despite failure, adversity, and plateaus in

²⁴ Note that comparisons on the relative effect sizes across males and females are not statistical statements.

progress. Grit is unrelated to talent and can be built through a growth mindset (Duckworth 2007).²⁵ Educate! graduates show large, statistically significant improvements in grit (Table 5.2.2) (0.14 sd, two-sided p -value = 0.014), as well as for the subindices of passion (0.145 sd, two-sided p -value = 0.009) and perseverance (0.097 sd, two-sided p -value = 0.105). Notably, larger effects are observed among females for the main index and for passion (0.265 sd, p -value = 0.002), suggesting that Educate! may have had a role in increasing passion and commitment to long-term goal for girls, which is consistent with the additional education investments observed among females, which will be discussed in the next section.

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. As such, self-efficacy measures are often correlated with and complement measures of grit. Educate! graduates exhibit higher self-efficacy than comparable youth in the control group of a magnitude of 0.10 sd (two-sided p -value = 0.066, Table 5.2.3.). Significant impacts are also detected within gender subsamples, again highlighting that Educate! played a role in shaping youth's attitudes towards taking charge and making plans for and investments in their future. These results can also be traced back to specific elements of the curriculum, such as lessons on "I am the solution" (whereby graduates learned to feel responsible for fixing problems in Uganda and to take ownership over their future and decisions) and "Being proactive" (whereby they learn what being "proactive" means and how to set S.M.A.R.T. goals).

The Educate! curriculum also devotes instruction time to promoting psychological development, teaching self-reflection, handling and overcoming low expectations, and developing plans to self-improve. As such, measures of **stress and depression** serve as proxies for the ability to cope with and manage stressful and difficult situations. Indeed, Educate! graduates report (statistically) significantly lower rates of stress (0.141 sd, two-sided p -value = 0.012, Table 5.3.4.), which is tied to their higher propensity to perceive difficult situations as challenges, rather than threats. There is no statistically significant impact on the depression index (which corresponds to self-reported symptoms related to depression) (Table 5.3.4). This finding may reflect the fact that while Educate! may improve coping skills to deal with challenging situations, it is not designed to address more structural issues that underlie depression.

All measures of skills discussed above (Big 5, grit, self-efficacy, and stress indices) are self-reported. Self-reporting questionnaires are the most common approaches to assessing personal qualities. They are quick, reliable, and in many cases, remarkably predictive of objectively measured outcomes. As an alternative to asking youth to self-report on 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

²⁵ A.L. Duckworth, C. Peterson, M.D. Matthews, and D.R. Kelly (2007), "Grit: Perseverance and Passion for Long-Term Goals," *Journal of Personality and Social Psychology* 92(6): 1087–101.

overcome possible biases (e.g., social desirability bias if respondents tend to overreport socially desirable responses during interviews). The paragraphs that follow report on impacts found through task-based measures to assess creativity, negotiation, and persuasion.

Creativity is considered the most innate of the personality traits/soft skills discussed in this section. As summarized in the methodology section of this report (Section 2), respondents were asked to list all possible uses of a pole in one minute. The impacts of Educate! on all three of the creativity outcomes – (1) total number of items mentioned by the respondent, (2) category spanning (the number of categories mentioned), and (3) how innovative (or original) each response was – are statistically significant (Table 5.2.5). For the total number of responses, there was a 0.24 (two-sided p -value = 0.069) increase in the number of items mentioned among Educate! graduates compared to the control group, which averaged 4.89 items. Educate! graduates also spanned 0.229 (two-sided p -value = 0.078) more categories than the control group (control group average = 4.754 categories) and were more innovative by 2.4 percentage points (pp) (two-sided p -value = 0.016). Here, also, the estimates for the female subsample are much larger than males. In the female sample, there were 0.385 more total responses (two-sided p -value = 0.067); 0.390 more categories (two-sided p -value = 0.058); and women in the treatment group are 3.1 pp more innovative (two-sided p -value = 0.010) than those in the control group. Overall, the effects recorded on creativity from the task may be attributed to elements of the curriculum that focus on identifying new opportunities in existing contexts, such as lessons on “Thinking Differently in Business,” where students were encouraged to determine competitive advantage and to make creative business decisions.

Negotiation. No statistically significant impacts were observed on negotiation (Tables 5.2.6 and 5.2.7), whether measured in terms of the probability of coming to an agreement or the amount agreed upon by the two players. But effects were found on the other two tasks. One consideration is that respondents and enumerators were incentivized to reach an agreement in order to measure variation in the amount agreed upon, and this may have masked intervention effects. It is also worth mentioning that negotiation skills were not explicitly taught as part of the Educate! curriculum. Evidence from the SEED curriculum evaluation study suggests that negotiation is also a skill that can be learnt and shaped during entrepreneurship training (Carney and Gertler 2018).²⁶

The last of the task-based measures is **persuasion** – participants’ ability to persuade others of their point of view on an issue, pitch a business idea, etc. In this specific case, youth were asked to convince a group of people (in the scenario, these people were hypothetical government officials). The participant was allotted one minute to make a persuasive argument, and the conversation was video recorded. After data collection, the persuasion video files were transcribed, and non-verbal actions made by the subjects were coded by business professionals recruited

²⁶ D. Carney, P. Gertler, forthcoming, “Making Entrepreneurs: The Returns to Teaching Youth Business Skills,” Working Paper.

in Uganda.²⁷ This particular measure is closest to simulating how the acquired skills translate and may impact real-life outcomes. Educate! graduates are deemed more persuasive along two specific dimensions (Table 5.2.8). They are more likely to be identified as someone to whom land should be given by government officials in this hypothetical scenario (6 pp, or a 7.1 percent increase, one-sided p -value = 0.037), and they are more likely to be identified as someone with whom Ugandan businessmen would like to do business (9.3 pp, or a 17.2 percent increase, one-sided p -value = 0.069). However, no statistically significant impacts are detected on body language assessments or 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.

5.3. Hard-Skills Business Knowledge

Business knowledge is assessed along five distinct dimensions: budget elements, profit and loss statements, ability to identify opportunities for business ideas, deliberative dialogue, and win-win situations (Tables 5.3.1 and 5.3.2). When focusing on aggregate measures of business knowledge, Educate! graduates do not appear to be more knowledgeable than their counterparts in the control group. However, when considering individual elements, which are a mixture of soft and hard skills, Educate! graduates are more knowledgeable about identifying opportunities for business (0.08 sd) and are better at deliberative dialogue (0.08 sd) and win-win strategies (0.11 sd). No statistically significant impacts are detected along the dimensions of either budget elements or profit/loss statements. 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! lesson plans indicates that its focus is roughly 70/80 percent on soft skills (i.e., leadership, community engagement, and psychosocial development), and 30/20 percent on hard skills (business creation, financial literacy, job readiness, social entrepreneurship). See Appendix Tables H1-H5 in Appendix H for an outline of Educate!'s 2102 lesson plans by term. In addition, Appendix Table H6 provides a summary of sessions by skill and skill types.

5.4. Prosocial Attitudes and Community and Political Engagement

Educate! training places a strong emphasis on social leadership and community engagement. Approximately 50 percent of lessons in the Educate! curriculum are dedicated to either community engagement or leadership. In particular, the curriculum features an explicit focus on the development of ideas and plans for social enterprises and community projects. Promotion of prosocial behavior – defined as a broad range of acts, including helping behavior, altruism, cooperation, and solidarity intended to benefit other people (Weinstein and Ryan 2010)²⁸ – in individuals, groups, and communities encourages the development of networks that facilitate coexistence, well-

²⁷ For more detail on how outcome measures are constructed and coded, see the methodology section.

²⁸ N. Weinstein, and R.M. Ryan (2010), "When Helping Helps: Autonomous Motivation for Prosocial Behavior and Its Influence on Well-being for the Helper and Recipient." *Journal of Personality and Social Psychology* 98(2): 222–24.

being, and healthier social and environmental contexts. To assess the extent to which Educate! training increased prosocial tendencies, we present results for a seven-item scale to capture an individual's intention to help others, as well as for self-reported behavior on civic engagement and trust.

Educate! graduates' **prosocial behavior (index)** (Table 5.4.1), which reflects an individual's care for the community and intent to help others, increases by 0.17 sd (one-sided p -value = 0.003). The large and significant impacts estimated for the full sample are also preserved within gender subsamples, with the effect for males and females being 0.121 sd (one-sided p -value = 0.047) and 0.251 sd (one-sided p -value = 0.006), respectively. It is important to note that prosocial attitudes may also lead to an improved ability to effectively communicate and persuade groups.

We now turn attention to community outcomes, which include **participation or leadership in community organizations and projects**, such as political councils or student organizations, political participation such as voting in elections, and trust in institutions.

Overall, Educate! graduates report similar or lower levels of **community engagement** than the control group (Tables 5.4.2 and 5.4.3). Notably, the probability of community engagement among control group youth is also relatively low, ranging from 1 percent of the control group reporting membership in a Local Council 5 (LC5) to 23.8 percent reporting membership in any community organization or committee. Male Educate! graduates are 5.7 pp less likely to report being a member of an "other" committee (one-sided p -value = 0.046), defined as a committee that is neither a Local Council 1 (LC1) nor a LC5. They are also 4.3 pp less likely to report having attended a community meeting in the past 12 months (one-sided p -value = 0.090).

No statistically significant impact of the program is found on **political participation** for the full sample as measured by political party membership, voting, or attending an election rally (Table 5.4.4). However, male Educate! graduates were 8.1 pp more likely to attend an election rally in 2016 (one-sided p -value = 0.058), which corresponds to a 14.3 percent increase relative to the control group mean of 56.8 percent. But they are 6.2 pp less likely to be a member of a political party (one-sided p -value = 0.098). Female Educate! graduates were more likely to vote in the 2016 LC3 (6.2 pp) and LC5 (6.2 pp) elections. These effects are not only statistically significant, but are also large in magnitudes. In the sample of higher-educated youth, voter turnout was rather low, especially among women. Female voter turnouts for LC5 and LC3 elections in 2016 were approximately 25 percent and 27 percent, respectively.

No impact of the program was found on graduates' **trust in local and national institutions** (Tables 5.4.5 and 5.4.6). Reported trust was lowest for local politicians (32.6 percent of the control group and 31.7 percent of the treated group reported any trust in local politicians), and highest for teachers (92 percent of the control group and 91.6 percent of the treated group reported any trust in teachers).

In summary, the Educate! program seems to have shifted self-reported measures of prosocial behavior, but these have not translated to increased civic engagement, with the exception of increased male participation in politically rallies and increased female voter turnout. As mentioned at the beginning of the section, the persons in question are still quite young (23 years old on average) and some are still in school. Based on national statistics, voter turnout was approximately 63 percent for the 2016 presidential election and appears to increase with age. The general distrust in election processes and political institutions may be difficult to overcome, as documented by an August 2015 poll published by Research World International showing that 45 percent of Ugandans did not believe the electoral process can lead to power changing hands, and 32 percent did not believe the elections would be free and fair. It is therefore not surprising that voter turnout among youth is low and difficult to increase.

5.5. Education and Labor Market Outcomes

As summarized in the previous section, Educate! yielded large and significant impacts on soft skills, and weaker impacts on business knowledge. This section presents evidence on whether and how the observed skill upgrading led to additional education investments and whether the new skills and investment are rewarded by the labor market. The section first documents how investments in education and economic participation differ between Educate! graduates and their counterparts in the control group, and then turns to whether Educate! training is rewarded in the labor market.

