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Working Paper

Job Training and Job Search Assistance Policies in Developing Countries

IZA Discussion Papers, No. 16537

Provided in Cooperation with:

IZA – Institute of Labor Economics

Suggested Citation: Carranza, Eliana; McKenzie, David (2023) : Job Training and Job Search Assistance Policies in Developing Countries, IZA Discussion Papers, No. 16537, Institute of Labor Economics (IZA), Bonn

This Version is available at:

<https://hdl.handle.net/10419/282664>

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DISCUSSION PAPER SERIES

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Policies in Developing Countries**

Eliana Carranza
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OCTOBER 2023

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ISSN: 2365-9793

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ABSTRACT

Job Training and Job Search Assistance Policies in Developing Countries*

Governments around the developing world face pressure to intervene actively to help jobseekers find employment. Two of the most common policies used are job training, based on the idea that many of those seeking jobs lack the skills employers want, and job search assistance, based on the possibility that even if workers have the skills demanded, search and matching frictions make it difficult for workers to be hired in the jobs that need these skills. However, reviews of the first generation of evaluations of these programs found typical impacts to be small, casting doubt on the usefulness and cost-effectiveness of these programs. This paper reexamines the arguments for whether, when, and how developing country governments should undertake job training and job search assistance policies. The authors use their experience with policy implementation, and evidence from recent impact evaluations, to argue that there is still a role for governments in using these programs. However, success depends critically on program design and delivery elements that can be difficult to scale effectively, and in many cases the binding constraint may be a lack of firms with job openings, rather than a lack of workers with the skills to fill these openings.

JEL Classification: J22, J23, J24, J64, M53, O12, O15

Keywords: job training, job search assistance, active labor market policies

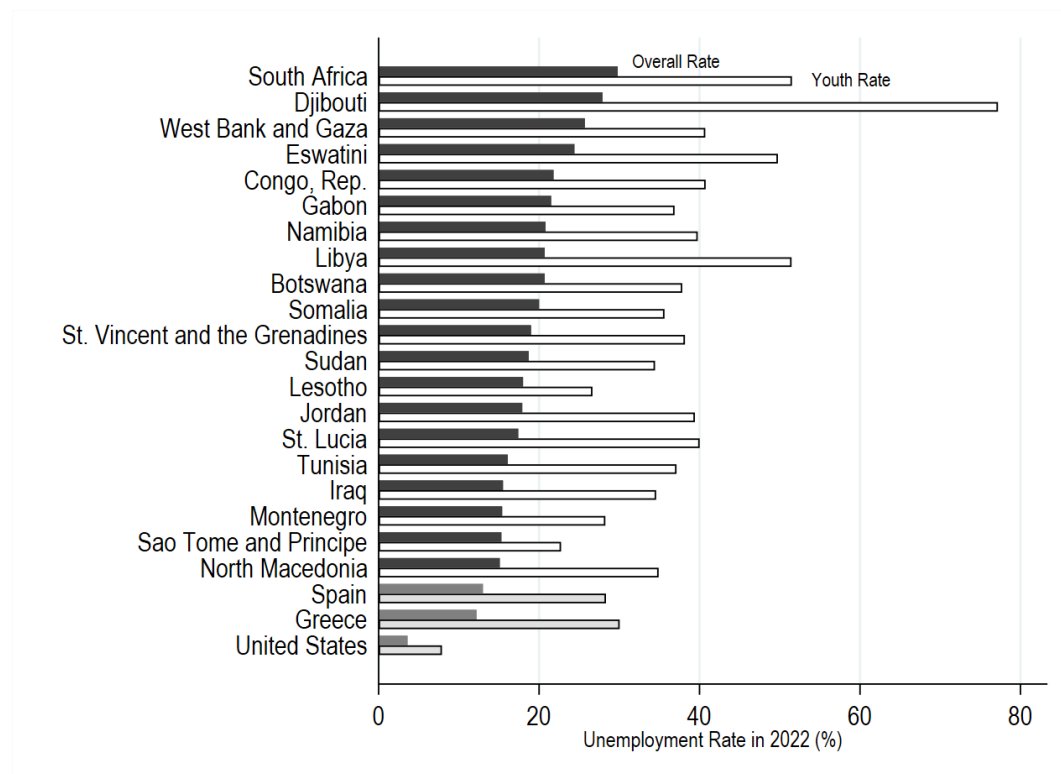
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* We are grateful to the editors, Heidi Williams, Erik Hurst, Nina Pavcnik, and Timothy Taylor, for their useful comments and their help in improving this piece. We thank Yves Perardel for providing us with tabulations from the Albania and Romania labor force surveys. Computational reproducibility verified by DIME Analytics <https://doi.org/10.60572/hm2r-nj04>.

In countries across the developing world, headlines commonly warn of a combined jobs crisis and demographic time bomb, in which millions of jobs need to be created each year. For example, “India is sitting on a time bomb’: Jobs crisis looms as population soars” warns “The country needs to create at least 90 million new non-farm jobs by 2030 to absorb new workers” (NewsIn.Asia, 2023). “Africa’s Youth Unemployment Crisis Is a Global Problem” notes “while 10 million to 12 million youth enter the workforce in Africa each year, only 3 million formal jobs are created annually” (Donkor, 2021). Along with the issues posed by new job seekers in the future, unemployment of existing workers is already high in some countries. Despite a perception that unemployment rates tend to be low in developing countries because people can always work in agriculture or are too poor not to work, the 20 countries with the highest unemployment rates in the world in 2022 were all in the developing world (Figure 1). Unemployment rates exceeded 15%, higher than the 13% in Spain and 12% in Greece, the European Union’s two highest rates, and far in excess of the 3.6% unemployment rate in the United States. They were even higher for youth, exceeding 30% in most of these 20 countries.

Figure 1: The countries with the highest unemployment rates are all in the developing world



Source: World Bank's World Development Indicators, July 25, 2023, update.

Note: Unemployment refers to the share of the total labor force that is without work but available for and seeking employment. Youth Unemployment is similarly defined for the share of the total labor force ages 15–24.

