

# The Impact of Private Sector Internship and Training on Urban Youth in Kenya

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## Abstract

This study uses a randomized experiment to evaluate the impacts of the training and internship program piloted in Nairobi, Mombasa and Kisumu counties by the Kenya Private Sector Alliance and the Government of Kenya with support from the World Bank's Kenya Youth Empowerment Project. The program provided three months of classroom-based technical training coupled with three months of internships in private firms to vulnerable youths between ages 15 and 29 years, with vulnerable being defined as those out of school and/or with no permanent job. The analysis in this paper is based on survey data collected before the program started (July 2012) and 15 months after the program ended (July 2014). The results of the impact evaluation show that the program has been

successful in placing youths in paid jobs and has contributed to an increase of 15 percent in current employment among male participants. The evaluation also found that the program has had positive effects on wage earnings, especially those of females and among older males, with wages increasing by about K Sh 5,000 for males and by K Sh 7,500 for females. With a total unit cost of K Sh 97,000 per beneficiary, an estimated K Sh 6,768 monthly wage for males and K Sh 9,623 monthly wage for females, the program's benefits exceeded the costs for males and females. The program also encouraged youths to participate in either (certified) skills training or an internship program, and helped to increase the probability of participants' opening a bank account and accumulating savings (for females).

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## I. Introduction

Integrating youths into the labor market is a major challenge for developing nations, particularly in Africa (Filmer et al, 2014). Inactivity and under-employment rates among youths are typically two to three times higher than the rates for older adults. With 75 million young people in the developing world who are unemployed and hundreds of millions who are underemployed, youth employment is one of the most pressing development challenges (World Bank 2013). In Sub-Saharan Africa, youths living in urban areas appear to be the age group that has the greatest difficulty finding paid employment.

In Kenya, for example, unemployment is mainly a youth problem. According to the Kenya Economic Update (World Bank 2012), the labor market prospects for youth are more challenging than for adults. Youth unemployment is rampant compared to adults - particularly in urban areas - and the youth inactivity rate is two times higher than that of adults. A recent analysis of unemployment in Kenya by the United National Development Program (UNDP, 2013) showed that youth unemployment is more a pronounced issue among those younger than 25 years of age, peaking to 35 percent compared to an overall national unemployment rate of 10 percent, and in urban areas it is as high as 50 percent compared to a rate of about 30 percent in rural areas (for youths up to the age of 22).<sup>1</sup> Nine percent of youth between the ages of 15 and 24 are inactive, not at a school, being particularly at risk of being recruited into criminal activity.

Training programs aim to address the insufficient supply of relevant skills (technical, cognitive, and non-cognitive), which is one of the main barriers preventing young people from finding work in developing countries.<sup>2</sup> Skills constraints mean that individuals lack the appropriate technical, cognitive, and/or non-cognitive skills to respond to employers' demand. Training programs represent a potential solution to this problem for individuals who have left the formal schooling system, unemployed job seekers, and youths transitioning from school to work who hold diplomas in subjects for which there is not enough demand. Lack of business and entrepreneurial skills is often a key constraint, especially for the poorest young people who want to become self-employed. While training programs can increase the employability and productivity of young people, they can be costly and of limited use in situations where there are only limited job opportunities available for these workers after they have been trained.

Evidence from the World Bank's enterprise surveys in more than 100 countries has shown that employers regard the lack of job-relevant skills among workers as one of the binding constraints to firm growth. In Kenya, the availability of educated workers represents the obstacle that firms perceived to have increased the most between the 2007 and 2013 rounds of the enterprise surveys (World Bank 2014).

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<sup>1</sup>Estimates are based on the Kenya Household Budget Survey 2005, the latest available in the country as of today.

<sup>2</sup>Training programs can also be designed to address other types of constraints limiting the supply of job-relevant skills to match labor demand, such as information asymmetries in the labor market, mobility and credit constraints, and in some contexts social constraints.

The body of evidence from impact evaluations of training programs in developing countries is growing but still sparse. While rigorous evidence in the United States and European countries has shown that job training programs have had little effect in terms of increasing employment rates (Betcherman et al, 2007 and Card et al, 2011), the few existing impact evaluation studies in low- and middle-income countries have found that such programs have had a mixed impact on employment and earnings overall.

Evidence shows that the success of vocational and technical training programs is closely related to which skills they teach, how well they serve the local labor demand (demand-driven design), and how well they are implemented. Combining classroom-based technical and life skills training with on-the-job training such as internships or apprenticeships proved to be more effective than providing classroom-based vocational training alone. Strong collaboration between the public and private sectors, both in the selection of the training contents and in the provision of workplace internships, seems to have been a critical factor in the success in the *Jovenes* programs. Supplementing the training with personalized counseling and customized job search assistance is also associated with successful outcomes (Honorati and McArdle 2013, Almeida et al. 2012).

This type of “integrated” training programs for youths has been implemented in several countries in Latin America (the *Jovenes* programs) and has proved to be effective in increasing the employability of the participants (Ibarraran and Rosas Shady, 2009 and Betcherman et al, 2004 and 2007). For example, evaluations of the *Joventud y Empleo* program in the Dominican Republic have shown that it has had almost no impact on overall employment but a positive—though insignificant—impact on individuals’ earnings, mainly driven by highly educated workers (Card et al, 2011). The impact evaluation of the 2008-9 cohort of participants of the *Joventud y Empleo* program in Dominican Republic (Ibarraran et al, 2014) found a 17% increase in the formality of jobs for men<sup>3</sup> and a 7% positive impact on monthly earnings in the short run (18 to 24 months after graduation) and no impact on overall employment. Consistently with the short term findings, the overall average impacts on employment and earnings of the same 2008-9 cohort of participants remain close to zero in size and insignificant in the long-run (about 4 years after graduation), while the positive impacts of the program on the formality of employment for men (measured by having employer provided health insurance) persisted in the long term (Ibarraran et al, 2015).

In Colombia, the impacts of the vocational training and internships provided by the *Jovenes en Accion* were found to be positive on both earnings and employment, especially for women (Attanasio et al, 2011). The study estimated the returns to have been on the order of a 23 to 33 percent increase in formal wages for participants compared to those of the control group. Young female participants had a 7 percent higher probability of having a paid job, three more hours of work per week, and 20 percent higher earnings than the females in the control group. In addition the program was found to complement formal education by encouraging participants to complete secondary school (28% increase in the probability to graduate from secondary school) and enroll in tertiary education (universities and formal vocational colleges) up to four years after receiving the program (Kugler et al., 2015)<sup>4</sup>. In Argentina, researchers found the program had had a significant impact but only on female employment (Aedo and Nuñez, 2004).

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<sup>3</sup> Having a job with health insurance or a written contract are considered as proxies of formality.

<sup>4</sup> The study was conducted on the same cohort of applicants (2005) and random assignment used in Attasio et al., 2011 paper.

The Adolescent Girls Initiative (AGI) interventions piloted in Afghanistan, Haiti, Jordan, Lao People's Democratic Republic, Liberia, Nepal, Rwanda and South Sudan offered skills training and various ancillary services tailored to local context, such as childcare, mentoring, job placement assistance, and links to microcredit, in order to facilitate young women's transition to self- and wage employment. Six of the eight pilots included an experimental component and three of the impact evaluations have reported results. The evaluation of the Jordan New Opportunities for Women program was the first attempt to disentangle the effect of life skills training; the study shows that the life skills training had no impact on employment in the short term and a weakly significant 6.1 percent effect in the medium term, a year after the participants had completed the program (Groh et al, 2012). In contrast, the AGI pilot in Liberia, which consisted of six months of technical and life skills classroom-based training, followed by six months of follow-up support, increased employment by 47 percent and earnings by 80 percent for women ages 16-27 (Adoho et al. 2014). Positive short-term effects on employment were also found in the Nepal pilot; using a quasi-experimental approach, preliminary findings show that participating in skills training and employment placement services generated an increase in non-farm employment of 16-17 percentage points on youth ages 16-24, and had significant effects on earnings especially among females (Ahmed et al. 2015).

In India, the experimental impact evaluation of a subsidized vocational training program for women between ages 18 and 39 in new Delhi slums finds that those who were offered the training program are 6 percentage points more likely to be employed, 4 percentage points more likely to be self-employed, work 2.5 additional hours per week, and earn 150 percent more per month than women in the control group 6 months after program completion; the study also finds that these impacts are sustained 18 months after program completion (Maitra and Mani 2014).

Less encouraging are the results of a recent impact evaluation of a large-scale vocational training program for the general unemployed population (with no special focus on youth) in Turkey. This evaluation found that the program had had no significant effects on either employment or earnings (Hirshleifer et al, 2014). Similarly, in Malawi, Cho et al. (2013) evaluate the effects of vocational and entrepreneurial training for youth. Results show that the training had no effects on labor market outcomes in the short run, but had positive effects on skills development, continued investment in human capital, and improved well-being for men.

This paper builds on this literature and provides the first impact evaluation of a training and internship program for vulnerable urban youths in the context of a lower income country in Africa. The paper uses an over-subscription design to evaluate the impact of the training and internship program piloted in Nairobi and Mombasa by the KEPSA and the Government of Kenya with support from the World Bank's Kenya Youth Empowerment Project (KYEP). Specifically, the evaluation assesses the impact of: (i) the two-week life skills training component of the program and (ii) the full six-month program offering a combination of different types of classroom-based training including life skills training, general business training, and sector-specific skills training and 12 weeks of internships in private firms in one of the six sectors that Vision 2030, the Kenya national development strategy, has identified as the main growth drivers. The KYEP program operates as a public-private partnership in which the Government of Kenya provides strategic policy direction, financing, and oversight and the KEPSA selects the training providers, mobilizes small, medium, and large firms in the private sector to participate in the program, matches youths with employers for the internships, and manages the overall implementation of the program.

The KYEP program was designed to incorporate the factors that have been identified in the international evidence as leading to success of similar programs and to adapt them to the local context in Kenya. These factors include the combination of classroom-based and on-the-job training, the demand-driven design of skills training curricula, the key role of the private sector in the implementation of the program, and the need to take account of the increasing importance of life skills in modern job markets. Overall, the KYEP program was designed to foster wage employment – rather than self-employment – by encouraging employers to retain the interns at the end of the six months and/or to help them to find another permanent job. However, some elements of entrepreneurship support were introduced in the design of the program for those youths interested in starting up a new business. This consisted of three weeks of entrepreneurship training as an alternative to the sector-specific training and an internship in a small or micro enterprise in the *Jua Kali* sector.

This impact evaluation finds that the full program has had significant positive results, specifically an increase of 15 percent in current employment among both male and female participants. While the results for males are robust to the difference in the attrition rate of males and females by the time of the endline survey, the results for females need to be interpreted with caution given the high number of female participants who did not continue in the endline survey sample. These positive current employment outcomes also translated into a significant increase in the number of hours worked per week and, for males, in the probability of having a written contract compared to the control group. The highest employment rates were associated with those who had been interns in firms operating in the finance, ICT, and tourism sectors. While the program's impact on labor earnings was not positive, heterogeneity analysis suggests that its impact was higher for more educated and older males.

The outcomes in terms of both employment and earnings for females were positive and significant, but because of the high attrition rate for female participants in the endline survey, they need to be interpreted with caution. A Lee bounding approach was used to test the robustness of the results for females. While the program contributed to a 6.1 percent increase in paid employment, mostly in the tourism sector, and an increase in earnings of KES 7,500 for participating females compared to the control group females, it has to be noted that those estimates may be biased, and the possibility cannot be excluded that the program had zero impact on participating females.

By subsidizing training and first time work experience, the program also proved successful in easing access to job relevant skills training. High training costs in Kenya are a barrier that prevents many young people from accessing skills development programs. While youths assigned to the program had a higher probability of having completed a skills training course and/or an internship than youths in the control group, no differences were observed in the endline survey between the treatment and control groups in the probability of holding a tertiary college diploma or university degree. No significant effects were found on the possession of behavioral skills such as contact with clients, problem solving, and learning at work or of personality traits such as self-esteem, extraversion, and openness. Consistent with KEPSA's efforts to get youths to open bank accounts in order to access their stipends, the evaluation found positive and significant results among program participants in the probability of having a bank account and of being less risk-averse.

Qualitative evidence collected through focus groups and individual interviews with both program beneficiaries and employers yielded enthusiastic positive feedback on the usefulness and relevance

of the life skills component of the classroom-based training (compared to the technical sector-specific and core business training), which proved successful in building confidence and improving communication and behavior in the workplace. Nevertheless, the impact evaluation estimated that impact of the two weeks of life skills training were not significant for any outcome in the endline survey carried out 18 months and 22 months after the participants had completed their life skills training.

The remainder of this paper is structured as follows: Section 2 discusses the context and content of the program, Section 3 presents the experimental design, and Section 4 presents our data collection and estimation methodology. Section 5 presents descriptive statistics and discusses program take-up rates, while Section 6 presents the program's impact on employment, earnings, financial behavior, and further skill development and examines heterogeneous effects. Section 7 discusses the cost-effectiveness of the program, and Section 8 presents the conclusions of the paper.

## **II. Background and Description of the Program**

In 2010, the Government of Kenya with funding support from the World Bank launched the Kenya Youth Empowerment Project (KYEP) as a pilot in Nairobi and Mombasa, as well as in Kisumu at a later stage. The primary objective of the KYEP was to increase the employability and the earning potential of vulnerable youths by providing them with the skills and work experience demanded by private employers. Between 2011 and 2014, the program trained approximately 14,000 youths over its first five cycles and is expected to train additional 6,000 youths in its sixth and final cycle by the end of September 2015.

The pilot training and internship program was designed and implemented to address key constraints on both demand and supply in the labor market. On the demand side, the program mobilized private employers, gave them incentives to accept interns and teach them job-relevant skills, and encouraged them to create jobs (and retain interns who successfully completed the program). On the supply side, the program aimed to reduce skills constraints in the six sectors where growth is expected according to Vision 2030, Kenya's national development strategy, by providing youths with job-relevant skills (technical and life skills) as well as workplace experience.

To ensure private sector ownership of the program and the effectiveness of the program's demand-driven design, the intervention operated as a private-public partnership. The Government of Kenya set the strategic vision for youth employment and financed the program while KEPSA, a policy advocacy organization for private employers, defined the competencies needed by employers in the six growth sectors, mobilized and motivated employers to participate in the program, recruited training providers on a competitive basis, and managed and implemented the overall program.

The pilot program was designed in response to the issue raised by Kenyan employers that many youths who come out of schools and training centers lack the relevant work experience and competencies needed for employment. To ensure that the program was demand-driven, employers' organizations in each sector were invited to identify their skill needs and to develop sector-specific training plans.