5.5.1. EDUCATION

In terms of the education trajectories of Educate! graduates, as a result of the program the beneficiaries of Educate! training graduate from secondary school at higher rates than youth in the control group. In particular, women are more likely to go on to tertiary education. The program also influenced the choice of field of study at a university by increasing the likelihood of enrolling in business or STEM majors.

The impacts of the program on educational attainment are reported in Table 5.5.1. Noteworthy are the high rates of **secondary school graduation** for youth in both treatment and control groups (model 1). Nonetheless, Educate! graduates are 3.7 percentage points (pp, or 4 percent) more likely to complete secondary school relative to the control group (88 percent graduation rate), a statistically significant effect (one sided p -value = 0.03). The point estimate for the female subsample is three times as large as that for the male subsample (6.6 pp or 8 percent) and statistically significant (one sided p -value = 0.01), thereby virtually closing the gender gap in graduation. With respect to performance on the secondary school exit exam, there are no statistically significant differences between the treatment and control groups on **A-level UACE exam scores** (column 4).²⁹ Several factors affect performance on exams: teacher quality, test-taking ability, education system incentives, stock of knowledge

²⁹ As discussed below in the case of grades in tertiary education, the estimates for A-level UACE exam scores are only suggestive and should be interpreted with caution, since they do not yet account for the fact that Educate! affects the decision to complete secondary school. As such, exit exam scores are available only for a subset of youth that is not drawn at random but rather is a function of the treatment assignment.

accumulated over the school career, etc. As documented in the previous section, the Educate! curriculum shifted individual's mindsets, ambitions, and orientation towards the future (given its emphasis on soft skills). However, there is more limited scope for the curriculum to meaningfully affect academic performance (i.e., math and reading per se) during the last year of secondary school as students learn the new skills.

In terms of **enrollment in and completion of tertiary education**, most young people in the study invest in post-secondary education (Table 5.5.1): 73.9 percent of the control group has completed or is currently enrolled in some form of tertiary education (vocational or university) and 40 percent of the group has completed a university or a vocational degree (models 7 and 19, respectively). Approximately 35.7 percent of the sample is currently enrolled in tertiary education. In spite of these high figures, female Educate! graduates are 8.4 pp (11 percent, one-sided p -value = 0.04, Model 9) more likely (than the control group) to have completed or to be currently enrolled in tertiary education. No statistically significant differences are estimated for the full sample or for the male subsample. No statistically significant program effects were found on the likelihood of currently being enrolled in school (models 10-12). Notably, the program influenced Educate! graduates' choice of major. Table 5.5.2 shows the effects on the choice of field of study or major in tertiary education. Educate! graduates are 7.2 pp more likely to select **business and STEM degrees**, which represents a 14 percent increase (one-sided p -value = 0.06). The effect among females is more pronounced and significant: there is an estimated 12 pp (22 percent, model 6) higher probability of selecting a business-technical track (one-sided p -value = 0.014). Finally, preliminary evidence suggests that, conditional on enrolling in tertiary education, Educate! graduates appear to perform better and record higher cumulative grade-point averages (GPA) relative to their counterparts in the control group. Namely, model 16 of Table 5.5.1 shows that the GPA of Educate! graduates is 0.12 sd higher (one-sided p -value = 0.06) than that of youth in the control group. The effect for females is even larger: 0.21 sd (one-sided p -value = 0.04). These estimates are only suggestive and should be interpreted with caution,³⁰ since they do not yet account for the fact that Educate! alters both the decision to enroll and performance in tertiary education.

5.5.2. LABOR MARKET OUTCOMES

This section looks at participation in the labor market. The survey module dedicated to time use is critical to constructing comparable measures of total earnings (measured as the cumulative amount earned since secondary school graduation from all sources), wages from work, and profits from self-employment.³¹ However, with 35.7 percent of the sample still enrolled in tertiary education, understanding the full impact on labor market outcomes will require waiting until these students have entered the labor market. With this caveat in mind, we first present results along the extensive margin of labor force participation; that is, we focus on the decision whether to

³⁰ By definition, GPA scores are only available for those who enrolled in tertiary education, which, as documented earlier, is an outcome that is affected by the Educate! intervention. As such this indicator suffers from sample selection, and simple comparisons between the treatment and control groups are biased and inconsistent.

³¹ On average, youth in the sample spent approximately 20 months working as employees and 28 months self-employed during the four years since graduation.

participate in the labor market, be it in the form of self-employment or as an employee. The closing portion of this section then reports findings on whether Educate! training is rewarded in the labor market.

Participation in the Labor Market

Overall, no improvements in labor force participation are detected among Educate! graduates (self-employment or otherwise) relative to the control group. Educate! graduates are not more likely than the control group to work for wages, to be self-employed, or to be economically active (Tables 5.5.3 and 5.5.4). However, separate analyses by gender indicate substantial heterogeneous effects. Male Educate! graduates are 3.8 pp (25 percent) more likely to participate in high-skilled jobs (this effect is at the margin of significance, one-sided p -value = 0.107) and have a higher number of concurrent businesses (0.7 and 0.6 among the treatment and control groups, respectively, the difference being statistically significant, one-sided p -value = 0.074). In turn, female Educate! graduates are altogether less likely to be dependent workers at the time of the survey (7.1 pp, or an 18.5 percent relative decrease).

The Educate! program does not alter the likelihood of being in **neither education, employment, nor training** (NEET; see model 10 of Table 5.5.3). But male Educate! graduates appear to be less likely to be NEET (1.4 pp), though this effect is only marginally significant (one-sided p -value = 0.104). It is important to note that the prevalence of NEET in this population is low: 4.8 percent overall, 2.9 percent for males, and 7.7 percent for females (means of controls in models 10-12). Compared to international statistics on Ugandan youth,³² the NEET group seems to be underrepresented in the sample. A number of potential causes include the fact that we study a sample of highly educated individuals, or the operational definition based on the time use module of the survey.

Returns in the Labor Market

No statistically significant differences were found in accumulated earnings between the treatment and control groups over the recall period (Table 5.5.5, models 1-3). As a reference, the earnings of youth in the control group were slightly higher than among treated youth: US\$5,714 vs. US\$4,124, respectively.

While cumulative earnings is an outcome that is available for the full sample of study participants, wages and revenues/profits will be tied to youth selecting wage-earning activities and self-employment, respectively. As such, as in the case of the test scores in the previous section, the evidence presented here should be interpreted with caution, since it does not yet account for the fact that Educate! affects the decisions to enter the labor market vs. remain in school, in which sector to work, etc. As such the sample of youth for which we have either wages or profit/revenue information is a function of assignment to the treatment and control groups. To illustrate the importance of this point, assume that Educate! training resulted in additional education investments for higher-

³² The share of youth in NEET in Uganda was 33.47 percent of the total youth population in 2017, according to the International Labour Organization's ILOSTAT database. <https://data.worldbank.org/indicator/SL.UEM.NEET.ZS>.

ability youth and delayed their full-time labor force participation. Then profit/wage data for the treatment group would be available only for youth who are relatively less able and may have lower income potential, thereby biasing downward any estimated differences in profits/wages between the treatment and control groups.

Among youth with wage jobs, no statistically significant effects of the program was found on **wages** (see Table 5.5.6 for the log of daily wage results).³³ The analysis of adjusted daily wages (to account for hours worked) delivers similar results.

Turning attention to young people who own their own business, estimates of the effect of Educate! indicate a (statistically significant) negative impact on self-reported revenues and profits over the last month (Table 5.5.7). With respect to self-reported profits, negative impacts of the program are recorded for the full sample and for the male subsample (12.9 percent and 24.9 percent, respectively). However, impacts are positive for the female subsample (Table 5.5.7, model 6) as self-reported profits appear 30 percent higher than in the control group, p -value = 0.072).

Measures of Own Economic and Social Standing

We close this section by reporting on self-reported measures of own economic and social standing. These are clearly important in their own right, but they can also serve as proxies for current levels of satisfaction and aspiration/optimism about their future. In the absence of objective measures of economic performance, they also provide insight into how Educate! graduates perceive their social standing and wealth relative to peers and the rest of community.

Educate! graduates are 4.2 pp (one-sided p -value = 0.07) more likely to (currently) place themselves in the upper half of the **wealth distribution** (Table 5.5.8, model 1). In addition, the estimated effect for females (model 3) is much larger than for males – a statistically significant 5.5 pp (one-sided p -value = 0.07).

The program does not appear to alter Educate! graduates' **perception of their current social standings** in either the full sample or the male subsample (models 4-5). This result is in part explained by the fact that 82 percent of youth in the control group already position themselves in the upper half of the social standing distribution, which reflects the fact that the sample is from young people with relatively higher socio-economic status, as proxied by secondary school completion rates and tertiary education. However, when restricting attention to the female subsample (model 6), young women receiving Educate! training are 3.8 pp more likely to see themselves as

³³ In the log-linear specification, coefficients should be interpreted as a percent change in the outcome (relative to the control group).

belonging to the upper half of the social standing distribution (a 5 percent relative increase, one-sided p -value = 0.098).

No statistically significant impacts were found in terms of **youth's future wealth and social standing** (Table 5.5.9). The only exception is among male Educate! graduates, who have an improved outlook on their future social standing: they are 4.5 pp (8.2 percent relative increase, significant at the 10 percent level) more likely to place themselves in the upper half of the social ladder.

5.6. Social Spillovers

This section presents an overview of program impacts on risky behavior, family formation decisions, attitudes toward traditional gender roles and the division of labor within the household, the use of and justification for physical and psychological violence, and the incidence of physical and psychological violence. This set of outcomes was included per the request of the research team after the Principal Investigators secured IPA-IPV (2017) funding to support data collection covering these specific topics.

TABLE 5.6.1 RELATIONSHIPS AND REPRODUCTIVE BEHAVIOR CHARACTERISTICS

	All	Treatment	Control
Currently or recently (in past 12 months) in a relationship	1,298 (81.38%)	658 (81.84%)	640 (80.91%)
Average age (years) when started current or most recent relationship (standard deviations)	21.3 (2.27)	21.3 (2.13)	21.3 (2.41)
Married or cohabitating	293 (18.37%)	137 (17.04%)	156 (19.72%)
Regular partner, not cohabitating	789 (49.47%)	403 (50.12%)	386 (48.80%)
Single	474 (29.72%)	246 (30.60%)	228 (28.82%)
Probability of one or more sexual partners since graduating secondary school	1,237 (77.55%)	607 (75.50%)	630 (78.36%)
Average number of sexual partners since graduating secondary school (standard deviations)	1.93 (2.49)	1.75 (2.04)	2.11 (2.86)
Use of family planning methods	1,028 (64.45%)	487 (60.57%)	541 (68.39%)
Abstinence	255 (15.99%)	102 (12.69%)	153 (19.34%)
Has children	247 (15.49%)	110 (13.68%)	137 (17.32%)
Average number of children (standard deviations)	0.18 (0.45)	0.16 (0.42)	0.20 (0.47)
	1,595	804	791

Table 5.6.1 shows characteristics of youth in the sample in terms of their relationship status, family formation, and sexual behaviors. It shows that 81.4 percent of respondents are currently in a relationship or were recently in

relationship that ended within 12 months of the four-year follow-up. These relationships are relatively recent and on average started when the respondent was 21 years old (as a reminder, respondents are on average are 23 years old). 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.³⁴ The table also shows that 15.5 percent of respondents have children, and that respondents in the study have, on average, 0.18 children.