Even among those with employment, many find themselves in low paid, informal jobs, and would like to do better. Changes in the structure of the economy and job opportunities due to automation, climate change, and lasting impacts of the COVID-19 pandemic are thought to have made the challenge even harder, resulting in headlines such as “Robots Pose Big Threat to Jobs in Africa, Researchers Warn” (Ridgwell, 2018), “Rising heat stress could destroy 80 million jobs by 2030, UN says” (Taylor, 2019), and “This Chinese jobs crisis could be its worst” (Chen, 2023).

Faced with these current employment challenges and such forecasts, governments face pressure to help job-seekers. One viewpoint is that the problem is a skills mismatch, where many of those seeking jobs do not have the skills sought by employers. This may be due to poor education systems, as well as changes in skills demanded by employers as economic growth, technological change, globalization, and the desire for a green transition change the structure of the economy. A popular solution is then for the government to provide *job training* so that jobseekers can acquire these skills. An alternative viewpoint is that even when workers have skills that employers want, they have difficulty finding the right job fit due to search and matching frictions. Fragmented and largely informal labor markets may make it difficult to identify job openings, and workers without much work experience may not know how best to look for jobs or signal their skills to potential employers. This results in governments providing a range of *job search assistance* policies designed to help jobseekers better use the skills they do have.

This paper asks whether, when, and how developing country governments should undertake job training and job search assistance policies. Job generation will typically require policies that boost the demand for labor by increasing firm productivity and overall economic growth. Supply-side interventions that train workers and help them look for jobs will not be very effective if there are few jobs for them to look for. An earlier generation of critical reviews and meta-analyses of the first generation of evaluations of these programs found the typical impacts were rather small, with typically only 2 or 3 people out of every 100 trained or assisted finding work as a result of these programs (McKenzie, 2017). As a result, Blattman and Ralston (2015) argued that “it is hard to find a skills training program that passes a simple cost-benefit test.”

However, there have been recent innovations in how job training and job search programs in developing countries are designed, targeted, and implemented.¹ We argue that there is a real, if more limited, role for government in providing these programs. For example, government action may be warranted when private firms are underinvesting in training of workers due to the possibility workers will leave, and when search and matching frictions slow down or prevent the reallocation of workers across sectors and geography that are critical for structural transformation. Equity concerns may also justify the use of these policies to help disadvantaged jobseekers find jobs. We begin with an overview of the worse and better reasons why governments in developing countries have become involved in job search and job training. We then outline lessons from recent experiences in developing economies with vocational training, policies designed to overcome spatial and informational search frictions, interventions aimed at overcoming psychological barriers to job search, and government efforts to encourage the development and use of online jobs platforms.

Good and Not-So-Good Reasons for Governments to Provide Job Training and Search Assistance

Firms typically have strong incentives to find and retain good workers, and many workers likewise have strong incentives to look for jobs and seek training in the skills demanded by the market. As a result, the vast majority of jobs are filled without government intervention. Table 1 illustrates this point, using some of the relatively few available labor force surveys that directly ask employed workers in developing countries how they found their jobs. The vast majority of jobs are found by workers either learning about jobs through their social networks of friends and relatives, or through workers directly approaching employers in their business or worksite and asking if they have openings. Public (government) agencies and private employment agencies are

¹ We focus on job training and job search assistance as two of the most common types of active labor market policies undertaken by governments. There are several other types of active labor market policy that we do not cover. For example, another common form of skills training is to teach jobseekers business skills in order that they can start their own small businesses (for a review, see McKenzie et al. 2021). Governments can also directly provide jobs to workers through large public works programs (reviewed in Gehrke and Hartwig, 2018) or make it cheaper for firms to hire workers through wage subsidy programs (reviewed in McKenzie, 2017). We also restrict our focus to largely urban labor markets, reflecting government efforts to integrate workers into wage jobs, and do not discuss policies to increase agricultural employment.

the source of a tiny fraction of all jobs found by workers: 9 percent of jobs in Albania, 5 to 6 percent of jobs in Jordan and Morocco, and down to less than 1 percent of jobs obtained in Mexico.

Table 1: Main methods used by employed workers to find jobs

	Percent who used method to find job						
	Albania	Jordan	Mexico	Morocco	Romania	Sierra Leone	Turkey
Friends and Relatives	28.8	41.0	53.0	70.9	37.2	46.0	59.7
Direct Application to Employers	52.7	37.1	32.0	40.4	36.4	41.1	22.9
Newspaper ads	0.5	8.5	8.9	0.1	15.7	5.0	4.5
Internet	0.3	1.0	1.6	1.5		0.0	5.0
Public or Private Employment Agency	9.1	6.2	0.6	5.5	2.5	2.2	2.7
Other	8.5	6.2	3.9	12.5	8.2	5.8	5.2
Sample Size	14653	904	117924	712	36542	504	3302

Source: Albanian data from Quarterly Labor Force Survey 2019; Jordan is from New Work Opportunities for Women Pilot Impact Evaluation 2010–2013; Mexico is from Trimester 1, 2014 National Survey of Occupation and Employment (ENOE); Morocco is from Household and Youth Survey 2009–2010; Romania is from Household Labor Force Survey 2021; Sierra Leone is from 2014 Labor Force Survey; and Turkey is from Vocational Training for the Unemployed Impact Evaluation 2010–2012.

Note: Morocco survey allowed multiple methods to be used, so responses add up to more than 100 percent. Romania survey combines newspaper advertisements and internet advertisements into one response category. Carranza and McKenzie (2023) provide full details.

Job matches between workers and firms can be highly location-, sector-, time-, and firm-specific, so that it seems unlikely in most cases that a central planner or government will do better than the private market in filling most job openings. In line with Table 1, throughout history and the growth of most countries, large increases in labor supply have been absorbed by the market without the need for the government to help millions of people find jobs. So why should the government get involved in providing job training and search assistance rather than leaving it to the private market?

Perhaps the most common reason that governments provide these services is based on political pressure for a government to show it is doing something about employment—and providing job training or search assistance is often politically easier than addressing other barriers to creating jobs. In political terms, the success of these programs can be based on visible inputs—like the number of people who finished a training program, or the number of towns with job-assistance centers—rather than the more difficult-to-observe effects like the number of workers

who obtain lasting good jobs that they would not have found without this help. When quantitative inputs are the measure of success, the consequence can be reliance on public sector training agencies that may have limited linkages to the private sector, and that offer training of variable quality that is not necessarily in skills that are in high demand. For example, Maitra et al. (2022) note that, despite efforts at reform, India’s system of vocational training is still characterized by “a bureaucracy-driven centralised and hierarchical framework” with a “glaring lack of involvement of industries,” resulting in a system that “has not proved agile enough to quickly adapt skill-training provisions to contemporary technological innovations.”