The program targets vulnerable youths defined as males and females between ages 15 and 29 years who have a minimum of eight years of schooling, have been out of school for at least one year, and are not in employment at the time of their application to the program. While not easy to



verify, being out of school and being without a permanent job at the application stage were the main characteristics used to identify vulnerable youths or those at risk of longer-term unemployment or of becoming stuck in low-productivity jobs. The minimum of eight years of schooling was included as a way to ensure that the participants would have had a basic education and thus would be able to benefit from further training.

The KYEP program aims to equip youths with technical and social skills and to promote increased use of such skills at work. The technical skills in question include analytical skills specific to the sector, manual skills, and routine processes as well as basic computer skills such as word processing, use of spreadsheets, and email. The life skills training aims to develop basic work-related behavioral skills such as communication, leadership, self-esteem, conflict resolution, decision-making, and problem-solving that are key to whether employers view a job applicant favorably or unfavorably.

The program has been widely advertised in Nairobi, Mombasa, and Kisumu counties to raise awareness of its existence and to encourage young people to submit applications to KEPSA with proof of identity. In fact, KEPSA only verified the applicant's age and residence eligibility in defining the pool of eligible applicants. Given the high number of eligible applications received, KEPSA randomly selected a number of eligible applicants based on the number of internships that they could offer per cycle. By design, the percentage of the selected youths who held tertiary qualifications was capped at 40 percent in each program cycle.

Given the limited absorptive capacity of existing formal labor markets in Kenya, the project provided internships in both the formal and informal sectors. Each program cycle offered a combination of training and work experience in private sector firms in the six growth sectors identified in Vision 2030, consisting of five formal sectors (energy, finance, ICT, manufacturing, and tourism) and one informal sector (*Jua Kali*).

The program was split into three months of training and three months of work experience, as follows:

*Training.* Classroom-based training courses were provided by private training institutions and consisted of three phases:

- a) Life skills training (two weeks) aimed at strengthening life and other non-cognitive skills (such as conflict resolution and communication skills).
- b) Core business training (five weeks) focused on communication, customer care, entrepreneurship, basic computer use, and office practices, among others. Interns placed in firms operating in the five formal sectors received the five weeks of training while interns placed in the informal sector received three weeks of training coupled with a two-week module on entrepreneurship skills training.
- c) Sector-specific training to promote specific technical skills (five weeks) in each of the five formal sectors. For interns placed in the *Jua Kali* sector, the training plan consisted of three weeks of sector-specific training supplemented by an additional two weeks of work experience.

*Work experience (12 weeks) in selected private firms.* Employers were expected to provide on-the-job training and mentoring. In the *Jua Kali* sector, internships consisted of apprenticeship training by master craftsmen. The master craftsmen had to pre-qualify to be eligible for the program by

participating in skills upgrading developed by the relevant sector organization for the informal sector under KEPSA.

The program offered a small monthly stipend of KES 6,000 to youths (equivalent to US\$70) to compensate them for their transportation and food costs during the six months of the program. Employers were also given monthly compensation of KES 3,000 (equivalent to US\$35) to offset the time spent overseeing the interns and to reimburse them for the costs of materials during the 12 weeks of the internships.

### **III. Impact Evaluation Design**

The impact evaluation was carried out on the second cohort of youths who applied to the program in May 2012, and it estimated the impact of the overall package of services provided (training and work experience) and specifically of the life skills training on the cohort's labor market outcomes (the probability of being employed and of starting a new business, the probability of having a written contract, the number of hours worked, and earnings), socio-emotional outcomes, and their subsequent investments in further skills development. A beneficiary assessment for cycle 2 participants was carried out to collect qualitative evidence to supplement the results of the impact evaluation.

Given that the first cycle of the program was greatly over-subscribed, the impact evaluation randomly assigned eligible youths to two treatment groups and one control group. The large number of applications received validated the feasibility of randomization as a mechanism to assign the three different interventions. Randomized assignment ensures that the treatment and control groups are similar along a broad range of characteristics. Therefore, an unbiased estimate of the counterfactual can be obtained by measuring the outcomes of the control group, and an unbiased estimate of the program's impact can be obtained by comparing the difference between the outcomes of the treatment and control groups.

Three different groups were randomly selected from a pool of eligible applicants. The first treatment group (T1) was offered the chance to participate in a two-week life skills training class only, the second treatment group (T2) was offered the chance to participate in the two-week life skills training and then be considered for the remaining training and work experience components, while the third group (C) served as a control group.

While the impact evaluation of the first treatment group (life skills only) was purely random, the impact evaluation of the second treatment group (full program) departed from perfect randomization in that it allowed employers to be involved in selecting their interns rather than having them assigned directly by KEPSA. For instance, a key feature of this program is its ownership and implementation by the private sector of Kenya as coordinated by KEPSA. During the program design stage, employers expressed a strong desire to choose their own interns through interviews. This implied that, of all those trainees who completed the first two weeks of life skills training, only those selected by employers were expected to participate in the business training, sector-specific training, and work experience. Thus, the employers' involvement in the selection of interns introduced a bias into the randomized design. As a consequence, the evaluation identification strategy to evaluate the full program relied on an instrumental variable approach to estimate the average treatment effects on the treatment group (those applicants who were randomly selected to receive life skills training and endogenously selected by employers to participate in the internship

program), while its design remained entirely experimental when estimating the impact of the life skills training only on those in the first treatment group (T1).

To ensure that employers were given a choice of candidates, the number of candidates randomly selected in to be in the T2 group exceeded the number of internship positions available by 27 percent. A total of 1,300 internships were expected to be created in the second cycle – 900 in Nairobi and 400 in Mombasa – while 300 was the maximum number of applicants to receive life skills training only. Hence, 300 youths were randomly selected from the pool of eligible applicants to receive life skills training only (the T1 group) and 1,650 ( $1300 \times (1+0.27)$ ) applicants were chosen at random (the T2 group) to receive two weeks of life skills training before beginning the employer interview and selection process for the business training and internship component. Randomly assigned waitlists were also established for each of these groups in case KEPSA was unable to contact any of those assigned to the T1 and T2 groups.

Assuming a power of 80 percent and significance of 5 percent, the power calculations showed that approximately 850 individuals were needed in the T2 group in the impact evaluation sample and 850 individuals in the control group in order to obtain a minimum effect of 0.136 on the main outcome of interest (the probability of being employed). With an expected attrition rate of 15 percent, the sample should have been augmented by additional 300 youths, but budget constraints meant that only 100 extra youths were added to the control group, accounting for an attrition rate of about 12 percent in the control group.

KEPSA held a semi-public lottery in its office with the participation of the main program stakeholders, including the Ministry of Youth and Sports, employers' representatives, and the Kenya National Audit Office (KENAO). A stratified randomization approach was used to select the two treatment groups and the control group to prevent baseline imbalances between the treatment and control groups. In particular, the sample of eligible applicants was stratified by location (Nairobi or Mombasa), gender, and education attainment (primary, secondary completed and any post-secondary certificate, diploma, or degree), variables for which subgroup analysis was desirable but also strongly related to outcomes of interest, for a total of 12 strata. In order to meet the cap on the number of tertiary educated youths, no more than 40 percent of the youths selected during the randomized process had a tertiary education.

In principle, the selection of participants to the training and internship component depended on them having successfully completed the two weeks of life skills training but also on their education and previous work experience, their own sector preferences, and their interview performance. In practice, KEPSA managed this process mostly by referring to the education profiles required by the employers.

The first and main question considered in this paper is whether the training and work experience that the participants gained through the KYEP program increased their employment opportunities and earnings. The underlying assumption is that youths lack the appropriate, job-relevant technical, cognitive, and/or non-cognitive skills to respond to labor demand and that employers need to be encouraged to retain interns and/or create jobs, even for youths with a post-secondary or tertiary education who have earned diplomas.

The second question is whether the overall program and the life skills training component in particular promote further skills development among program graduates and other intermediate

outcomes such as increased access to savings, greater cognitive skills, and better personality traits such as decision-making ability and grit. The study adopts the STEP skills measurement methodology<sup>5</sup> to estimate the use of cognitive skills (such as the use of reading and writing skills at work), computers, and job-related interpersonal skills such as contact with clients, solving problems, and learning at work. It also uses the STEP methodology's big-five taxonomy of personality traits (openness, conscientiousness, extraversion, agreeableness, and emotional stability). Although it is not shown in this paper, the evaluation found that the program had no significant effects on the use of cognitive skills as measured by STEP or on improving personality traits.<sup>6</sup>

The theory of change behind this study is that providing job-relevant technical and life skills combined with hands-on experience in private sector firms increases the likelihood that unemployed youths will be retained by their internship employers, will find a job in an established firm not owned by their families (wage employment), or will start their own new business (self-employment). There are four possible ways in which the KYEP program may help to make participants more employable. First, the core business training, sector-specific training, and internships teach youth new technical and job-relevant skills, thus increasing their supply of technical skills and of work experience (tenure). Second, the entrepreneurship training and actual work experience with craft-men equip youths with the financial education and core business knowledge to start up a new business (assuming capital constraints are not binding). Third, the life skills training teaches them better job search strategies (by helping them to prepare their CVs, to prepare for interviews, and access job vacancy notices) and also appropriate behavioral attitudes in the workplace. Fourth, the certification that participants receive for completing the KYEP training and internship program may act as a signal for employers that these young people possess certain sector-specific and core business skills.

The study assumes that the classroom-based technical training, the life skills training, and the workplace experience are all of sufficient quality, relevance, and length to enable participants to actually acquire new or consolidated skills. The study also rests on the assumption that employers are willing to retain interns if they perform well during the internship and on the existence of a private sector labor market that is able to absorb these skilled youths.

#### **IV. Data Collection**

Ipsos-Synovate, a global market research firm, carried out a face-to-face baseline survey of the program participants after they had been randomly assigned to the three groups (T1, T2, and control) in July and August 2012. This baseline survey collected information on the participants' educational backgrounds, employment and self-employment history, saving behavior, whether they had already participated in other training or internship programs, their household composition, health status, and any unintended pregnancies or risky behavior such as drug or alcohol consumption. It also included a module measuring their cognitive skills, skills at work, and non-cognitive skills (adapted from the World Bank's STEP measurement survey instrument), as well as a detailed tracking module including contact information for their parents and their close social network to minimize attrition. A face-to-face endline survey was administered between November and December 2013 approximately seven months after the internships had been completed, using smart phones (LG E400) to enter data. The survey instrument was configured on a smart phone and

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<sup>5</sup><http://microdata.worldbank.org/index.php/catalog/step/about>.

<sup>6</sup>In addition, personality traits are not found to serve as good predictor of employment.

all interviews were conducted by experienced team of interviewers trained by Ipsos. Because of technical problems, data related to the labor force participation module of the questionnaire were not collected properly and could not be used in the analysis. Given the relevance of employment outcomes for the study, Ipsos conducted a new wave of phone call interviews in July 2014 for just a few demographic variables (to confirm the identity of respondents) and for the employment module seven months after the first endline survey and about 14 months after the participants had completed the program (Table 1).

Thus, the variables related to demographics, education, training, skills, health, and saving behavior were collected in the first in-person endline survey, while the variables related to employment and past employment were collected in the phone call interviews (second endline). The final sample for labor market outcomes included 1,618 youths: 709 in the control group, 657 in the T2 (full program) group, and 252 in the T1 (life skills only) group. The final sample for intermediate outcomes such as skills and socioeconomic outcomes includes 1,635 individuals (Table 2). The composition of the final samples by group assignment, location, and gender is shown in table 3.

To minimize the risk of attrition, Ipsos collected detailed contact information in the baseline survey, including each youth's physical address, email address, landline, and cell phone numbers as well as the landline and cell phone numbers of their parents and closest friends. All those interviewed in the baseline survey had working cell phone numbers. Follow-up telephone calls were made to keep track of the respondents by KEPSA and through the Computer Assisted Telephone Interviews (CATI) system within Ipsos to validate and update this information during the months between baseline and endline surveys. Ipsos also tried using the additional contact information for relatives and friends that had been collected in the baseline survey, but this information did not prove to be very reliable. However, there were high attrition rates in both endline surveys (22 percent and 23 percent respectively), mainly due to cell phone numbers being switched off, the high internal mobility of youths within urban areas, and their lack of interest in participating in the endline survey.

Baseline statistics reveal high youth mobility, with 56 percent of youths having lived outside Nairobi and Mombasa and almost half of the sample having moved residence more than twice in the previous two years. Internal migration was particularly high in the Nairobi sub-sample, where 67 percent of the youths reported having lived in another region before. The highest migration was from Nyanza region. Most of the youths who moved to Nairobi came from the Nyanza and Central regions, while most of those who moved to Mombasa came from the Nyanza, Western, and Eastern regions. Almost 40 percent of those migrating from other regions in Kenya reported having come to either Nairobi or Mombasa when they were between 18 and 21 years old. Very few migrated from other countries.

The attrition rates recorded in both endline surveys (22 percent and 23 percent) compare favorably to similar studies on youths in urban areas in other developing countries, for example, 18.5 in Colombia (Attanasio et al, 2011), 38 percent in the Dominican Republic (Card et al, 2011), and 46 percent in Malawi (Cho et al, 2013). More importantly, the treatment and control individuals had different attrition rates in both of the endline surveys. Table 4a shows that attrition rates were overall higher in the control group than in the treatment groups in both cities and were far higher among females than males. Attrition rates for females assigned to the control group were about 30 percent in both Nairobi and Mombasa, but differential attrition (the attrition rate of the control

group minus the attrition rate of the treatment group) was much lower in Mombasa where there were similar attrition rates among females assigned to the treatment and control groups.

Table 8 reports results from regressions of the probability of dropping out (in other words, not participating in the endline surveys) over indicators of whether the person was randomly assigned to the T1 group (life skills training only) or the T2 group (the full program) and on strata fixed effects in Nairobi and Mombasa separately and in the overall sample. Similar regressions were run that also included baseline characteristics. The results indicated that attrition was selectively related to which group an individual was assigned to in Nairobi (which represented 68 percent of the overall sample), with individuals who were assigned to the control group being significantly more likely to drop out of both endline surveys than those assigned to the treatment groups. However, no significant differences were found in the probability of continuing to be in the endline 2 sample between the treatment and control groups in Mombasa.

Results for Nairobi showed a significant relationship between the probability of continuing in the sample and being assigned to a treatment group, especially for those assigned to the two weeks of life skills training only (the T1 group) who were 0.08 more likely to be interviewed in the endline surveys. Those assigned to participate in the full program (the T2 group) did not differ from the control group in the first endline survey (when controlling for the baseline data) but were 0.07 more likely to continue in the second endline survey than control group members. In contrast, individuals in the T2 group did not differ from those in the control group in the second endline survey but were 0.06 more likely to be interviewed in the first endline in Mombasa survey. These results imply that the labor market outcome variables collected in the second endline survey in Nairobi are biased and should be interpreted with caution as well as the skills and other outcome variables collected in endline 1 in Mombasa. When comparing baseline characteristics between those who dropped out and those who continued (not reported in the paper), it became clear that those who dropped out were more willing to work in the next six months, were more active in searching for jobs, and were more likely to have attended school according to the baseline survey data. This suggests a negative selection in the sample (an upward bias in the estimated impacts). Although the direction of the bias is not known, baseline characteristics suggest it might be negative as those who did not continue in the sample might have refused to participate in the survey because they had found jobs and/or had better options.

