GENDER-SENSITIVE TRAINING TO IMPROVE YOUTH'S LABOUR-MARKET OUTCOMES

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Soft-skills training, locus of control, and labor market outcomes of youth: Evidence from a randomized intervention in Kenya[1]

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Abstract

Africa has the youngest population in the world, but African economies are not creating enough high-productivity jobs, and rates of youth unemployment thus remain a major challenge in the region. Several supply- and demand-side factors may explain these trends, including skill gaps. While traditional technical and vocational education and training (TVET) centers address important gaps in hard (technical) skills, soft-skills trainings have not yet received sufficient attention in the African context. We evaluate the overall and heterogenous impact of a gender-sensitive soft-skills training that aimed to address youths' unique interests, preferences, and labor market constraints in Kenya. We also examine whether the presence (or absence) of complementary noncognitive skills, such as locus-of-control skills, moderates the impact of the soft-skills training. We use a randomized controlled trial to evaluate the effectiveness of a soft-skills training to support young men and women in making the transition from school to work in Kenya. Our evaluation combines baseline, midline, and endline data to understand the dynamics of labor market transitions for youth. We find that although the soft-skills training prepared youth for the labor market by improving their willingness, expectations, and preparedness for jobs, the impact of the soft-skills training on ultimate labor market outcomes varies across individuals with varying psychological traits. The training improved labor market outcomes for those with internal locus of control but not for individuals who lack these attributes. One standard deviation increase in (internal) locus of control is associated with a 5 percentage-point increase in the impact of the soft-skills training on probability of participation in income-earning activities. We also find that returns to locus of control and the soft-skills training are higher for females than males.

Keywords: Soft-skills, locus of control, TVET, youth, labor market, Africa, Kenya.

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1. Introduction

Amid a global economy beset by recurring crises, geopolitical tensions, social unrest, and global trade barriers, the labor market is increasingly becoming more challenging for youth and women. Africa has the world's youngest population, with a median age of about 20 years (African Development Bank, 2018; ILO, 2022). While this youthful population offers an adequately large and energetic workforce that could drive economic transformation, high rates of youth unemployment pose a major challenge in many African countries (Fox et al., 2016; Fox et al., 2020; Sumberg et al., 2020). In 2020, more than 20 percent of young men and women were not in employment, education, or training (NEET) in Africa (Cieslik et al., 2022; ILO, 2022). About 12 million youth enter the workforce each year in Africa, but only 3 million jobs are created annually in the formal sector (African Development Bank, 2018; ILO, 2022). Furthermore, evidence from several African countries indicates significant gender-based employment segregation, with women more likely than men to be engaged in low-productivity sectors, less-profitable businesses, unpaid family employment, or the informal economy (e.g., Heintz, 2018; Klasen, 2019). Women in East Africa are more likely than men to be engaged in less remunerative occupations, including agriculture, retail, and the service sectors.

Several supply- and demand-side factors are believed to contribute to existing high rates of youth unemployment and associated gender gaps in labor market participation and gender-based employment segregation. Among the supply-side constraints, skill gaps appear to be one of the most important barriers impeding youth and women's labor market participation in various sectors and occupations (e.g., Das and Kotikula, 2019). Other important factors that contribute to disparities in labor market outcomes include cognitive and noncognitive skill gaps (e.g., Heckman et al., 2006; Heckman and Kautz, 2012; Kautz et al., 2014). Addressing these challenges requires integrated interventions that simultaneously tackle both supply- and demand-side constraints.

Although there exists abundant empirical evidence on how different variants of active labor market policies and interventions can address these demand- and supply-side constraints in North America (e.g., Heckman et al., 1999; Crepon et al., 2016), Europe (e.g., Kluve, 2010; Vooren et al., 2019), and, to some extent, Latin America (McKenzie, 2017; Alzua et al., 2016), there is less evidence when it comes to Africa, where youth unemployment is rising. Given the heterogeneity in the type and impact of labor market policies (e.g., Crepon et al., 2016; McKenzie, 2017; Vooren et al., 2019), it is not obvious whether and how some of these interventions could address unemployment in Africa. For example, some of these labor market interventions

(including vocational training, wage subsidies, and job search assistance) are likely to require complementary skills to effectively improve the labor market outcomes of the unemployed. This is particularly true for complementary social and soft skills, which are becoming increasingly important in shaping labor market outcomes (e.g., Heckman and Kautz, 2012; Deming, 2017; Adhvaryu et al., 2023).

This paper evaluates the effectiveness of a gender-sensitive soft-skills training to improve the labor market participation of youth in the context of a multifaceted technical and vocational education and training (TVET) program in Kenya.[2] The intervention is a complementary course that provides soft-skills training, information, and motivation to youth about opportunities as they enter the labor market. We tested the effectiveness of the intervention to support young men and women in making the transition from school to work in Kenya. The training included significant gender-sensitive elements that can address young people's unique interests, preferences, and constraints in Kenya. It also included lessons to help improve youth agency and the ability to make strategic life choices and act upon those choices. The course included material that aims to address women's challenges and constraints in the Kenyan labor market and work environment. The course content was specifically designed to address the issues discussed above and was created through a methodology called direct instruction, which uses manuals, videos, and materials for both the instructors and trainees.[3]

We used a cluster randomized controlled trial (RCT) and assigned about half of the classes and students into a treatment group (soft-skills training) and the remaining half into the control group. We did this for each TVET center to ensure balance across the treatment and control groups. Including both young men and women, in both the soft-skills training as well as in the control group classes, allowed us to quantify the overall impact of the intervention, while also facilitating further heterogeneity analyses on potential differential impacts across genders and groups of individuals. Identifying the overall and heterogeneous impacts of these interventions is crucial to design cost-effective and scalable approaches to address youth unemployment, as well as gender gaps in labor market participation in East Africa and beyond. We are particularly interested in exploring whether the presence (or absence) of complementary

[2] The training was implemented in four TVET centers in Kenya: Nairobi Technical Training Institute (NTTI), Kabete National Polytechnic, Kiambu Institute of Science and Technology (KIST), and PC Kinyanjui.

[3] The implementation of training via direct instruction has proven effective in formal education in basic and high school education (e.g., Engelman, 2024).

noncognitive skills such as locus of control, which is defined as the perceived control that individuals have over situations and outcomes in their lives (Rotter, 1966), moderates the impact of the training. Although this remains understudied in Africa and among youth, locus of control has been shown to be instrumental for improving labor market outcomes (e.g., Cobb-Clark, 2015; Mendolia and Walker, 2015) through effects on search efforts and job market strategies (Caliendo et al., 2015; McGee and McGee, 2016), as well as ability to achieve goals (Heywood et al., 2017). We also examine whether labor market outcomes and returns to these skills, and locus of control, vary by gender.

We collected three rounds of data, including baseline data collected before the students completed their soft-skills training, midline data collected six months after the students completed their training, and endline data collected about one year after the students completed their training. Through these surveys, we collected important labor market outcomes, as well as information on young people's perceptions and expectations of labor market outcomes. We then estimated different empirical specifications exploiting temporal and cross-sectional variation in exposure to the training.

We find that although the soft-skills training prepared youth for the labor market by improving their willingness, expectations, and preparedness for better jobs, the impact of the soft-skills training on ultimate labor market outcomes varies across individuals with varying psychological traits. The training improved labor market outcomes for those with internal locus of control but not for individuals who lack these attributes. We also find that returns to locus of control and associated attributes are higher for women. Young women with an internal locus of control are more likely to benefit from the soft-skills training than young men.

Our study contributes to several different strands of literature. First, it contributes to the literature on the African youth bulge and the transition of youth from school to labor markets in Africa, a topic that is understudied. By explaining important factors and interventions that may shape these transitions, we provide important insights to inform targeted interventions that can support youth participation in the labor market. Second, our study contributes to the literature on the role of soft skills and associated trainings to improve the labor market outcomes of individuals (e.g., Deming, 2017; Acevedo et al., 2017; Ashraf et al., 2020; Campos et al., 2017; Schlosser and Shanan, 2022; Edmonds et al., 2023; Adhvaryu et al., 2023). Our paper contributes to this literature by highlighting for whom and how soft-skills interventions can improve labor market

outcomes. Third, we contribute to studies that highlight the role of psychological traits and associated noncognitive skills in shaping labor market outcomes (Cobb-Clark, 2015; Caliendo et al., 2015; McGee and McGee, 2016; Heywood et al., 2017). Finally, we contribute to the literature on the use of direct instruction methods in the context of state-funded vocational training (Dean and Kuhn, 2007; Rosenshine, 2009; Engelman, 2024). Such an approach may have advantages in reducing the cost of training for systems that are generally underfunded.

