

# Improving Opportunities for Youth with Subsidized Dual Apprenticeships in Côte d'Ivoire



PHOTO: OFFICE FOR THE COORDINATION OF YOUTH EMPLOYMENT PROGRAMS (BCP-EMPLOI)

In sub-Saharan Africa, wage jobs are rare, and a vast majority of young people are engaged in low-productivity occupations. Many governments attempt to upgrade traditional apprenticeships to help improve youth opportunities for productive employment. There is limited evidence on the direct and indirect effects of these formal apprenticeships. This study evaluated the impacts of an apprenticeship program subsidizing formal apprentices placed in firms and offering them theoretical training.

## Key Findings

Overall, the subsidized dual apprenticeship program successfully expanded youth access to apprenticeship and the number of apprenticeship positions in firms during the program. In parallel, it increased youth earnings and skills four years after the start of the evaluation.

*During the program, 20 months after apprentices were placed in firms:*

- » The program fostered human capital investments among youth. While youth in the program increased participation in formal apprenticeships, they decreased participation in traditional apprenticeships. The net effect was still positive and youth participation in apprenticeship strongly increased.
- » Participating firms had more apprentices compared to the comparison group. While firms where formal apprentices were placed hired fewer traditional apprentices, this substitution effect was relatively small. In the end, there were 0.74 to 0.77 net new apprenticeship positions created per subsidized apprentice.

- » Firms who hosted formal apprentices saw an increase in the number of days worked by apprentices compared to comparison firms. The value of the work performed by apprentices also strongly increased. However, there was no impact on firm profits and revenues.

*Four years after the evaluation started, 18-24 months after the program ended:*

- » Youth who participated in the program had a 15 percent increase in earnings.
- » The average increase in earnings is consistent with gains in productivity—youth were engaged in more complex tasks, including non-routine abstract tasks, a sign that they were able to improve their human capital and technical skills.
- » More youth obtained certification, which suggests that part of the skills acquired were general and transferable.

### RESEARCHERS

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### PARTNERS

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### COUNTRY

Côte d'Ivoire

### TIMELINE

2014 - 2018

### STUDY SAMPLE

1,842 youth, 731 firms

# The Challenge

## A LACK OF OPPORTUNITIES FOR YOUTH TO ACQUIRE NEW SKILLS

Traditional apprenticeships are widespread in Africa, where data suggest that around 20 percent of youth have participated in traditional apprenticeships, but fewer than 5 percent have attended technical and vocational training.<sup>1</sup> Since traditional apprenticeships are one of the main sources of skill acquisition for youth in low- and middle-income countries, many governments attempt to upgrade apprenticeship systems and improve opportunities for skill acquisition. Some formal apprenticeship schemes aim to facilitate access to apprenticeships, for instance through subsidies. Other schemes seek to improve training quality, such as dual apprenticeships combining theoretical and on-the-job training for youth. However, there is little evidence on the effectiveness of such programs on both youth and firms.

In Côte d'Ivoire, employment is concentrated in self-employment, with 46.9 percent of employed individuals in agricultural self-employment and 29.3 percent in non-agricultural self-employment.<sup>2</sup> Many individuals lack opportunities to acquire skills after they have exited the education system.<sup>3</sup> Traditional apprenticeships are common, but do not necessarily provide quality training. In addition, given the substantial opportunity cost of apprenticeship, youth may face financial constraints to access these positions, and firms may not be able to provide training in general skills valued on the labor market.

# The Program

## A SUBSIDIZED DUAL APPRENTICESHIP PROGRAM FOR YOUTH

In 2011, the government of Côte d'Ivoire and the World Bank jointly launched an emergency youth employment and skills development project called *Projet Emploi Jeune et Développement des Compétences* (PEJEDEC). It was designed to improve access to temporary employment and skills development opportunities for youth. It included a formal apprenticeship program that targeted low-skilled youth aged 18 to 24 years old in the main urban areas of the country. The program set up a subsidized dual apprenticeship scheme and was implemented by Agence Nationale de Formation Professionnelle (AGEFOP). Formal apprenticeships lasted one to two years, depending on the occupation. Youth received insurance coverage, work equipment, and a monthly stipend of 30,000 CFA Francs

(approximately US\$54 in 2018 or half the formal minimum wage) to cover meals and transportation costs.

The program placed youth in firms, where they received on-the-job training under the supervision of master craftsmen. Youth were also eligible to receive 180 hours of complementary theoretical training per year. The most popular apprenticeship positions at the time included car or motor mechanic, metal worker, boilermaker, welder, and bricklayer. Apprenticeship counselors regularly visited master craftsmen and apprentices to monitor the relationship and learning. At the end of the apprenticeship, participants could get tested on their practical skills and theoretical knowledge and receive a certificate.

# The Evaluation

## COMPARING THE APPRENTICESHIP PROGRAM TO BUSINESS AS USUAL

The impact evaluation was a partnership between the World Bank, the government of Côte d'Ivoire, and researchers. The objective was to evaluate the impacts of the subsidized dual apprenticeship program on youth employment and earnings, as well as on firms.

The evaluation took place in seven urban areas in the interior of the country. Out of 731 companies that applied to host apprentices, 361 firms were randomly selected to participate. The remaining firms were assigned to the comparison group. Of 1,842 eligible youth who applied to the apprenticeship program, approximately half were randomly selected to participate and were matched to apprenticeship positions offered by firms in the treatment group according to their choice of trade. The other half formed a comparison group and did not receive an apprenticeship position through the program.