Ipsos recorded that those who did not take part in the endline surveys fell into three categories: (i) those who could not be reached as their contact numbers were wrong or their phones were out of service; (ii) those who could not be reached because of sickness or death or because they were out of town and or out of the country; and (iii) those who refused to participate in the surveys. A large portion of attrition from endline 1 and 2 was due to people refusing to participate in the survey and was not random (41 percent and 50 percent respectively for the two endline surveys).<sup>7</sup> Mobility may explain some of the attrition if we assume that those who were not reached (because their numbers were wrong or their phones were off) were out of the country or in a different region/province where their phones did not work.

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<sup>7</sup>Among the 478 who did not participate in endline1, 41 percent refused, 46 percent had a phone that was out of service, and 13 percent could not be reached because of sickness, death, or travel. The main reasons for the attrition from endline2 were refusals (50 percent), wrong contacts (36 percent), and other reasons (14 percent).

## V. Sample Statistics and Baseline Randomization

The baseline and endline survey instruments collected detailed information on demographic characteristics, education, participation in skills training courses, labor market status and experience, earnings, health status, saving behavior, household characteristics, cognitive skills, and personality traits. Some of these variables are not strictly comparable because of the differences in the designs of the baseline and the endline survey instruments, particularly with regard to the labor market variables.<sup>8</sup> Therefore, a pure comparison of mean variables between before and after the intervention is not possible because of the different collection methods and definitions used in the baseline and endline surveys.

Table 5b reports basic descriptive statistics of demographic characteristics and main outcomes of interest before and after the program for both Nairobi and Mombasa. Labor market variables included whether the person was currently employed, the average number of hours the person worked per day, whether the person had a written contract, whether the person had a “formal” job (defined as receiving social security benefits), whether the person had been actively searching for a salaried job in the previous month, the person’s willingness to start working, and his or her monthly labor market earnings. The employed were defined as those who reported having worked in the previous seven days for at least an hour for a wage, a salary (either in cash or in kind), or for family gain.<sup>9</sup> Among those who were employed, we distinguished between wage workers (those who worked for somebody who was not a member of their own household) and the self-employed based on their reported main activity. The self-employed included those who worked for at least an hour in a household enterprise or farm or on their own business or farm and occasional workers working on their own’ for example, selling goods in the street or washing cars.

We also distinguished between earnings from wage employment (defined as earnings net of payroll taxes and social security contributions if any) and from self-employment. Indicators on the average number of hours worked per day and per week and on whether the individual worked for more than 20 hours per week were based on the number of hours that they worked in different occupations (if more than one). All indicators of hours worked and earnings included zeros for those not working.

Women represent about 40 percent of the sample. The average age in the sample before starting the program was 24 years old. More than 20 percent of the sample had children (on average one or two children) and lived on their own (not with their parents). Interestingly, 10 percent of the sample in Nairobi got married in the year between the baseline and endline survey, and 10 percent more youths reported having had children by the endline survey. The prevalent religion was Protestant, though one-third of the Mombasa sample was Muslim.

Overall, the program reached mostly tertiary dropouts rather than secondary dropouts. About 53 percent of candidates had some tertiary education (they had either started or completed college and/or university), while 29 percent of the sample had completed secondary school and 18 percent

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<sup>8</sup> The questions related to the number of hours worked and earnings in the baseline survey referred to both current work and/or past work. Indicators were set equal to zero in the baseline survey for those who did not work in the previous seven days (current employment). In addition, the baseline survey only asked about the average number of hours worked per day.

<sup>9</sup>The module on labor participation in the endline survey differed from the baseline survey in terms of structure and how questions were phrased, and as a consequence the pre-program and post-program variables are not fully comparable.

had completed primary education but had not completed secondary education. Only 1 percent of the sample did not complete primary school. The majority of those with a tertiary education<sup>10</sup> (either partial or completed) were in the field of information technology and business management (accounting and finance). The sample for the baseline survey had an average of 14 years of schooling, meaning that the program's targeting could be improved to reach the most vulnerable youths between 16 and 29 years old.

Only about 12 percent of those in the sample were attending school before the program, which validates one of the program's eligibility conditions (being out of school). Most of those who reported being in school were attending tertiary schools, either a government polytechnic or teacher training school or a private college or university. The main reason that respondents gave for having to withdraw from post-secondary schools was a lack of financial resources.

Gender disparities were evident at both the lower level and the highest level of education in Nairobi. While little gender disparity was observed among those for whom secondary school was the highest level of education achieved, there was a higher prevalence of females among those who had only achieved a primary education and who had not completed secondary school and a higher prevalence of males among those who had completed tertiary education, reflecting the gender, education and city stratification.

Before the intervention, about 30 percent of the sample reported having participated in a work-related or skills training program that lasted at least 30 hours in the previous year, with the most common fields being business management (17 percent of respondents), medical and health services (11 percent), IT (10 percent), and arts or humanities (7 percent). In the majority of cases, this training lasted from between six months and two and more years. The probability of having participated in a training program in the previous year had increased to 50 percent in the endline survey.

The probability of being employed was quite high in the baseline survey, about 0.78 in Nairobi and 0.70 in Mombasa, as was the number of hours worked (about 30 hours a week). The probability of being in wage employment, in other words, working for somebody outside of the family, was about double the probability of self-employment in both Nairobi and Mombasa. Urban youth unemployment rose by the time of the endline survey, with a drop in the current employment probability to 0.67 overall and a drop from six to four average hours worked per day. Similarly, the probability of finding a salaried job in the previous four weeks had decreased by the endline survey. The probability of having a written contract also fell from 0.25 to 0.20, while the probability of having a job with social security and a formal pension was also high (13 months after program completion it was 0.27).

While these statistics suggest that labor market participation and activities declined overall between 2012 and 2014, we interpret these differences as mainly due to noise in the data collection and to the different design of the two surveys.<sup>11</sup> The average employment statistics for youths in the treatment groups were better than those for the control group in the endline survey. Current employment was higher among treatment groups than the control group in the endline data in both

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<sup>10</sup> It has to be noted that some of those attending college-level schools may not have completed secondary school if they were at a youth polytechnic.

<sup>11</sup> There are no representative data on labor force participation by urban youths over the same period to compare with these survey findings.



Nairobi and Mombasa, especially among males (Table 5a)<sup>12</sup>. Unemployment and inactivity rates among females were almost double those of males, and the 20 percent inactivity rate among females is particularly concerning as a significant proportion of those who were inactive were not in education. The survey respondents reported their lack of skills as the main barrier to finding a job and their lack of access to finance as the most binding constraint to opening up and running a new business. In the endline survey, average wage monthly earnings were low, at around KES 15,000 (US\$163 a month or about US\$5 a day), with self-employment earnings being even lower, less than KES 3,000 a month.

### *Baseline balance*

The overall comparability between the treatment groups and the control group in the baseline survey data is consistent with successful randomization. Table 6 presents data on the demographic characteristics, labor market outcomes, skills, and saving behavior of the treatment and control groups in the evaluation sample both before and after the intervention. Columns 1,2, and 4 report the variables means of the control, T1 (life skills training only), and T2 (full program) groups respectively, while columns 3 and 5 report the estimated difference between the treatment and control groups with estimated standard errors. Generally, the control and treatment groups have similar outcomes across a wide range of observable characteristics. The only significant differences were that the members of the control group seemed to be more willing to start working in the next six months and were performing better at school (the group had a higher share of those who had passed the Kenya Certificate of Primary Education exam) than those in the treatment groups. However, those differences were not very large. It can be concluded that overall the comparability between the treatment and control groups in the baseline survey data is consistent with successful randomization.

## **VI. Program Take-up**

Combining survey data with program administrative data (see Tables 7a and 7b) shows program participation per component and per assigned sector. About 90 percent of those who were offered a chance to participate in either the life skills training alone (T1) or in the full program (T2) attended part of the two-week life skills training, and about 78 percent completed the full two weeks of life skills training (Table 7a). By design, only a share (73 percent) of those who completed the life skills training were assigned to participate the rest of the program. Overall, 63 percent of those in the evaluation sample who had completed life skills training as part of the T2 group were interviewed and placed in internships by KEPSA in consultation with employers (67 percent in Mombasa). Seventy-six percent of those who were selected by employers to participate in the full program completed all of the components including the core business training, the sector-specific training, and the three-month internships (compared with 48 percent of those who were assigned or intended to participate in the full program). Compliance with the entire program was higher in Mombasa than in Nairobi. More dropouts seemed to happen between the sector-specific training and the work experience component than at any other stage. There are no data on internship attendance (only on graduation from internships) to show whether the 13 percent of interns who dropped out did so before or during the work experience. However, we attribute these dropouts to the time lag between the end of the training classes and the start of the internship as well as to

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<sup>12</sup> Annex table A1 reports descriptive statistics at endline by assignment group.

beneficiaries' dissatisfaction with their placement. According to a beneficiary assessment conducted on a sample of cycle 2 beneficiaries, some interns expressed dissatisfaction with the placement process and with the fact that their sector-specific training and internships did not match their preferences and educational backgrounds.

Table 7b shows the number of interns assigned to each sector as a share of the total number of interns in the program. The distribution of interns by sector reflects the capacity of employers in each sector to offer internships and their commitment to supervising interns. Firms operating in the ICT, tourism, and *Jua Kali* sectors absorbed 27, 25, and 21 percent of interns respectively. These same sectors also experienced the highest dropout rates between the time of being placed with an employer and the completion of the internship, with about 5 percent of interns dropping out in those three sectors compared to only about 2 percent in manufacturing and energy. ICT absorbed the most interns in Nairobi, while tourism absorbed the most in Mombasa.

## VII. Impact Results

This section presents our estimates of the impact of the full program on different outcomes and goes on to discuss the Lee bounds estimates (Manski, 2000 and Lee, 2008) that we used to correct for significant differential attrition rates within the treatment group. None of the estimated effects of the life skills training component alone were significant and so are not presented in this paper.

First, in our empirical analysis, we obtained intention-to-treat (ITT) estimates by comparing average outcomes for the treatment and control groups in the endline survey data.<sup>13</sup> ITT estimates can be interpreted as the impact of *offering* the program. Interest by policymakers in this impact may be limited as it does not reflect the actual implementation of the program. To obtain ITT estimates, the following model was estimated using Ordinary Least Squares (OLS):

$$Y_i = \alpha + \beta T_i + \gamma X_i + s_j + \epsilon_i \quad (1)$$

where  $Y_i$  was the outcome of interest for individual  $i$  at endline,  $T_i$  was a binary variable for being randomly assigned to the treatment group,  $X_i$  was a set of baseline characteristics to control for any remaining baseline imbalances,  $s_j$  were the 12 strata fixed effects, and  $\epsilon_i$  was a mean-zero error term. The model was estimated with and without controlling for baseline characteristics, which included gender, age, education, marital status, employment, salary from wage employment, self-employment earnings, hours worked per day, and having a written contract.

To estimate the impact of actually receiving the program ( $\delta$ ), the following second stage equation (of a two stage OLS model) was estimated:

$$Y_i = \delta Z_i + \mu X_i + s_j + \epsilon_i \quad (2)$$

The randomized selection procedure was used as an instrument to estimate the predicted compliance ( $Z$ ) and in turn the average treatment on the treated (ATT) effect  $\delta$ , that is on those

<sup>13</sup>Endline 1 survey data were used to estimate the program's impact on participants' skills and saving behavior, while endline 2 survey data were used to estimate the program's impact on participants' labor market activities and earnings.

applicants who were randomly selected to participate in the full program and who were placed in (and completed) business training and internships after having completed the life skills training. ATT estimates isolate the impact of actually participating in the full program for those interns who “complied” with their original assignment to the treatment and control groups. In our analysis, compliance of youths with the treatment group was defined either as “being placed with an employer for an internship” or more strictly as “having completed the full program”<sup>14</sup> and their respective sector-specific training. In the presence of full program take-up, ITT and ATT estimates would be equivalent. However, in this experiment, partial compliance existed by design as not all applicants who were randomly assigned to the full treatment group were expected to remain in the program (because of the employers being given the right to choose the candidates that they wanted as interns). The ATT impact was estimated for a range of outcomes of interest by instrumenting actual participation with the randomized assignment according to the following first stage regression:

$$Z_i = \theta T_i + \xi X_i + s_j + \varepsilon_i \quad (3)$$

where  $Z_i$  was an indicator based on the program’s administrative record of whether the candidate had been placed to employers,  $T_i$  was an indicator variable for randomized assignment to the treatment group,  $X_i$  was a set of controls,  $s_j$  were strata fixed-effects, and  $\varepsilon_i$  was a mean-zero error term. The coefficient  $\theta$  indicated the causal effect of being randomly selected to the full treatment group on the likelihood of actually participating in the full program, which reflected the likelihood of having the education and experience characteristics that employers were looking for (compliance on the demand side). The equation was also estimated with  $Z_i$  serving as an indicator of whether a candidate had successfully completed the full program (all components), which also reflected the personal characteristics of a motivated youth who fully participated in the program (compliance on the demand and supply sides). In this last case, the coefficient  $\theta$  represented the causal effect of being randomly selected to the full treatment group on the likelihood of actually completing the full program. Those two estimates differ from each other given the dropouts that occurred during the core business training, sector-specific training, and work experience phases and therefore should be interpreted differently.

Equation 2 was estimated in a second stage that relied on the predicted compliance estimated in the first stage for either placed interns or graduated interns (compliers).  $\delta$  represented the ATT impact of actually participating in the program for youths who had characteristics similar to the interns who were placed and /or graduated. It has to be noted that ATT estimates are local-average treatment effects and should be interpreted carefully. They were estimated for the “compliers” those interns who were actually placed in internships and who completed the whole program. It is likely that compliers had different characteristics than non-compliers (who consist of those applicants who were not selected by employers and/or those interns selected by employers who dropped out). Even if they were the same in terms of observable characteristics, they may have differed in terms of their interview performance, motivation, and other unobservable characteristics. In this sense, our ATT estimates reflect the average impact on the program on applicants who had the characteristics of “compliers” but do not reveal what the program’s impact would have been had all randomly selected applicants actually participated fully in the program.

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<sup>14</sup> This refers to all candidates who completed the different training courses in their respective training plans and also successfully completed the three months of workplace experience.