An additional not-so-good reason for providing these job training and search services is as a second-best response to distortions in the labor market created by other government actions that may be politically much more difficult to change. One example is the dominance of a large public sector that pays much higher wages than comparable private sector jobs, causing jobseekers to queue for these public jobs and not consider working in the private sector. For example, this pattern has historically defined the job market for relatively educated workers in many countries in the Middle East. Assaad (2014) notes that “by using labor markets as means to distribute rents and to buy political quiescence, Arab governments have essentially undermined the labor markets’ primary function.” Another example is the presence of high minimum wages and inflexible labor laws that make it expensive and burdensome for private employers to hire workers, leading the supply of jobseekers to greatly exceed demand at prevailing wages. South Africa introduced a minimum wage set roughly equal to the median wage, and soon had an unemployment rate over 30 percent (Bhorat et al. 2020).² Many of these regulations are size-dependent, applying more strictly to firms that have more than a given threshold (e.g. 10, 50 or 100) number of workers, acting as an additional constraint on the expansion of more productive, larger, firms.³ While training and search assistance may help some workers to overcome the constraints caused by these

² Of course, quantifying the impact of the minimum wage on employment is difficult. Bhorat et al. (2020) suggest that high levels of noncompliance with the policy may mute some of the effects, although their analysis may be too soon for the full effects to be felt. Bertrand and Crépon (2021) provide experimental evidence that South African employers imperfectly understand labor regulations and this constrains their hiring.

³ Although firms often find workarounds, so that these regulations may bind less strongly than in developed countries. For example, Bertrand et al. (2022) detail how Indian firms use outside contract labor to overcome some of the burdensome labor regulations that otherwise would apply when they reach 100 workers.

distortions and find jobs, the success stories may just crowd out other jobseekers, and it would be better for governments to concentrate their policy efforts in addressing the distortions directly.

In the absence of these government-introduced distortions, the simplest introductory model of labor supply and labor demand, in which the market works to equilibrate the supply and demand for jobs through changes in the wage is actually not a bad approximation for many types of labor in less-skilled jobs in urban labor markets in developing countries. Many firms have no trouble filling the job openings that they have. For example, Groh et al. (2015) conducted a panel survey of employers in Jordan to track how long it took firms to fill vacancies. Most vacancies are filled fast, with only 6 percent requiring more than two weeks. In a field experiment conducted in Sri Lanka, De Mel et al. (2019) find that only 12 percent of microenterprises said they found it hard to find the right worker for routine, physical jobs. Many governments are particularly interested in boosting the workforce in formal jobs in large manufacturing firms. But several studies have found these manufacturing firms do not appear to be that discerning about who they hire. They find workers very quickly and many workers voluntarily quit these jobs – suggesting that these jobs are neither that hard to fill, nor so rationed and sought after that no one leaves these jobs after securing such a position (for example, Blattman and Dercon 2018).⁴

So then what are some better reasons for government involvement in the provision of job training and search assistance? There are three main reasons why the private market allocation of labor may be inefficient or inequitable, thus providing a potential justification for the government to get involved. First, search and matching frictions are likely to exist for some jobs, and they not only inhibit individual jobseekers from finding work, but can slow down or prevent the reallocation of workers across sectors and geography that is such an integral part of structural transformation. For example, China's rapid growth involved its urban population growing from 100 million in 1980 to over 500 million today. This enormous reallocation involves workers needing to learn about job opportunities in another place, and potentially also requires them to learn different skills. The government may be able to speed up this transition process through appropriate training and job search policies. Matching frictions can also mean inefficiently high rates of job turnover, which

⁴ Of course this high turnover can have costs for both firms and workers, and better matches can result in higher productivity. But many firms do not appear to view these costs as high enough to invest heavily in reducing turnover.

can be costly for both workers and firms, and so efforts to improve match quality may increase labor productivity.

Second, the production of human capital can involve externalities that cause firms and individual workers to underinvest in training. For example, Caicedo et al. (2022) provide empirical evidence from Colombia for the idea that firms underinvest in the training of workers due to the possibility that they will leave and work for other firms. Likewise, the apprenticeship system common in West Africa may embed inefficiencies caused by the concern of master craftspeople that their apprentices will compete against them after they have been trained—which creates incentives for firm owners to provide slower and lower quality training to apprentices than they would do if properly incentivized (Brown et al, 2022). Government support of training in general, and for sector-specific (rather than firm-specific) skills, may address these concerns. Concerted investment in certain sets of skills may also be needed as part of an industrial policy to attract large multinational plants that have spillover benefits for the rest of the economy. For example, the Costa Rican Investment Promotion Agency (CINDE) has worked with partners to provide training in technological fields demanded by multinational companies.

Finally, governments may wish to be involved for social mobility and equity reasons. As shown in Table 1, the main way many firms and jobseekers connect is through networks of connections formed by friends and relatives. But disadvantaged individuals with limited networks and a lack of funds to spend acquiring skills may end up segmented into different labor markets, without the knowledge or skills to approach firms directly and find jobs that way. Even if training and job search assistance to these groups does not generate additional jobs, providing an opportunity for some individuals from these disadvantaged groups to access better jobs may be desirable for equity reasons, and may help improve overall allocative efficiency in the economy.

While our focus is on low and middle-income economies, there are a wide range of labor market conditions prevailing across the developing world, and many of these same issues and rationales for government intervention apply to certain labor market segments in high-income countries. Similar concerns apply about whether workers displaced by trade or technology shocks, or stuck in cities with declining industries are able to reskill and relocate, as well as equity reasons being used to focus programs on individuals from disadvantaged backgrounds. However, a larger share of the labor market may be subject to these frictions in many developing countries, which in

addition to greater demographic pressures and an ongoing structural transformation of the economy can strengthen the rationale for policy action.

Given these reasons that might justify government involvement, the key question is then how should the government get involved in order to ensure these policies have higher chances of being successful?

What Are the Most Promising Avenues for Government Involvement in Job Training and Job Search?