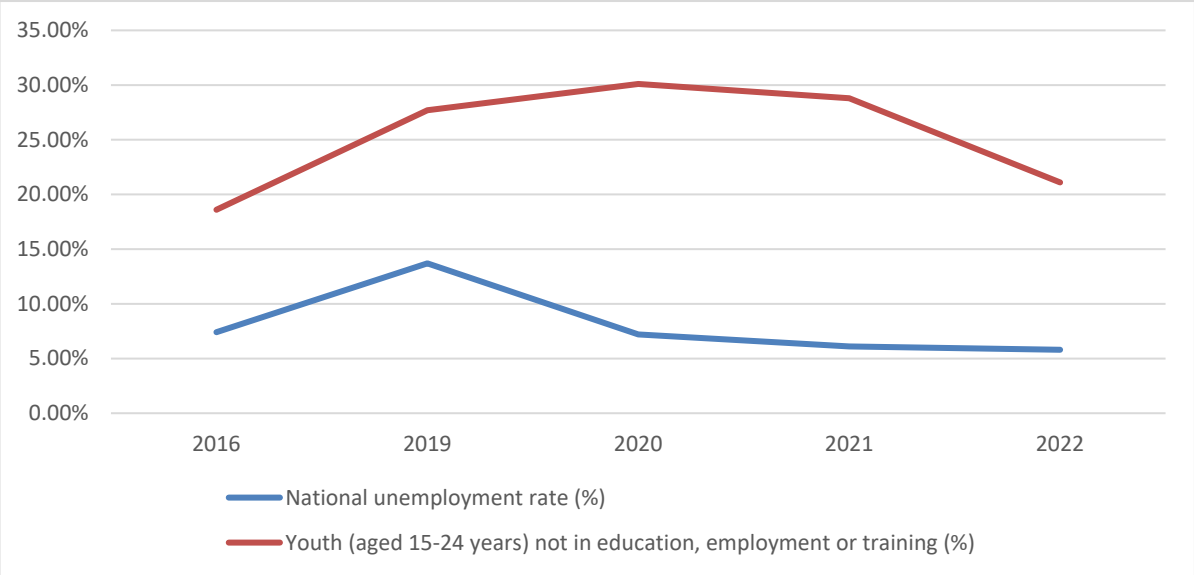
2. Context

With a median age of about 20 years, Africa's population is the youngest in the world. However, African economies are not generating enough jobs for the number of youth that enter the labor force every year, and youth unemployment thus remains a major challenge in many African countries. In most African countries, the rate of youth unemployment is generally more than twice that of adults (African Development Bank, 2018). In 2015, more than 33 percent of Africa's 420 million young men and women between 15 and 35 years of age were unemployed, and those who were employed were in vulnerable employment (African Development Bank, 2018).

Youth ages 15 to 24 constitute about 28 percent of Kenya's population of 47.6 million people (Kenya National Bureau of Statistics, 2023). However, with a total labor force of about 25 million, Kenya faces a major unemployment problem that significantly affects youth. The percentage of NEET youth in Kenya reached about 30 percent in 2020 (Figure 1), while the overall national unemployment rate remained below 10 percent (Figure 1). Youth unemployment hampers the achievement of sustainable development goals, exacerbates poverty, and can be a source of political instability by increasing the risk of conflict (Bangura, 2022; Ismail and Olonisakin, 2021). Recent and increasing discontent of youth in Kenya, as reflected in recent demonstrations, are manifestations of the underlying lack of economic opportunities.

Using data from various surveys from the Kenya National Bureau of Statistics (i.e., 2016 Kenya Integrated Household Budget Survey; 2019 Kenya Population and Housing Census, 2019; 2020-2022 Kenya Continuous Household Survey), Figure 1 shows that the share of NEET youth is much higher than the national unemployment rate.

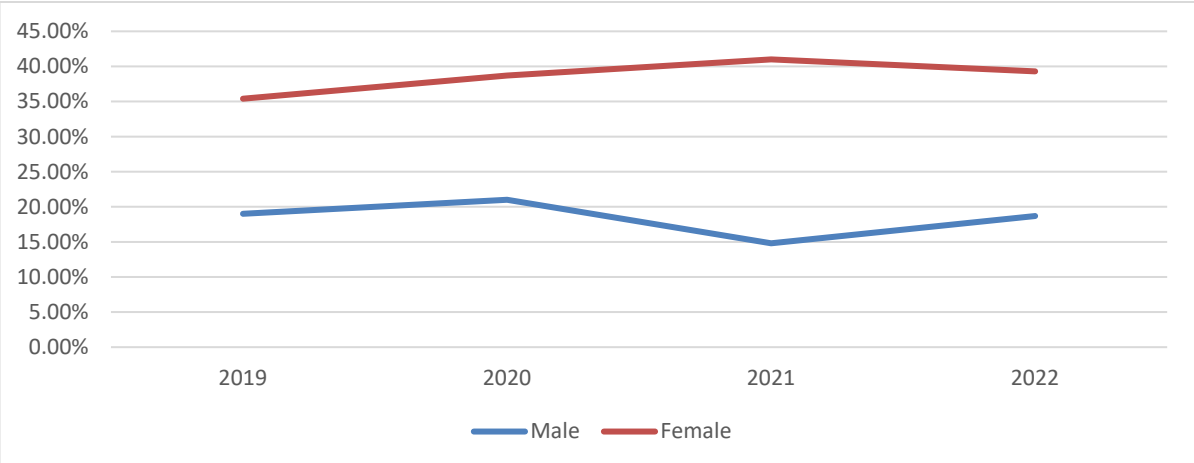
Figure 1: Unemployment and the share of youth not engaged in education, employment, or training in Kenya



Source: Kenya National Bureau of Statistics (2023).

Narrowing the scope further, Figure 2 shows that the NEET rate among girls and women ages 15 to 24 has been consistently higher than for their male counterparts. In addition, the gender gap in youth unemployment widened substantially after 2020. This may be attributed to adverse labor market conditions brought about by the COVID-19 pandemic and other shocks.

Figure 2: Youth not engaged in education, employment, or training in Kenya, by gender



Source: Kenya National Bureau of Statistics (2023).

Policymakers and other stakeholders in Kenya have recently introduced various initiatives and interventions to address the challenges facing youth. Some of these initiatives and programs include the Youth Employment Scheme Abroad, Youth Enterprise

Development Fund, Kenya Youth Employment and Opportunities Program, Kenya Youth Empowerment Program, Kenya Youth Employment and Skills Program, and Kenya Youth Employment and Entrepreneurship Accelerator Program. However, most of these programs focus on providing technical skills, and some of them require major funding, which has proven not to be cost-effective given the major fiscal burden and budget deficit the country. Furthermore, empirical evidence on the effectiveness of these interventions remains scant. As such, identifying cost-effective interventions to support the youth transition from school to the labor market is imperative to the Kenyan context. While formal education in TVET centers concentrates on technical skills, soft skills, including socio-emotional and noncognitive skills, are generally ignored. Most TVET centers in Kenya are owned by the government and offer little flexibility in their curriculums, despite changing demand in the labor market. These gaps in the TVET curriculum and limited resources to finance additional soft-skills training continue to impede the development of soft skills in Kenya (Muchira et al., 2023). Innovative and cost-effective interventions that support the development of soft skills in TVETs can improve the effectiveness of youth trainings.

In addition to quantifying the average impact of these initiatives and interventions, identifying what type of program works for whom remains crucial, because a one-size-fits-all approach may not serve all youth, who face different and multifaceted constraints. In particular, some interventions may require complementary skills, including the development of psychological traits that can help translate these trainings and interventions into ultimate labor market outcomes. To assess the role of complementary skills, we focus on the role of individuals' locus of control, which is their perceived ability and control over situations and outcomes in their lives (Rotter, 1966), in shaping labor market outcomes by moderating the effectiveness of soft-skills training.

3. Locus of Control and Labor Market Outcomes: Review and Concepts

Given the pervasive heterogeneity associated with different types of labor market interventions and policies identified in the literature (e.g., Crepon et al., 2016; McKenzie, 2017; Vooren et al., 2019), we anticipate that the effectiveness of a soft-skills training may vary across individuals with different psychological traits. To structure our understanding of the implication of locus of control on labor market outcomes, this section provides a simple conceptualization of the mechanisms through which locus of control influences labor market outcomes and how this may moderate the effectiveness of soft-skills training. Locus of

control can be defined as the perceived control that individuals have over situations and outcomes in their lives (Rotter, 1966). It captures how much an individual believes in the causal relationship between his/her actions and life's outcomes. It is broadly categorized into two dimensions: internal and external. While individuals with internal locus of control believe that they control outcomes in their lives, those with external locus of control believe that fate, luck, other people, and other stochastic reasons explain events in their lives (e.g., Cobb-Clark and Schurer, 2013). The concept of locus of control is broadly related to self-efficacy, and Judge et al. (2002) argue that measures used to capture generalized self-efficacy and locus of control capture markers of the same higher-order concept.

Locus of control has been shown to be instrumental for decision-making and choice formation through its influence on both socioeconomic and behavioral outcomes (Ng et al., 2006). These attributes are instrumental in improving labor market outcomes (Cobb-Clark, 2015) through their effects on search effort and job market strategies (Caliendo et al., 2015; McGee and McGee, 2016). A high level of self-efficacy and internal locus of control increases self-assortment into jobs that provide workers the ability to showcase their unique values and ability to achieve goals (Heywood et al., 2017). Furthermore, locus of control can affect occupational attainment, and returns to these noncognitive skills can vary along gender lines (Cobb-Clark and Tan, 2011). Hennecke (2024) shows that women who believe that they have control over outcomes in their life are more likely to participate in the labor market than their peers who believe that outside forces control their lives. Locus of control has been demonstrated to be a significant component of wage determination models (Groves, 2005). When employed under low wage margins, individuals with internal locus of control are more likely to earn higher wages than their peers and have greater potential for upward mobility (Schnitzlein and Stephani, 2016).