5.6.1. FERTILITY AND RISKY BEHAVIORS

Relationship and reproductive behavior outcomes include behaviors such as fertility, family formation, number of sexual partners, and contraception use. Overall, relative to the control group, Educate! graduates engage in less risky (sexual) behaviors (Table 5.6.2), with large effects among males. They also appear to delay family formation (Table 5.6.3).

While these may appear distant and not immediately related outcomes to the intervention, the Educate! program has the potential to shape this type of youth behavior 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 (or withdrawing) from the labor market. The text below provides more detail on the magnitude and gender heterogeneity of these effects.

Youth exposed to the program are less likely to have any **sexual partner** at all (4.1 pp, one sided p -value = 0.063). Furthermore, they are also 4.9 pp (or 10 percent, one-sided p -value = 0.045) less likely to have more than one sexual partner since graduating from secondary school (Table 5.6.2). In particular, they report 0.11 sd (or roughly 0.36, one-sided p -value = 0.032) fewer sexual partners. Effects for males – who are traditionally more likely to have multiple sexual partners – are twice as large as those for females. On average, male Educate! graduates report 0.14 sd fewer sexual partners (one-sided p -value = 0.021), which corresponds roughly to 0.48 fewer sexual partners relative to control group males, who report 2.5 sexual partners since leaving secondary school (Table 5.6.2). To benchmark these figures, according to the 2016 Demographic Health Survey, men aged 40 to 49 – who are more than 20 years older than youth in our sample – reported eight lifetime sexual partners. Educate! impacts are therefore sizable and all the more significant considering that Uganda has recently experienced increases in both the prevalence and incidence of HIV, with about 1.3 million adults aged 15 to 49 living with HIV in the country, and with a prevalence rate of 7.3 percent.³⁵

³⁴ If the number of sexual partners reported was greater than 20, we recoded responses to 20 ($n = 11$).

³⁵ A. Gottert, A. Katahoire, J. Pulerwitz, and G. Siu (2018), “Male Partners of Young Women in Uganda: Understanding Their Relationships and Use of HIV Testing,” PLoS ONE 13.

Educate! graduates also report being less sexually active and delaying family formation. The program leads to a 6.1 pp increase in **abstinence** from sex while in a relationship (one-sided p -value = 0.01) relative to the control group (13 percent; see Table 5.6.3). Delays in family formation appear both along the extensive (whether or not to have children) and the intensive (how many children) margins. Youth in the treatment group are less likely **ever to be pregnant** (5.6 pp, approximately 21 percent) and have 0.1 sd **fewer children**, representing approximately 0.044 fewer children than couples in the control group (Table 5.6.3). The effects on fertility are quite large in light of the relatively young age of the sample and the low incidence of pregnancy.

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.³⁶ 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 (the average age of youth in our sample), 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 likely to be positively selected relative to the average youth in Uganda, as indicated by the educational attainment outcomes (e.g., completion of secondary, enrollment in tertiary education, etc.).

5.6.2. SOCIAL NORMS ABOUT GENDER ROLES AND IPV OUTCOMES

The Educate! intervention could influence social norms and IPV-related outcomes through several complementary channels and mechanisms:

- Traditional economic channel/control over resources by expanding participants' economic opportunities (whether actual or potential).
- Improving both men's and women's soft and persuasion skills, which could have spillovers on personal dimensions of participants' lives, including those related to conflict resolution and social norms, as well as sexual behaviors and fertility (impacts reported above).
- Shifting the aspirations of women who may otherwise be lacking economically active and successful female role models. Similarly, men's perceptions about gender roles and women's productive potential could be altered by exposing them to their partners' peers in non-traditional gender roles and to female mentors, thereby reducing backlash by men and the likelihood of IPV.
- Increasing educational attainment and economic returns, expanding aspirations, and improving bargaining skills and outside options, which could affect the quality of partners in the marriage markets.

³⁶ A. Keats (2018), "Women's Schooling, Fertility, and Child Health Outcomes: Evidence from Uganda's Free Primary Education Program," *Journal of Development Economics* 135: 142–59.

The theoretical predictions regarding the effects of women's economic opportunities on IPV are ambiguous. Improvements in bargaining power may improve IPV-outcomes through changes in attitudes and norms, increased control over resources, and improved outside options. However, such changes could challenge the status quo, leading to new tensions, emotional backlash, and to men using violence to restore authority and extract resources. As such, studying the impact of the program on these outcomes is a key empirical question that could inform and guide curriculum design (to mitigate unintended consequences) or shed further light on the social spillovers of the intervention.

Educate! graduates express **more egalitarian gender views** (Table 5.6.4). Overall, they express greater optimism and support views of society valuing men and women equally (3.1 pp or 3.5 percent; one-sided p -value = 0.025) relative to the control group. However, gender-specific and complementary dimensions of these shifts in social norms are also observed. Women who received the Educate! training are more likely to claim a right to more agency in joint decision-making within the household (4 pp, 5 percent, one-sided p -value = 0.052) as well as to their participation in the labor market (13.9 pp, 28 percent, one-sided p -value = 0.01). In turn, men who received training are more likely to recognize women's right to safe sex (i.e., ask to use a condom: 5.8 pp, 7.5 percent, one-sided p -value = 0.054) and consensual sexual relationships (i.e., right to refuse sex, 3.2 pp, 3.5 percent, one-sided p -value = 0.057).

It is important to acknowledge that some social norms may be more resistant to change than others. One of the indicators suggests that male Educate! graduates believe that joint decision-making within the household may lead to diminished reputation among their peers. As alluded to earlier, increased female agency in conjunction with persistent traditional male roles may increase tensions within partnerships, yielding psychological and/or physical violence, as predicted by "male backlash" theories.³⁷ As such, the impact on IPV-related outcomes is a priori undetermined.

Educate! graduates also reported **improved attitudes towards acceptability of IPV** (12 percent lower social acceptability; see Table 5.6.5), and female Educate! graduates are 18 percent less likely to report **being victims of or being threatened with physical violence** (6.2 pp, 18 percent, one-sided p -value = 0.058). Preliminary results suggest improvements in partner selectivity and in the quality of matches in the market for partners. We hope to test this hypothesis directly by collecting additional data on the partners of study participants.

Overall, these findings speak to the importance of social spillovers of interventions that operate on skills and education, especially in the Ugandan context. It is worth noting that IPV is a widespread policy problem thought

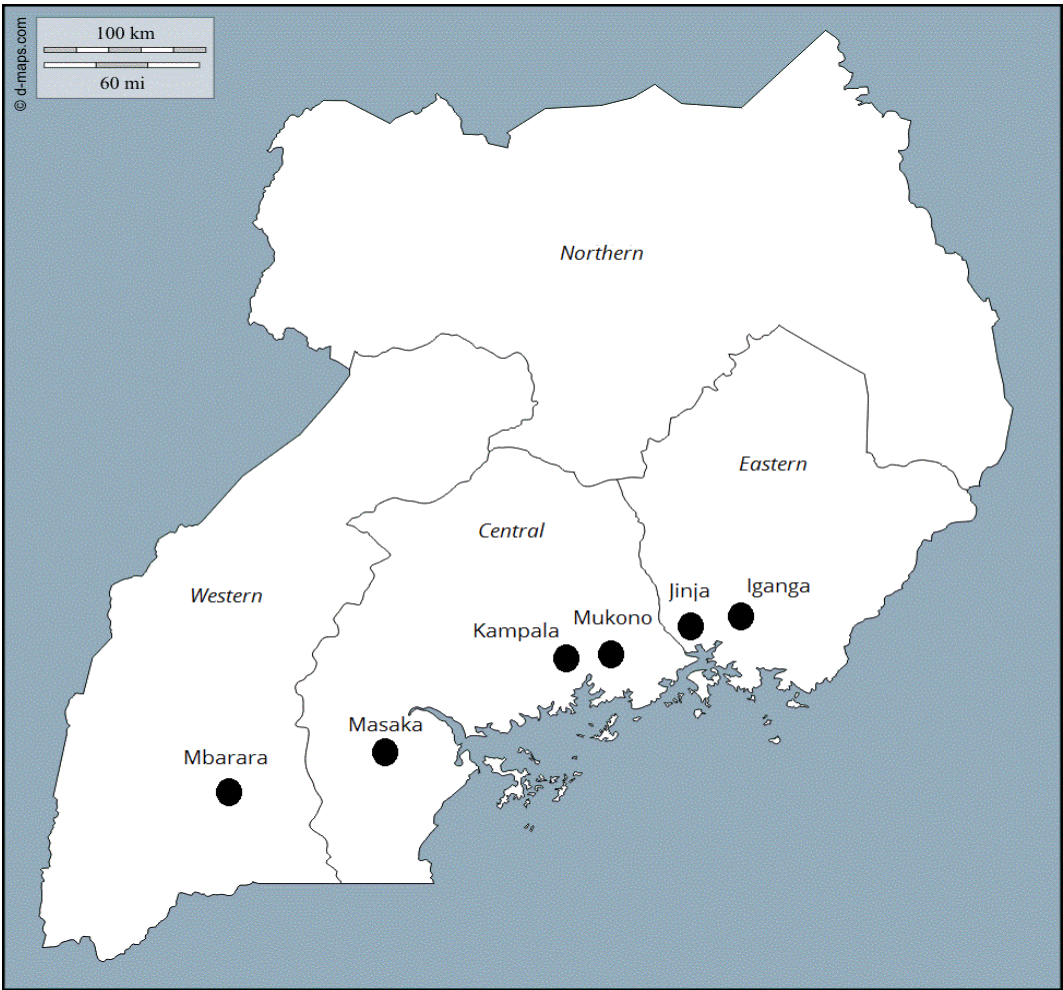
³⁷ That is, the independence of a man's partner may represent a challenge to a culturally prescribed norm of male dominance and female dependence. Where a man lacks this sign of dominance, violence may be a means of reinstating his authority over his partner.

to touch the lives of 30 percent of women globally (Devries et al. 2013).³⁸ In Uganda, IPV is pervasive; approximately 51 percent of women report experiencing physical violence and about 56 percent report having experienced physical and/or sexual violence, according to the 2016 Demographic Health Survey. These figures are likely to understate the true magnitude of the problem, given that they are self-reported. In Uganda, about 9 percent of violent incidents forced women to miss time away from paid work, amounting to approximately 11 days per year, equivalent to half a month's salary. These losses affect not only the victim of violence herself but her family and dependents, according to UN Women. The annual costs of IPV are estimated at US\$30.7 million, or 0.35 percent of Ugandan GDP (Kasirye 2013).³⁹ In 2016, the global cost of violence against women was estimated by the United Nations to be US\$1.5 trillion, equivalent to approximately 2 percent of the global GDP.

³⁸ K.M. Devries, J.Y.T. Mak, C. Garcia-Moreno, M. Petzold, J.C. Child, G. Falder, S. Lim, L.J. Bacchus, R.E. Engell, L. Rosenfeld, C. Pallitto, T. Vos, N. Abrahams, and C.H. Watts (2013), "The Global Prevalence of Intimate Partner Violence against Women," *Science* 340 (6140): 1527–528.