Jobseekers may struggle to find jobs for three main reasons. First, there may be a shortage of firms wishing to hire them. This may reflect a lack of overall labor demand in the economy, in which case the appropriate policy actions will be in the area of private sector development policy. In some cases, it may also reflect discrimination, with firms not willing to hire individuals with certain characteristics. Second, jobseekers may struggle because they lack the skills and experience needed for jobs. Job training and internships and apprenticeships can then be used to help overcome this problem. Finally, even if jobs are available and individuals have the right skills, they may struggle to find and match with employers who want their labor, in which case job search assistance can be useful.

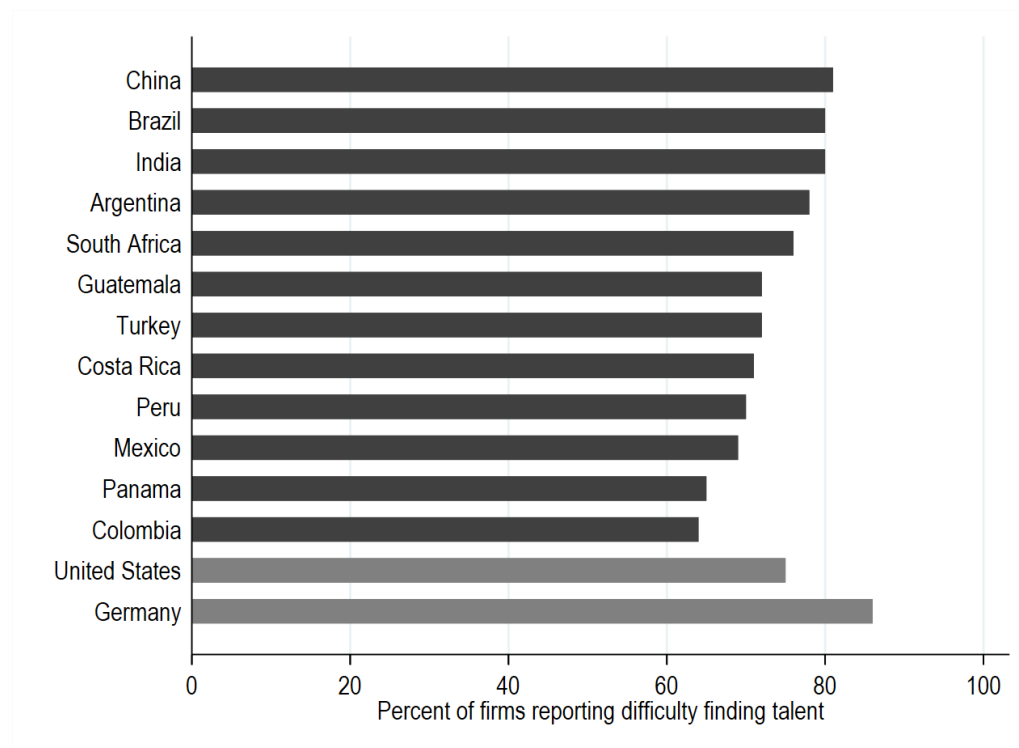
It is difficult to find systematic evidence to assess the relative importance of these three reasons, and the answer will almost surely vary with context. Our sense is that in many cases the largest issue is a lack of labor demand for jobs, and especially “good” jobs, and that policies to help firms to grow and demand more labor need to be a primary part of any jobs policy solution (although it is not the topic of this paper). Data from the Mexican National Survey of Occupation and Employment (ENOE) provides one data point, asking unemployed individuals why they are not looking for work: 4.6 times as many individuals say it is because they think there are no jobs available near them than say it is because they lack the skills or experience needed for jobs. Lack of experience and knowledge of where to look for jobs may be bigger barriers for young jobseekers. A survey of high school graduates in one part of Mexico with a strong labor market

found 33 percent of youth said lack of experience was their main obstacle to finding a job, 10 percent said lack of skills, and 14 percent said difficulty searching for jobs.⁵

While employers can often fill jobs with “a” worker quickly, many employers say that difficulty finding workers with the right skills is an issue they face, and many employers appear to feel this is more the case today than in the past. Manpower Group has been surveying public and private employers in multiple countries annually and reports that 77 percent of employers in 41 countries surveyed in 2023 report difficulty finding talent with the skills they need, up from only 31 percent in 2010. Figure 2 shows high levels of firms saying they struggle to find talent in all of the developing countries the survey covers, with the percentage of firms reporting difficulties similar to that in the U.S. and Germany. Employers report both difficulty finding workers with the right technical skills such as information technology, data skills, and sales and marketing skills, as well as with the right soft skills such as reliability, creativity, critical thinking, and resilience. Public policy efforts can then try to help jobseekers develop these skills, as well as helping workers with these skills to signal in a credible way that they have these skills as they search for jobs and match with employers.

⁵ Data from México Piloto de Inclusion Laboral de Jóvenes Baseline survey Phase 1 (2018), used in Abel et al. (2022). A further 21 percent said their age, gender, ethnicity, or socioeconomic background was the main obstacle, which could reflect employer discrimination, social norms, or difficulties they face paying for training or job search.

Figure 2: The majority of firms in many developing countries say they struggle to find talent with the skills they need



Source: Data from Manpower Group Employment Survey Q2, 2023.

Note: Percentages are calculated as the share of employers in a representative sample of public and private employers for the country, across specific sectors and regions, reporting a labor demand that outpaces the supply of labor with the skills they need at their location during the second quarter of 2023.

Job Training

Job training programs are designed to provide new skills and experience, and are predominantly focused on youth and the unemployed. They typically try to teach technical vocational skills in fields such as hairdressing and beauty, carpentry, electrical work, tailoring, plumbing, or information technology skills such as coding, data entry, office programs, and others. In addition to these “hard” skills, some programs also include “soft skills” components such as communication skills, teamwork, planning, self-efficacy, and financial literacy. These programs can be taught in classrooms and/or in the form of on-the-job-training through an internship or apprenticeship. The most common programs offered by governments and studied in the literature tend to last three to six months, although there are shorter intensive “bootcamps” that can be three weeks to a month, as well as longer programs of two years that are more similar to the traditional

Technical and Vocational Education and Training (TVET) programs that are sometimes offered as part of the formal education system.