There exist several pathways through which locus of control may shape labor market outcomes. For instance, locus of control can lead to investments in human capital, especially for youth. Heckman and colleagues (2006) show that locus of control explains school choice, employment, wages, and work experience. Locus of control matters for educational decisions, wherein it triggers higher expectations of the returns on investments in human capital among teenagers (Coleman and DeLeire, 2003).[4] The positive educational implication of locus of control has also been confirmed by Mendolia and Walker (2014),

[4] Using a different dataset to test the theoretical predictions and ensuing empirical insight from Coleman and DeLeire (2003) and Cebi (2007) finds little statistical support for the role of locus of control as a determinant of educational outcome after controlling for cognitive ability.

using an English cohort.[5]

Locus of control may also improve labor market outcomes through agricultural investments, which can drive self-employment and entrepreneurship through influences on entry and exit decisions (Caliendo et al., 2014). In Ethiopia, farmers who believed that they have control over their lives are observed to adopt farm technologies such as improved seeds, chemical fertilizers, and irrigation more than farmers who believe they do not have control over their lives (Abay et al., 2017).[6] Besides these agricultural investments, which can be described as short-term investments with long-term benefits, there is also evidence on the role of locus of control in long-term investments such as livestock ownership in Kenya (Tabe-Ojong et al., 2023). Individuals with internal locus of control may have higher expectations about the returns on their investments in human capital, as well as agricultural and financial investments (Buddelmeyer and Powdthavee, 2016). Internal locus of control has been shown to improve saving behaviors, wealth accumulation, saving rates, and portfolio choices (Cobb-Clark et al., 2016; Bucciol and Trucchi, 2021). Individuals with an internal locus of control are more likely to increase their own equity and the share of equity in their household portfolios, even for those who are not very financially literate (Salamanca et al., 2020).

Individuals with an internal locus of control exhibit important traits such as grit and perseverance in the face of adversity (Buddelmeyer and Powdthavee, 2016). This trait may further explain the impacts of locus of control on investments, but it could also highlight perseverance in investments or economic decisions, even when facing adversity or shocks. Additionally, this could signify psychological resilience, which is important amid uncertainties and shocks.[7] Individuals with internal locus of control are more likely to search more for jobs (Caliendo et al., 2015; McGee and McGee, 2016).

Despite these relevant studies from European and North American countries, the role of such psychological traits and skills in Africa remains understudied. Psychological traits such as locus of control are reasonably stable in adults (Cobb-Clark and Schurer, 2012;

[5] They find that teenagers with external locus of control are more likely to have low test scores in science and mathematics, and a higher likelihood of quitting school. Internal locus of control has been shown to be instrumental for educational attainment among teenagers, whereas youths with external locus of control are shown to drop out of education and employment (Mendolia and Walker, 2014).

[6] Similar insights on the role of locus of control in stimulating technology adoption and, subsequently, agricultural transformation were also highlighted in Taffesse and Tadesse (2017).

[7] Internal locus of control has been highlighted as a psychological buffer against health shocks (Schurer, 2017), indicating that individuals with an internal locus of control suffer fewer psychological effects from adverse events. That is, internal locus of control serves as a buffer and insurance mechanism against adverse shocks (Buddelmeyer and Powdthavee, 2016).

Cobb-Clark and Schurer, 2013) but can be influenced in earlier years, especially during adolescence and early adulthood (Cobb-Clark and Schurer, 2013). Furthermore, it is unknown whether returns on these psychological traits vary across genders and other characteristics. Thus, our study offers important contributions by examining the role of psychological traits such as locus of control in shaping labor market outcomes in an understudied population.

4. Intervention and Experimental Design

4.1 Intervention

We implemented a soft-skills training that aims to improve the employability of young TVET graduates. The soft-skills training was designed in a way that considers the unique interests, preferences, and constraints of young men and women in Kenya. Beyond the usual skills training that aims to support young men and women in navigating the labor market, it included specific modules meant to empower youth, with the ultimate objective of enhancing their ability to make strategic life choices and to act upon those choices within their households, communities, and, ultimately, the labor market. The course included material to address the challenges and constraints facing youth in the Kenyan labor market and work environment. Some of the modules provided information and motivation for young men and women about opportunities for entering the labor market. The course materials were developed specifically for this intervention and divided into 10 one-hour-long video lessons. The video lessons were facilitated and delivered in person as an additional module of the standard curriculum. TVET teachers were trained to deliver the course materials and instructed to follow a detailed script. Table A1 in the Appendix shows the topics covered in the 10 video episodes, which resembled a TV series. Each episode portrayed specific skills needed to succeed in the labor market. The teachers were instructed to interrupt the videos at specific times and ask the trainees to complete assessments in their booklets.

The training was implemented across four TVET centers operating under the Kenyan Ministry of Education: Kabete National Polytechnic, PC Kinyanjui Technical training Institute, Nairobi Technical Training Institute (NTTI), and Kiambu Institute of Science and Technology (KIST), which are all located within Nairobi or on its outskirts. The training was implemented in these centers between October and November 2022. The four TVET centers have a long record of delivering training to high school graduates. They are fully accredited by the Technical Vocational Education and Training

Authority and Kenyan Ministry of Education to provide TVET training at the diploma, craft, and artisan levels. The TVET centers provide courses in the applied sciences; baking; building and civil engineering; business, entrepreneurship, and social studies; electrical and electronics engineering; information and communication technology and computer studies; industrial mechatronics; hospitality; and mechanical and automotive engineering departments, among others. These courses aim to equip trainees with marketable skills that can help them navigate the labor market. The soft-skills training we implemented was designed to complement the hard skills associated with the above courses. In addition to the usual skills training delivered by the centers, students in classes assigned to the treatment group also received the soft-skills training, while students in classes assigned to the control group underwent TVET training as usual, without the addition of the gender-sensitive soft-skills lessons.

4.2 Experimental design

We designed a cluster RCT at the class level to minimize contamination. We targeted students who were expected to complete their studies soon and enter the labor market. Eligible groups for this training were TVET classes and students expected to complete training by December 31, 2022. Each TVET center had two groups: those receiving the treatment and those assigned to the control group. For the treatment classes, each teacher was required to show the video to the students, explain the content, and facilitate discussion. Additionally, participants were asked to conduct several training-related activities that would reinforce the material and information captured in the videos. Our sample of treated and control group classes included both young male and female students, which allows us to compare the relative efficacy and outcomes of the soft-skills training by gender.

To implement this cluster randomization, we worked closely with the TVETs. In the first stage, TVET centers submitted a list of classes and students expected to graduate before the end of 2022, which included 187 classes and 3,600 students. Based on this sample of classes and eligible students, the research team collected baseline data from potential treatment and control group candidates. After completing the baseline survey, we randomized classes (and candidates) into treatment and control groups. We assigned 50 percent of the sample to the treatment group and the remaining 50 percent to the control group. The randomization was stratified by the four TVET institutions. We did this for each TVET center to ensure balance across treatment and control groups. Our

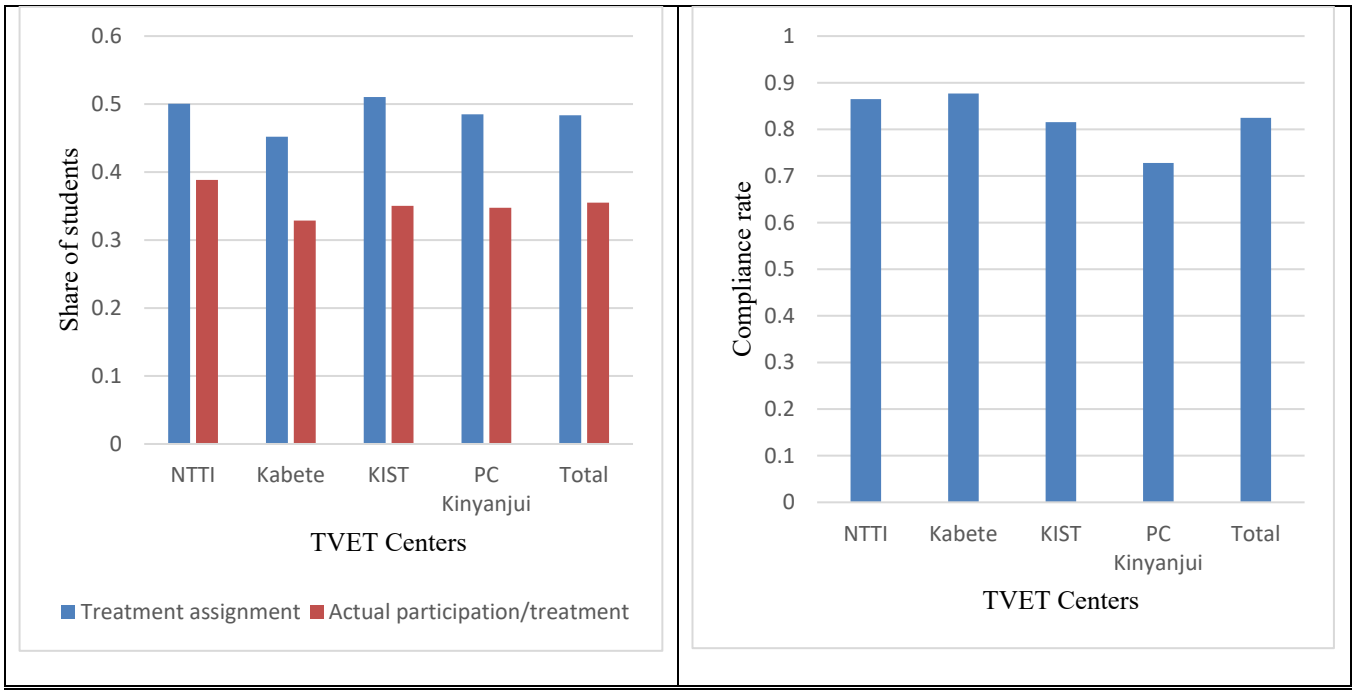
power calculations suggest that these classes and students are sufficient to detect plausible effects of the intervention.[8]

Following our research design, the share of students assigned to receive the soft-skills training amounted to about half of the total sample (Figure 3). However, for various reasons, compliance with the treatment assignment was not perfect, and hence the actual participation rates (Figure 3) are less than 50 percent. The second graph in Figure 3 shows compliance rates associated with each TVET center. These rates represent the share of students who followed the assignment in both control and treatment groups. Students who followed the random assignment are represented by a value of 1 and those who did not are represented by a value of 0. Compliance rates are generally high, ranging from 72 percent for PC Kinyanjui to 87 percent for NTTI and Kabete. This is encouraging and within the range we assumed in our power calculations. Potential explanations for noncompliance are related to implementation problems and associated confusion. We characterized the distribution of observable characteristics across the compliers and noncompliers by regressing the probability of compliance as a function of the candidates' baseline characteristics. The results are reported in Table A2. Despite minor differences, we cannot reject the null hypothesis of jointly zero coefficients associated with the comprehensive list of observable characteristics.[9]

Figure 3: Treatment assignment, actual participation, and compliance rates

[8] To minimize attrition, additional contact information was required from participants (Facebook, Twitter, Instagram, etc.).