As anticipated in the data collection section, the concern is whether the significant difference in attrition rates between the control and treatment groups might have biased both the ITT and ATT estimates. Indeed, as discussed above, the descriptive statistics and Table 8 suggests that these differential attrition rates were significant and that they could bias estimates of the program's labor market impact in the Nairobi sub-sample and among females.

We used the Lee bounding approach to construct upper and lower bounds for the treatment effects in order to check the robustness of our results to these significant differential attrition rates by estimating effects for the best and worst case scenarios (the situation in which the control group members who drop out are all employed and earning). The idea was to trim the data by the proportion of excess individuals to compute the largest and smallest possible effect for each outcome of interest. The monotonicity assumption required to implement the Lee bounds was satisfied in our sample. Treatment group assignment affected the sample selection in only one direction (those in the control group are more likely to drop out), which implies the assumption that youths assigned to the treatment group would have dropped out if they had been assigned to the control group and that youths did not drop out of the sample because they were assigned to the treatment group. This assumption was validated by the control group's higher rate of refusing to participate in the endline survey as discussed above.

To construct the lower and upper Lee bounds, we trimmed the distribution of the outcome variables of the youths assigned to the treatment group above and below by the proportion of differential attrition (the difference in attrition rates between the control and treatment groups over the retention rate of the treatment group). In substance, the trimming procedure placed sharp bounds on the average treatment effects that were consistent with the observed data.

Table 9 shows the trimming proportion for each sub-population group (males and females in Nairobi and Mombasa), the estimated ITT, and the Lee bounds on the treatment effects with the probability of being employed as the outcome variable (with an indicator equal to one if the respondent had been working during the previous seven days). The ITT were positive and significant for males in Mombasa and overall. Importantly, the width of the Lee bounds was reasonably narrow in Mombasa and in the overall male sub-sample and contained the ITT point estimate. The bounds on the Nairobi and overall female sub-samples were too wide (the width was about 0.11 among all females and 0.16 among Nairobi females), which means that we could not rule out zero effects. Overall the evidence points toward the program having positive and significant effects on the male treatment group sub-sample and in Mombasa where the ITT point estimates were closer to the upper bounds and even the lower bounds showed positive and significant (no more than at 10 percent) effects. This evidence also suggests that the ITT and ATT point estimates of the program's impact on the Nairobi and female sub-samples cannot be interpreted as unbiased. In other words, the improvement in employment outcomes among female compliers in the Nairobi program cannot be attributed to the program and is not supported by the bounds. In the worst case scenario (the number of control females who did not continue in the endline survey were all employed), the program may have had zero impact. Given the uncertainty about the direction of the selection bias introduced by the differential female attrition rates, our results related to female participants need to be interpreted with caution, whereas our analysis of the impact of the full program on the male and the Mombasa sub-samples can be considered as unbiased.

To the contrary, the differential attrition rates between the control group and the T1 group were slightly smaller for females than for males (Table 4). We found that the life skill training component had had no medium-term effects on the labor supply and earnings outcomes of youths assigned to the T1 group (not reported in the tables). It may have had some short-term effects that had faded away during the 23 months between the participants' completed the life skills training and when they responded to the second endline survey.

### *Labor Market Supply and Earnings*

Table 10 panel A presents ITT and ATT effects on several employment outcome variables for the male, female, and Mombasa sub-samples, describing labor market participation, labor market earnings, and the quality of jobs. The outcome indicators include measures of whether respondents have been working in the previous seven days, in the past month, whether they worked for pay,<sup>15</sup> whether they worked as a wage worker (for somebody not in their family) or were self-employed, the average number of hours they worked per week, whether they worked for at least 20 hours per week, whether they had a written contract, whether they received social security benefits, the number of months they have been working (tenure), and finally their monthly earnings from wage employment and self-employment. The ATT effects were estimated using both "being placed in an internship" and "program graduation" as indicators of compliance in the first stage regression. All of our ITT and ATT estimates are robust, with the ATT estimates being of a larger magnitude as would be expected as they are locally defined on a smaller group.

The ATT and ITT effects of the KYEP program were significant and comparable to those for similar programs in other developing countries (for example, Colombia's *Jovenes en accion* and the Dominican Republic's *Joventud y Empleo*). Our ITT estimates show that the full program increased current employment by 6.5 percentage points for all males originally assigned to the program about 14 months after they had completed the program, by 10.8 points for those placed in internships (ATT estimates), and by 14.2 percentage points among males who actually completed the program compared to those in the control group. Given that 69 percent of males in the control group reported in the endline survey having been employed in the previous seven days and 64 percent in the previous month, the ITT estimates were equivalent to a 9.5 percent increase in employment the previous week and a 10.8 percent increase in employment the previous month, while the ATT estimates were equivalent to 15.6 and 17.8 percent increases respectively. Our estimates of wage employment were slightly higher and also significant, translating into an extra three hours worked per week more than the 23 average hours worked per week by the control group. In addition, we found no significant impact on tenure, suggesting that being out of the labor force (in training) for three months did not dramatically change the length of job tenure for male participants compared with control males.

Those effects were mainly driven by the higher probability of wage employment among male program participants rather than self-employment, which is consistent with the program's positive effect on the probability of having a written contract. It was also consistent with the program's design, which aimed to foster wage employment and to encourage employers to retain interns rather than to support small-scale entrepreneurship. The program designers anticipated that a certain number of youths would want to start new businesses of their own, so they decided to offer

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<sup>15</sup>This variable was equal to one if the respondent reported having worked in the previous seven days and also reported having received a salary from that job.

those youths a three-week entrepreneurship training class as an alternative to the sector-specific training coupled with an internship in a small or micro enterprise in the *Jua Kali* sector. However, the program provided no further business development services to support self-employment such as start-up capital, counseling, or networking services, all of which are key to successful business start-ups (Cho and Honorati, 2014).

Albeit positive, the change in earnings was not significantly different from zero among males. The wages of males who had been placed in internships increased by about KES 5,116 after program graduation, which corresponded to 26 percent of the wage earnings of control group males.

The program seems to have had a similar impact on the probability of females being employed, which increased by 4.5 percentage points for all females originally assigned to the program, by 6.7 for those females placed in training and internships, and by 8.7 for those females who completed the program. The ATT estimate for females placed in training and internships was equivalent to a 15.5 percent increase in employment the previous week and a 15.1 percent increase in employment in the previous month (Table 10 panel B). As discussed above, these results need to be interpreted carefully. The lower bounds suggest that zero effects on employment cannot be ruled out.

The program had a significant impact also on the earnings of females, a finding which appears to be robust to Lee bounding for differential attrition rates. Wage earnings for females increased by KES 7,500 which corresponds to 132 percent of the earnings of control group females.

In Mombasa, the program's estimated impact was slightly higher in magnitude than the overall impact. The program increased the probability of paid employment in the previous month by 7.3 percentage points for those originally assigned to treatment group compared to the control group and by 10.8 percentage points for those who were actually placed in internships, which corresponds to increases of 14 and 20 percent respectively in the probability of being employed (Table 10 panel C). Interestingly, in Mombasa the program significantly increased the probability of having worked for self and/or owned family business in the previous seven days by almost 2.7 percentage points for those assigned to treatment (ITT) and by 4 percentage points for interns who were actually placed and by 5.1 percent for interns who completed the program. Monthly earnings from wage employment increased significantly by almost KES 5,800 for youths originally assigned to the program, by KES 9,000 for those who were placed in internships, and by about KES 11,424 for those who completed the internship program compared to an average of KES 9,935 for control group youths in Mombasa. This is equivalent to a 90 percent increase in wage earnings. However, we found no significant impact on self-employment earnings for those operating a business.

In accordance with the design of the endline survey, data on earnings were collected only for those reporting to be engaged in any economic activity in the previous seven days. As a whole, the total earnings for the treatment group are higher both because they are more likely to work and because they are earning more when they do work than controls.

While interviewers asked both the employed and the unemployed what was the lowest monthly net wage that they would be willing to accept for a full-time job with social security benefits, no significant differences were found across groups, so the program does not appear to have changed expectations about job earnings.

As discussed before, youth were first randomly selected to participate in the program, then, once they had completed the life skills training, they were endogenously “placed with” employers in the six different sectors (energy, finance, ICT, manufacturing, *Jua Kali*, and tourism) through a matching process conducted by KEPISA and the employers providing the internships. Once the matching process was completed, the selected youths participated in the core business training, their sector-specific training, and their internship with the employer with whom they had been matched.

Table 11 presents the mean differences between the interns in respective sectors and the control group youths for each outcome variable as well as their significance. These statistics do not reflect the causal impact of the program but are indicative of the direction and different magnitudes of outcomes across sectors. The majority of male interns were placed in the ICT and tourism sectors. On average, for male interns placed in the finance, energy, and tourism sectors, the probability of becoming a wage employee increased by 20, 18, and 18 percent respectively compared to control group males. In those sectors, the number of hours worked by participating males increased by 9, 12, and 6 hours per week. In terms of job quality, interns in the finance sector had a higher probability of having a written contract than control group males, while interns in the energy and tourism sectors tended to have jobs in which they received social security benefits. The difference in tenure had the expected negative sign, suggesting that on average interns worked for two months less than the control youths, which is consistent with the 10 weeks of classroom-based training received as part of the KYEP program. Male interns in the *Jua Kali* sector also reported being engaged in significantly more self-employment income-generating activities in the previous seven days than control group males, although the difference was not significant for the previous month, which suggests that their activities may have been intermittent. No significant difference was found between male interns working in the ICT and manufacturing sectors compared to males in the control group. The last row of Table 11 suggests that candidates who were randomly assigned to the program and completed the life skills training but were not selected for the subsequent skills training and internships are doing better in terms of past month employment than control group. They also did better than interns placed in the ICT and manufacturing sectors but not as well as interns placed in the finance sector.

Females placed in the tourism sector had consistently better employment outcomes than the control group females in terms of labor supply, number of hours worked, and wage earnings (which were on average KES 11,000 higher than the wages of the control group girls). The small number of female interns in the energy sector precluded any interpretation of the descriptive statistics. In contrast to the outcome for males, females who were not placed in the training and internship program (but who completed the life skills training) did not significantly differ from control group females in any employment outcome.

#### *Access to Skills Training and Changes in Financial Behavior*

By subsidizing training courses and three months of initial job experience, the program was also successful in promoting access to job-relevant skills training programs. Table 12 presents program results on intermediate outcomes such as further skills development, measured by having participated in either (certified) skills training or in an internship in the previous 12 months, or by

the probability of having acquired a tertiary diploma and/or college degree.<sup>16</sup> Both our ITT and ATT estimates showed a significant positive increase in participation in skill training and internship programs among program participants compared to similar youths in the control group, but we found no effect on the probability of holding a tertiary education diploma or college degree.

Table 12 also presents results for financial behavior outcomes, showing that the program had a positive impact on the probability of opening a bank account (both males and females) and on accumulating savings (females). Our assumption is that the life skills, core business, and entrepreneurship training delivered through the KYEP program informed the young participants about the usefulness of having a formal bank account to save as well as making them less risk averse (in the case of males). This result is also consistent with KEPISA’s efforts to encourage young people to open bank accounts to access their stipends.

#### *Differential Impact on Employment by Age and Education Attainment*

Impact evaluations of similar programs in Latin America found that these programs had stronger effects on females than males, including Colombia’s *Jovenesen Accion* (Attanasio et al, 2011), Panama’s PROCAJOVEN 2002, and Peru’s Projovent (Ibarraran and Rosas, 2009). However, a more recent evaluation of the ISKUR training course in Turkey showed that the course had had the greatest impact on males aged 25 and over (Hirshleifer et al, 2014).

To analyze whether the KYEP program had heterogeneous effects or whether certain groups of beneficiaries benefitted more than others from the program, we estimated the following regression by interacting the assignment to treatment dummy based on the lottery (Ti) with education level and age separately.

$$Y_i = \alpha + \beta T_i + \gamma T_i * C_i + \delta C_i + \theta X_i + s_j + \epsilon_i \quad (1)$$

where  $Y_i$  was the outcome of interest for individual  $i$  at endline,  $T_i$  was a binary variable for being randomly assigned to the treatment group,  $C_i$  was the interacting variable at the baseline,  $X_i$  was a set of baseline characteristics to control for any remaining baseline imbalances, and  $s_j$  were the 12 strata fixed effects. Table 13 presents the heterogeneous ITT effects by education levels (used in the stratification) and age for the male and Mombasa sub-samples as these are unbiased and robust to Lee bounds.

In the male sub-sample, we found differential effects by initial education attainment on labor market activity. Less educated males (those with a completed primary education or less) were significantly likely to be engaged in self-employment activities, while more educated candidates (those with some tertiary education or who had completed either college or university) were more likely to be wage employees and to work more hours. In the Mombasa sub-sample, we found that the program had a significant impact on youths with lower initial levels of education (those with a completed primary education or less) in terms of almost all employment outcomes, including both labor supply and earnings from wage employment.

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<sup>16</sup>We found no impact on the use of cognitive skills measured by different indicators taken from the STEP survey methodology, including the use of reading and writing skills at work, the use of literacy skills at work, the use of computers, contact with clients, solving and learning at work, autonomy, and repetitiveness.



To investigate the differential impact by age, we divided the sub-sample into those older and younger than 24 years old (the median of the age distribution). While no differential effect by age was found in the Mombasa sub-sample, there is evidence that the program had a more significant impact on older males (those over 24 years old) than younger males in terms of their earnings from wage employment.

## VIII. Cost-Benefit Analysis

It is important to look not only at the impact of the program but also at the costs of the different program components to assess the performance of the life skills training and of the full program and to draw conclusions about the program's sustainability and the potential for scaling it up. Cost-benefit analysis is crucial to evaluation the potential policy impact of the study and to inform the Government of Kenya about the most efficient ways to allocate resources. Unfortunately, the design of the impact evaluation did not make it possible for us to disentangle the impact of each component of the KYEP program. It was designed to assess the impact of the full program and of the life skills training alone (which we found had had an insignificant impact). As such, a cost-benefit analysis could only be carried out on the program as a whole.

Our analysis of costs took into account service delivery costs and the recurrent administrative costs (including staff and operating overhead costs) that could be attributed to cycle 2 only. To quantify the administrative costs, we made assumptions about the percentage of staff time and overhead expenses (transport, telephone, and workshops) attributable to cycle 2.<sup>17</sup> Administrative data on beneficiaries' attendance, their completion of each of the program components, and reports on the stipends paid to trainees and the compensation paid to employers were gathered, monitored, and reported in a new program management information system developed within KEPSA.

By comparing the shares of the weekly service delivery costs per beneficiary among the different program components, internship costs accounted for 26 percent of total training and internship delivery costs, sector-specific training accounted for about 23 percent, life skills training for 21 percent, core business training for 17 percent, and entrepreneurship training and stipends for about 14 percent.