The hope is that these programs will increase employment and earnings for jobseekers through at least three potential channels: 1) by increasing their human capital through teaching new skills, thereby making them more productive workers; 2) by alleviating employer uncertainty about the skills workers have by providing a signal in the form of certification or references; and 3) by providing jobseekers with new strategies (and potentially new networks) for helping to find jobs. Public funding of these programs is often justified by arguing that jobseekers are credit-constrained and unable to pay for the direct costs of training, as well as unable to bear the opportunity costs involved in needing to pay for living expenses and not earning money during training. In addition, due to information frictions, jobseekers may not know about the full range of training providers or find it difficult to ascertain their quality. These same arguments are also made in high-income countries, but credit constraints and informational frictions are likely to be larger issues in less developed economies. On the firm side, even though firms may have trouble finding workers with the right skills, firms also may be credit-constrained in paying for worker training, and reluctant to spend time and money training workers in general skills if these workers may then leave to work in other firms soon afterwards.

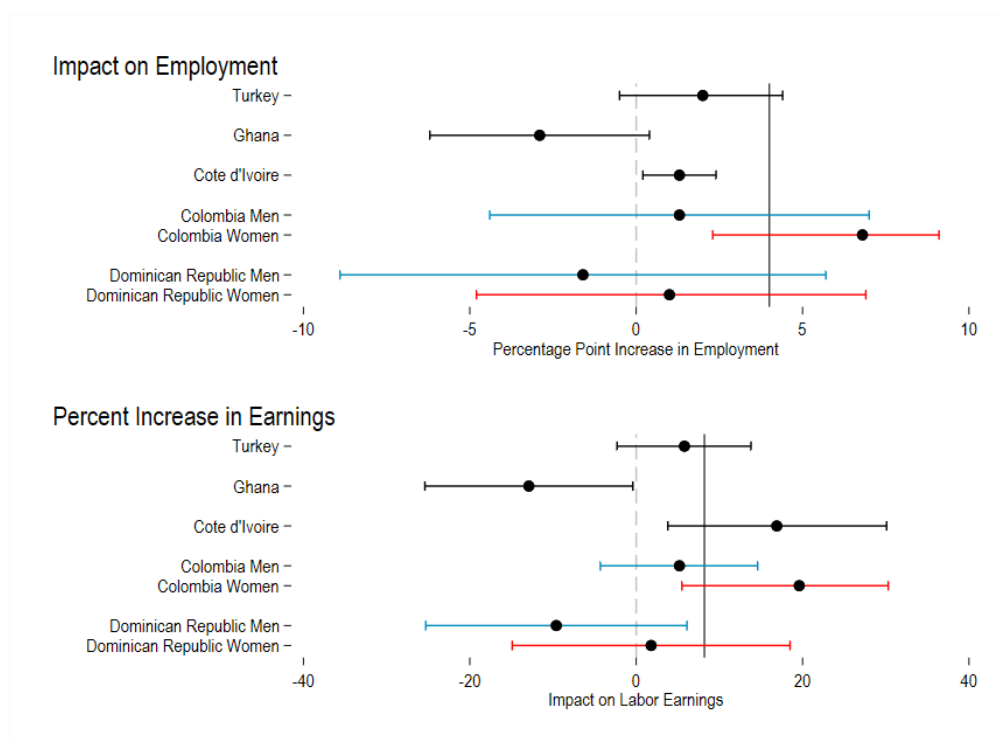
Returns to education and experience are among the strongest empirical regularities in labor economics, suggesting that training should affect earnings and employment. However, given that these courses are short in duration and returns to education and experience are typically in the order of around 10 percent per year, we might expect only three or six months of training to have relatively modest impacts. Indeed, most randomized experiments measuring the impact of vocational training programs have found effects of roughly this size. McKenzie (2017) reviews nine such studies and finds an average impact of a 2.3 percentage point increase in employment, which, given the costs of these programs, equates to approximately \$17,000-\$60,000 per additional person employed, and a median increase in earnings of 11 percent, or \$19 per month. Agarwal and Mani (2023) include an additional 14 recent studies in a formal meta-analysis, and find an average impact on employment of 4 percentage points (with a 95 percent confidence interval between 2 to 6 percentage points) and on earnings of 8.2 percent (with a 95 confidence interval between 2 to 14 percent). These impacts on employment are similar in magnitude to the average impact of training

in high-income countries, with Card et al. (2018) finding from a combination of experimental and non-experimental studies that training averages a 2.0 percentage point impact on employment in the first year after training, and 6.6 percentage points one to two years later.⁶

These effects appear particularly muted for at-scale programs operated by governments. Figure 3 shows evidence from five experimental evaluations of government vocational training programs that trained at least 5,000 people in a year. In this figure and the subsequent ones, we show both the point estimate and a 95 percent confidence interval from the evaluation. For example, the figure shows that vocational training in Türkiye resulted in an estimated 2.0 percentage point increase in employment, with a 95 percent confidence interval of -0.5 to 4.4 percentage points. With the exception of the impact for women of the Colombian Jóvenes en Acción program (Attanasio et al, 2011), the estimated effect on employment is 2 percentage points or lower in these programs, half that of the meta-analysis impact across all pilot, nongovernment organizations, and government programs of 4.0 percentage points reported by Agarwal and Mani (2023). There is more variability in the impact on earnings, but five of the seven reported estimates are also below the meta-analysis average impact of 8.2 percent.

⁶ Card et al. (2018) use a sample that combines developed and developing countries, with 64% of the training estimates coming from high-income countries. They find few significant differences in impact by country region, except for slightly higher estimates from non-experimental evaluations in Germanic countries.

Figure 3: Limited Effects of Large-Scale Government Job Training Programs on Employment and Earnings



Notes: Studies shown are from experimental evaluations of programs operated by governments at a scale of at least 5,000 or more trained. Point estimate of impact of being offered the program and 95 percent confidence intervals shown. Impacts shown are for longest time period post-training for which impact on having paid work and on total labor earnings are available. Percent increase in earnings is relative to control mean. Turkey estimates from Hirschleifer et al. (2016) at one year post-training; Ghana estimates from Hardy et al. (2019) at one year post-training; Côte d'Ivoire estimates from Crépon and Premand (2021) at two years post-training; Colombia estimates from Attanasio et al. (2011) at 14 months post-training; Dominican Republic estimates from Acevedo et al. (2020) at 3.5 years post-training. Solid vertical lines show meta-analysis estimates from Appendix Figures A.1 and A.2 in Agarwal and Mani (2023) from a broader set of government and non-government programs, including pilot programs: of 4.0 percentage points for employment and 8.2 percent for earnings. The Colombian and Dominican Republic studies only report results separately by gender, whereas the other studies report results for a pooled sample of men and women.