[9] The F-test statistic for the regression of the compliance indicator variable on the characteristics listed in Table 1 equals 1.28, with a p-value of 0.197.

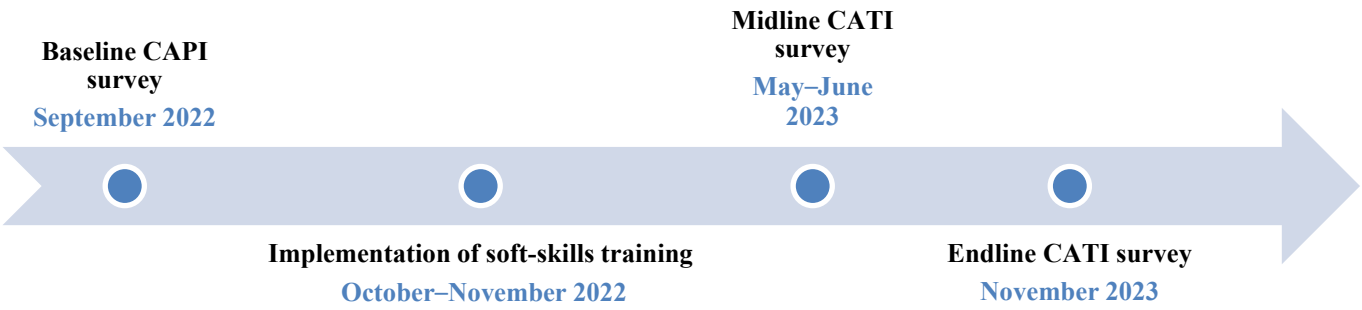


Note: KIST=Kiambu Institute of Science and Technology; NTTI=Nairobi Technical Training Institute; TVET=technical education and training.

5. Data Collection and Survey

Data were collected in three rounds. Baseline data collection took place before the training started, and the midline survey was implemented about six months after completion of the intervention, and hence about five to six months after the students completed their TVET training. The baseline survey data were collected in September 2022, and the intervention was launched in October 2022. The midline survey was carried out about five to six months after the students completed their TVET training, in May and June 2023. The endline survey was conducted in November 2023, about 12 months after the students completed the soft-skills training and their TVET training. Figure 4 shows the timeline of the intervention and data collection. The baseline survey was done using computer-assisted personal interviews, while the midline and endline surveys were conducted using computer-assisted telephone interviews. While the baseline face-to-face survey covers several modules that capture demographic and labor market characteristics and outcomes, the midline and endline phone surveys focused on modules related to labor market participation. The baseline survey collected detailed demographic information along with the students' household characteristics, expectations, and future aspirations and perceptions.

Figure 4: Timeline of intervention and data collection



Note: CAPI=computer-assisted personal interviews; CATI=computer-assisted telephone interviews.

Our sample includes 187 classes distributed across the four TVETs. A total of 3,621 students were interviewed in the baseline survey. Approximately 30 percent of these were from NTTI, 31 percent were from Kabete, 27 percent were from KIST, and 13 percent were from PC Kinyanjui. Slightly more male students (54 percent) than female students (46 percent) were interviewed. There was not much variation by gender across the four TVET centers. As shown in Table 1, the mean age of the students was 23, and more than 60 percent of the students were between 21 and 23. We were able to reach close to 90 percent of the graduates in our phone survey in the midline and 85 percent of them in the endline surveys. These are reasonable attrition rates and consistent with the assumptions in our power calculations. In Table A3, we show that these attrition rates are not correlated with the treatment assignment.

To probe the integrity of the randomization, we tested the balance of the observable characteristics of treated and control group students. As shown in Table 1, the random assignment generated comparable groups of treatment and control group units. Table 1 compares the distribution of a long list of observable characteristics across students assigned to the control and treatment groups. The mean values of these observable characteristics are statistically comparable across treatment and control group students. This supports the validity of the random assignment and lays the foundation for a successful evaluation of the impact of soft-skills training on individuals' perceptions, attitudes, job search efforts, and ultimate labor market outcomes.

Table 1: Balance of individual and household characteristics

	(1)	(2)	(3)	Pairwise t-

	Control group		Treatment		Full sample		test (p-value)
Variable	N/[Clusters]	Mean/SD	N/[Clusters]	Mean/SD	N/[Clusters]	Mean/SD	(1)–(2)
Female	1,867	0.49	1,754	0.42	3,621	0.46	0.20
	[92]	[1.68]	[95]	[1.57]	[187]	[1.67]	
Age	1,867	22.51	1,753	22.72	3,620	22.61	0.20
	[92]	[4.14]	[95]	[5.27]	[187]	[4.79]	
Has college education	1,867	0.08	1,754	0.07	3,621	0.08	0.41
	[92]	[0.31]	[95]	[0.37]	[187]	[0.34]	
Never married	1,867	0.91	1,754	0.89	3,621	0.90	0.62
	[92]	[0.71]	[95]	[0.72]	[187]	[0.71]	
Household size	1,867	4.55	1,754	4.49	3,621	4.52	0.33
	[92]	[1.91]	[95]	[1.79]	[187]	[1.86]	
Lives in a hostel	1,867	0.17	1,754	0.20	3,621	0.18	0.51
	[92]	[1.03]	[95]	[1.45]	[187]	[1.25]	
Lives in rented place	1,867	0.52	1,754	0.50	3,621	0.51	0.69
	[92]	[1.11]	[95]	[1.13]	[187]	[1.12]	
Lives at home	1,867	0.22	1,754	0.22	3,621	0.22	0.99
	[92]	[0.74]	[95]	[0.90]	[187]	[0.82]	
Attends diploma course	1,867	0.62	1,754	0.71	3,621	0.66	0.31
	[92]	[2.91]	[95]	[2.43]	[187]	[2.72]	
Has Facebook account	1,867	0.79	1,754	0.80	3,621	0.79	0.30
	[92]	[0.54]	[95]	[0.54]	[187]	[0.54]	
Household owns land	1,867	0.76	1,754	0.75	3,621	0.75	0.61
	[92]	[0.43]	[95]	[0.58]	[187]	[0.51]	
Household owns livestock	1,867	0.47	1,754	0.45	3,621	0.46	0.16
	[92]	[0.64]	[95]	[0.60]	[187]	[0.61]	
Household has computer	1,867	0.18	1,754	0.20	3,621	0.19	0.21
	[92]	[0.47]	[95]	[0.52]	[187]	[0.50]	
Household owns a car	1,867	0.28	1,754	0.26	3,621	0.27	0.29
	[92]	[0.59]	[95]	[0.53]	[187]	[0.56]	
Household's income category	1,867	3.85	1,754	3.85	3,621	3.85	1.00
	[92]	[2.04]	[95]	[2.66]	[187]	[2.35]	
Locus of control	1,867	0.06	1,754	0.10	3,621	0.08	0.33
	[92]	[1.11]	[95]	[1.09]	[187]	[1.10]	
Currently working	1,867	0.07	1,754	0.07	3,621	0.07	0.57
	[92]	[0.28]	[95]	[0.25]	[187]	[0.27]	
Has ever worked for income	1,867	0.55	1,754	0.56	3,621	0.55	0.69
	[92]	[0.76]	[95]	[0.84]	[187]	[0.80]	
Willing to accept job offer	1,867	0.99	1,754	0.98	3,621	0.99	0.45
	[92]	[0.10]	[95]	[0.14]	[187]	[0.12]	
Satisfied with the TVET training	1,867	1.71	1,754	1.75	3,621	1.73	0.17
	[92]	[1.00]	[95]	[1.07]	[187]	[1.05]	
Job search in the last 4 weeks	1,867	0.36	1,754	0.36	3,621	0.36	0.80
	[92]	[0.74]	[95]	[0.66]	[187]	[0.70]	

Note: Standard deviationsare given in brackets. P-values were computed considering clustering at class level. ***, **, and * indicate significance at 1, 5, and 10 percent.

In Table 2, we report transitions in labor market outcomes as well as associated changes in perceptions and expectations about the labor market. Students were asked about their satisfaction with the TVET training; the mean satisfaction score for the full

sample was relatively high and stable across all rounds. Students were also asked how long they thought it would take them to find a job after completing their training. The results in Table 2 show that in the baseline (before their graduation), about 90 percent of respondents believed that they would find a job in less than a year. This declined in the midline survey and reached 81 percent in the endline survey. These findings imply that while many students are optimistic about finding employment relatively soon after completing training, the reality they faced after completing their training makes them relatively less optimistic. These patterns are consistent with mismatch in expectations about the labor market (e.g., Jones et al., 2024; Jones and Santos, 2022). We also asked the respondents whether they would immediately accept a job offer and almost all in the baseline survey reported willingness to do so, although this trend declined in the midline and endline surveys.