Table 14 presents the unit costs (per participant) of the program by component, including administrative costs. The total cost per beneficiary was about KES 84,000 (US\$1,000) excluding administrative costs and about KES 97,000 (US\$1,150) including administrative costs.<sup>18</sup> This unit cost

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<sup>17</sup> Operating overhead costs were approximately 50 percent of total 2012/2013 operating costs and included 100 percent of the amounts paid for the impact evaluation, the beneficiary assessment, and the M&E consultancies. The staff costs attributable to cycle 2 included 100 percent of staff costs as of May to September 2012, 50 percent of total staff costs between March and April 2012, and 50 percent of total staff costs between October 2012 and May 2013.

<sup>18</sup>We calculated the unit costs for each type of training based on the number of participants, defined as those who attended at least one day of training. We calculated the stipends and employers fees per participant based on the number of interns who started internships. We calculated the staff and overhead costs per participant based on the total number of candidates who confirmed their participation in cycle 2 and attended at least one day of life skills training (2,431), including the additional 300 experimental candidates added to cycle 2 to test the life skills training component alone.

– not adjusted for inflation – is similar to that of a similar program, *Jovenesen Accion*, in Colombia which cost US\$750 per person in 2005.

We calculated the monetary benefits of the program based on the ATT estimate of its impact on monthly earnings for interns who completed the full program (see Table 10). These estimates show a KES 6,768 gain for males (although this is statistically insignificant) and a gain of KES 9,623 for females (however, a zero impact on female earnings cannot be ruled out). This implies that it would take about 14 months to offset the costs of the program in the case of males and only 10 months in the case of females. A new wave of data collection would be needed to confirm whether the program's impact on paid employment is persisting and, if not, how long it lasted. Assuming that these monetary gains are sustained over time for more than a year (or 14 months), which is not an unrealistic assumption, we can conclude that the benefits of the program exceeded the costs for both males and females, resulting in a positive internal rate of return.

The 12 weeks of classroom-based training provided by the program did not represent a positive opportunity cost and were not factored in as the estimated loss in tenure due to the program was never significant. However, it has to be noted that the gains do not take into account the non-monetary benefits of having a job in a private firm and that the direct costs of delivering the program do not include any possible displacement effects in the Nairobi and Mombasa labor markets on non-participants. The impact evaluation survey and program administrative data did not make it possible to measure general equilibrium effects to quantify whether the program firms did not hire as many workers as they would have done if they had not had the services of the program interns for free.<sup>19</sup> If the program interns crowded out non-participants from jobs, then we have underestimated the costs. However, as the size of the KYEP pilot (about 730 graduates in Nairobi and 300 in Mombasa in cycle 2) was negligible compared to the share of the youth population of working age in both cities, it seems reasonable to assume that these displacement effects may be of second-order. However, the concern about displacement effects may be more important if the program is scaled up to the point of being large relative to the labor market.

## IX. Conclusions

The KYEP training and internship program that is being piloted in Nairobi and Mombasa provides three months of classroom-based technical training coupled with three-month internships in private firms to vulnerable youths between the ages of 17 and 29 years old, defined as those who were out of school and/or had no permanent job in the previous year. These are considered to be youths at risk of having only low-productivity jobs and of depreciating their skills at an early stage of their lifecycle. A minimum of eight years of education is one of the eligibility conditions for the program to ensure that participants have the basic skills and capacity to absorb the technical and life skills taught during the program.

The demand-driven design of the program is very similar to the approach taken in other programs that have been implemented and evaluated in developing countries in Latin America. For instance, the core business, sector-specific, and life skills taught to the KYEP interns were those in demand by employers. As such the KYEP pilot represented an opportunity to evaluate the effectiveness of

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<sup>19</sup> To measure displacement effects would require comparing employment outcomes in the cities, districts, and sectors where the program was not implemented with cities, districts, and sectors where the program was implemented and between participant and non-participants.

providing combined training and internship programs to urban youths in a low-income country. To our knowledge, this study is the first impact evaluation based on experimental design of this type of program in Africa or in a country with limited capacity.

Descriptive statistics show that the program benefitted more educated youths than expected and that about 75 percent of youths assigned to the program were engaged in an economic activity at baseline. Overall, the program seems to have reached mostly tertiary dropouts rather than secondary dropouts, as 18 percent of the sample had not completed secondary education, almost 29 percent had completed secondary school, and 53 percent had some tertiary education, having either started or completed college and/or university. The sample at the baseline had an average of 14 years of schooling, meaning that the program's targeting could be improved to reach the most vulnerable youths in the 16-29 years old age range.

The evaluation analyzed the impact of the life skills training component (two weeks) and of the overall program (classroom-based and on-the-job training) on participants' labor supply and labor earnings (the main outcomes of interest) as well as on their further skill development and financial behavior. While the life skills training component was found to have had no significant impact on any of these variables, the overall training and internship program had positive and significant effects on participants' employment outcomes and in their access to training courses and internships.

Our results show that the KYEP program had a substantial positive impact for males on the probability of having paid wage employment with a written contract, which also translated into a significant increase in the number of hours worked per week. Given that 64 percent of males in the control group had paid employment at the time of the endline survey the ATT estimates for interns were equivalent to a 15 percent increase in paid employment in the previous month. Descriptive statistics show that, on average, wage employment among male interns in the finance, energy, and tourism sectors increased by 20, 18, and 18 percent respectively compared to control group males. Albeit positive, the change in wage earnings was not significantly different from zero among males overall but was significant for older males (those older than 24 years old). Wages increased by about KES 5,000 among males placed in internships, which corresponds to 26 percent of the wage earnings of control group males and by KES 12,000 among older males.

Overall no effects were found on the probability of starting up a new business, being self-employed, or working for a family business. This suggests that training alone is not sufficient to foster self-employment and that it needs to be complemented with measures to ease access to start-up capital. While the program offered an entrepreneurship training course coupled with internships in a small or micro enterprise as an alternative to the sector-specific training for those interested in starting or running a small business, no other business development service was provided to support self-employment such as start-up capital, counseling, networking services, or micro credit, all of which are critical for supporting small-scale entrepreneurship. Descriptive statistics from the surveys also show that the most binding constraints to business start-ups are a lack of capital and a skills mismatch. The program reduced constraints to self-employment only in so far as it built the basic business skills of participants. Extending the program to include components designed to ease access to capital and link beneficiaries to business development services would improve this outcome.

However, the program had a significant impact on self-employment among lower educated youths (those for whom primary was the highest level of education attained) and in Mombasa. In Mombasa, the program significantly increased the probability that program interns would work for themselves and/or for their own family's business by 4 percentage points relative to the young people in the control group, which represents a 20 percent increase in self-employment.

Given the considerable differential attrition between assignment groups among females, our results related to females are biased and need to be interpreted with caution. Our results showed that the program had a positive effect on the probability of a female participant having a paid job after graduating and that it increased labor earnings among females by KES 9,600 a month. While Lee bounds cannot rule out a zero impact, the impact on earnings seems to be robust, being closer to the estimated upper bound. Specifically, female interns placed in the tourism sector had better employment and earnings outcomes than those placed in other sectors. In contrast with our results for males, less educated females, especially in Mombasa, benefitted more than better educated females from the program.

The program also had positive effects on having participated in either (certified) skills training or in an internship in the previous 12 months for both males and females, but we found no effects on the probability of having acquired a tertiary diploma and/or college degree. The program helped to change the financial behavior of participants measured by the probability of them opening a bank account and accumulating savings (for females), both of which increased. Our assumption is that the life skills, core business, and entrepreneurship training delivered through the KYEP program educated youths about using formal bank accounts to save as well as making them less risk averse (for males).

These results are at the basis of a cost-benefit analysis. With a total estimated cost of KES 97,000 per beneficiary and an estimated KES 6,768 monthly gain for males (although this is statistically insignificant) and a KES 9,623 monthly gain for females, the benefits of the program exceed the costs for both males and females if we assume the gains were sustained for at least 14 months, which does not seem to be a unrealistic assumption. Thus, if we ignore any potential displacement effects to program non-participants, the pilot program proved to be cost-effective. However, possible spillover effects need to be taken into account and may prove be particularly important should the KYEP program be scaled up to be large enough relative to the labor market.

## References

- Adoho, Franck, Shubha Chakravarty, Dala T. Korkoyah Jr., Mattias Lundberg, and Afia Tasneem. 2014. "The Impact of an Adolescent Girls Program: The EPAG Project in Liberia". World Bank Policy Research Working Paper No. 6832.
- Ahmed, A., S. Chakravarty, M. Lundberg and P. Nikolov. 2015. "The Role of Training Programs for Youth Employment in Nepal: Impact Evaluation Report on the Employment Fund", mimeo.
- Aedo, C., and S. Nuñez. 2004. "The Impact of Training Policies in Latin America and the Caribbean: The Case of Programa Joven," Research Network Working Paper #R-483, Inter-American Development Bank.
- Almeida, R. Arbelaez, J., Honorati, M., Kuddo, A., Lohmann, T., Ovadiya, T.M. Pop, M.L. Sanchez Puerta, and M. Weber. 2012b. "Improving Access to Jobs and Earnings Opportunities: The Role of Activation and Graduation Policies in Developing Countries," Social Protection and Labor Discussion Paper No. 1204, World Bank, Washington, D.C.
- Attanasio, O. P., A. D. Kugler., and C. Meghir. 2011. "Subsidizing Vocational Training for Disadvantaged Youth in Developing Countries: Evidence from a Randomized Trial," *American Economic Journal: Applied economics* 3:188-220.
- Betcherman, G., K. Olivas, and A. Dar. 2004. "Impacts of Active Labor Market Programs: New Evidence from Evaluations with Particular Attention to Developing and Transition Countries," SP Discussion Paper 0402, World Bank, Washington, D.C.
- Betcherman, G., M. Godfrey, S. Puerto, F. Rother, and A. Stavreska. 2007. "A Review of Interventions to Support Young Workers: Findings of the Youth Employment Inventory" Social Protection Discussion Paper 0715, World Bank, Washington, D.C.
- Card, D., P. Ibarrran, F. Regalia, D. Rosas-Shady, Y. Soares. 2011. "The Labor Market Impacts of Youth Training in the Dominican Republic". *Journal of Labor Economics*, vol. 29, no. 2.
- Cho, Y., and M. Honorati. 2014. "Entrepreneurship programs in Developing Countries: A Meta Regression Analysis", *Labor Economics Vol. 24*.
- Cho, Y., D. Kalomba, M. Mobarraq, and V. Orozco. 2013. "Gender Differences in the Effects of Vocational Training: Constraints on Women and Drop-Out Behavior". World Bank Policy Research Working Paper 6545.
- Filmer D. and L. Fox. 2014. "Youth Employment in Sub-Saharan Africa". World Bank, Washington, DC.
- Groh M, N. Krishnan, D. McKenzie, and T. Vishwanath. 2012. "The Impact of Training and Wage Subsidy Programs on Female Youth Employment in Jordan," Policy Research Working Paper No. 6141, World Bank, Washington, D.C.

- Honorati, M. and T.P. McArdle. 2013. "The Nuts and Bolts of Designing and Implementing Training Programs in Developing Countries" Social Protection and Labor Discussion paper No. 1304. World Bank, Washington, DC.
- Ibarraran, P., and D. Rosas Shady. 2009. "Evaluating the Impact of Job Training Programs in Latin America: Evidence from IDB Funded Operations," *Journal of Development Effectiveness* 1(2): 195–216.
- Ibarraran, P., L. Ripani, B. Tapoada, J. M. Villa, and B. Garcia. 2014. "Life Skills, Employability and Training for Disadvantaged Youth: Evidence from a Randomized Evaluation Design," IZA Discussion Paper No. 6617.
- Ibarraran, P., J. Kluge, L. Ripani, D. Rosas Shady. 2015. "Experimental evidence on the long term impacts of a youth training program" mimeo.
- Hicks, J.H., M. Kremer, I. Mbiti, E. Miguel. 2011. "Vocational Education Voucher Delivery and Labor Market Returns: A Randomized Evaluation Among Kenyan Youth". Report for Spanish Impact Evaluation Fund (SIEF) Phase II.
- Hirshleifer, S., D. McKenzie, R. Almeida, and C. Ridao-Cano (2014). The impact of vocational training for the unemployed: Experimental evidence from turkey. IZA Discussion Paper No. 8059.
- Honorati, M. "The Impact of Private Sector Internships and Training on Urban Youth in Kenya", World Bank Policy Research Working Paper series, forthcoming.
- Ibarraran, P., and D. Rosas Shady. 2009. "Evaluating the Impact of Job Training Programs in Latin America: Evidence from IDB Funded Operations," *Journal of Development Effectiveness* 1(2): 195–216.
- Ibarraran, P., L. Ripani, B. Tapoada, J. M. Villa, and B. Garcia. 2014. "Life Skills, Employability and Training for Disadvantaged Youth: Evidence from a Randomized Evaluation Design," IZA Journal of labor and Development 3, 1-24.
- Kugler, A., M. Kugler, J.E. Saavedra, and L.O. Herrera. 2015. "Job Training and Formal Education Complementarities: Experimental Evidence," mimeo.
- Maitra, P. and S. Mani. 2014. "Learning and Earning: Evidence from a Randomized Evaluation in India" IZA Discussion Paper No. 8552.
- UNDP. 2013. Kenya's Youth Employment Challenge. Discussion Paper, January 2013.
- Veza, E., B. García, G. Cruces and J. Amendolaggine. 2014. "Youth and Employment Program, Dominican Republic" Impact Evaluation Report for the 2008-2009 Cohorts. Mimeo.
- World Bank. 2010. Kenya Youth Empowerment Project. Project Appraisal Document. Report No: 53090-KE.
- World Bank. 2012. "Kenya at work. Energizing the economy and creating jobs". Kenya Economic Update, December 2012. Edition No. 7.

World Bank. 2013. World Development Report: Jobs. World Bank, Washington, DC.

World Bank. 2014. "*Anchoring High Growth. Can Manufacturing Contribute More?*". Kenya Economic Update, December 2014. Edition No. 11.