³⁹ I. Kasirye (2013), "Economic Costs of Domestic Violence in Uganda," Centre for Domestic Violence Prevention, Kampala, Uganda.

APPENDIX A. MAP OF SCHOOL DISTRICTS



APPENDIX B. TRAINING SCHEDULE

APPENDIX TABLE B1. TRAINING SCHEDULE FOR QUANTITATIVE DATA COLLECTION

		August 18	August 19	August 20	August 21	August 22	August 23	August 24
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
08.30 - 10.00	Morning	Welcome to E training Introduction E & program	Recap day 1 Module 3: Economic activities intro	Recap day 1-2 Module 3: Economic activities	Recap day 1-3 Module 7: You and relationships	Recap day 1-4 Introduction IPV	Recap day 1-5	Field practice day
10.30 - 11.00	Tea break							
11.00 - 13.00	Morning	Introduction evaluation Training manual	Module 3: Economic activities Work for someone else	Module 4: Community Module 5: Behavioral games	Module 8: Post survey reflection Practice	Module 9: Perceptions Module 10: Attitudes	Practice	Field practice day
13.00 - 14.00	Lunch break							
14.00 - 17.30	Afternoon	Informed consent Module 1: Demographics Module 2: Business knowledge	Module 3: Economic activities Self employed	Module 6: Psychological scales Practice	Practice	Module 11: Bargaining and IPV	Practice	Field practice feedback Concluding remarks

APPENDIX C. IPA DATA COLLECTION REPORT NOTES

1. Behavioral Games

As shown in Appendix Table C1, almost all respondents agreed to participate in the negotiation game (93.7 percent), and 88.1 percent of them negotiated and reached an agreement with the enumerator. Based on the respondent's performance in the negotiation, points were rewarded from 0 to 15,000. The average score of respondents who reached an agreement was 6,729. Of the total number of respondents, 91.5 percent agreed to participate in the persuasion game. In the creativity game, the respondent was asked to name as many uses as possible for a pole in one minute. The average number of pole uses cited was approximately five.

APPENDIX TABLE C1. BEHAVIORAL GAMES

	All	Treatment	Control
Agreed to negotiation game	1,494 (93.7%)	747 (93.2%)	804 (94.2%)
Reached agreement in negotiation game	1,405 (88.1%)	705 (97.7%)	700 (88.5%)
Average points in negotiation game if reached agreement (standard deviation)	6,729.18 (2547.86)	6,712.06 (2557.73)	6,746.43 (2539.60)
Agreed to persuasion game	1,460 (91.5%)	732 (91.0%)	728 (92.0%)
Average number of pole uses mentioned in creativity game (standard deviation)	5.01 (1.96)	5.13 (2.03)	4.89 (1.88)

2. Economic Module

The economic activities of the respondents are shown in Appendix Table C2. The respondent's economic activities were recorded from December 2013 (the month the respondent graduated from secondary school) until the month of the survey. The respondent recalled for each month what he or she was doing (self-employed, working for someone else, searching for a job, or not searching for a job). The average number of economic activities (self-employed or working for someone else) was 1.71 activities. Among the respondents, 49.1 percent reported a self-employment activity at least once; 60.7 percent reported working for someone else (paid) at least once; and 42.8 percent reported working for someone else (unpaid) at least once. In addition, 30.7 percent of the respondents mentioned that he or she had searched for a job at least once from December 2013 until the day of the survey. The survey also found that 73.7 percent of the respondents are currently saving, and 54.2 percent use a bank account for their savings.

APPENDIX TABLE C2. ECONOMIC ACTIVITIES

	Total Sample	Treatment	Control
Average number of economic activities (standard deviations)	1.71 (1.89)	1.72 (1.85)	1.70 (1.92)
Self-employed	784 (49.1%)	412 (51.3%)	371 (46.8%)
Employed (paid)	970 (60.7%)	476 (59.1%)	494 (62.4%)
Employed (unpaid)	683 (42.8%)	344 (42.7%)	339 (42.8%)
Searching for a job	490 (30.7%)	239 (29.7%)	251 (31.7%)
Savings	1,175 (73.7%)	587 (73.0%)	588 (74.4%)
Keeps savings in bank account	864 (54.2%)	439 (54.5%)	425 (53.7%)

3. Community

Appendix Table C3 shows the community involvement of the respondents: 17.4 percent are members of one or more community committees. When asked about community work (varying from doing maintenance work on community buildings to contributing to funeral expenses to someone outside of the respondent's family), 92.4 percent of the respondents said they contributed time, labor, or money to at least one type of community work, with an average of three types of community work. The respondent's contribution was mandatory for, on average, 1.4 activities, while, on average, 1.8 community work activities were initiated by the respondent (alone or in a group).

APPENDIX TABLE C3. COMMUNITY INVOLVEMENT

	All	Treatment	Control
Member of community committees (e.g., Local Council 3, Local Council 5 or any other)	278 (17.4%)	131 (16.3%)	147 (18.6%)
Community work in the past 12 months	1474 (92.4%)	745 (92.7%)	729 (92.2%)
Average of different types of community work in past 12 months (standard deviations)	3.10 (1.54)	3.12 (1.56)	3.08 (1.52)
Of the community work, average of mandatory activities (standard deviations)	1.42 (0.75)	1.41 (0.73)	1.44 (0.77)
Of the community work, average of activities initiated (standard deviations)	1.84 (1.24)	1.85 (1.28)	1.82 (1.20)

4. Relationships

Appendix Table C4 shows the respondents' relationship and family characteristics. Half of the respondents (49.5 percent) are currently in a relationship, but do not live with their partner; 18.4 percent are currently married or living together with their partner; and 0.7 percent are temporarily separated, divorced, or widowed. Further, 1.1 percent have a casual sexual partner and 29.7 percent are single. Family planning methods are used by 64.5 percent of the respondents. Approximately 15 percent of respondents have children, with an average of 1.15 children.

APPENDIX TABLE C4. RELATIONSHIP AND FAMILY CHARACTERISTICS

	All	Treatment	Control
Married or co-habiting	293 (18.4%)	137 (17.0%)	156 (19.7%)
Regular partner, not cohabitating	789 (49.5%)	403 (50.1%)	386 (48.8%)
Temporarily separated/divorced/widowed	11 (0.7%)	7 (0.9%)	4 (0.5%)
Casual sexual partner	18 (1.1%)	6 (0.8%)	12 (1.5%)
Single	474 (29.7%)	246 (30.6%)	228 (28.8%)
Use of family planning methods	1,028 (64.5%)	487 (60.6%)	541 (68.4%)
Has children	247 (15.5%)	110 (13.7%)	137 (17.3%)
Average number of children (standard deviations)	1.15 (0.38)	1.15 (0.38)	1.16 (0.39)

APPENDIX D. SOFT AND BUSINESS KNOWLEDGE (TABLES FOR SECTIONS 5.2 AND 5.3)

TABLE 5.2.1. AVERAGE TREATMENT EFFECTS (ATE): BIG 5 PERSONALITY TRAITS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Big 5: Extroversion			Big 5: Agreeableness			Big 5: Conscientiousness			Big 5: Neuroticism			Big 5: Openness		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.082	0.033	0.162	0.086	0.087	0.092	0.039	0.059	0.031	-0.013	-0.021	-0.016	0.129	0.098	0.192
Mean of 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	0.000	0.000	0.000
Observations	1586	925	661	1586	925	661	1586	925	661	1586	925	661	1586	925	661
Two-sided p -value ($H_0: ATE = 0$)	0.172	0.700	0.050	0.115	0.177	0.329	0.539	0.381	0.760	0.851	0.845	0.842	0.046	0.219	0.067
One-sided p -value ($H_0: ATE \leq 0$)	0.088	0.332	0.021	0.058	0.073	0.145	0.264	0.198	0.375	0.570	0.584	0.582	0.029	0.102	0.025
One-sided p -value ($H_0: ATE \geq 0$)	0.912	0.668	0.979	0.942	0.927	0.855	0.736	0.802	0.625	0.430	0.416	0.418	0.971	0.898	0.975
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.179			0.944			0.750			0.958			0.423		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weight type). Dependent variables in models 1-15 are standardized with respect to the mean of the control group. Personality is measured with the Big 5 model, which are 44 items across five broad dimensions of personality: openness (inventive and curious vs. consistent and cautious), conscientiousness (efficient and organized vs. easygoing and careless), extroversion (outgoing and energetic vs. solitary and reserved), agreeableness (friendly and compassionate vs. analytical and detached), and neuroticism (sensitive and nervous vs. secure and confident). For each of the 44 items, respondents were asked to assess whether they strongly disagree, disagree, are neutral, agree, or strongly agree with a statement. Each dimension is a multi-item scale and is standardized to the control group (for "all" respondents, "male" respondents only, and "female" respondents only).

TABLE 5.2.2. AVERAGE TREATMENT EFFECTS (ATE): GRIT

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Grit Index			Passion (Grit) Index			Perseverance (Grit) Index		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.140	0.119	0.212	0.145	0.088	0.265	0.097	0.115	0.104
Mean of control group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1586	925	661	1586	925	661	1586	925	661
Two-sided p -value ($H_0: ATE = 0$)	0.014	0.095	0.016	0.009	0.173	0.002	0.105	0.150	0.222
One-sided p -value ($H_0: ATE \leq 0$)	0.008	0.049	0.006	0.005	0.087	0.001	0.044	0.076	0.101
One-sided p -value ($H_0: ATE \geq 0$)	0.992	0.951	0.994	0.995	0.913	0.999	0.956	0.924	0.899
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.422			0.070			0.855		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weight type). Grit is an index constructed of 12 items, six of which are combined to construct the passion index and the other six are combined to construct the perseverance index. All indices in this table are standardized to the control group (for "all" respondents, "male" respondents only, and "female" respondents only).

TABLE 5.2.3. AVERAGE TREATMENT EFFECTS (ATE): SELF-EFFICACY

	(1)	(2)	(3)
	Self-efficacy Index		
	All	Male	Female
Treatment	0.100	0.091	0.132
Mean of control group	0.000	0.000	0.000
Observations	1586	925	661
Two-sided p -value (H_0 : ATE = 0)	0.066	0.227	0.102
One-sided p -value (H_0 : ATE \leq 0)	0.037	0.104	0.052
One-sided p -value (H_0 : ATE \geq 0)	0.963	0.896	0.948
Two-sided p -value (H_0 : male=female)	0.730		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weight type). Self-efficacy is a 10-item scale that assesses a respondent's belief regarding his or her capabilities in achieving goals. All indices in this table are standardized to the control group (for "all" respondents, "male" respondents only, and "female" respondents only).

