



## Private Enterprise Development in Low-Income Countries

### Tackling Youth Unemployment through Vocational Training and Apprenticeships

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***This study finds that vocational training and apprenticeships both raise employment of poor Ugandan youth, but vocational training provides general skills that foster mobility and result in higher earnings.***

## Introduction

By 2050, the world's population is expected to increase by 30%, with 83 million people added every year (UN, 2017). The global economy is not generating enough jobs to keep pace with the growing number of labour market entrants. This problem is particularly severe in sub-Saharan Africa, where 60% of the population is below the age of 25, and where 2018 alone is expected to generate one million new unemployed, concentrated among young people trying to enter the labour market (UN, 2017; International Labour Organisation, 2017). Helping such growing masses of young workers find secure employment is thus a key challenge for policy-makers worldwide, particularly in developing countries and sub-Saharan Africa.

Vocational training and apprenticeships are two common policy tools in the fight against youth unemployment. The World Bank invested \$9 billion in 93 such training programs between 2002 and 2012 (Blattman and Ralston, 2015). Despite the popularity of these programs, evidence on their relative effectiveness is limited, especially in the context of developing countries (Card et al., 2015; Blattman and Ralston, 2015; McKenzie, 2017).

Both vocational training and apprenticeships are designed to provide workers with technical skills that can help them get jobs. Vocational training is imparted in-class, while apprenticeships take place in firms, where workers receive on-the-job training. Subsidising vocational training can help poor workers overcome a lack of financial resources that might prevent them from acquiring valuable skills. However, the success of vocational training relies on workers being able to find firms that can hire them. If workers lack the resources or information necessary to effectively look for jobs, or if firms are unable to finance the recruitment and training costs needed to hire a new worker, then subsidised apprenticeships can provide a more direct entry-way into the labour market, by creating an attachment between workers and firms.

In this research note, we report the findings from an evaluation we conducted with the NGO BRAC, to compare the effectiveness of vocational training and apprenticeships in helping a sample of Ugandan youth enter the labour market.

## Context, intervention and data collection

Uganda is an ideal setting for this type of study, as it is the country with the second lowest median age in the world, with 60% of the population aged below 20, and with formal sector youth employment rates that are below 30% (UN, 2017).

As part of the intervention, youth from both urban and rural areas identified as coming from poor households through a poverty assessment conducted by BRAC were randomly assigned to three groups: a first group was offered a vocational training program sponsored by BRAC and consisted of six months of sector-specific in-class training at partner vocational training institutes (VTIs), a second group instead



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was placed in a small firm for a subsidised apprenticeship lasting six months, a third group was held as control.

All the youth participating in the study were either unemployed or underemployed at baseline, but were willing to get trained and to work. For both types of training we focused on sectors common in Uganda and in developing countries more generally, such as welding or hairdressing. Only vocational training provided workers with a certificate.

Our sample includes 1,700 workers and 1,500 small firms, which we tracked in multiple survey rounds over four years. Our surveys included standard measures of labour market outcomes such as employment and earnings, and we also collected information on the skills of workers, both through a novel sector-specific skills test that we designed, as well as by asking workers detailed questions on the tasks they performed on the job. We are able to assess the labour market impacts of vocational training and apprenticeships by comparing the outcomes of the workers assigned to those two treatments, with the outcomes of the workers assigned to the control group.

**Figure 1: Welding apprentices in Kampala**

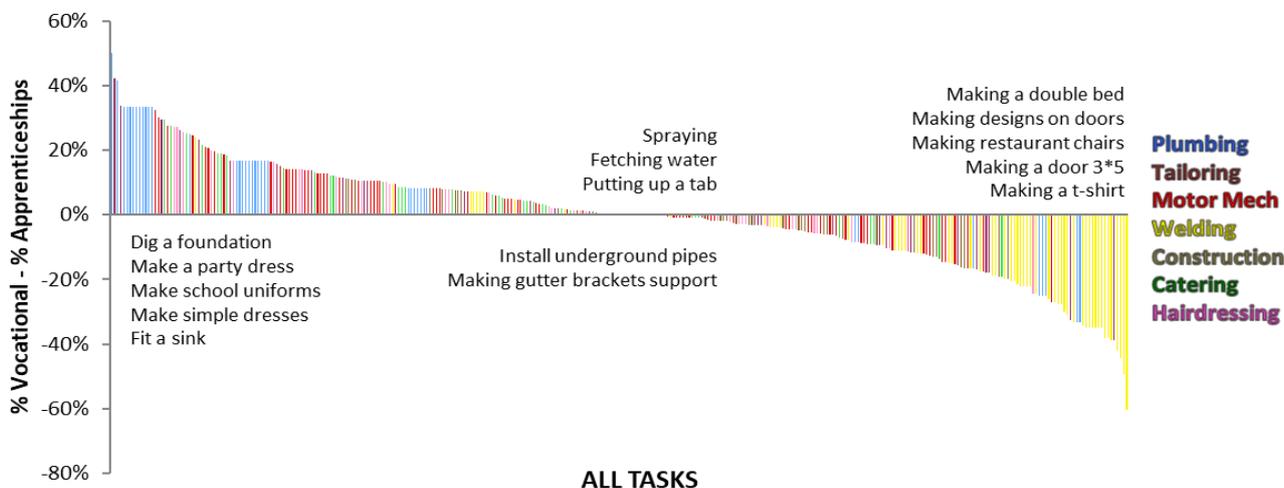


## Results and cost-benefit analysis

We find that both interventions increased skills but whilst apprentices learned firm-specific skills, vocational trainees learned sector-specific skills. In line with this, vocational trainees and apprentices performed substantially different tasks while employed, as shown in Figure 2.