The labor market outcomes in Table 2 show transitions from TVET training to participation in labor markets. For example, the share of respondents currently working rose from 7 percent in the baseline, to 32 percent in the midline, to 49 percent in the endline survey. Similarly, the share of respondents who have ever worked for income increased from about 55 percent in the baseline to 68 percent in the endline. This indicates that many students were able to access employment after completing their training and, with the passage of time, more students became employed.

Besides ultimate labor market participation, students were asked whether they had searched for a job, believed that there were any job opportunities in their area, or were optimistic about finding a job. In the baseline survey, only about 36 percent of the students had searched for a job in the last four weeks. This doubled to 72 percent in the midline survey and then marginally declined to 67 percent in the endline survey. The average monthly labor income in the baseline survey was very small (1,158 KES, or about $US8), because many of the students were not working. This income increased to 5,702 KES (about $US41) in the midline and 9127 KES (about $US65) in the endline survey. Most of the differences in labor market outcomes across rounds are statistically significant.

Table 2: Transitions from school into the labor market and associated changes in

perceptions and expectations

	Round 1	Round 2	Round 3
Satisfied by TVET training (1–5 Likert scale)	4.27	4.13	4.22
Expects to get a job in less than a year	0.89	0.87	0.81
Willing to accept a job	0.99	0.94	0.95
Prefers to be self-employed	0.61	0.48	0.58
Searched for a job last month	0.36	0.72	0.67
Ever worked for income	0.55	0.65	0.68
Currently working	0.07	0.32	0.41
Monthly labor income	1,158.39	5,701.56	9,126.48

Note: This table reports mean values of key labor market outcomes across rounds. Monthly labor income is reported in Kenyan Shillings (KES).

Eliciting locus of control

To assess respondents' perceived control over their life outcomes, a module to capture individuals' locus of control was administered. Locus of control is "a generalized attitude, belief, or expectancy regarding the nature of the causal relationship between one's own behavior and its consequences" (Rotter, 1966). Individuals' subjective beliefs about their life outcomes and the extent to which these events can be affected by their own actions can affect decisions to invest in human capital and labor market outcomes. Individuals who believe that their life can be sufficiently influenced by their own actions are more likely to invest in trainings and related types of human capital (Coleman and DeLeire, 2003; Heckman et al., 2006). To elicit respondents' locus of control, survey participants were read statements and asked to score them on a scale of 1 to 5, with 1 being "strongly disagree" and 5 being "strongly agree." This list is shown in Table 3. For each question, respondents were asked to provide their response on a five-level Likert scale of agreement/disagreement. These 10 questions are widely used to measure individuals' internal and external locus of control. The average responses to these question was very similar across the rounds, consistent with previous studies showing that these types of attributes are generally stable across time (e.g., Cobb-Clark and Schurer, 2013). In Table A4 and A5, we show that the distribution of responses to these questions was statistically comparable across control and treatment groups in the baseline as well as after treatment, the latter of which implies that soft-skills training has a limited role in shaping these responses and outcomes.

While the first five questions in Table 3 capture external locus of control, the remainder relate to internal locus of control. To confirm this, and in accordance with common practice, we employed factor analysis to classify the contribution of items to

select latent factors, which we interpret as internal and external locus of control. Our factor analysis shows that the first five items load into a latent factor, which we interpret as "external locus of control," while the last five items load into a factor which we interpret as "internal locus of control." Once we identified which items contribute to external and internal locus of control, we reverse coded the items associated with external locus of control and constructed a unidimensional index that measures respondents' perceived level of control over life events. This index increases with internality (internal tendencies). To ease interpretation, we standardized this index and constructed terciles of locus of control. We asked the locus of control questions in all rounds; these values are virtually comparable, as shown in Table 3. Thus, we constructed two variants of our measure of locus of control: (1) by averaging across rounds and (2) by using baseline values. Thus, in our estimations, we used both continuous and tercile values of locus of control, which are constructed using mean values across rounds or baseline values of locus of control. While using the mean values helps us to reduce noise from one round of data, using the baseline responses precludes any effect of the soft-skills training on these outcomes. In our robustness exercise, we ignored the factor analysis and simply added the raw values of the 10 questions in Table 3 and generated a continuous indicator ranging from 1 to 50. These different estimations serve as a robustness test for our results.

Table 3: Locus of control score

	Round 1	**Round 2**	**Round 3**
To a great extent, my life is controlled by accidental/chance happenings	2.60	2.58	2.47
I feel like what happens in my life is determined by others	1.94	2.12	2.01
When I get what I want, it is usually/mostly because I am lucky	2.63	2.72	2.60
Often, there is no chance of protecting my personal interests from bad luck	2.89	2.89	2.87
It is not always wise for me to plan too far ahead, because many things turn out to be a matter of good or bad fortune	2.75	2.74	2.67
I can mostly determine what will happen in my life	3.25	3.33	3.31
When I make plans, I am almost certain/guaranteed/sure to make them work	3.95	3.94	3.86
I am usually able to protect my personal interests	4.10	4.08	4.06
When I get what I want, it is usually because I worked hard for it	4.27	4.23	4.20
My life is determined by my own actions	4.31	4.23	4.19

Note: This table reports mean values of responses for each of the 10 items capturing locus of control across rounds.

6. Empirical Strategy

To identify the impact of access to soft-skills training, we used the random assignment into classes as the instrument for treatment status. While the random assignment of classes (and hence students) into training and control groups generates unbiased average effects of access

to soft-skills training using simple mean differences, the availability of pre- and post-treatment data facilitates more structured and powered differences-in-differences or fixed effect estimations. We thus start by estimating the impact of access to the soft-skills training on youth labor market outcomes using the following fixed effects specification:

$$Y_{it} = \alpha_i + \alpha_1 Post_t + \alpha_2 Training_{it} + \epsilon_{it} \quad (1)$$

Where Y_{it} stands for youth labor market outcomes as well as associated perceptions and expectations for each youth *i* and round *t*. α_i stands for individual fixed effects and captures all time-invariant differences across youth, while $Post_t$ represents a binary indicator, assuming a value of 1 for those observations after the intervention and 0 for the baseline observations. The baseline survey was conducted in September 2022 when the students were still attending TVET training, while the midline and endline surveys were conducted in May 2023 and November 2023 after the students had completed training. The round dummy and associated coefficient α_1 captures aggregate trends triggered by the completion of the TVET training, as well as other temporal trends. $Training_{it}$ represents a binary indicator variable, assuming a value of 1 for those youth who were assigned to receive the soft-skills training and 0 for those assigned to the control group. $Training_{it}$ assumes a value of 0 for the baseline period for all individuals, as the intervention was launched immediately after the baseline, while it assumes a value of 1 for those individuals who were assigned to receive the soft-skills training in the midline and endline surveys. α_2 captures the average impact of access to soft-skills training. ϵ_{ht} represents idiosyncratic unobservable factors that may affect labor market outcomes.

Although about half of the classes and students were assigned to the treatment group and half to the control group–and hence the share of students assigned to receive the soft-skills training amounts to about half of the total sample—compliance with the treatment assignment was not perfect. Potential explanations for this noncompliance are related to implementation problems and associated confusion. Thus, α_2 should be interpreted as intention to treat, the impact of offering access to soft-skills trainings, instead of the actual impact for those who participated in the training. However, this parameter is interesting for two reasons: it would be important to understand the potential impact of offering soft-skills training to the youth, even if some do not attend the training, and in many settings, implementors have limited control to force or monitor participation.

We anticipated that the gender-sensitive soft-skills training would generate varying impacts across youth with different levels of self-efficacy and locus of control. We employed factor analysis to generate a continuous as well as categorical measure of locus of control

that could capture individuals' perceived control over life events. To evaluate potential heterogeneity in the impact of the training on individuals with varying levels of locus of control, we expanded the specification in equation (1) by intersecting access to the soft-skills training with a continuous index measuring (internal) locus of control as follows:

$$Y_{it} = \alpha_i + \beta_1 Post_t + \beta_2 Training_{it} + \beta_3 Training_{it} * LOC_i + \varepsilon_{ht} \quad (2)$$

Here, all notations except LOC_i are as described in equation (1). LOC_i stands for a standardized continuous index as well as terciles constructed based on this continuous index measuring individuals' perceived ability and control over life events. We note that the locus of control enters the equation as a time-invariant element, which is constructed either as mean values of the index across rounds or at baseline values. The interaction term $Training_{it} * LOC_i$ helps to uncover potential heterogeneity across individuals with varying level of self-efficacy. β_3 captures additional impacts of the training on those individuals with higher levels of self-efficacy or those with internal locus of control. We anticipate β_3 to be positive and statistically significant. As we have two rounds of post-treatment data, we also estimate short- and medium-term impacts in some of our estimations. These estimations use round dummies instead of the post-treatment dummy specified in equation (1)–(2).

The soft-skills training was offered to both young women and men, allowing us to explore heterogeneities in the impact of the training as well as returns to locus of control. The randomization was conducted at the class level, and students in the same class will likely face similar treatment as well as similar labor markets, which can generate correlation of unobserved effects (error terms) across individuals from the same class. Thus, standard errors are clustered at the class level, which is the level of treatment in our case and hence the commonly recommended level of clustering standard errors (Abadie et al., 2023).