TABLE 5.2.4. AVERAGE TREATMENT EFFECTS (ATE): STRESS AND DEPRESSION MEASURES

	(1)	(2)	(3)	(4)	(5)	(6)
	Stress Index			Depression Index		
	All	Male	Female	All	Male	Female
Treatment	-0.141	-0.165	-0.135	0.034	0.081	-0.033
Mean of control group	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1586	925	661	1586	925	661
Two-sided p -value (H_0 : ATE = 0)	0.012	0.017	0.166	0.682	0.468	0.743
One-sided p -value (H_0 : ATE \leq 0)	0.995	0.995	0.929	0.350	0.228	0.619
One-sided p -value (H_0 : ATE \geq 0)	0.005	0.005	0.071	0.650	0.772	0.381
Two-sided p -value (H_0 : male=female)	0.967			0.442		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weight type). Stress is an eight-item scale that assesses anxiety or stress levels in a situation as perceived as a threat (e.g., whether the participant feels anxious about the situation) or a challenge (e.g., whether the respondent is eager to tackle this situation). The depression measure is an index of nine items (e.g., "I feel very sad when I remember bad things from the past or I feel sad most of the time"). All indices in this table are standardized to the control group (for "all" respondents, "male" respondents only, and "female" respondents only).

TABLE 5.2.5. AVERAGE TREATMENT EFFECTS (ATE): CREATIVITY MEASURES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total Responses			Category Spanning			How Innovative Respondent Is		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.24	0.189	0.385	0.229	0.166	0.39	0.024	0.022	0.031
Mean of control group	4.89	5.19	4.429	4.754	5.061	4.282	0.105	0.118	0.0838
Observations	1574	918	656	1574	918	656	1574	918	656
Two-sided <i>p</i> -value (H0: ATE = 0)	0.069	0.251	0.067	0.078	0.296	0.058	0.016	0.180	0.010
One-sided <i>p</i> -value (H0: ATE ≤ 0)	0.036	0.124	0.019	0.043	0.147	0.017	0.012	0.079	0.004
One-sided <i>p</i> -value (H0: ATE ≥ 0)	0.965	0.876	0.981	0.957	0.853	0.983	0.988	0.921	0.996
Two-sided <i>p</i> -value (H0: male=female)	0.389			0.325			0.605		

Note: One-sided and two-sided *p*-values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weight type). Respondents were asked to tell the enumerator all the different uses for a pole that they could think of in one minute. Total responses is the count of items mentioned by the respondent (excluding any responses that were redundant or unintelligible). Category spanning is the number of categories mentioned by the respondent. How innovative respondent is refers to how original or innovative each response was as determined by how common or uncommon each item mentioned by the respondent was. This was calculated by assigning a weight (1 divided by the number of people who mention the item) to each item and summing across all weighted items.

TABLE 5.2.6. AVERAGE TREATMENT EFFECTS (ATE): NEGOTIATION TASK (1 OF 2)

Table 5.2.6 Average Treatment Effects (ATE) on Soft Skills: negotiation task (1 of 2).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Reached Agreement			Financing (in millions of UGX) if Reached Agreement			Financing (in log millions of UGX) if Reached Agreement			Start Date (in months) if Reached Agreement		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.000	0.002	-0.004	0.677	7.194	-6.135	0.002	0.022	-0.019	-0.096	-0.018	-0.111
Mean of control group	0.941	0.934	0.952	364.5	369.9	356.3	19.67	19.69	19.64	4.913	5.232	4.428
Observations	1493	872	621	1405	815	590	1405	815	590	1405	815	590
Two-sided <i>p</i> -value (H0: ATE = 0)	0.976	0.896	0.843	0.933	0.439	0.610	0.946	0.458	0.634	0.544	0.918	0.612
One-sided <i>p</i> -value (H0: ATE ≤ 0)	0.487	0.449	0.587	0.465	0.217	0.704	0.473	0.225	0.696	0.733	0.537	0.688
One-sided <i>p</i> -value (H0: ATE ≥ 0)	0.513	0.551	0.413	0.535	0.783	0.296	0.527	0.775	0.304	0.267	0.463	0.312
Two-sided <i>p</i> -value (H0: male=female)	0.791			0.322			0.344			0.755		

Note: One-sided and two-sided *p*-values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weight type). For the negotiation task, the enumerator and respondent have up to five minutes to negotiate about what to do in a situation where there is conflict. The Buyer/Enumerator was trying to stay as close to giving the Seller/Respondent 100 million UGX up front and a project start date that would begin in two months. The Seller/Respondent was trying to get as close to getting 600 million UGX up front and a project start date in 12 months. The respondent is challenged to negotiate with the enumerator for two specific items: (1) terms of finance, which is a number between 100 million UGX and 600 million UGX, and (2) terms of the project start date, which is a number between one month and 12 months.

TABLE 5.2.7. AVERAGE TREATMENT EFFECTS (ATE): NEGOTIATION TASK (2 OF 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Total Points - Butagira (Seller/Respondent)			Total Points - Musumba (Buyer/Enumerator)			Number of Words Spoken by Butagira (Seller/Respondent)			Number of Words Spoken by Musumba (Buyer/Enumerator)		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	-21.169	140.613	-171.893	99.483	-31.1	158.428	12.238	16.717	14.167	10.369	8.648	10.143
Mean of control group	6339	6549	6015	8872	8467	9497	243	265	208.9	439	433.1	448.2
Observations	1494	872	622	1494	872	622	1538	891	646	1538	891	646
Two-sided p -value (H_0 : ATE = 0)	0.921	0.610	0.648	0.639	0.908	0.620	0.294	0.246	0.252	0.256	0.375	0.469
One-sided p -value (H_0 : ATE \leq 0)	0.538	0.301	0.691	0.310	0.551	0.303	0.144	0.109	0.121	0.125	0.199	0.227
One-sided p -value (H_0 : ATE \geq 0)	0.462	0.699	0.309	0.690	0.449	0.697	0.856	0.891	0.879	0.875	0.801	0.773
Two-sided p -value (H_0 : male=female)	0.449			0.632			0.873			0.929		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weight type). For the negotiation task, the enumerator and respondent have up to five minutes to negotiate about what to do in a situation where there is conflict. The Buyer/Enumerator was trying to stay as close to giving the Seller/Respondent 100 million UGX up front and a project start date that would begin in twomonths. The Seller/Respondent was trying to get as close to getting 600 million UGX up front and a project start date in 12 months. The respondent is challenged to negotiate with the enumerator for two specific items: (1) terms of finance, which is a number between 100 UGX million and 600 million UGX, and (2) terms of the project start date, which is a number between one month and 12 months. How well the enumerator and respondent do is also determined through points they can gain from the following payoff tables. The maximum number of points (the best scenario) Musumba could earn is 15,000 associated with 100 million UGX financing paid up front and a project start date in two months. The best scenario for Butagira results in 15,000 points and is associated with 600 million UGX financing received up front and a project start date in 12 months.

TABLE 5.2.8. AVERAGE TREATMENT EFFECTS (ATE): PERSUASION TASK

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Persuasion - Whether the Person Should Be Given Land			Persuasion - Person Is Someone with Whom You Would Do Business			Persuasion - Whether You Would Hire This Person			Persuasion - Person Is Persuasive in Voice, Words, and Body Posture			Persuasion - Person Is Confident in Voice, Words, and Body Posture		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.06	0.046	0.085	0.093	0.097	0.095	0.049	0.041	0.073	0.012	0.024	-0.007	-0.003	0.026	-0.039
Mean of control group	0.837	0.859	0.802	0.541	0.564	0.504	0.561	0.601	0.496	0.089	0.077	0.107	0.254	0.259	0.246
Observations	1333	782	551	1333	782	551	1333	782	551	1332	781	551	1335	784	551
Two-sided p -value (H_0 : ATE = 0)	0.070	0.183	0.098	0.069	0.083	0.271	0.319	0.457	0.304	0.610	0.394	0.868	0.927	0.621	0.534
One-sided p -value (H_0 : ATE \leq 0)	0.037	0.086	0.040	0.038	0.044	0.109	0.167	0.235	0.141	0.307	0.185	0.573	0.534	0.296	0.743
One-sided p -value (H_0 : ATE \geq 0)	0.963	0.914	0.960	0.963	0.956	0.891	0.833	0.765	0.859	0.693	0.815	0.427	0.466	0.704	0.257
Two-sided p -value (H_0 : male=female)	0.392			0.982			0.688			0.475			0.413		

Notes: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weight type). The persuasion task gave the respondent one minute to convince a group of people about his or her opinion and persuade them to agree with that opinion. The respondent was allotted one minute to make a persuasive case, and the conversation was video recorded. Coders then assessed the respondent (e.g., whether the person is someone with whom you'd like to do business) and rated the persuasiveness in the person's voice, words, and body posture, as well as the confidence in the person's voice, words, and body posture. Dependent variable in models 10-15 is an indicator for if the coder rated the person as *completely* persuasive/confident.

TABLE 5.3.1. AVERAGE TREATMENT EFFECTS (ATE): HARD SKILLS/BUSINESS KNOWLEDGE (1 OF 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Opportunities for Business Ideas			Budget Elements			Profit & Loss Statement		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.088	0.051	0.135	0.108	0.121	0.092	0.004	-0.004	0.014
Mean of control group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1,597	930	667	1,597	930	667	1,597	930	667
Two-sided p -value (H_0 : ATE = 0)	0.157	0.490	0.126	0.261	0.311	0.508	0.970	0.957	0.893
One-sided p -value (H_0 : ATE \leq 0)	0.075	0.242	0.059	0.134	0.152	0.246	0.478	0.519	0.438
One-sided p -value (H_0 : ATE \geq 0)	0.925	0.758	0.941	0.866	0.848	0.754	0.522	0.481	0.562
Two-sided p -value (H_0 : male=female)	0.416			0.854			0.889		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Business knowledge was measured through multiple-option questions: opportunities for business ideas, budget elements, profit & loss statement (this table), and deliberative dialogue and win-win situations (Table 5.3.2), scored as the number of correctly chosen answer options (models 1-15). We did not penalize for incorrect responses. Business knowledge score computed with the method of iterated principal factor of the correlation matrix. All measures in this table are standardized to the control group (for "all" respondents, "male" respondents only, and "female" respondents only).

TABLE 5.3.2. AVERAGE TREATMENT EFFECTS (ATE): HARD SKILLS/BUSINESS KNOWLEDGE (2 OF 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Deliberative Dialogue			Win-Win Situations			Business Knowledge Score		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.083	0.077	0.091	0.111	0.153	0.058	0.104	0.103	0.104
Mean of control group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1,597	930	667	1,597	930	667	1,597	930	667
Two-sided p -value (H_0 : ATE = 0)	0.145	0.348	0.261	0.056	0.049	0.509	0.287	0.407	0.450
One-sided p -value (H_0 : ATE \leq 0)	0.066	0.152	0.108	0.032	0.024	0.242	0.143	0.191	0.211
One-sided p -value (H_0 : ATE \geq 0)	0.934	0.848	0.892	0.968	0.976	0.758	0.857	0.809	0.789
Two-sided p -value (H_0 : male=female)	0.896			0.361			0.997		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Business knowledge was measured through multiple-option questions: opportunities for business ideas, budget elements, profit & loss statement (Table 5.3.1), and deliberative dialogue and win-win situations (this table), scored as the number of correctly chosen answer options (models 1-15). We did not penalize for incorrect responses. Business knowledge score computed with the method of iterated principal factor of the correlation matrix. All measures in this table are standardized to the control group (for "all" respondents, "male" respondents only, and "female" respondents only).