**Table 1: Timeline of Activities**

Application process	May 2012
Randomization/ lottery	June 28, 2012
Baseline data collection	July 2012
Program implementation <ul style="list-style-type: none"> <li>○ Life skills training</li> <li>○ Core business training <ul style="list-style-type: none"> <li>▪ Entrepreneurship</li> </ul> </li> <li>○ Sector-specific training</li> <li>○ Work experience</li> </ul>	August 2012-May 2013 August 2012 October-November 2012 November 2012 November-December 2012 January-April 2013
Endline data collection (1)	November-December 2013
Endline data collection (2)	July 2014

**Table 2: Groups assignment and IE Sample Composition**

	Randomly selected to participate in the program (sampling frame)	Randomly selected in the IE sample	Baseline IE sample*	End 1 IE sample*	Endline2 IE sample*
T1	300	300	229	189	187
T1 waitlist	400		84	69	65
T2	1,650	850	686	535	545
T2 waitlist	700		144	121	111
C	950	950	763	560	562
C waitlist	2,952		207	162	148
<b>Total</b>	<b>6,952</b>	<b>2100</b>	<b>2,113</b>	<b>1,636</b>	<b>1,618</b>

Note: \*This includes successfully completed interviews excluding observations that do not comply with the experiment. Specifically 80 observations were removed: 73 youths randomly assigned to treatment were never reached by the program and offered to participate, 6 youths assigned to control group did participate in the program and one survey was not completed successfully.

**Table 3: Final Sample Composition by Gender and Location**

	Endline 1				Endline 2			
	C	T1	T2	TOTAL	C	T1	T2	TOTAL
<i>Nairobi</i>								
Male	262	142	239	643	254	146	246	646
Female	179	116	171	466	182	106	183	471
<i>Mombasa</i>								
Male	160	0	155	315	157	0	150	307
Female	120	0	91	211	116	0	78	194
<b>Total</b>	<b>721</b>	<b>258</b>	<b>656</b>	<b>1,635</b>	<b>709</b>	<b>252</b>	<b>657</b>	<b>1,618</b>



**Table 4a: Attrition Rates by Gender and Assignment Group**

	Nairobi			Mombasa	
	Control	T1	T2	Control	T2
Male	25%	16%	18%	23%	21%
Female	31%	24%	20%	29%	28%

**Table 4.b: Sample Attrition**

	Do not drop out by in endline 2	Drop out by endline 2	Total
Do not drop out by endline 1	1,431	204	1,635
Drop out by endline 1	187	291	478
Total	1,618	495	2,113

**Table 5a: Labor Force Composition**

	Male			Female		
	C	T2	T1	C	T2	T1
Employed	69%	75%	73%	43%	48%	54%
Wage employee	46%	53%	50%	28%	31%	34%
Self-employed	23%	22%	23%	16%	17%	19%
Employed (unpaid)	5%	4%	6%	5%	5%	6%
Unemployed	21%	18%	21%	38%	30%	31%
Inactive	10%	7%	6%	18%	22%	15%
Inactive student	5%	2%	3%	3%	8%	3%
Inactive non-student	5%	5%	3%	15%	14%	12%

Source: Data from endline surveys.

**Table 5b: Descriptive Statistics from the Baseline and Endline Surveys**

	All		Nairobi		Mombasa	
	Before	After	Before	After	Before	After
<b>Labor supply and earnings</b>						
Worked in last 7 days*	0.756	0.668	0.780	0.634	0.703	0.583
Wage employee*	0.482	0.415	0.509	0.433	0.423	0.373
Self-employed*	0.274	0.253	0.271	0.201	0.279	0.210
Paid work in last 7 days		0.588		0.603		0.557
Worked last month*		0.583		0.603		0.549
Looked for wage employment in last month	0.784	0.570	0.794	0.568	0.762	0.577
Months searching for job*	15.031	6.819	14.385	6.626	16.561	7.242
Hours worked per week*	43.125	30.897	44.425	31.529	40.226	29.489
Employed for 20+ hours*	0.698	0.543	0.721	0.561	0.649	0.503
Has contract*	0.253	0.197	0.255	0.217	0.248	0.152
Formal work/Has social insurance benefit*		0.271		0.272	0.000	0.269
Willing to work in next 6 months	0.988	0.932	0.987	0.926	0.990	0.946
Willing to work without social insurance benefit	0.788	0.535	0.805	0.543	0.750	0.515
Reservation wage	16,361	24,024	16,798	25,458	15,388	20,826
Wage worker earnings (monthly)*	7,301	15,150	7,524	16,078	6,610	13,081
Self-employment earnings (monthly)*	1,136	2,748	1,216	2,976	959	2,600
Ever employed since the age of 15*	0.908	0.698	0.911	0.705	0.900	0.685
Previous job was salaried*	0.781	0.564	0.787	0.572	0.766	0.545
Previous job was self-employed*	0.096	0.111	0.090	(0.107)	0.110	(0.120)
<b>Training &amp; education</b>						
Received training in past 12 months	0.292	0.498	0.307	0.515	0.260	0.464
Had an internship in past 12 months	0.291	0.324	0.293	0.319	0.287	0.335
Currently attending school	0.117	0.837	0.122	0.174	0.108	0.141
Primary complete or less	0.128	0.104	0.126	0.096	0.133	0.122
Secondary complete or less	0.532	0.365	0.505	0.342	0.589	0.413
Some college or university*	0.185	0.138	0.198	0.142	0.156	0.127
College or university complete	0.155	0.394	0.170	0.420	0.122	0.338
<b>Demographic characteristics</b>						
Males	0.589	0.586	0.581	0.581	0.595	0.595
Age	24.055	25.408	24.024	25.408	24.119	25.408
Married	0.150	0.234	0.169	0.265	0.112	0.169
Household size	3.780	3.414	3.505	3.182	4.361	3.903
Number of dependents	1.165	1.878	1.216	1.933	1.057	1.762
Has children	0.228	0.329	0.256	0.384	0.169	0.213
N. of children conditional on having children	1.349	1.861	1.351	1.967	1.341	1.455
Moved from home to new location	0.448	0.306	0.473	0.319	0.395	0.279
Lived outside Nairobi	0.560		0.674		0.319	
<b>Savings and assets</b>						
Has Savings	0.464	0.619	0.454	0.629	0.483	0.597
Has bank account	0.461	0.539	0.484	0.555	0.413	0.504

Note: variables labeled with an asterisk (\*) are not fully comparable between the baseline and the endline surveys because of differences in the design of the two surveys.

**Table 6: Baseline Balance by Assignment Groups**

	Control	T1	Difference	T2	Difference
	(i)	(ii)	(ii)-(i)	(iii)	(iii)-(i)
<b>Labor Supply and Earnings</b>					
Worked in previous 7 days	0.753 (0.010)	0.745 (0.024)	-0.007 (0.033)	0.763 (0.007)	0.010 (0.015)
Wage employee	0.484 (0.012)	0.500 (0.011)	0.017 (0.019)	0.474 (0.013)	(0.010) (0.025)
Self-employed	0.269 (0.019)	0.245 (0.032)	-0.024 (0.049)	0.290 (0.013)	0.020 (0.031)
Looked for wage employment in previous month	0.788 (0.014)	0.750 (0.029)	(0.038) (0.041)	0.794 (0.008)	0.006 (0.020)
Months searching for job	14.894 (0.467)	17.983 (1.200)	3.090 (1.457)*	14.066 (0.516)	-0.828 (0.880)
Hours worked per day	6.164 (0.104)	6.178 (0.233)	0.014 (0.296)	6.150 (0.106)	(0.014) (0.191)
Has contract	0.263 (0.013)	0.239 (0.023)	-0.024 (0.033)	0.248 (0.010)	-0.015 (0.021)
Willing to work in next 6 months	0.994 (0.002)	0.984 (0.008)	-0.010 (0.009)	0.983 (0.003)	-0.011 (0.004)**
Willing to work informally/without social insurance benefit	0.775 (0.013)	0.806 (0.023)	0.031 (0.031)	0.795 (0.013)	0.020 (0.024)
Reservation wage	16,447 (276.425)	16,530 (311.146)	83 (532.605)	16,203 (239.817)	-244 (506.435)
Monthly wage (net payment after tax and contributions)	7,512 (227.915)	7,227 (484.126)	-285 (621.636)	7,101 (231.384)	-411 (423.320)
Self-employment earnings (monthly)	1,163 (129.923)	849 (177.019)	-313 (269.108)	1,218 (119.371)	55 (241.408)
Ever employed since the age of 15	0.895 (0.010)	0.921 (0.012)	0.026 (0.021)	0.917 (0.008)	0.021 (0.018)
Previous job was salaried	0.771 (0.013)	0.790 (0.022)	0.020 (0.030)	0.788 (0.013)	0.017 (0.025)
Previous job was self-employed	0.093 (0.005)	0.095 (0.017)	0.002 (0.018)	0.100 (0.008)	0.007 (0.012)
<b>Training and Education</b>					
Received training in previous 12 months	0.288 (0.010)	0.256 (0.040)	-0.032 (0.041)	0.312 (0.020)	0.024 (0.028)
Had an internship	0.289 (0.011)	0.293 (0.031)	0.005 (0.037)	0.293 (0.013)	0.004 (0.021)
Previous KEPSA applicant	0.117 (0.007)	0.091 (0.018)	-0.026 (0.022)	0.118 (0.008)	0.001 (0.014)
Currently attending school	0.120 (0.008)	0.099 (0.013)	-0.020 (0.019)	0.122 (0.008)	0.003 (0.016)
Ever had to withdraw from school	0.508 (0.016)	0.487 (0.019)	(0.020) (0.030)	0.499 (0.015)	(0.009) (0.030)
Years of education*	13.632 (0.056)	13.835 (0.116)	0.203 (0.142)	13.543 (0.067)	-0.089 (0.115)
Primary complete or less	0.141 (0.010)	0.115 (0.017)	(0.026) (0.027)	0.120 (0.006)	(0.021) (0.015)
Secondary complete or less	0.526 (0.014)	0.499 (0.019)	-0.028 (0.030)	0.552 (0.013)	0.025 (0.026)
Some college or university	0.180 (0.012)	0.189 (0.008)	0.009 (0.013)	0.188 (0.014)	0.008 (0.026)
College or university complete	0.153 (0.009)	0.197 (0.015)	0.044 (0.016)**	0.140 (0.013)	(0.012) (0.021)
Passed KCPE exam	0.823 (0.014)	0.782 (0.031)	(0.041) (0.040)	0.774 (0.014)	(0.049) (0.026)*
Passed KCSE exam (at least C+ grade)	0.298 (0.007)	0.298 (0.024)	0.000 (0.021)	0.291 (0.015)	-0.007 (0.021)

<b>Demographic Characteristics</b>					
Males	0.590	0.575	-0.015	0.593	0.003
	(0.004)	(0.009)	(0.012)	(0.004)	(0.008)
Age	24.120	24.308	0.188	23.883	-0.237
	(0.093)	(0.069)	(0.127)	(0.101)	(0.193)
Married	0.145	0.228	0.083	0.126	(0.020)
	(0.010)	(0.024)	(0.027)**	(0.014)	(0.022)
Catholic	0.265	0.287	0.022	0.296	0.031
	(0.009)	(0.022)	(0.028)	(0.009)	(0.015)*
Protestant	0.597	0.584	-0.013	0.591	-0.006
	(0.013)	(0.026)	(0.033)	(0.014)	(0.024)
Muslim	0.134	0.125	(0.009)	0.109	(0.025)
	(0.007)	(0.006)	(0.009)	(0.008)	(0.015)
Mother with primary complete or less	0.486	0.442	(0.043)	0.480	(0.006)
	(0.010)	(0.035)	(0.037)	(0.017)	(0.023)
Mother with secondary complete or less	0.345	0.369	0.024	0.337	-0.008
	(0.013)	(0.028)	(0.033)	(0.016)	(0.028)
Mother with incomplete or complete college	0.170	0.189	0.019	0.183	0.014
	(0.006)	(0.010)	(0.013)	(0.006)	(0.011)
Father with primary complete or less	0.366	0.333	(0.033)	0.360	(0.007)
	(0.013)	(0.032)	(0.042)	(0.011)	(0.020)
Father with secondary complete or less	0.338	0.324	-0.014	0.341	0.003
	(0.019)	(0.048)	(0.064)	(0.012)	(0.027)
Father with incomplete or complete college	0.296	0.343	0.047	0.300	0.004
	(0.008)	(0.034)	(0.038)	(0.013)	(0.017)
Mother alive	0.838	0.835	(0.003)	0.847	0.009
	(0.013)	(0.029)	(0.039)	(0.009)	(0.020)
Father alive	0.678	0.675	(0.002)	0.691	0.013
	(0.014)	(0.013)	(0.020)	(0.016)	(0.029)
Lives with mother	0.298	0.298	0.000	0.313	0.015
	(0.012)	(0.018)	(0.026)	(0.012)	(0.023)
Lives with father	0.199	0.181	-0.018	0.211	0.012
	(0.012)	(0.023)	(0.023)	(0.017)	(0.028)
Household size	3.782	3.712	-0.070	3.806	0.024
	(0.045)	(0.143)	(0.145)	(0.079)	(0.114)
Number of dependents	1.095	1.358	0.263	1.166	0.071
	(0.057)	(0.124)	(0.174)	(0.036)	(0.085)
Has children	0.224	0.266	0.042	0.217	-0.007
	(0.016)	(0.021)	(0.030)	(0.017)	(0.033)
No. of children conditional on having children	1.347	1.442	0.095	1.299	-0.048
	(0.037)	(0.037)	(0.059)	(0.043)	(0.077)
Moved from home to new location	0.447	0.425	(0.023)	0.459	0.012
	(0.012)	(0.025)	(0.034)	(0.011)	(0.022)
Lived outside Nairobi	0.568	0.550	-0.017	0.556	-0.012
	(0.015)	(0.025)	(0.036)	(0.014)	(0.027)
<b>Savings and Assets</b>					
Has savings	0.459	0.473	0.014	0.465	0.007
	(0.012)	(0.016)	(0.024)	(0.012)	(0.023)
Has bank account	0.443	0.510	0.067	0.462	0.019
	(0.011)	(0.017)	(0.021)***	(0.012)	(0.022)
Has a loan	0.283	0.277	(0.005)	0.327	0.044
	(0.013)	(0.028)	(0.032)	(0.017)	(0.028)
Currently rents dwelling	0.751	0.778	0.027	0.773	0.022
	(0.014)	(0.024)	(0.028)	(0.018)	(0.030)
Has a mobile phone	0.960	0.954	(0.005)	0.973	0.013
	(0.007)	(0.006)	(0.010)	(0.008)	(0.015)
House has electricity	0.849	0.866	0.016	0.831	(0.018)
	(0.005)	(0.007)	(0.009)	(0.006)	(0.010)
House has a TV	0.714	0.736	0.022	0.697	(0.017)
	(0.013)	(0.012)	(0.021)	(0.012)	(0.025)
House has piped water	0.576	0.555	-0.021	0.544	-0.032
	(0.014)	(0.025)	(0.037)	(0.010)	(0.023)
Household expenditure	14,155	13,643	(512)	13,616	(539)
	(383.891)	(604.265)	(854.788)	(374.437)	(725.069)