One plausible reason for the limited impact of these large government programs is that they may not be creating the skills that the labor market is demanding. Some small and informal firms may have no demand for skilled labor at all, and lack the physical and managerial capital to benefit from it. For those firms that would like skilled workers, training programs may be slow to update courses and curricula to reflect the changing needs of firms, or perhaps training providers are of poor quality and are incentivized based on number of people trained rather than on employment outcomes. Training may even backfire and cause a reduction in employment if it creates unrealistic

expectations among jobseekers, causing them to raise their reservation wages and only search for jobs in the area in which they were trained (Acevedo et al., 2020).

In part due to the evidence from the first waves of rigorous training evaluations, policy efforts have aimed to improve the effectiveness of vocational training programs. The two approaches usually mentioned are to make training more demand-driven, and to link payments for the training program more clearly to results. Demand-driven programs aim to have private sector firms and providers, rather than the government, determine what courses are offered and how they are delivered, and to link on-the-job training explicitly to employer demand. An often-mentioned example is the *Jóvenes* programs in Latin America, including the Colombian program studied by Attanasio et al. (2011), which had the largest impacts among the government programs summarized in Figure 1. Attanasio et al. (2017) link participants in this program to social security records and find, up to a decade later, a lasting effect of 3.8 percentage points on being employed in the formal sector, with trained individuals earning US\$13 more per month in formal earnings. But simply having private sector providers offering the training may be insufficient: Hirschleifer et al. (2016) find privately run courses in Türkiye have larger short-term impacts than government-run courses, but that this difference disappears in the three years after training.

Results-based contracting aims to increase the incentives for providers to deliver employment impacts by linking some of the payments to targets such as the percentage of trainees in jobs. World Bank (2020) discusses some of the practical issues and experiences with such an approach. It sounds promising in theory, but in practice many governments lack the administrative capacity to measure results and manage such a process. In addition, the share of the total payment linked to performance may in practice end up being relatively small and incentivize only short-term, and not long-term, employment outcomes.

A more optimistic view of the potential impact of job training programs has emerged from impact evaluations of several programs implemented by nongovernment organizations. Particularly influential here has been the work by Alfonsi et al. (2020), who evaluate the impact of vocational training and firm-provided training in the form of apprenticeships in programs operated in Uganda by the nongovernment organization BRAC. The program is much smaller in scale than government programs (697 youth get vocational training and 283 get apprenticeships), relatively intensive (six months duration), with training restricted to a narrow set of sectors

identified as having substantial demand for skilled workers, and with a small set of training providers that were selected based on quality. They find the firm apprenticeships have positive short-run impacts that fade out, which they attribute to a lack of skill certification. In contrast, the vocational training has impacts that grow and then stabilize: those assigned to vocational training are 9 percentage points more likely to be employed and earn 25 percent more than the control group averaged over the three years. Shonchoy et al. (2018) work with the nongovernment organization Gana Unnayan Kendra in Bangladesh and highlight another way nongovernment organizations may help enhance the effectiveness of training programs: by alleviating other constraints that inhibit youth from using the skills learned. They find that one-month of training to work in garment factories has much larger impacts when paired with assistance to migrate to the cities where these jobs are located.

However, while these programs led by nongovernment organizations do offer some lessons for public policy, there are reasons to be cautious in expecting them to be a cost-effective jobs solution at large scale for thousands of jobseekers. First, the impacts of programs tend to fall with scale, which List (2022) dubs the “voltage effect,” in part because of the challenges of ensuring the quality of training is maintained and the topics provided continue to meet the needs of employers at scale. In addition, general equilibrium concerns may arise with scale: that is, training jobseekers en masse in a limited range of skills may result in them all competing with one another for a fixed supply of jobs. Second, the impressive-sounding percent increase in earnings in many of these studies often comes from a relatively small absolute increase in earnings divided by a small base income that disadvantaged individuals would be earning in the absence of training. As a consequence, the gain in income would typically have to last for many more years than studies typically measure in order to pass a cost-benefit test. For example, the 25 percent increase in income in Alfonsi et al. (2020) equates to an extra \$6.10 per month, for a program that costs \$470 per person to provide and the 16.9 percent increase in income in Crépon and Premand (2021) equates to a \$16.20 per month increase for a program that cost \$2,045 per person. A combined vocational training and life skills program for adolescent girls in Uganda run by the nongovernment organization BRAC had an incredible 308 percent increase in earnings (Bandiera et al, 2020), but this still only equates to an additional \$4.20 per month.

Thus, in many cases the seemingly large percentage earnings gains do not reflect transformational absolute income gains, and will need to persist for five to ten years, or longer, to pass cost-benefit tests. Alternatively, such programs could target poor individuals who alternatively would be receiving even more expensive forms of government support in social assistance programs, which could help them to pass a cost-benefit test.