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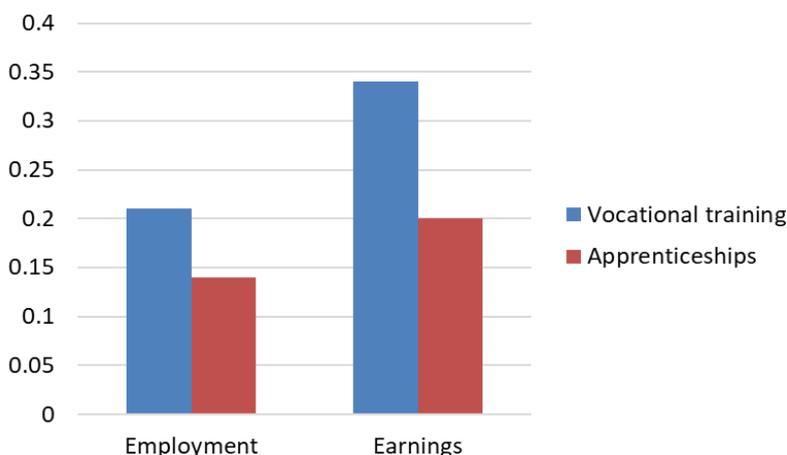
Figure 2: Impacts on Tasks Performed on the Job



Notes: Figure 2 plots the difference in the percentage of workers performing each given task while employed, between workers in the Vocational Training and in the Apprenticeship groups. The x-axis lists all the tasks included in the survey, across the eight sectors considered in the study.

Both interventions led to large increases in employment and earnings but gains were at least 50% larger for vocational trainees. When averaged over the three years post-intervention study period, the gains in employment probability were 21% for vocational trainees and 14% for apprentices, while the increase in monthly earnings was 34% and 20% respectively, as shown in Figure 3.

Figure 3: Impacts on Employment and Earnings



Notes: The Figure reports the estimated percentage increase in probability of employment and total monthly earnings, relative to the level in the control group. Impacts are averaged over the three years post-intervention.

Why was vocational training more successful than apprenticeships? Labour market mobility is an important part of the answer. We use data on the labour market histories of workers in the three years post intervention to show that due to their skills being more transferable, vocational trainees were much more mobile than apprentices: they were more likely to be poached by higher paying firms, and if they fell into unemployment, they were more likely to get back into employment. On the other hand, apprentices learned more firm-specific skills and did not receive a certificate to signal their skills, thus making it more difficult for them to move to better jobs over time.

Both interventions were costly. But can we consider either of them worth it? Performing a cost-benefit analysis reveals that both vocational training and apprenticeships were cost-effective, and would



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pay for themselves in a decade. However, vocational training was more cost-effective. Assuming benefits last over the life-cycle, vocational training had an internal rate of return (IRR) of 21%, while apprenticeships had an IRR of about 10%.

An important consideration is whether our interventions had displacement effects i.e. whether our workers found employment at the expense of other workers not in our study. While we find that apprentices displaced other workers in the firms where they were matched, our design does not allow us to study the displacement effects of vocational training, leaving this an open question. However, even in the presence of full displacement, the interventions may still have led to an improvement in overall productivity, since the workers who were brought into employment were highly motivated and so likely to be more productive than the average unemployed youth. In line with this, although apprenticeships did not cause an increase in firm size, those firms hiring apprentices made higher profits as a result.

### Policy implications

Taken together, our results suggest that both vocational and apprenticeship training can play an important role in fighting youth unemployment and increasing productivity. Vocational training seems particularly promising, since it provides workers with more transferable skills that are valuable to a particular sector as opposed to one particular firm. This can increase the ability of vocational trainees to move across jobs and to take advantage of opportunities in the labour market.

In thinking about the design of future training evaluations, it is important to consider two specific features of our design, which we believe contributed to the success of both interventions in our context:

1. The workers who applied to our program did so voluntarily and so were highly motivated to participate.
2. The VTIs were selected to be of very high quality.

These two points help explain why our estimates of the returns to both programs are large relative to the existing literature.

### Moving Forward...

Looking ahead, our results open up a rich set of policy and research questions on how the market for vocational education may be best organized in these countries, and on the role that certifications can play in this process. For instance, how large is quality dispersion across vocational institutes in developing countries, and are workers aware of such differences in quality when making their choices over which institutes to attend? Also, how important are skills certificates and the reputation of different training institutes in explaining the returns to vocational training? These are important research and policy questions that it would be interesting to explore further in the future.