<b>Health</b>					
Has health insurance	0.258	0.293	0.035	0.244	-0.014
	(0.012)	(0.030)	(0.039)	(0.011)	(0.020)
Smoker	0.016	0.025	0.009	0.023	0.006
	(0.004)	(0.013)	(0.016)	(0.002)	(0.004)
Drinks	0.259	0.240	-0.018	0.241	-0.017
	(0.009)	(0.011)	(0.016)	(0.009)	(0.018)

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**Table 7a: Program Take-up by Treatment and Control Group and Location**

	Total						Nairobi						Mombasa		
	T1			T2			T1			T2			T2		
	Total	Complied	Share	Total	Complied	Share	Total	Complied	Share	Total	Compliec	Share	Total	Complied	Share
<b>A Overall</b>															
Contacted	252	252	1.000	657	657	1.000	252	252	1.000	429	429	1.000	228	228	1.000
Attended LST	252	231	0.917	657	590	0.898	252	231	0.917	429	379	0.883	228	211	0.925
Completed LST	252	200	0.794	657	503	0.766	252	200	0.794	429	312	0.727	228	191	0.838
Interviewed and placed				657	415	0.632				429	262	0.611	228	153	0.671
Attended core business T				657	390	0.594				429	242	0.564	228	148	0.649
Attended sector specific T				657	372	0.566				429	225	0.524	228	147	0.645
Attended entrepreneurship T				657	248	0.377				429	145	0.338	228	103	0.452
Internship completed				657	318	0.484				429	196	0.457	228	122	0.535
<b>B Conditional on being selected by employers (placed)</b>															
Attended core business T				415	390	0.940				262	242	0.924	153	148	0.967
Attended sector specific T				415	372	0.896				262	225	0.859	153	147	0.961
Attended entrepreneurship T				415	248	0.598				262	145	0.553	153	103	0.673
Internship completed				415	318	0.766				262	196	0.748	153	122	0.797

**Table 7b: Program Take-up by Sector (as share of interns placed)**

	Energy		Finance		ICT		Manufacturing		MSE (Jua Kali)		Tourism		Total
<b>Total</b>													
Interviewed and placed	34	8.2%	43	10.4%	111	26.7%	34	8.2%	88	21.2%	105	25.3%	413
Attended core business T	31	7.5%	40	9.6%	108	26.0%	32	7.7%	82	19.8%	97	23.4%	389
Attended sector specific T	31	7.5%	36	8.7%	105	25.3%	30	7.2%	77	18.6%	93	22.4%	370
Attended entrepreneurship T	18	4.3%	18	4.3%	66	15.9%	19	4.6%	61	14.7%	66	15.9%	248
Internship completed	25	6.0%	28	6.7%	91	21.9%	26	6.3%	66	15.9%	82	19.8%	317
<b>Nairobi</b>													
Interviewed and placed	15	5.7%	29	11.1%	71	27.1%	20	7.6%	64	24.4%	63	24.0%	261
Attended core business T	13	5.0%	28	10.7%	68	26.0%	18	6.9%	59	22.5%	56	21.4%	241
Attended sector specific T	12	4.6%	24	9.2%	65	24.8%	16	6.1%	55	21.0%	53	20.2%	224
Attended entrepreneurship T	4	1.5%	11	4.2%	38	14.5%	9	3.4%	45	17.2%	38	14.5%	145
Internship completed	11	4.2%	17	6.5%	57	21.8%	16	6.1%	47	17.9%	48	18.3%	195
<b>Mombasa</b>													
Interviewed and placed	19	12.4%	14	9.2%	40	26.1%	14	9.2%	24	15.7%	42	27.5%	152
Attended core business T	18	11.8%	12	7.8%	40	26.1%	14	9.2%	23	15.0%	41	26.8%	148
Attended sector specific T	19	12.4%	12	7.8%	40	26.1%	14	9.2%	22	14.4%	40	26.1%	146
Attended entrepreneurship T	14	9.2%	7	4.6%	28	18.3%	10	6.5%	16	10.5%	28	18.3%	103
Internship completed	14	9.2%	11	7.2%	34	22.2%	10	6.5%	19	12.4%	34	22.2%	122

**Table 8: Probability of Attrition by Treatment and Control Groups**

	Total				Nairobi				Mombasa			
	Attrition to endline 1		Attrition to endline 2		Attrition to endline1		Attrition to endline 2		Attrition to endline 1		Attrition to endline 2	
	5	6	7	8	1	2	3	4	5	6	7	8
Assigned to treatment 1	-0.088** (0.039)	-0.081** (0.039)	-0.077*** (0.025)	-0.069** (0.029)	-0.093*** (0.035)	-0.089** (0.035)	-0.068*** (0.023)	-0.063** (0.025)				
Assigned to treatment 2	-0.037* (0.023)	-0.035 (0.023)	-0.081*** (0.017)	-0.078*** (0.017)	-0.048*** (0.018)	-0.049*** (0.018)	-0.061*** (0.016)	-0.060*** (0.016)	-0.066** (0.030)	-0.067** (0.032)	-0.027 (0.024)	-0.021 (0.028)
Baseline characteristics	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Observation	2,113	2,113	2,113	2,113	1,445	1,445	1,445	1,445	668	668	668	668

Note: Standard errors marked by asterisks (\*, \*\*, \*\*\*) indicate significance at the 10, 5, and 1 percent levels respectively.

**Table 9: Lee Bounds on Training and Internship Program Treatment Effects  
(dependent variable = being employed in previous 7 days)**

	Total		Nairobi		Mombasa	
	Male	Female	Male	Female	Male	Female
Trimming proportion	0.06	0.10	0.06	0.11	0.03	0.02
N. obs (T2+C) at endline 2	814	559	500	365	307	194
N. obs trimmed	47	56	31	40	9	4
<i>Dependent variable: Employed</i>						
ITT estimate	0.066* (0.039)	0.042 (0.032)	0.029 (0.044)	0.060 (0.041)	0.129*** (0.031)	0.006 (0.042)
Lower Lee bound	0.051 (0.034)	-0.012 (0.051)	0.011 (0.041)	-0.015 (0.065)	0.116** (0.056)	-0.005 (0.085)
Upper Lee bound	0.112*** (0.042)	0.101** (0.050)	0.092* (0.053)	0.145** (0.064)	0.144** (0.068)	0.019 (0.082)

Note: Standard errors marked by asterisks (\*, \*\*, \*\*\*) indicate significance at the 10, 5, and 1 percent levels respectively.

**Table 10: Impact of Training and Internships on Employment Outcomes**

	Worked in last 7 days	Worked last month	Paid work	Wage worker	Self- employed	Hours worked per week	Employed for 20+ hours	Has a contract	Job has social insurance benefits	Tenure (months)	Monthly earnings (wage employees)	Monthly earnings (self- employed)
<b>Panel A: Male</b>												
ITT	0.065*	0.070**	0.069*	0.072*	-0.006	3.130**	0.043*	0.046*	-0.014	0.285	3,108	-656
	(0.038)	(0.032)	(0.040)	(0.037)	(0.039)	(1.231)	(0.024)	(0.027)	(0.041)	(0.903)	3,560	858
Lower Lee bound	0.051	0.051	0.052	0.048	-0.057	0.282	0.020	0.006	-0.051	-2.715**	-8,787	-2,667
	(0.034)	(0.035)	(0.035)	(0.040)	(0.041)	(2.489)	(0.041)	(0.040)	(0.042)	(1.077)	3,860	862
Upper Lee bound	0.112***	0.112***	0.113***	0.109***	0.003	5.183**	0.080**	0.067**	0.010	0.472	5,602	-374
	(0.042)	(0.042)	(0.042)	(0.041)	(0.031)	(2.151)	(0.039)	(0.031)	(0.036)	(1.071)	4,166	749
ATT (placed)	0.108*	0.115**	0.114*	0.118**	-0.010	5.151***	0.070*	0.076*	-0.023	0.469	5,116	-1,080
	(0.058)	(0.049)	(0.061)	(0.056)	(0.060)	(1.878)	(0.037)	(0.042)	(0.065)	(1.403)	5,485	1,342
ATT (completed)	0.142*	0.152**	0.151*	0.156**	-0.013	6.815***	0.093*	0.101*	-0.030	0.621	6,768	-1,428
	(0.076)	(0.064)	(0.080)	(0.075)	(0.080)	(2.438)	(0.049)	(0.057)	(0.086)	(1.851)	7,212	1,792
Control mean	0.69	0.64	0.65	0.46	0.23	23.03	0.41	0.20	0.33	10.94	19,278	4,132
Number of observations	808	808	808	808	808	808	808	808	808	808	808	808
<b>Panel B: Female</b>												
ITT	0.045*	0.042**	0.045***	0.029	0.016	2.199	0.033	0.046	-0.005	0.553	5,035.457*	201
	(0.026)	(0.020)	(0.016)	(0.042)	(0.022)	(2.410)	(0.040)	(0.033)	(0.022)	(1.072)	(2674)	(238)
Lower Lee bound	-0.012	-0.020	-0.014	-0.043	-0.082	-3.566	-0.042	-0.040	-0.097*	-2.220***	-3,311**	-1,135.464***
	(0.051)	(0.052)	(0.052)	(0.053)	(0.052)	(2.994)	(0.053)	(0.051)	(0.053)	(0.774)	(1346)	(315)
Upper Lee bound	0.101**	0.093*	0.099**	0.070	0.031	4.307*	0.071*	0.073**	0.016	1.267	6,443**	246.157
	(0.050)	(0.050)	(0.050)	(0.044)	(0.034)	(2.348)	(0.042)	(0.033)	(0.037)	(1.016)	(2592)	(423)
ATT (placed)	0.067*	0.063**	0.067***	0.044	0.024	3.271	0.049	0.069	-0.007	0.823	7,489**	298
	(0.037)	(0.028)	(0.023)	(0.058)	(0.030)	(3.360)	(0.055)	(0.047)	(0.031)	(1.490)	(3678)	(331)
ATT (completed)	0.087*	0.081**	0.086***	0.056	0.031	4.203	0.063	0.089	-0.009	1.057	9,623.228*	383.241
	(0.050)	(0.040)	(0.032)	(0.078)	(0.037)	(4.507)	(0.074)	(0.064)	(0.040)	(1.938)	(4,942.472)	(413.402)
Control mean	0.43	0.42	0.41	0.28	0.16	14.23	0.24	0.12	0.21	8.76	5,654	1,252
Number of observations	558	558	558	558	558	558	558	558	558	558	558	558

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Strata fixed effects included. Regressions control for baseline characteristics. Baseline characteristics include age, marital status, education attainment, employment, wage earnings, self-employment earnings, having a contract, hours worked per day. ATT estimates use "placed in internships" and "internship completed" as instruments in the first stage (not reported) respectively.



**Table 10: Impact of Training and Internship on Employment Outcomes (continued)**

**Panel C: Mombasa**

	Worked in last 7 days	Worked last month	Paid work	Wage worker	Self- employed	Hours worked per week	Employed for 20+ hours	Has a contract	Job has social insurance benefits)	Tenure (months)	Monthly earnings (wage employees)	Monthly earnings (self- employed)
ITT	0.075** (0.036)	0.073** (0.030)	0.082** (0.038)	0.048 (0.043)	0.027* (0.016)	2.503 (1.537)	0.019 (0.019)	0.026 (0.047)	0.054 (0.037)	1.100 (1.617)	5,840*** (1704)	511 (495)
Lower Lee bound	0.078 (0.048)	0.075 (0.049)	0.085* (0.048)	0.045 (0.052)	0.002 (0.052)	1.912 (3.761)	0.019 (0.052)	0.002 (0.051)	0.048 (0.052)	-0.800 (2.777)	-1,347 (11660)	-794 (1236)
Upper Lee bound	0.109** (0.053)	0.106** (0.053)	0.116** (0.053)	0.076 (0.048)	0.033 (0.039)	4.489* (2.640)	0.049 (0.046)	0.033 (0.034)	0.078* (0.043)	1.394 (1.400)	7,428*** (4206)	638 (748)
ATT (placed)	0.111** (0.050)	0.108** (0.043)	0.121** (0.053)	0.071 (0.058)	0.040* (0.021)	3.698* (2.152)	0.029 (0.025)	0.038 (0.062)	0.080 (0.051)	1.625 (2.169)	9,004*** (2644)	617 (655)
ATT (completed)	0.141** (0.067)	0.137** (0.056)	0.153** (0.071)	0.090 (0.076)	0.051** (0.025)	4.691* (2.737)	0.036 (0.033)	0.048 (0.081)	0.102 (0.064)	2.062 (2.690)	11,424*** (3542)	782 (822)
Control mean	0.54	0.51	0.51	0.34	0.20	18.01	0.31	0.14	0.24	5.68	9,935	2,350
Number of observations	501	501	501	501	501	501	501	501	501	501	501	501

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Strata fixed effects included. Regressions control for baseline characteristics. Baseline characteristics include age, marital status, education attainment, employment, wage earnings, self-employment earnings, having a contract, hours worked per day. ATT estimates use "placed in internships" and "internship completed" as instruments in the first stage (not reported) respectively.