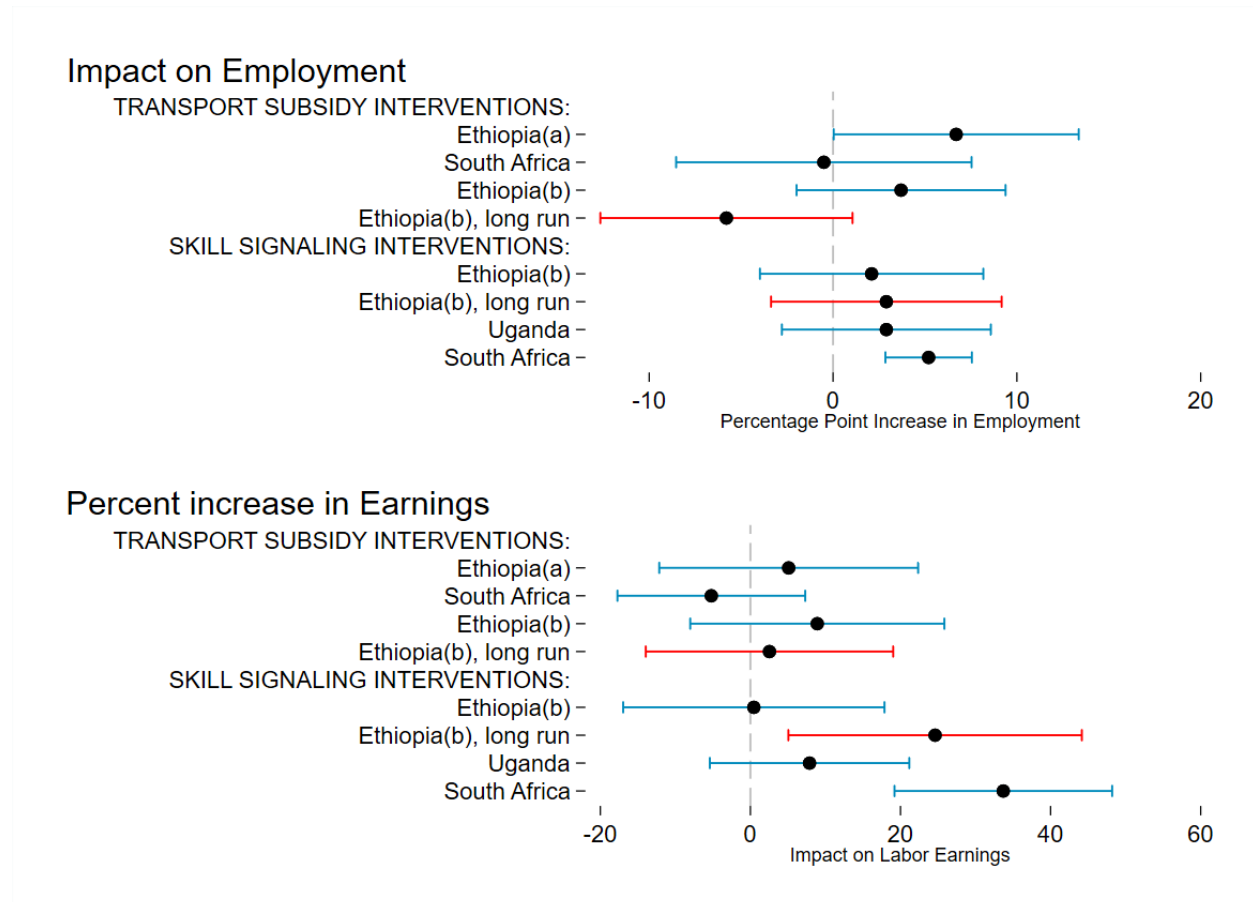
These modest average impacts of vocational training suggest that a lack of skills is unlikely to be the single binding constraint to finding employment or earning higher wages for the majority of jobseekers taking part in such programs. But modest average impacts may mask large effects for certain subsets of individuals. An unexplored area for research and policy is testing better ways of targeting the selection of participants into such programs based on those most likely to benefit.

Labor Market Intermediation

Based on the notion that workers may not know *how* or *where* to find available jobs, labor intermediation services seek to equip workers with the tools to improve their job search and to connect workers with jobs. Earlier evidence on traditional labor market intermediation programs, such as government intermediation and placement services, resume and interview preparation, job fairs, and simply sending information about job openings to jobseekers found that they had only limited and short-term impacts (McKenzie 2017). One possible reason is that these programs may help workers learn to find one job, but given high job turnover, they are little help in finding subsequent work. Similarly, Card et al. (2018) report job search assistance programs only having average impacts of 1.1 to 2.0 percentage points in their meta-analysis of impacts in high-income countries.

Recent experimental evaluations in developing countries instead show somewhat more promise for interventions that get jobseekers to search in new locations, update biased beliefs, and better signal their skills. Figure 4 summarizes examples of the short- and longer-term impacts of two types of these interventions: transport subsidies to help overcome spatial frictions, and skill signaling interventions to help reduce information frictions. We discuss these types of interventions in turn, and also mention a relatively new research area—interventions to address behavioral and psychological factors that may be limiting employment.

Figure 4: Subsidizing search over distance has positive but often temporary impacts, whereas skill signaling interventions that improve match quality can have more lasting impact



Notes: Point estimate of experimental impacts and 95 percent confidence intervals shown of being offered the program. Impacts shown are for longest time period post-training for which impact on having paid work and on total labor earnings are available. Percent increase in earnings is relative to control mean.

Data sources: Ethiopia (a) estimates are from Franklin (2017) at 4 months post-intervention; South Africa estimates from Banerjee and Sequeira (2020) at 1 year post-intervention; Ethiopia (b) estimates from Abebe et al. (2021) at 1 year and 4 years post-intervention; Uganda estimates from Bassi and Nansamba (2022) at 1 year post-intervention; South Africa estimates from Carranza et al. (2022) at 4 months post-intervention.

In developing country labor markets, it is not uncommon to find a surplus of workers relative to available jobs in some locations coexisting with employers in other locations experiencing shortages of similar workers. Even when jobseekers living far from job centers have a job or can easily find one in their local labor markets, the higher quality jobs offering stability, protections, and higher salaries tend to remain out of their reach. For instance, comparing individuals with the same educational attainment, Franklin (2017) finds that the share of workers

employed informally and in low-skilled occupations increases, and the share employed in high-skilled occupations decreases, with distance to larger cities. Such spatial mismatches are even more striking when considering search across international borders. Jobseekers within an urban area do not seem to search broadly enough in city centers, and jobseekers outside an urban area do not seem to search broadly enough in nearby urban areas, despite potentially high returns to searching for jobs over larger distances.

One approach to this issue used by researchers (but not typically by governments at scale) has been to subsidize search across space directly through transportation subsidies. In Ethiopia, Franklin (2017) found youth given these subsidies were more likely to find employment in the city center, and to find jobs of higher quality and permanent jobs, rather than the kinds of casual jobs available in their vicinity. However, as Figure 4 shows, the impacts of such assistance may not last. In Ethiopia, Abebe et al. (2021) find a modest impact of transport subsidies on permanent and formal employment, with little to no improvement in jobseekers' probability of having a job four years after this support is withdrawn.