APPENDIX E. PROSOCIAL ATTITUDES AND COMMUNITY AND POLITICAL ENGAGEMENT (TABLES FOR SECTION 5.4)

TABLE 5.4.1. AVERAGE TREATMENT EFFECTS (ATE): PROSOCIAL ATTITUDES

	(1)	(2)	(3)
	Prosocial Index		
	All	Male	Female
Treatment	0.167	0.121	0.251
Mean of control group	0.000	0.000	0.000
Observations	1586	925	661
Two-sided p -value ($H_0: ATE = 0$)	0.007	0.100	0.012
One-sided p -value ($H_0: ATE \leq 0$)	0.003	0.047	0.006
One-sided p -value ($H_0: ATE \geq 0$)	0.997	0.953	0.994
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.389		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weight type). The prosocial measure is an index of seven items (e.g., "I help individuals who are younger than me"). All indices in this table are standardized to the control group (for "all" respondents, "male" respondents only, and "female" respondents only).

TABLE 5.4.2. AVERAGE TREATMENT EFFECTS (ATE): COMMUNITY ENGAGEMENT, COMMITTEE MEMBERSHIP (1 OF 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Member of a LC1 Committee			Member of a LC5 Committee			Member of Other Committee		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.000	0.005	-0.005	-0.008	-0.008	-0.007	-0.023	-0.057	0.034
Mean of control group	0.071	0.077	0.061	0.010	0.010	0.010	0.186	0.233	0.113
Observations	1,595	930	665	1,595	930	665	1,595	930	665
Two-sided p -value ($H_0: ATE = 0$)	0.992	0.819	0.841	0.085	0.145	0.283	0.360	0.125	0.219
One-sided p -value ($H_0: ATE \leq 0$)	0.498	0.409	0.591	0.961	0.934	0.863	0.826	0.954	0.117
One-sided p -value ($H_0: ATE \geq 0$)	0.502	0.591	0.409	0.039	0.066	0.137	0.174	0.046	0.883
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.776			0.875			0.040		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Models 7-9: dependent variable is an indicator for whether the respondent reported membership in any non LC1 or LC5 committee (for example LC2, LC3, student organizations). LC: Local Council.

TABLE 5.4.3. AVERAGE TREATMENT EFFECTS (ATE): COMMUNITY ENGAGEMENT, COMMITTEE MEMBERSHIP (2 OF 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Member of LC1 or LC5 Committee			Member of Any Committee			Attended a Community Meeting in Past 12 Months		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	-0.002	0.001	-0.005	-0.020	-0.049	0.030	-0.023	-0.043	0.013
Mean of control group	0.076	0.083	0.065	0.238	0.287	0.161	0.176	0.214	0.116
Observations	1,595	930	665	1,595	930	665	1,595	930	665
Two-sided <i>p</i> -value (H0: ATE = 0)	0.888	0.954	0.826	0.456	0.198	0.410	0.378	0.214	0.662
One-sided <i>p</i> -value (H0: ATE ≤ 0)	0.560	0.475	0.596	0.765	0.916	0.202	0.832	0.910	0.322
One-sided <i>p</i> -value (H0: ATE ≥ 0)	0.440	0.525	0.404	0.235	0.084	0.798	0.168	0.090	0.678
Two-sided <i>p</i> -value (H0: male=female)	0.852			0.123			0.207		

Note: One-sided and two-sided *p*-values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Member of LC1 or LC5 includes being a member of one or both types of committees. Membership in any committee includes LC1, LC5, or any non-LC1 non-LC5 committee. Models 7-9: dependent variable is an indicator for whether the respondent attended one or more community meetings in the year prior to the survey. LC: Local Council.

TABLE 5.4.4. AVERAGE TREATMENT EFFECTS (ATE): COMMUNITY ENGAGEMENT, POLITICAL PARTICIPATION

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Member of a Political Party			Voted in March 2016 LC3 Elections			Voted in March 2016 LC5 Elections			Attended an Election Rally in 2016			Donated in Support of a 2016 Election Candidate		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	-0.046	-0.062	-0.002	0.019	0.004	0.062	0.003	-0.021	0.062	0.036	0.081	0.005	-0.003	-0.007	0.010
Mean of control group	0.327	0.414	0.194	0.374	0.457	0.245	0.381	0.482	0.223	0.478	0.568	0.339	0.061	0.092	0.013
Observations	1,595	930	665	1,595	930	665	1,595	930	665	1,595	930	665	1,595	930	665
Two-sided <i>p</i> -value (H0: ATE = 0)	0.237	0.240	0.946	0.613	0.927	0.169	0.950	0.705	0.103	0.451	0.139	0.911	0.801	0.755	0.364
One-sided <i>p</i> -value (H0: ATE ≤ 0)	0.888	0.902	0.528	0.305	0.468	0.078	0.473	0.665	0.042	0.229	0.058	0.453	0.602	0.636	0.174
One-sided <i>p</i> -value (H0: ATE ≥ 0)	0.112	0.098	0.472	0.695	0.532	0.923	0.527	0.335	0.959	0.771	0.942	0.547	0.398	0.364	0.826
Two-sided <i>p</i> -value (H0: male=female)	0.236			0.287			0.130			0.208			0.450		

Note: One-sided and two-sided *p*-values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Models 1-3: dependent variable is an indicator for whether respondent is a member of a political party, including active, inactive, and leadership members. Models 4-6: dependent variable is an indicator for whether respondent is an active or leadership member of a political party. Models 7-9: dependent variable is an indicator for whether respondent voted in the March 2016 LC3 elections. Models 10-12: dependent variable is an indicator for whether respondent voted in the March 2016 LC5 elections. Models 13-15: dependent variable is an indicator for whether respondent attended an election rally in 2016. Models 16-18: dependent variable is an indicator for whether respondent donated money, equipment in support of a 2016 election candidate. LC: Local Council.

TABLE 5.4.5. AVERAGE TREATMENT EFFECTS (ATE): COMMUNITY ENGAGEMENT, TRUST IN INSTITUTIONS (1 OF 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Any Trust in Teachers			Any Trust in Doctors			Any Trust in Banks		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	-0.004	-0.009	0.007	0.017	0.022	0.013	0.006	0.015	-0.005
Mean of control group	0.920	0.933	0.900	0.860	0.865	0.852	0.890	0.892	0.887
Observations	1,595	930	665	1,595	930	665	1,595	930	665
Two-sided p -value (H_0 : ATE = 0)	0.839	0.638	0.815	0.294	0.267	0.670	0.764	0.461	0.844
One-sided p -value (H_0 : ATE \leq 0)	0.581	0.679	0.410	0.140	0.148	0.323	0.370	0.237	0.580
One-sided p -value (H_0 : ATE \geq 0)	0.419	0.321	0.590	0.860	0.852	0.677	0.630	0.763	0.420
Two-sided p -value (H_0 : male=female)	0.686			0.810			0.515		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Models 1-9: dependent variable is an indicator for whether the respondent stated "I somewhat trust [institution]" or "I trust [institution] a lot."

TABLE 5.4.6. AVERAGE TREATMENT EFFECTS (ATE): COMMUNITY ENGAGEMENT, TRUST IN INSTITUTIONS (2 OF 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Any Trust in Local Politicians			Any Trust in National Politicians			Any Trust in Civil Servants		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	-0.009	-0.013	-0.005	0.018	0.037	-0.013	0.008	0.016	0.003
Mean of control group	0.326	0.324	0.329	0.354	0.331	0.390	0.645	0.659	0.623
Observations	1,595	930	665	1,595	930	665	1,595	930	665
Two-sided p -value (H_0 : ATE = 0)	0.777	0.770	0.916	0.533	0.359	0.760	0.748	0.628	0.948
One-sided p -value (H_0 : ATE \leq 0)	0.618	0.636	0.544	0.255	0.151	0.633	0.365	0.304	0.471
One-sided p -value (H_0 : ATE \geq 0)	0.382	0.364	0.456	0.745	0.849	0.367	0.635	0.696	0.529
Two-sided p -value (H_0 : male=female)	0.885			0.359			0.806		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Models 1-9: dependent variable is an indicator for whether the respondent stated "I somewhat trust [institution]" or "I trust [institution] a lot."

APPENDIX F. EDUCATION AND LABOR MARKET OUTCOMES (TABLES FOR SECTION 5.5)

TABLE 5.5.1. AVERAGE TREATMENT EFFECTS (ATE): EDUCATIONAL OUTCOMES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Completed High School (UACE)			Score on A-level UACE			Some Tertiary Education			Currently Enrolled in School			Completed Tertiary Education			Grade Point Average		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.037	0.020	0.066	0.026	0.018	0.036	0.028	-0.020	0.084	-0.017	-0.051	0.032	0.037	0.019	0.049	0.120	0.040	0.209
Mean of control group	0.876	0.904	0.833	0.000	0.000	0.000	0.739	0.726	0.759	0.357	0.380	0.322	0.4	0.366	0.453	0.000	0.000	0.000
Observations	1,597	930	667	1,421	845	576	1,597	930	667	1,597	930	667	1,597	930	667	806	457	349
Two-sided p -value ($H_0: ATE = 0$)	0.067	0.353	0.033	0.871	0.936	0.838	0.563	0.778	0.093	0.692	0.410	0.488	0.293	0.595	0.33	0.130	0.627	0.097
One-sided p -value ($H_0: ATE \leq 0$)	0.030	0.172	0.014	0.435	0.459	0.423	0.289	0.619	0.037	0.662	0.829	0.243	0.14	0.294	0.149	0.061	0.327	0.038
One-sided p -value ($H_0: ATE \geq 0$)	0.970	0.828	0.986	0.565	0.541	0.577	0.711	0.381	0.963	0.338	0.171	0.757	0.86	0.706	0.851	0.939	0.673	0.962
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.171			0.915			0.103			0.205			0.578			0.210		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights); UACE score and grade point average (GPA) standardized w.r.t. mean of control group. Completed high school defined as having received the Uganda Advanced Certificate of Education. Some tertiary education defined as those who started or completed tertiary studies (i.e., vocational or university studies). Currently enrolled in school includes university and vocational, and is defined as those who are enrolled but have not graduated. Completed tertiary education defined as having completed a vocational or university degree. Cumulative GPA was standardized with respect to the control group and conditioning on male/female.

TABLE 5.5.2. AVERAGE TREATMENT EFFECTS (ATE): EDUCATION TYPE

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Business-Technical Studies in a Vocational school			Business-Technical Studies in a University			Humanities Studies in a University		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	-0.013	0.003	-0.036	0.072	0.039	0.120	-0.072	-0.039	-0.120
Mean of control group	0.179	0.166	0.199	0.487	0.514	0.447	0.513	0.486	0.553
Observations	1,597	930	667	1,597	930	667	1,597	930	667
Two-sided p -value ($H_0: ATE = 0$)	0.591	0.913	0.320	0.122	0.476	0.036	0.122	0.476	0.036
One-sided p -value ($H_0: ATE \leq 0$)	0.696	0.459	0.837	0.058	0.237	0.014	0.942	0.763	0.986
One-sided p -value ($H_0: ATE \geq 0$)	0.304	0.541	0.163	0.942	0.763	0.986	0.058	0.237	0.014
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.325			0.190			0.190		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Business-technical careers include vocational or university degrees in science, engineering, business, accounting/finance, biomedical, agriculture/animal production, economics and statistics. Humanities include the arts, law, tourism, education, non-quantitative social sciences, secretarial, cosmetology, and fashion and design.