**Table 11: Mean Differences in Employment Outcomes by Sector of Internship or Training**

		N. of interns	Worked in last 7 days	Worked last month	Paid work	Wage worker	Self- employed	Hours worked per week	Employed for 20+ hours	Has a contract	Job has social insurance benefits	Tenure (months)	Monthly earnings (wage employees)	Monthly earnings (self- employed)
<b>Panel A: Male</b>														
Control mean			0.688	0.643	0.655	0.456	0.233	23.028	0.405	0.197	0.326	7.451	19,278	4,132
ENERGY	29	0.161** (0.078)	0.108 (0.129)	0.155* (0.079)	0.176*** (0.065)	-0.015 (0.082)	12.117*** (4.074)	0.180** (0.073)	0.111 (0.123)	0.197* (0.106)	1.516 (2.164)	4,489.659 (8,548.106)	-1,238.101 (1,773.588)	
FINANCE	25	0.138** (0.060)	0.143*** (0.044)	0.095 (0.091)	0.205*** (0.055)	-0.068*** (0.015)	9.399* (5.490)	0.174*** (0.050)	0.145*** (0.054)	0.031 (0.057)	-0.314 (2.315)	-1,864.844 (4,031.849)	1,318.356 (2,064.977)	
ICT	70	0.006 (0.037)	0.021 (0.041)	0.000 (0.049)	-0.005 (0.062)	0.011 (0.081)	-1.270 (1.839)	-0.018 (0.055)	0.001 (0.105)	-0.121*** (0.027)	-2.245* (1.330)	-9,397.675*** (1,887.249)	-98.227 (2,232.186)	
MANUFACTURING	20	0.052 (0.102)	0.096 (0.098)	0.084 (0.106)	0.126 (0.106)	-0.074 (0.088)	6.807 (7.438)	0.070 (0.109)	0.083 (0.084)	-0.076 (0.054)	-1.230 (3.521)	17,924.292 (13,309.632)	-2,258.424 (1,501.771)	
MSE (Jua Kali)	44	0.124** (0.053)	0.104 (0.078)	0.154*** (0.044)	0.007 (0.079)	0.117*** (0.041)	-0.983 (6.849)	-0.013 (0.097)	-0.034 (0.088)	-0.065 (0.078)	0.358 (2.419)	6,510.437 (5,221.224)	933.847 (1,334.524)	
TOURISM	50	-0.020 (0.055)	-0.013 (0.071)	0.017 (0.055)	0.177*** (0.038)	-0.197*** (0.047)	5.977*** (0.681)	0.110*** (0.028)	-0.014 (0.050)	0.094** (0.046)	-2.056** (0.914)	14,206.256 (16,196.450)	-2,870.149*** (399.059)	
Not placed	153	0.080 (0.055)	0.088** (0.042)	0.075 (0.059)	0.047 (0.056)	0.033 (0.046)	2.773 (2.056)	0.024 (0.044)	0.081*** (0.022)	-0.020 (0.069)	1.533 (0.999)	3,866.565 (2,794.773)	-384.853 (1,128.607)	
<b>Panel A: Female</b>														
Control mean			0.435	0.418	0.408	0.277	0.158	14.230	0.243	0.120	0.205	3.812	5,654	1,252
ENERGY	5	0.442*** (0.058)	0.461*** (0.056)	0.472*** (0.058)	0.604*** (0.043)	-0.162*** (0.018)	21.052*** (5.746)	0.436*** (0.151)	0.324 (0.258)	0.182 (0.322)	3.473* (2.062)	13,361.226** (5,887.960)	-1,649.330*** (338.926)	
FINANCE	18	0.095 (0.086)	0.112 (0.090)	0.013 (0.101)	0.050 (0.099)	0.045 (0.043)	4.053 (5.522)	0.082 (0.099)	0.128** (0.061)	-0.097* (0.050)	-2.035** (0.854)	6,558.961 (5,741.480)	-381.828 (446.479)	
ICT	41	-0.060 (0.078)	-0.068 (0.062)	-0.033 (0.069)	-0.041 (0.064)	-0.020 (0.025)	-2.216 (2.641)	-0.037 (0.055)	-0.011 (0.058)	-0.034 (0.044)	-2.216*** (0.849)	-2,918.532* (1,721.165)	711.596 (954.201)	
MANUFACTURING	14	-0.023 (0.177)	-0.077 (0.159)	-0.070 (0.158)	-0.019 (0.121)	-0.004 (0.056)	0.479 (7.344)	0.015 (0.119)	-0.007 (0.072)	-0.002 (0.126)	-1.315 (2.177)	192.384 (7,875.789)	-1,197.364*** (318.592)	
MSE (Jua Kali)	44	0.021 (0.089)	0.037 (0.091)	0.024 (0.070)	0.006 (0.073)	0.015 (0.062)	0.226 (4.142)	-0.007 (0.074)	0.041 (0.076)	-0.020 (0.030)	2.053 (2.133)	7,644.216 (5,001.849)	-192.610 (361.217)	
TOURISM	55	0.061*** (0.021)	0.061*** (0.021)	0.072*** (0.016)	0.061* (0.037)	0.000 (0.026)	3.362*** (0.903)	0.072** (0.033)	0.034 (0.049)	0.051 (0.037)	0.426 (2.099)	11,642.802*** (4,240.714)	-155.864 (433.445)	
Not placed	89	0.065 (0.068)	0.049 (0.038)	0.070 (0.064)	0.017 (0.060)	0.048 (0.071)	1.488 (3.318)	0.014 (0.055)	0.049 (0.057)	-0.012 (0.032)	1.928 (1.847)	2,832.054 (3,750.999)	493.468 (910.225)	

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Strata fixed effects included. Table shows the difference in means between control and youth assigned to core , sector specific training by the sector where the internship firm operates. "Not placed" refer to youth assigned to the program who were not selected by employers to participate in the internships, core and sector specific training.

**Table 12: Impact of Training and Internship on Saving Behavior and Further Skills Development**

	Received training in past 12 months	Had an internship	Some college, diplomas	Has savings	Has a bank account	Risk averse
<b>Panel A: Male</b>						
ITT	0.472*** (0.033)	0.452*** (0.024)	0.020 (0.032)	0.014 (0.014)	0.039** (0.017)	-0.038** (0.017)
Lower Lee bound	0.471*** (0.035)	0.452*** (0.036)	-0.011 (0.042)	-0.012 (0.039)	-0.001 (0.041)	-0.051 (0.034)
Upper Lee bound	0.539*** (0.045)	0.519*** (0.040)	0.057 (0.044)	0.056 (0.045)	0.067 (0.045)	0.017 (0.044)
ATT (placed)	0.779*** (0.043)	0.746*** (0.027)	0.032 (0.053)	0.024 (0.023)	0.065** (0.027)	-0.062** (0.028)
ATT (completed)	1.025*** (0.065)	0.982*** (0.040)	0.043 (0.070)	0.031 (0.030)	0.086** (0.035)	-0.082** (0.036)
Control mean	0.27	0.12	0.53	0.67	0.58	0.79
Number os observations	948	948	948	948	948	948
<b>Panel B: Female</b>						
ITT	0.434*** (0.035)	0.465*** (0.032)	0.024 (0.031)	0.075*** (0.025)	0.133*** (0.029)	-0.024 (0.037)
Lower Lee bound	0.431*** (0.046)	0.435*** (0.047)	-0.040 (0.056)	0.014 (0.054)	0.094* (0.055)	-0.055 (0.042)
Upper Lee bound	0.570*** (0.058)	0.574*** (0.054)	0.099* (0.057)	0.153*** (0.059)	0.232*** (0.057)	0.084 (0.059)
ATT (placed)	0.634*** (0.037)	0.680*** (0.039)	0.035 (0.044)	0.109*** (0.034)	0.194*** (0.040)	-0.035 (0.054)
ATT (completed)	0.795*** (0.035)	0.853*** (0.012)	0.044 (0.057)	0.137*** (0.044)	0.244*** (0.055)	-0.043 (0.069)
Control mean	0.26	0.13	0.48	0.50	0.38	0.80
Number os observations	687	687	687	687	687	687

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Strata fixed effects included. Regressions control for baseline characteristics. Baseline characteristics include age, marital status, education attainment, employment, wage earnings, self-employment earnings, having a contract, hours worked per day. ATT estimates use "placed in internships" and "internship completed" as instruments in the first stage (not reported) respectively.

**Table 13: Differential Intention-to-treat Impact of Training and Internship Program by Education and Age**

Assignment to treatment interacted with:	Worked in last 7 days	Paid work	Wage worker	Self-employed	Hours worked per week	Employed for 20+ hours	Tenure (months)	Has a contract	Monthly earnings (wage employees)	Monthly earnings (self-employed)
<b>Panel A: Male</b>										
Primary	0.085 (0.103)	0.106 (0.096)	-0.027 (0.101)	0.111*** (0.042)	0.757 (6.348)	-0.064 (0.107)	6.411 (4.108)	-0.071 (0.075)	-797 (9886)	2,488 (1905)
Secondary	-0.075 (0.050)	-0.067 (0.049)	-0.065 (0.047)	-0.011 (0.026)	-4.575 (2.960)	-0.077 (0.052)	-4.087* (2.454)	-0.019 (0.043)	1,358 (7774)	-1,327 (1590)
Tertiary	0.046 (0.035)	0.027 (0.038)	0.084*** (0.018)	-0.038 (0.038)	4.762*** (1.656)	0.114*** (0.026)	1.679 (3.143)	0.053 (0.052)	-1,157 (9565)	363 (1323)
Age	-0.004 (0.009)	-0.005 (0.007)	0.002 (0.011)	-0.006 (0.008)	0.490 (0.414)	0.003 (0.009)	-0.325* (0.192)	0.009 (0.009)	1,294 (1036)	-258 (288)
Older (>24)	-0.024 (0.045)	-0.044 (0.041)	0.011 (0.072)	-0.036 (0.050)	0.793 (3.362)	0.022 (0.068)	-0.666 (1.693)	0.062 (0.058)	12,604*** (4204)	-1,969 (1365)
Control mean: primary	0.713	0.704	0.417	0.296	22.146	0.352	7.491	0.093	16,009	4,509
Control mean: secondary	0.678	0.641	0.454	0.224	22.503	0.380	7.685	0.164	20,893	3,719
Control mean: tertiary	0.794	0.764	0.583	0.212	29.408	0.531	8.077	0.380	20,919	4,010
Oler men	0.779	0.754	0.527	0.253	27.322	0.473	8.921	0.285	20,483	4,530
Sample size	952	952	952	952	952	952	952	952	952	952
<b>Panel B: Mombasa</b>										
Male	0.088** (0.043)	0.096** (0.040)	0.097** (0.049)	-0.008 (0.033)	2.238 (2.067)	0.015 (0.034)	0.022 (3.648)	-0.002 (0.094)	3,898 (3260)	193 (865)
Primary	0.248*** (0.055)	0.204*** (0.067)	0.181*** (0.060)	0.067*** (0.009)	12.550*** (2.152)	0.129*** (0.037)	11.789*** (1.776)	-0.052 (0.072)	9,096*** (2867)	1,021 (1634)
Secondary	-0.035 (0.102)	-0.028 (0.094)	-0.058 (0.102)	0.023** (0.012)	-8.118* (4.654)	-0.099 (0.074)	-6.307*** (1.423)	0.106* (0.055)	1,786 (4657)	-758 (1855)
Tertiary	-0.099 (0.105)	-0.082 (0.087)	-0.034 (0.109)	-0.065** (0.032)	2.591 (5.129)	0.045 (0.094)	0.856 (2.380)	-0.098 (0.073)	-7,298* (3756)	327 (1553)
Age	0.006 (0.015)	0.010 (0.015)	0.009 (0.017)	-0.002 (0.017)	0.963 (0.855)	0.009 (0.013)	0.178 (0.306)	0.001 (0.011)	-358 (1318)	252 (458)
Older (>24)	-0.039 (0.113)	-0.023 (0.096)	0.011 (0.133)	-0.049 (0.093)	3.062 (6.909)	0.052 (0.112)	1.394 (2.751)	0.004 (0.097)	3,860 (9117)	-426 (2498)
Control mean: primary	0.627	0.612	0.299	0.328	16.642	0.239	6.478	0.090	17,527	3,454
Control mean: secondary	0.554	0.526	0.366	0.188	18.332	0.310	6.617	0.132	14,800	2,119
Control mean: tertiary	0.619	0.592	0.422	0.197	23.917	0.395	5.340	0.218	7,696	3,150
Oler men	0.628	0.599	0.380	0.248	20.481	0.339	6.818	0.165	12,103	3,220
Sample size	501	501	501	501	501	501	501	501	501	501

Note: Robust standard error in parenthesis. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Strata fixed effects included. Each row shows the coefficient and standard errors of the interaction term between the assignment to treatment dummy and the variable in the row; regressions include the level of the interacted variable and baseline characteristics (age, marital status, education attainment, employment, wage earnings, self-employment earnings, having a contract, hours worked per day).

**Table 14: Costs per Participant**

	KES	US\$
<u>Delivery of training</u>		
Life skills training	5,972	71
Core business training	12,446	148
Entrepreneurship training	5,836	69
Sector-specific training	16,040	190
<u>Delivery of internship</u>		
Stipends to interns	34,639	411
Compensation to employers	9,227	109
<b>Total cost per participant</b>	<b>84,160</b>	<b>999</b>
<u>Administrative costs</u>		
Staff costs	8,472	101
Operating overhead costs	4,479	53
<b>Total costs per participant (including admin.)</b>	<b>97,112</b>	<b>1,152</b>

*Note:* Numbers refer to total costs for both Nairobi and Mombasa. Participants are those who attended at least one day of training. Per participant stipends and compensation of employers' costs are calculated based on the number of youths who were placed in internships. Per participant staff cost and overhead are calculated based on the total number of candidates who confirmed their participation in cycle 2 and attended at least one day of life skills training (2,431).

**Annex Table A.1: Descriptive Statistics by Treatment and Control Groups [from Endline Surveys]**

	C	T1	T2
<b>Labor supply and earnings</b>			
Worked in last 7 days	0.584	0.647	0.644
Wage employee	0.382	0.433	0.443
Self-employed	0.202	0.214	0.201
Looked for wage employment in last month	0.584	0.560	0.560
Hours worked per week	28.91	34.01	31.85
Employed for 20+ hours	0.511	0.579	0.565
Has contract	0.165	0.230	0.218
Formal work/Has social insurance benefit	0.276	0.262	0.269
Willing to work in next 6 months	0.939	0.913	0.932
Willing to work without social insurance benefit	0.543	0.532	0.527
Reservation wage	23,473	25,060	24,221
Wage worker earnings (monthly)	13,667	10,955	18,359
Self-employment earnings (monthly)*	2,946	3,155	2,653
<b>Past employment</b>			
Ever employed since the age of 15	0.681	0.687	0.721
Previous job was salaried	0.556	0.563	0.572
Previous job was self-employed	0.111	0.079	0.123
<b>Number of observations</b>			
<b>Training and education</b>			
Received training in past 12 months	0.262	0.593	0.721
Received literacy/numeracy training in past 12 months	0.104	0.159	0.143
Days of training received	74.000	27.020	80.257
Training is certified	0.534	0.856	0.837
Had an internship	0.121	0.240	0.581
Trained by KEPSA	0.046	0.465	0.634
Currently attending school	0.158	0.190	0.159
Primary complete or less	0.117	0.081	0.099
Secondary complete or less	0.372	0.341	0.366
Some college or university	0.143	0.143	0.130
College or university complete	0.369	0.434	0.405
<b>Demographic characteristics</b>			
Males	0.587	0.550	0.598
Age	25.502	25.708	25.187
Married	0.226	0.302	0.216
Passed KCPE exam	0.825	0.802	0.785
Passed KCSE exam (at least C+ grade)	0.285	0.336	0.281
Household size	3.494	3.264	3.386
Number of dependents	1.904	1.965	1.816
Has children	0.315	0.426	0.306
N. of children conditional on having children	1.868	2.009	1.771
Pregnant	0.131	0.129	0.159
<b>Savings and assets</b>			
Has Savings	0.601	0.628	0.636
Has bank account	0.499	0.558	0.575
Has a loan	0.351	0.411	0.338
Receives social assistance/aid	0.100	0.099	0.084
Currently rents dwelling	0.714	0.775	0.721
Household expenditure	12,988	14,126	13,653
Has health insurance	0.295	0.419	0.343
<b>Number of observations</b>	<b>721</b>	<b>258</b>	<b>656</b>