7. Estimation Results and Discussion

In Table 4, we present the results of the impact of soft-skills training on willingness to accept a job offer, satisfaction, expectations, and intention to migrate for job purposes. We find that the soft-skills training improved the willingness of young people to accept job offers immediately, as well as satisfaction associated with the main TVET training. We also find a positive impact of the soft-skills training on the expectation of finding a job within a year. The results in column 3 of Table 4 show that access to soft-skills training increases the expectation of finding a job within a year by about 3 percentage points and the willingness to accept job offers by about 2 percentage points. We also examine whether youth were satisfied with the TVET training, especially in terms of its relevance and usefulness for their

job search. Those who were assigned to the soft-skills training were more likely to report that the TVET training was relevant and helpful for their career (columns 4 and 5). Relatedly, soft-skills training increases the intention to migrate to find better jobs by about 3 percentage points. Overall, the results in Table 4 show that access to the soft-skills training improved preparation for and expectations of the labor market.

Table 4: Soft-skills training, expectations, and perceptions of the labor market

	(1) Willing to accept job offers	(2) Satisfied with TVET training (1–5 scale)	(3) Expect to get a job within a year	(4) TVET training was relevant (1–4 scale)	(5) TVET training was helpful (1–4 scale)	(6) Intend to migrate to find better job
Treatment	0.019***	0.067*	0.027*	0.057*	0.070**	0.025**
	(0.007)	(0.035)	(0.014)	(0.030)	(0.031)	(0.010)
Post dummy	-0.051***	-0.125***	-0.058***			
	(0.005)	(0.025)	(0.009)			
Individual fixed effects	Yes	Yes	Yes	No	No	No
R-squared	0.017	0.006	0.007	0.001	0.002	0.002
Mean of depend. variable[a]	0.985	4.271	0.891	3.440	3.225	0.887
Number of observations	9,862	9,871	9,870	3,076	3,077	3,081

Note: Standard errors, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
[a] The mean of the dependent variable was computed at baseline value. The questions related to the relevance and usefulness of the training and intention to migrate were only asked in the endline survey.

We also present results on the impact of soft-skills training on ultimate labor market outcomes, as shown in Table 5. We considered different labor market outcomes, including: (1) whether the respondent ever worked for income, (2) whether s(he) is currently working, and (3) the associated labor income received in the last month. We also constructed a fourth outcome by aggregating the above three outcomes as well as those in Table 4 to capture overall youth labor market performance. We constructed this composite index using principal component analysis. As shown in Table 5, although the coefficients associated with the treatment indicator are positive, not all are statistically significant. The sizes of the impacts are also very small, implying that the ultimate effect of the soft-skills training on labor market outcomes was negligible. There might be several explanations for this: (1) the light nature of the training and lack of complementary skills needed to benefit from the training, and (2) the lack of corresponding change on the supply side of the labor market. Furthermore, the average impacts reported in Table 5 may mask important heterogeneities across individuals with varying attributes. Thus, we estimate potential heterogeneities using equation (2) and by interacting access to the soft-skills training and psychological traits such as locus of control.

Table 5: Soft-skills training, locus of control, and actual labor market outcomes

	(1) Ever worked for income	(2) Currently working	(3) Labor income last month	(4) Overall labor market performance (index)
Treatment	0.001	0.012	207.252	0.012
	(0.023)	(0.021)	(633.311)	(0.039)
Post dummy	0.107***	0.292***	6198.358***	0.582***
	(0.015)	(0.014)	(388.580)	(0.025)
Ind. fixed effects	Yes	Yes	Yes	Yes
R-squared	0.020	0.178	0.170	0.147
Mean of dep. var.[a]	0.552	0.069	1158.39	-0.370
No. observations	9,871	9,871	9,872	9,862

Note: LOC=locus of control. LOC was computed using 10 ten items shown in Table 3 and averaged across rounds. Standard errors, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a] The mean of the dependent variable was computed at baseline value.

The heterogeneity analysis reported in Table 6 uncovers some important findings. The coefficients associated with the (time-variant) treatment indicator and (time-invariant) locus of control show positive and statistically significant effects. That is, soft-skills training has a positive impact on youths with an internal locus of control—those who believe they can influence outcomes in their lives. Those individuals with internal locus of control are more likely to benefit from the soft-skills training, both in terms of labor market participation and earnings. For example, the estimates in columns 1 and 3 show that one standard deviation increase in (internal) locus of control is associated with a 5 percentage-point increase in the impact of the soft-skills training on the probability of participation in income-earning activities. The impact of the soft-skills training on earnings is much higher, as reflected in the third column of Table 6. The impact associated with the last column, and thus overall labor market performance, suggests that one standard deviation increase in (internal) locus of control is associated with a 0.14 standard deviation increase in the impact of the soft-skills training on overall labor market outcomes. These results corroborate previous work on the role of psychological traits and noncognitive skills in shaping labor market outcomes. For instance, locus of control has been shown to improve labor market outcomes (Cobb-Clark, 2015), arguably by improving job search and related job market strategies (Caliendo et al., 2015; McGee and McGee, 2016). When it comes to labor income, locus of control has been highlighted as a significant component of wage determination models (Groves, 2005), with increased possibilities for upward income mobility. As highlighted by Schnitzlein and Stephani (2016), individuals with internal locus of control are more likely to earn more than their peers and have greater potential for upward mobility.

Table 6: Soft-skills training, locus of control, and actual labor market outcomes

	(1) Ever worked for income	(2) Currently working	(3) Labor income last month	(4) Overall labor market performance (index)
Treatment	0.001	0.012	212.931	0.013
	(0.023)	(0.022)	(633.841)	(0.039)
Post dummy	0.107***	0.292***	6198.358***	0.582***
	(0.015)	(0.014)	(388.600)	(0.025)
Treatment # LOC	0.054***	0.053***	1150.655***	0.139***
	(0.018)	(0.017)	(424.889)	(0.032)
Ind. fixed effects	Yes	Yes	Yes	0.013
R-squared	0.021	0.179	0.170	0.149
Mean of dep. Var.[a]	0.552	0.069	1158.39	-0.370
No. observations	9,871	9,871	9,872	9,862

Note: LOC=locus of control. LOC was computed using 10 ten items shown in Table 3 and averaged across rounds. Standard errors in parentheses, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a] The mean of the dependent variable was computed at baseline value.

As we have two rounds of post-treatment data, we also estimate short- and medium-term impacts. The midline survey was conducted about six months after the soft-skills intervention, while the endline survey was conducted about one year after the intervention. For this purpose, we drop one of the post-treatment rounds and we use round dummies instead of the post-treatment dummy specified in equation (1)–(2). The results in Table 7 report these disaggregated results. Odd columns show results associated with the short-term impacts and returns to locus of control, while even columns provide medium-term impacts. Although the short- and medium-term returns to the training and locus of control are not statistically different, we observe that medium-term impacts and returns are slightly higher than short-term returns. This is intuitive given that six months is a short period of time, and youth may need more time and opportunities to convert their skills into labor market outcomes. This is also consistent with previous studies showing that earnings premium for social sciences and soft skills increases with experience, while it declines rapidly for jobs involving technology-intensive tasks such as computer science and engineering (Deming and Noray, 2020).

Table 7: Short- versus medium-term impacts and returns

	(1) Ever worked for income (after 6 months)	(2) Ever worked for income (after 12 months)	(3) Currently working (after 6 months)	(4) Currently working (after 12 months)	(5) Labor income last month (after 6 months)	(6) Labor income last month (after 12 months)	(7) Overall labor market performance (index) (after 6 months)	(8) Overall labor market performance (index) (after 12 months)
Treatment	-0.002	0.013	0.024	-0.001	-97.726	393.640	0.010	0.018
	(0.024)	(0.027)	(0.024)	(0.025)	(585.852)	(857.005)	(0.039)	(0.052)
Round dummy	0.094***	0.114***	0.244***	0.340***	4618.415***	7817.705***	0.467***	0.693***
	(0.016)	(0.018)	(0.016)	(0.015)	(457.703)	(530.207)	(0.027)	(0.033)
Treatment # LOC	0.038*	0.057**	0.041**	0.069***	847.586**	1447.495**	0.100***	0.172***
	(0.022)	(0.024)	(0.020)	(0.023)	(419.716)	(598.116)	(0.038)	(0.043)
Ind. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.022	0.037	0.209	0.293	0.105	0.128	0.173	0.251
Mean of dep. Var.[a]	0.552	0.552	0.069	0.069	1158.388	1158.388	-0.370	-0.370
No. observations	6,790	6,702	6,790	6,702	6,790	6,702	6,780	6,702

Note: LOC=locus of control. LOC was computed using 10 ten items shown in Table 3 and averaged across rounds. Standard errors in parentheses, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a] The mean of the dependent variable was computed at baseline value.

Now that we have shown that locus of control matters for impacts of soft-skills training on labor market outcomes, we turn to exploring some mechanisms for this relationship. We explore the implication of locus of control and soft-skills training on preferences and expectations about the labor market, including preferences for self-employment. As shown in Table 8, the soft-skills training increases the preference to be self-employed, but only for those with an internal locus of control. For youth who were assigned to the soft-skills training, one standard deviation increase in internal locus of control increased their preference to be self-employed by about 7 percentage points. Similarly, the soft-skills training increased satisfaction with TVET training, but, again, mostly for those with internal locus of control. Self-employment and entrepreneurship offer immense employment opportunities for many youth in developing countries. It is thus possible that locus of control drives this preference for self-employment by triggering and affording individuals the ability to showcase their unique values and ability to achieve their goals (Heywood et al., 2017). Our insights here are in line with earlier studies that have shown locus of control to be associated with self-employment and entrepreneurship (Caliendo et al., 2014). Given that individuals with an internal locus of control exhibit important traits such as grit and perseverance in the face of adversity (Buddelmeyer and Powdthavee, 2016), their preference for self-employment is not surprising, as self-employment comes with immense challenges and risks.