TABLE 5.5.3. AVERAGE TREATMENT EFFECTS (ATE): LABOR MARKET PARTICIPATION

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Currently Working			Participation in High-skill Job			Economically Active			NEET (Not in Education, Employment or Training)		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	-0.021	0.027	-0.071	0.007	0.038	-0.031	-0.006	0.038	-0.039	-0.009	-0.014	-0.01
Mean of control group	0.433	0.466	0.383	0.153	0.152	0.154	0.701	0.782	0.576	0.048	0.0291	0.077
Observations	1,597	930	667	1,597	930	667	1,597	930	667	1,597	930	667
Two-sided p -value (H_0 : ATE = 0)	0.530	0.581	0.060	0.745	0.253	0.270	0.848	0.355	0.370	0.454	0.200	0.691
One-sided p -value (H_0 : ATE \leq 0)	0.732	0.291	0.969	0.367	0.107	0.871	0.571	0.156	0.816	0.780	0.896	0.663
One-sided p -value (H_0 : ATE \geq 0)	0.268	0.709	0.031	0.633	0.893	0.129	0.429	0.844	0.184	0.220	0.104	0.337
Two-sided p -value (H_0 : male=female)	0.131			0.077			0.146			0.898		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Currently working defined as working for someone else at the time of the survey, regardless of not receiving a wage (i.e., internship). Participation in high skill job includes but is not limited to healthcare, teaching, information technologies, translation services, motor vehicles mechanic, accounting, and social work. Economically-active defined as those who were either working for wage or self-employed at the time of the survey.

TABLE 5.5.4. AVERAGE TREATMENT EFFECTS (ATE) ON SELF-EMPLOYMENT PARTICIPATION

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Currently Self-employed			High-skill Business			Number of Concurrent Businesses		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.026	0.042	0.039	-0.004	0.009	-0.017	0.052	0.083	0.053
Mean of control group	0.443	0.555	0.270	0.085	0.096	0.068	0.463	0.601	0.251
Observations	1,597	930	667	1,597	930	667	1,597	930	667
Two-sided p -value (H_0 : ATE = 0)	0.436	0.270	0.311	0.762	0.631	0.441	0.284	0.187	0.269
One-sided p -value (H_0 : ATE \leq 0)	0.206	0.117	0.149	0.616	0.303	0.789	0.131	0.074	0.117
One-sided p -value (H_0 : ATE \geq 0)	0.794	0.883	0.851	0.384	0.697	0.211	0.869	0.926	0.883
Two-sided p -value (H_0 : male=female)	0.954			0.328			0.664		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Currently self-employed defined as those individuals who reported operating a business (in sole or shared ownership) and keeping at least part of the profits. High-skill businesses include but are not limited to: professional writing, translation services, tour and travel, website developing, music production, construction, and mechanical shops. Number of concurrent businesses calculated from the number current self-employment modules administered.

TABLE 5.5.5. AVERAGE TREATMENT EFFECTS (ATE): TOTAL EARNINGS

	(1)	(2)	(3)
	Log of Total Earnings		
	All	Male	Female
Treatment	-0.224	-0.076	-0.260
Mean of control group	6.669	7.207	5.837
Observations	1,596	930	666
Two-sided p -value ($H_0: ATE = 0$)	0.297	0.761	0.239
One-sided p -value ($H_0: ATE \leq 0$)	0.860	0.626	0.869
One-sided p -value ($H_0: ATE \geq 0$)	0.140	0.374	0.131
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.567		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Total earnings over the recall period estimated as daily wage from all current and past jobs times the number of days worked on each job, plus monthly profit from all current and past businesses times the number of months in operation of each business.

TABLE 5.5.6. AVERAGE TREATMENT EFFECTS (ATE): DAILY WAGE

	(1)	(2)	(3)
	Log of Daily Wage		
	All	Male	Female
Treatment	-0.025	-0.067	0.039
Mean of control group	1.350	1.534	1.005
Observations	675	445	230
Two-sided p -value ($H_0: ATE = 0$)	0.770	0.535	0.807
One-sided p -value ($H_0: ATE \leq 0$)	0.609	0.740	0.402
One-sided p -value ($H_0: ATE \geq 0$)	0.391	0.260	0.598
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.556		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Daily wage was estimated with the following questionnaire items: (a) Which of the following describes how you got paid [hour, day, week, month, contract payment]; and (b) How much do you earn per [a]; this measure is not adjusted by full-time-equivalent.

TABLE 5.5.7. AVERAGE TREATMENT EFFECTS (ATE): BUSINESS OUTCOMES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Log of Revenues			Log of Profits			Log of Profit/Day		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	-0.227	-0.269	0.058	-0.198	-0.293	0.189	-0.129	-0.249	0.304
Mean of control group	5.669	5.940	4.863	4.657	4.903	3.925	2.299	2.530	1.611
Observations	555	401	154	555	401	154	555	401	154
Two-sided p -value (H_0 : ATE = 0)	0.079	0.064	0.824	0.069	0.039	0.485	0.194	0.026	0.184
One-sided p -value (H_0 : ATE \leq 0)	0.964	0.963	0.410	0.959	0.983	0.229	0.902	0.989	0.072
One-sided p -value (H_0 : ATE \geq 0)	0.036	0.037	0.590	0.041	0.017	0.771	0.098	0.011	0.928
Two-sided p -value (H_0 : male=female)	0.244			0.119			0.020		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Business revenues (models 1-3) was estimated from the following questionnaire items: (a) How much were the business revenues in the last [week, month]; (b) Would you say that the last [week, month] was typical in terms of business revenues?; and (c) How much were the business revenues in a typical [week, month]? Business profits (models 4-9) were estimated from similar questionnaire items. Both revenue and profit sources are from all concurrent businesses. We applied the following monotonic transformation of revenues and profits: $x = x + \text{abs}(\min[x]) + 1$ to account for zeros.

TABLE 5.5.8. AVERAGE TREATMENT EFFECTS (ATE): PRESENT SOCIAL AND WEALTH STANDING

	(1)	(2)	(3)	(4)	(5)	(6)
	Upper Half of Current Wealth Position			Upper Half of Current Social Standing		
	All	Male	Female	All	Male	Female
Treatment	0.042	0.034	0.055	0.020	0.011	0.038
Mean of control group	0.449	0.457	0.435	0.825	0.848	0.789
Observations	1,586	925	661	1,586	925	661
Two-sided p -value (H_0 : ATE = 0)	0.147	0.358	0.134	0.307	0.670	0.202
One-sided p -value (H_0 : ATE \leq 0)	0.072	0.180	0.067	0.152	0.326	0.098
One-sided p -value (H_0 : ATE \geq 0)	0.928	0.820	0.933	0.848	0.674	0.902
Two-sided p -value (H_0 : male=female)	0.660			0.467		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Upper half of current wealth [social] position defined as answering five or higher in the questionnaire item "In terms of wealth [social standing], I stand on step number..." [1-10].

TABLE 5.5.9. AVERAGE TREATMENT EFFECTS (ATE): FUTURE SOCIAL AND WEALTH STANDINGS

	(1)	(2)	(3)	(4)	(5)	(6)
	Upper Half of Expected Wealth Position in the Future			Upper Half of Expected Social Standing in the Future		
	All	Males	Females	All	Males	Females
Treatment	0.026	0.006	0.049	0.031	0.045	0.013
Mean of control group	0.295	0.290	0.302	0.544	0.547	0.539
Observations	1,586	925	661	1,586	925	661
Two-sided p -value (H_0 : ATE = 0)	0.322	0.838	0.247	0.221	0.158	0.710
One-sided p -value (H_0 : ATE \leq 0)	0.158	0.419	0.111	0.111	0.079	0.360
One-sided p -value (H_0 : ATE \geq 0)	0.842	0.581	0.889	0.889	0.921	0.640
Two-sided p -value (H_0 : male=female)	0.333			0.514		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights).
Upper half of expected wealth [social] position in the future defined as answering six or higher in the questionnaire item "In terms of wealth [social standing], in 10 years I will stand on step number..." [1-10].

APPENDIX G. SOCIAL SPILLOVERS OUTCOMES (TABLES FOR SECTION 5.6)

TABLE 5.6.2. AVERAGE TREATMENT EFFECTS (ATE): SEXUAL PARTNERS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Number of Sexual Partners since Graduating Secondary School			One or More Sexual Partners since Graduating High School			More than One Sexual Partner since Graduating Secondary School		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	-0.108	-0.140	-0.066	-0.041	-0.046	-0.037	-0.049	-0.055	-0.031
Mean of control group	0.000	0.000	0.000	0.796	0.790	0.806	0.442	0.484	0.377
Observations	1,496	872	624	1,595	930	665	1,595	930	665
Two-sided p -value (H_0 : ATE = 0)	0.066	0.053	0.463	0.141	0.201	0.305	0.110	0.184	0.530
One-sided p -value (H_0 : ATE \leq 0)	0.968	0.979	0.761	0.937	0.901	0.848	0.956	0.911	0.733
One-sided p -value (H_0 : ATE \geq 0)	0.032	0.021	0.239	0.063	0.099	0.152	0.045	0.089	0.267
Two-sided p -value (H_0 : male=female)	0.510			0.865			0.731		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). In models 1-3, number of sexual partners since graduating secondary school takes a value 20 if reported number of partners was greater than 20, and was standardized with respect to the mean of the control group and conditioning on male/female.

TABLE 5.6.3. AVERAGE TREATMENT EFFECTS (ATE): REPRODUCTIVE BEHAVIOR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Abstinence			Ever Pregnant			Number of Children		
	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.061	0.079	0.034	-0.056	-0.055	-0.066	-0.106	-0.077	-0.142
Mean of control group	0.129	0.112	0.155	0.264	0.225	0.311	0.000	0.000	0.000
Observations	1595	930	665	1355	707	648	1564	912	652
Two-sided p -value (H_0 : ATE = 0)	0.007	0.006	0.376	0.106	0.248	0.182	0.157	0.409	0.235
One-sided p -value (H_0 : ATE \leq 0)	0.004	0.002	0.173	0.954	0.887	0.919	0.918	0.806	0.903
One-sided p -value (H_0 : ATE \geq 0)	0.996	0.998	0.827	0.047	0.113	0.081	0.082	0.194	0.097
Two-sided p -value (H_0 : male=female)	0.314			0.877			0.627		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Models 1-3 are for the probability that the respondent reported using abstinence to avoid or delay pregnancy with current or most recent partner. Ever pregnant refers to respondent if female, or current/most recent sexual partner if respondent is male. Respondent's number of children was standardized with respect to mean of the control group and conditioning on male/female.