About 20 months after formal apprentices were placed in firms, a follow-up phone survey was conducted to measure youth employment status and earnings. The survey also measured firms' workforce, including the hiring of formal and traditional apprenticeships, and estimated potential substitution effects (i.e., whether firms replaced traditional apprentices with formal apprentices). To measure if the program affected the type of apprentices entering firms, data was collected on the profiles of all apprentices who joined or left firms over the course of the study.

A second follow-up survey was collected approximately four years after the start of the evaluation (18-24 months after the end of the program). The follow-up survey focused on estimating impacts on youth employment and earnings after the formal apprenticeships were completed.

## Results

Overall, the subsidized dual apprenticeship scheme successfully expanded youth access to apprenticeship and the number of formal apprentices in firms during the program. It also increased youth skills and earnings 18-24 months after the end of the program.

### **During the program, 20 months after apprentices were placed in firms:**

*Participation in formal apprenticeships:* Over the course of the program, youth participation in all forms of apprenticeships increased by 52.8 percentage points. Youth in the program increased participation in formal apprenticeships by 71.2 percentage points, but decreased participation in traditional apprenticeships, compared to youth who were not in the program. The proportion of youth in the program that participated in traditional apprenticeships fell by 18.5 percentage points (down from 22.5 percent in the comparison group). The net effect on participation was still positive and strong, showing that the program fostered human capital investments among youth.

*Firm Employment:* Formal and traditional apprentices joined and left firms throughout the study period. Twenty months after the program was implemented, results show that there were 0.74 to 0.77 net new apprenticeship positions created per subsidized apprentice. The results suggest that, for each formal apprentice placed in a firm, 0.2 traditional apprentices were displaced. In other words, firms who hired participants from the formal program hired fewer traditional apprentices, although this substitution effect was small.

*Youth Employment and Earnings:* The program had no impact on average earnings for youth 20 months after the start of the program. This illustrates the large opportunity cost of participating in apprenticeship: youth receive earnings substantially lower than earnings they could receive in alternative wage- or self-employment. The subsidy that youth received exactly compensated the average associated loss in labor earnings.

*Certification:* The program led to a substantial increase in human capital investments during the program. The program also led to a 15.1 percentage point increase in youth obtaining training certification, which is noteworthy because it signals that general skills were acquired.

## Conclusion

The results of this evaluation suggest that subsidized dual apprenticeships successfully expanded access to training, while increasing youth skills and earnings four years after the start of the evaluation. A key result is that youth who participated in the program had significantly higher earnings approximately two years after the end of the intervention, which is important as it is rare for training programs to have such impacts on earnings. The average increase in earnings is also consistent with gains in productivity—the findings show that youth were engaged in more complex tasks, including non-routine abstract tasks, a sign that they were able to improve their human capital and technical skills.

*Benefits to firms:* Firms who hosted program apprentices saw an increase in the number of days worked by apprentices by 19 percent more days relative to firms in the comparison group, where apprentices worked a total of 31 days per month. The value of work performed by apprentices increased even more: it was 78 percent higher per month relative to the value of work by apprentices in comparison group firms. However, there were no direct impacts on firm profits and revenues.

### **Four years after the evaluation started, 18-24 months after the program ended:**

*Youth Employment and Earnings:* Four years after the start of the program, youth earnings increased. Youth in the program earned 15 percent more relative to those in the comparison group, earning 62 percent more in apprenticeship and 23 percent more in self-employment. Earnings in wage employment remained stable despite youth being slightly more likely to remain apprentices. Still, earnings increased on average. Since changes in participation and time worked were limited, the results also point to gains in workers' productivity.

*Skill acquisition:* 18-24 months after the end of the program, youth substantially improved their skills, which is consistent with the observed increase in earnings and productivity. Youth assigned to formal apprenticeships were more likely to undertake non-routine analytical tasks by 0.24 standard deviations (SDs) and non-routine interpersonal tasks by 0.08 SDs. An overall index of routine task intensity, which aggregates across the types of tasks performed by individuals, decreased by 0.21 SDs. This shows that youth in the program were involved in a wider range of tasks, and were particularly more likely to be involved in complex, non-routine tasks. Youth in the program were significantly more likely to perform a range of non-routine analytical tasks, including tasks that involved reading, writing, taking measurements, performing math operations, or tasks that required thinking.

On average, the program cost CFA 1,135,030 (approximately US\$2,045) per youth for a 24-month apprenticeship.

The results also confirmed that the program expanded overall access to apprenticeship among youth and increased the number of positions in firms. More youth obtained certification, which suggests that part of the skills acquired were general and transferable.

These results are likely to have broad relevance in developing country contexts where a large number of jobs are concentrated in small informal firms with limited technology and where traditional apprenticeships are common. In such contexts, the study has important policy implications in showing that subsidized dual apprenticeships can foster human capital investments, improve skills and increase earnings for youth.



PHOTO: OFFICE FOR THE COORDINATION OF YOUTH EMPLOYMENT PROGRAMS (BCP-EMPLOI)

## References

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Source: Crépon, Bruno and Patrick Premand, 2019. "Direct and Indirect Effects of Subsidized Dual Apprenticeships". IZA Institute of Labor Economics Discussion Paper No. 12793. <https://ftp.iza.org/dp12793.pdf>

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