Table 8: Soft-skills training, locus of control and preferences in labor market participation

	(1) Prefer to be self-employed	(2) Prefer to be self-employed	(3) Satisfied with TVET training (1-5 scale)	(4) Satisfied with TVET training (1-5 scale)
Treatment	-0.007	-0.006	0.067*	0.068*
	(0.024)	(0.024)	(0.035)	(0.035)
Post dummy	-0.077***	-0.077***	-0.125***	-0.125***
	(0.017)	(0.017)	(0.025)	(0.025)
Treatment # LOC		0.042**		0.074***
		(0.018)		(0.026)
Individual fixed effects	Yes	Yes	Yes	Yes
R-squared	0.011	0.012	0.006	0.007
Mean of dep variable	0.609	0.609	4.271	0.891
No. observations	9869	9869	9871	9871

Note: LOC=locus of control. LOC was computed using 10 ten items shown in Table 3 and averaged across rounds. Standard errors, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

7.2 Gender differences

In this section, we explore gender differences in the impact of the soft-skills training, as well as associated differences in returns to psychological traits such as locus of control. For this purpose, we split the sample across female and male students and estimate the empirical specification in equation (2) for each sample. We find that young women with internal locus of control are more likely to benefit from the soft-skills training and thus translate it into higher levels of participation in labor markets than men with similar characteristics (Table 9). We also find positive implications and differences in earned income. This is intuitive and somewhat supports aspects of previous work in the empirical literature about differential returns to soft-skills training and psychological traits. For instance, Hennecke (2023) shows that women who believe they have control over outcomes in their life are more likely to participate in the labor market than their peers who believe that outside forces control their lives. Therefore, locus of control contributes to the difference in labor market participation among women but as highlighted by our study, it also complements other types of interventions and trainings. As shown in column 5 of Table 9, the soft-skills training generated significant wage advantages for young women with internal locus of control. These differential returns to soft-skills training and psychological traits are consistent with some previous studies. For example, using detailed administrative data from low-skilled employees in Germany, Dauth (2020) found that training subsidies increase earnings, with the gains being more pronounced for women.

Table 9: Gender differences in the impacts of soft-skills training and returns to locus of control

	(1) Ever worked for income (female)	(2) Ever worked for income (male)	(3) Currently working (female)	(4) Currently working (male)	(5) Labor income last month (female)	(6) Labor income last month (male)	(7) Overall labor market performance (index) (female)	(8) Overall labor market performance (index) (male)
Treatment	0.015	0.001	0.001	0.020	829.956	-493.814	0.030	-0.001
	(0.032)	(0.029)	(0.030)	(0.026)	(959.457)	(803.825)	(0.061)	(0.051)
Post dummy	0.154***	0.062***	0.276***	0.306***	4814.587***	7513.761***	0.561***	0.602***
	(0.019)	(0.022)	(0.022)	(0.017)	(440.688)	(638.313)	(0.039)	(0.037)
Treatment # LOC	0.059**	0.055**	0.095***	0.023	2223.322***	350.586	0.222***	0.081*
	(0.026)	(0.026)	(0.025)	(0.022)	(736.399)	(552.038)	(0.050)	(0.042)
Ind. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.045	0.008	0.174	0.185	0.066	0.081	0.158	0.143
Mean of dep. var.	0.454	0.635	0.044	0.091	675.715	1569.709	-0.490	-0.268
No. observations	4,517	5,355	4,517	5,355	4,517	5,355	4,514	5,348

Note: LOC=locus of control. LOC was computed using 10 ten items shown in Table 2 and averaged across rounds. Standard errors, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Turning to the gender implications of soft-skills training on preferences for being self-employed, we again observe that the soft-skills training has a greater impact for women who have internal locus of control. We also observe that access to the soft-skills training triggers higher satisfaction among women with internal locus of control than their male counterparts. Overall, our findings contribute to the open debate on who benefits more from soft-skills training (Mckenzie, 2017). Given that women generally have lower exposure to the labor market because of lower initial human capital, besides other social and cultural norms that deter participation, they may benefit more from trainings if the returns to human capital development exhibit diminishing returns (Chakravorty and Bedi, 2019). However, in conservative societies, sociocultural barriers remain even after additional trainings, which may reduce the effectiveness of these trainings (Cho et al., 2013). Given these contrasting arguments, the empirical literature on the gendered differences in returns to labor market trainings remains mixed, although studies continue to show that women benefit more (e.g., Psacharopoulos, G., 1985; Escudero et al., 2019; Psacharopoulos, 2018), and thus our findings contribute to this emerging trend.

Table 10: Gender differences in soft-skills training, locus of control and preference in labor

	(1) Prefer to be self-employed (female)	(2) Prefer to be self-employed (male)	(3) Satisfied with TVET training (1-5 scale) (female)	(4) Satisfied with TVET training (1-5 scale)(male)
Treatment	0.011	-0.015	0.042	0.093**
	(0.031)	(0.029)	(0.045)	(0.046)
Post dummy	-0.064***	-0.090***	-0.098***	-0.150***
	(0.023)	(0.021)	(0.032)	(0.033)
Treatment #LOC	0.072**	0.023	0.109**	0.050
	(0.031)	(0.021)	(0.049)	(0.033)
Individual fixed effects	Yes	Yes	Yes	Yes
R-squared	0.008	0.017	0.006	0.009
Mean of dep variable	0.562	0.648	4.317	4.232
No. observations	4517	5353	4517	5355

Note: LOC=locus of control. LOC was computed using 10 ten items shown in Table 2 and averaged across rounds. Standard errors, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

6.3 Robustness exercises

After establishing the positive impact of soft-skills training on labor market outcomes for youth with an internal locus of control, we conduct additional checks using different measures and constructs of locus of control. First, we create terciles of locus of control based on the continuous and standardized measure of (internal) locus of control. We then include a dummy for those in the third tercile, those with the highest internal locus of control. This tercile essentially refers to youth in the top third of the distribution, meaning those who have the highest internal locus of control. As shown in Table 11, the main insight on the positive impact of soft-skills training for those with internal locus of control remains consistent with the previous results. We find that among those who were exposed to the soft-skills training, and relative to those in the first and second terciles of locus of control, those in the third tercile experienced a 7 percentage-point increase in the probability of working because of the soft-skills training.

Although psychological traits such as locus of control are generally stable, at least over a short period (e.g., Cobb-Clark and Schurer, 2013), and we show that the soft-skills training had no impact on these outcomes (see Table A4-A5), one can theoretically argue that the soft-skills training can also improve locus of control. To probe whether this is driving the results, we also use baseline responses to the 10 questions in the baseline and construct locus of control using these baseline responses. The results using the baseline measure of locus control are reported in Table 12, which shows consistent results.

Finally, in Table 13, we ignore the factor analysis and simply construct the raw total

sum of the responses to the 10 items in Table 3. As the responses to each question range between 1 and 5, and we have 10 items, this leads to a total sum of responses ranging from 1 to 50. One limitation with this approach is that it puts equal weight on all items, unlike the factor analysis that includes differential weight for these items. However, the results in Table 13 show consistent patterns with the previous tables and findings.

Table 11: Soft-skills training, locus of control, and actual labor market outcomes using terciles

	(1) Ever worked for income	(2) Currently working	(3) Labor income last month	(4) Overall labor market performance (index)
Treatment	-0.024	-0.010	-162.263	-0.039
	(0.027)	(0.023)	(735.210)	(0.044)
Post dummy	0.107***	0.291***	6198.358***	0.582***
	(0.015)	(0.014)	(388.600)	(0.025)
Treatment #LOC: Third tercile	0.075***	0.066***	1109.231	0.154***
	(0.026)	(0.025)	(685.629)	(0.049)
R-squared	0.021	0.179	0.073	0.148
Mean of dep. variable	0.552	0.069	1158.388	-0.370
No. observations	9,872	9,872	9,872	9,862

Note: "LOC: Third tercile" stands for a binary indicator, assuming a value of 1 for those individuals with values of (internal) locus of control falling in the third tercile and 0 otherwise. Standard errors in parentheses, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 12: Soft-skills training, locus of control, and actual labor market outcomes using baseline responses

	(1) Ever worked for income	(2) Currently working	(3) Labor income last month	(4) Overall labor market performance (index)
Treatment	-0.000	0.011	122.351	0.007
	(0.023)	(0.022)	(608.158)	(0.039)
Post dummy	0.107***	0.291***	6198.358***	0.582***
	(0.015)	(0.014)	(388.600)	(0.025)
Treatment #LOC: baseline	0.012	0.020**	921.806	0.055**
	(0.012)	(0.010)	(653.101)	(0.027)
R-squared	0.021	0.178	0.074	0.148
Mean of dep. variable	0.552	0.069	1158.388	-0.370
No. observations	9,872	9,872	9,872	9,862

Note: "LOC: baseline" stands for locus of control. It is computed using the 10 items given in Table 2 and based on the baseline values. Standard errors in parentheses, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 13: Soft-skills training, locus of control, and actual labor market outcomes using raw total sum of responses