TABLE 5.6.4. AVERAGE TREATMENT EFFECTS (ATE): GENDER VIEWS AND SOCIAL NORMS

	(1) One Day Women and Men in My Community Will Be Valued Equally			(4) A Husband Who Makes Decisions Jointly with His Wife Is Respected			(7) A Husband Decides Whether His Wife Can Work Outside of the Home			(10) A Wife Can Ask Her Husband to Use a Condom			(13) A Wife Can Refuse to Have Sex with Her Husband		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
Treatment	0.031	0.047	0.006	-0.011	-0.054	0.040	-0.101	-0.065	-0.139	0.037	0.058	0.020	0.024	0.032	0.017
Mean of control group	0.879	0.855	0.912	0.814	0.826	0.798	0.489	0.497	0.477	0.749	0.774	0.714	0.902	0.913	0.885
Observations	1280	713	567	1285	715	570	1285	715	570	1285	715	570	1285	715	570
Two-sided p -value ($H_0: ATE = 0$)	0.043	0.046	0.777	0.584	0.107	0.099	0.037	0.283	0.019	0.245	0.115	0.578	0.186	0.090	0.524
One-sided p -value ($H_0: ATE \leq 0$)	0.025	0.021	0.393	0.727	0.959	0.052	0.983	0.872	0.995	0.124	0.054	0.297	0.089	0.057	0.266
One-sided p -value ($H_0: ATE \geq 0$)	0.975	0.979	0.607	0.273	0.041	0.948	0.017	0.128	0.005	0.876	0.946	0.703	0.911	0.944	0.734
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.193			0.022			0.244			0.333			0.661		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights). Models 4-6 are for the probability that the respondent agreed that if a hypothetical husband told his friends that he makes decisions jointly with his wife, the husband's friends would respect him. Models 7-15 are for the probability that the respondent agreed with the statement about the acceptable behavior of a hypothetical husband and wife.

TABLE 5.6.5. AVERAGE TREATMENT EFFECTS (ATE): INTIMATE PARTNER VIOLENCE, ACCEPTABILITY AND EXPERIENCE OF VIOLENCE

	(1) Social Acceptability of Violence Index			(4) Physical Violence or Threat of Violence		
	All	Male	Female	All	Male	Female
Treatment	-0.069	-0.041	-0.115	-0.030	-0.009	-0.062
Mean of control group	0.563	0.508	0.641	0.304	0.272	0.349
Observations	1285	715	570	1283	715	568
Two-sided p -value ($H_0: ATE = 0$)	0.083	0.377	0.057	0.308	0.831	0.139
One-sided p -value ($H_0: ATE \leq 0$)	0.951	0.806	0.978	0.842	0.592	0.942
One-sided p -value ($H_0: ATE \geq 0$)	0.049	0.194	0.022	0.158	0.408	0.058
Two-sided p -value ($H_0: \text{male}=\text{female}$)	0.256			0.358		

Note: One-sided and two-sided p -values estimated with the wild bootstrap method (1,000 repetitions, Rademacher weights).

The social acceptability of violence index is an indicator for if the respondent answered "yes, a husband has good reason to hit his wife if..." to one or more of 12 situations: she disobeys him, she answers back to him, she disrespects him, she disrespects his relatives, he suspects she is unfaithful, he finds out she has been unfaithful, she spends time gossiping with neighbors, she neglects to take care of the children, she does not complete housework to his satisfaction, she refuses to have sexual relations with him, she accuses him of being unfaithful, she tells his secrets to others, or if he is angry with her.

Physical violence includes one or more of the following: purposeful intimidation, threatening to hurt, slapping, throwing something that could hurt, pushing, shoving, pulling hair, hitting with fist, hitting with something that could harm, kicking, dragging, beating up, choking, burning, threatening or using a gun, knife, or other weapon, threatening or using a panga. For females, physical violence is her experience of one or more acts of violence ever, and for males, refers to him ever inflicting one or more acts of violence on his current or most recent partner.

APPENDIX H. 2012 EDUCATE! CURRICULUM

APPENDIX TABLE H1. 2012 EDUCATE! CURRICULUM, TERM 1

Term 1		
Current Curriculum	Skills Covered	Concepts
1.1 What is SELC SELC Overview Student Commitment Form Vision web	Social responsibility Self-awareness (confidence)	1. Social entrepreneurship 5. Mentoring
1.2 Why Leadership Power of Students Pictures/Discussion Benson Case Study Game: Choices	Social responsibility Self-awareness (confidence) Resilience Teamwork Resource mobilization	3. Power (child rights, you are the solution, violence/gender)
1.3 Deliberative Dialogue Deliberative Dialogue: Get By, Get Rich, Get Out, Get Active	Critical thinking/Problem-solving Public speaking/Communication Teamwork	7. Cooperative leadership
1.4 Social Entrepreneurship and the SEC Def of Social E-ship Passion/Skills/Opportunities Triple Bottom Line SEC Structure	Social responsibility Resource mobilization Opportunity identification Teamwork	1. Social entrepreneurship 2. Community problem-solving (PEDVU) 7. Cooperative leadership
1.5 Vision and Team Building Blind Team Builders	Teamwork	7. Cooperative leadership
1.6 Mentoring: Positive Self Talk AM/FM Mentor-Designed	Self-awareness (confidence)	
1.7 Community Leadership and Me Personal Leadership Values Community Leadership Values Prioritize	Self-awareness (confidence) Social responsibility Public speaking/communication Teamwork	1. Social entrepreneurship 2. Community problem-solving 7. Cooperative leadership

APPENDIX TABLE H2. 2012 EDUCATE! CURRICULUM, TERM 2

Term 2		
Current Curriculum	Skills Covered	Concepts
2.1 Visionary Leadership Ghandi, James Grant, MLK, Wangari Maathai BHAG & Goal Setting	Resilience Self-awareness (confidence) Project management/Goal setting/Prioritization	1. Social entrepreneurship 2. Community problem-solving 7. Cooperative leadership
2.2 Be Proactive Proactive Choices and Excuses The Complaint Choir	Initiative/Be proactive Project management/Goal setting/Prioritization	2. Community problem-solving 3. Power
2.3 Community Outreach Community Excursion Resource Mapping	Teamwork Resource mobilization Opportunity identification Research	1. Social entrepreneurship 2. Community problem-solving 6. BUILD a business?
2.4 Win-Win Tough Talk Overview Win-Win, Lose-Win, Lose-Lose	Critical thinking/Problem-solving Public speaking/Communication	4. Innovation 1. Social entrepreneurship
2.5 Advocacy Tough Talk	Public speaking/Communication	3. Power
2.6 Savings Human Barometer Savings Stations:	Savings Resource mobilization	Business Development
2.7 Business Model Cold Wind Blows Business Model: Value Side	Opportunity identification Business planning Budgeting/bookkeeping	6. BUILD a business
2.8 Model Home Challenge Green Home with Pictures	Health skills/Home management	2. Community problem-solving 3. Power
2.9 Mentoring: Strengths NSEW, Strengths	Self-awareness (confidence)	5. Mentoring

APPENDIX TABLE H3. 2012 EDUCATE! CURRICULUM, TERM 3

Term 3		
Current Curriculum	Skills Covered	Concepts
3.1 I Am The Solution Uganda's Greatest Resource Green Home Challenge Discussion Term Goals and Passbook	Critical thinking/Problem-solving Networking Teamwork Resource mobilization Opportunity identification Health skills/Home management	3. Power
3.2 Social Entrepreneurship Charity vs. Business vs. Mentoring Stations: Find the Social E-preneur, Sustainable Solutions, Advantages/Disadvantage of Charity, Business, Social E-ship, Apply Sustainability to SEC	Social responsibility Critical thinking/Problem-solving Public speaking/Communication Teamwork	1. Social entrepreneurship 2. Community problem-solving
3.3 Thinking Differently Innovation Applied to Business Canvass	Creativity Critical thinking/Problem-solving Opportunity identification Public speaking/Communication Teamwork	4. Innovation
3.4 Business Model Part II Business Model: Cost Side School Resource Identification	Budgeting/Bookkeeping Business planning	6. BUILD a business
3.5 Innovation Creativity Test Product Creation	Creativity Product making Business planning	4. Innovation
3.6 Budget Creation Using Business Canvass to Create a Budget Students to Go "Market" in Class to Ceate a Mock Budget Based on Business Model	Budgeting/Bookkeeping Savings Business planning	6. BUILD a business
3.6 Cost Projection Cost vs. Revenue The Amazing Race	Budgeting/Bookkeeping Savings Business planning	6. BUILD a business
3.7 Opportunity Identification Albina Ruiz Case Study Resource/Need/Solution	Social responsibility Critical thinking/Problem-solving Resource mobilization Opportunity identification	1. Social entrepreneurship 2. Community problem-solving
3.8 Mentoring: I Can Label Me Societal Perceptions Discussion	Self-awareness (confidence) Public speaking/Communication	5. Mentoring 3. Power

APPENDIX TABLE H4. 2012 EDUCATE! CURRICULUM, TERM 4

Term 4		
Current Curriculum	Skills Covered	Concepts
4.1 National Exhibition PEVU Review Assessment Awards Judging Criteria		1. Social entrepreneurship
4.2 National Exhibition Prep Exhibition Interview Prep Report Writing Template	Project management/Goal setting/Prioritization Budgeting/Bookkeeping	
4.3 National Exhibition Prep TBD by Mentor		
4.4 Assumption Testing Assumptions BUILD Overview Customer Profiling with guests	Opportunity identification Research	6. BUILD a business
4.5 Assumption Testing (Invent) Brainstorm Ideas Defend Ideas	Critical thinking/Problem-solving Creativity Teamwork Opportunity identification	6. BUILD a business
4.6 Assumption Testing (Listen) Active Listening Feedback on Product Ideas from Members in the School	Public speaking/Communication Opportunity identification Networking	6. BUILD a business
4.7 Group Mentoring Passions: FantastiCAT	Self-awareness (Confidence)	5. Mentoring

APPENDIX TABLE H5. 2012 EDUCATE! CURRICULUM, TERM 5

Term 5		
Current Curriculum	Skills Covered	Concepts
5.1 Group Mentoring Academics	Self-awareness (Confidence)	5. Mentoring
5.2 Poverty Poverty Cycle Rehmah and Joyce Case Study Youth-friendly Banks	Critical thinking/Problemsolving Budgeting/Bookkeeping Savings Initiative/Be proactive Social responsibility	2. Community problem-solving
5.3 Environmental Degradation Deforestation Waste Discussion on Scholar Personal Project	Critical thinking/Problem-solving Resource mobilization Social responsibility	2. Community problem-solving
5.4 Disease Nutrition Hygiene HIV/AIDS Malaria Practice: ORS Discussion on Scholar Personal Project	Critical thinking/Problem-solving Social responsibility	2. Community problem-solving
5.5 Violence/Uneducated & Disempowered Communities Sexual Violence Gender Expectations: Day in the Life	Critical thinking/Problem-solving Self-awareness (Confidence) Social responsibility Networking	2. Community problem-solving 3. Power

APPENDIX TABLE H6. EDUCATE! CURRICULUM BY SKILL TYPE

Skill	No. of Sessions	Skill Type
Budgeting/Bookkeeping	5	Hard skills
Business planning	5	Hard skills
Creativity	3	Soft skills
Critical thinking/Problem-solving	11	Soft skills
Health skills/Home management	2	Soft skills
Initiative/Be proactive	2	Soft skills
Networking	3	Soft skills
Opportunity identification	9	Hard skills
Product making	1	Hard skills
Project management/Goal setting/Prioritization	2	Soft skills
Public speaking/Communication	7	Soft skills
Research	2	Soft skills
Resilience	2	Soft skills
Resource mobilization	7	Hard skills
Savings	4	Hard skills
Self-awareness (Confidence)	10	Soft skills
Social responsibility	10	Soft skills
Teamwork	9	Soft skills
Total sessions: Hard skills	32	(32.6% of sessions)
Total sessions: Soft skills	66	(67.4% of sessions)