	(1) Ever worked for income	(2) Currently working	(3) Labor income last month	(4) Overall labor market performance (index)
Treatment	-0.447**	-0.486***	-1.11e+04**	-1.300***
	(0.182)	(0.137)	(4462.382)	(0.277)
Post dummy	0.107***	0.291***	6198.358***	0.582***
	(0.015)	(0.014)	(388.600)	(0.025)
Treatment #LOC: Raw sum	0.012**	0.013***	306.904**	0.036***
	(0.005)	(0.004)	(125.782)	(0.007)
R-squared	0.021	0.179	0.074	0.149
Mean of dep. variable	0.552	0.069	1158.388	-0.370
No. observations	9,872	9,872	9,872	9,862

Note: "LOC: Raw sum" stands for locus of control. It is computed as the raw sum of responses to the 10 items given in Table 2 and averaged across rounds. Standard errors in parentheses, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

8. Conclusion

While Africa hosts the world's youngest population—and thus an adequately large and energetic workforce that could drive economic transformation—high rates of youth unemployment pose a major challenge in many African countries, including in Kenya. Despite various initiatives and interventions to address youth unemployment in Kenya, most existing programs focus on providing technical skills, and empirical evidence on the effectiveness of these interventions remains scant. As such, identifying cost-effective interventions to support the youth transition from school to the labor market are imperative to the Kenyan context. While formal education in TVET centers concentrates on technical skills, soft skills, including socio-emotional and noncognitive skills, are generally not included. With the objective of testing the effectiveness of a gender-sensitive soft-skills training, we worked with four TVET institutions in Kenya to integrate a soft-skills training into their existing TVET programs and curriculums. We implemented a cluster RCT and assigned about half of the classes to the soft-skills training, which allowed us to evaluate the impact of soft-skills training on labor market outcomes, as well as perceptions and expectations of the labor market.

We find that although the soft-skills training prepared youth for the labor market by improving their willingness, expectations, and preparedness for better jobs, the impact of the soft-skills training on ultimate labor market outcomes varied across individuals with vaying psychological traits. The training improved the labor market outcomes of those with internal locus of control but not of other individuals who lack

these attributes. One standard deviation increase in (internal) locus of control is associated with a 5 percentage-point increase in the impact of soft-skills training on the probability of participation in income-earning activities. We also find that returns to locus of control and associated attributes are higher for women. Young women with self-efficacy and internal locus of control are more likely to benefit from the soft-skills training than young men.

Our study offers relevant insights to facilitate the transition of youth from school to labor markets in Africa. Our findings highlight the need for targeted interventions to support youths' labor market participation in Africa, including interventions that consider complementary skills available to young men and women. Through this research, we contribute to the literature on the role of soft-skills and associated trainings to improve the labor market outcomes of individuals (e.g., Deming, 2017; Acevedo et al., 2017; Ashraf et al., 2020; Campos et al., 2017; Edmonds et al., 2023; Adhvaryu et al., 2023). Most importantly, our findings reinforce the role of psychological traits and associated noncognitive skills in shaping labor market outcomes (Heckman and Kautz, 2012; Kautz et al., 2014; Cobb-Clark, 2015; Caliendo et al., 2015; McGee and McGee, 2016; Heywood et al., 2017).

Despite our robust findings on the differential effects of a soft-skills training and the role of psychological traits in moderating the impact of a soft-skills training, we note that both topics remain understudied in the African context. Furthermore, it remains debatable whether psychological traits, such as locus of control, are sufficiently malleable and how we can improve these attributes (Cobb-Clark and Schurer, 2013), especially in Africa. Thus, further research on these questions is needed to offer additional insights that can inform labor market and youth policies in Africa.

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Table A1: Soft-skills course content

Episode	Episode theme	Skills learned/discussed	Activity
1	**Surfacing strengths**	**Self-awareness**	Introduction
			Talents, strengths, and skills
2	**Gender in the world of work**	**Gender competency**	Gender portraits
			Job diversity
3	**Job hunting and managing my emotions**	**Three ways of finding work**	Volunteering, networking, and learnerships
		Emotional awareness and emotional regulation	Identifying and regulating emotions
4	**Building a network in order to find a job or start a business**	**Interpersonal relatedness**	Important relationships
			African truths
			Business relationships
			Building trust
5	**Skills for connecting with others in the world of work**	**Listening**	Active listening
		Empathy	Understanding/showing/listening empathy
		Expression	The role of expression
6	**Leadership in the world of work**	**Interpersonal influence**	Understanding leadership
			Barriers to leadership
			Stepping into leadership
7	**Working with others**	**Collaboration**	Collaboration in business
			My business team and how teams work
8	**Negotiating to the top**	**Negotiation**	Negotiation and negotiation steps
			Negotiation outcomes and assertive behavior
9	**Setting myself up for success**	**Personal initiative**	My best business skill and envisioning my hopes and dreams
		Perseverance	Fixed and flexible mindsets and the power of "yet"
		Self-control	Defining self-control and what do I struggle to control
			Self-control through prioritizing
10	**Looking to my future**	**Problem solving**	Honey badger skills (creative problem solving)
			Start-up challenges
		Looking forward	Closure

Table A2: Characterizing compliance rates as a function of youth baseline characteristics

Baseline characteristics of respondents	(1) Compliance
Female	0.051**
	(0.025)
Age	0.004
	(0.005)
Has college education	0.013
	(0.022)
Never married	-0.040
	(0.028)
Household size	0.009**
	(0.004)
Lives in a hostel	0.008
	(0.029)
Lives at home	0.030
	(0.022)
Attends diploma course	-0.006
	(0.044)
Has Facebook	-0.007
	(0.018)
Household owns land	0.005
	(0.015)
Household owns livestock	0.006
	(0.014)
Computer	-0.025
	(0.020)
Household owns a car	-0.000
	(0.018)
Income category	-0.004
	(0.003)
Locus of control	-0.003
	(0.006)
Currently working	0.006
	(0.026)
Has ever worked for income	-0.005
	(0.016)
Willing to accept job offer	-0.047
	(0.043)
Satisfied with the TVET training	0.009
	(0.012)
Job search	-0.025*
	(0.015)
Mean compliance	0.830
R-squared	0.011
Joint F-test (p-value)	0.197
Number of observations	3,620

Note: Standard errors, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A3: Characterizing attrition rates as a function of treatment baseline characteristics

	(1) Attrition	(2) Attrition
Treatment	-0.019	-0.017
	(0.013)	(0.012)
Baseline characteristics of youth	No	Yes
R-squared	0.003	0.008
Mean attrition rate	0.125	0.124
Number of observations	3,622	3,589

Note: Standard errors, clustered at class level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A4: Locus of control score at baseline and across control and treatment group

	Control	**Treatment**	**Full sample**	Pairwise t-test (p-value)
To a great extent, my life is controlled by accidental/chance happenings	2.60	2.60	2.60	0.87
	[1.24]	[1.18]	[1.21]	
I feel like what happens in my life is determined by others	1.95	1.93	1.94	0.48
	[0.88]	[1.02]	[0.95]	
When I get what I want, it is usually/mostly because I am lucky	2.66	2.60	2.63	0.17
	[1.37]	[1.26]	[1.35]	
Often, there is no chance of protecting my personal interest from	2.87	2.92	2.89	0.19
	[1.14]	[1.15]	[1.16]	
It is not always wise for me to plan too far ahead because many things	2.77	2.72	2.75	0.21
	[1.18]	[1.25]	[1.23]	
I can mostly determine what will happen in my life	3.22	3.27	3.25	0.17
	[1.12]	[1.19]	[1.16]	
When I make plans, I am almost certain/guaranteed/sure to make them	3.94	3.95	3.95	0.85
	[0.91]	[0.85]	[0.88]	
I am usually able to protect my personal interests	4.10	4.10	4.10	0.99
	[0.76]	[0.67]	[0.72]	
When I get what I want, it is usually because I worked hard for it	4.27	4.27	4.27	0.79
	[0.68]	[0.63]	[0.66]	
My life is determined by my own actions	4.30	4.33	4.31	0.13
	[0.61]	[0.72]	[0.67]	

Note: Standard deviations are given in parentheses. P-values are computed considering clustering at class level. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table A5: Locus of control score after intervention (post-baseline) and across control and treatment groups

	Control	Treatment	Full sample	Pairwise t-test (p-value)
To a great extent, my life is controlled by accidental/chance happenings	2.52	2.52	2.52	0.97
	[1.15]	[1.28]	[1.21]	
I feel like what happens in my life is determined by others	2.04	2.09	2.06	0.04**
	[0.93]	[1.03]	[1.00]	
When I get what I want, it is usually/mostly because I am lucky	2.65	2.67	2.66	0.58
	[1.30]	[1.24]	[1.26]	
Often, there is no chance of protecting my personal interest from	2.87	2.88	2.88	0.67
	[1.02]	[1.11]	[1.06]	
It is not always wise for me to plan too far ahead because many things	2.70	2.71	2.70	0.59
	[1.41]	[1.20]	[1.31]	
I can mostly determine what will happen in my life	3.32	3.32	3.32	0.92
	[1.17]	[1.51]	[1.34]	
When I make plans, I am almost certain/guaranteed/sure to make them	3.91	3.89	3.90	0.49
	[1.00]	[0.90]	[0.96]	
I am usually able to protect my personal interests	4.07	4.06	4.07	0.59
	[0.75]	[0.68]	[0.72]	
When I get what I want, it is usually because I worked hard for it	4.22	4.22	4.22	1.00
	[0.65]	[0.77]	[0.71]	
My life is determined by my own actions	4.21	4.21	4.21	0.81
	[0.69]	[0.68]	[0.68]	

Note: Standard deviations are given in parentheses. P-values are computed considering clustering at class level. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.