Distance to jobs and high commuting costs could in part explain the declining impacts over time. Job quits may occur if jobseekers initially underestimate the disutility of commuting long distances and this offsets the wage premium paid in larger cities and urban labor markets (Banerjee and Sequeira, 2020). When poor matches between workers and firms result in high rates of job turnover, jobseekers recurrently have to search for jobs and may again find it difficult to access better opportunities in distant labor markets without a repeated subsidy.

A one-time transport subsidy can lead to longer-run effects on employment if searching more broadly allows jobseekers to learn about the spatial distribution of wages, and build job connections in a wider labor market. Strong repeated search is similarly possible if the spatial wage premium is large, and jobseekers can build assets over time as a result of obtaining employment in the short-term. An example comes from the work of Bryan et al. (2014), who provided financial assistance to help subsistence rural households in Bangladesh migrate for work in nearby urban areas during the agricultural lean season. Not only did this result in better jobs in the short-run, but once workers learn about and experience the benefits of jobs in urban areas, they return for work in following years without further incentive.

Subsidies to address spatial frictions are likely to work best for that subset of jobseekers for whom cash constraints, lack of experience, and lack of networks are the most important and binding constraints to participating in jobs in this new location. Mitchell et al. (2022) report that efforts to scale the Bangladeshi program resulted in much lower impacts, because financial assistance ended up largely going to people who were inclined to migrate anyway. But the very poor and disadvantaged may find it harder to save and afford the costs of repeat travel, so that there will also be no long-term impacts for this group. Hence, while spatial frictions are important, transport subsidies to overcome these frictions need careful targeting.

An alternative set of interventions to improve labor market intermediation seek to address information frictions, overcome biased beliefs, and signal skills. Remember, most jobs in developing countries are found through social networks and direct contact with employers. Thus, many workers may have inaccurate beliefs about the full range of job opportunities and wages available. This may be a particular concern for young workers and for racial minority and low educated workers who may be segregated from networks that provide information and contacts on many better jobs. The result of these biased beliefs can be that jobseekers may not search for jobs that could be a good match for them. Such workers may also have too high a reservation wage (Alfonsi et al. 2022), or reservation job prestige (Groh et al. 2015), causing them to turn down jobs they could get, choose poorly matched jobs, and quit soon after starting.

Can new, valuable, credible information cause an updating of beliefs, and in this way result in employment and earnings gains? In Uganda, Alfonsi et al. (2022) find trainees in a vocational education program overestimate how much they will earn in their first job, resulting in high reservation wages, but also underestimate the returns to experience and salary growth potential possible after starting work. Mentors who had been through the same program several years earlier were able to credibly help jobseekers form more realistic expectations, causing them to revise reservation wages downwards, turn down fewer jobs, and earn 18 percent more a year later.

In developing countries, information about the skills of workers can pose frictions to hiring. Potential employers find it difficult to assess the ability of workers, especially those with low levels of education. Jobseekers may have limited ability to know their own job skills and how they compare to other candidates, which can affect their job search behavior. To the extent that employers are more uncertain or underestimate the ability of lower-educated jobseekers and

jobseekers who have weaker labor market links—racial minority, younger and female workers—information frictions can also exacerbate labor market inequality.

Enabling jobseekers to communicate their skills in a credible manner can help overcome this information friction, increasing the likelihood of workers getting hired, and helping firms to select better candidates. Figure 4 shows that these types of interventions can generate more lasting impacts. In Ethiopia, Abebe et al. (2021) implement job application workshops that test and certify jobseekers on their skills and teach them how to signal these skills to employers. This sped up entry into formal jobs, and treated youth have 25 percent higher earnings four years later, in contrast to the only temporary earnings impact of transport subsidies on the same population. In South Africa, helping jobseekers signal cognitive and non-cognitive skills assessment results to firms increased their employment rate and earnings (Carranza et al., 2022). In Uganda, providing certificates of soft skills led workers who found employment to earn more (Bassi and Nansamba, 2022). Helping jobseekers obtain and understand the benefits of references from previous employers is another way of helping signal skills. Abel et al. (2020) found that reference letters lead firms to select candidates of higher ability (as captured by test scores not shared with firms), suggesting that assessment of workers' past performance conveys additional information to employers, improving their capacity to screen better applicants.

Of course, such skill certification will only work if these information search frictions are a main reason why workers are not receiving job offers they would like. In Jordan, Groh et al. (2015) implemented testing and skill certification, with no impact on employment – which they attribute to much of the unemployment being driven by strong preferences over non-wage job attributes.

Finally, even if jobseekers know where and how to look for jobs, and can credibly signal their skills, behavioral and psychological factors may still limit job search intensity and success rates. Certain low-cost tweaks can take these factors into account when designing other interventions. This area is relatively new, but we provide three examples that indicate the types of interventions that show promise. First, as a result of the so-called intention-behavior gap, jobseekers may fail to follow through in submitting as many job applications as they would ideally prefer. An intervention in South African Labor Centers that prompted jobseekers to set plans and goals for job search increased job search intensity, resulting more job offers and higher employment over the next three months (Abel et al, 2019). Second, workers who find a job may

not always show up on time or comply with workplace rules, leading to high turnover. A soft-skills training program focused on activating conscientiousness reduced job turnover among construction workers in Senegal (Allemand, 2023). Finally, high discount rates and impatience may mean that even if workers recognize the returns to experience, they may be unwilling to accept jobs with relatively low starting wages and high wage growth trajectories. In a study in Mexico, Abel et al. (2022) find that a temporary wage subsidy can help overcome this behavioral bias and increase formal employment rates as a result.

Online Job Platforms

The number of workers and firms using online jobs platforms has undoubtedly been rising as internet penetration has increased in developing countries and new platforms have been launched. For example, the Nigerian platform Jobberman claims 2.6 million jobseekers and 75,000 employers on its platform (as reported in Ladipo 2022), while the Indian portal Naukri has an estimated database of 82 million job seekers and 5 million recruiters, with an estimate of over 7 million searches by recruiters conducted daily.⁷ These online portals can lower the costs of search, enable search across space, and help alleviate information frictions, making it easier for job matches to occur. Apparently, many users believe these platforms are at least somewhat beneficial.

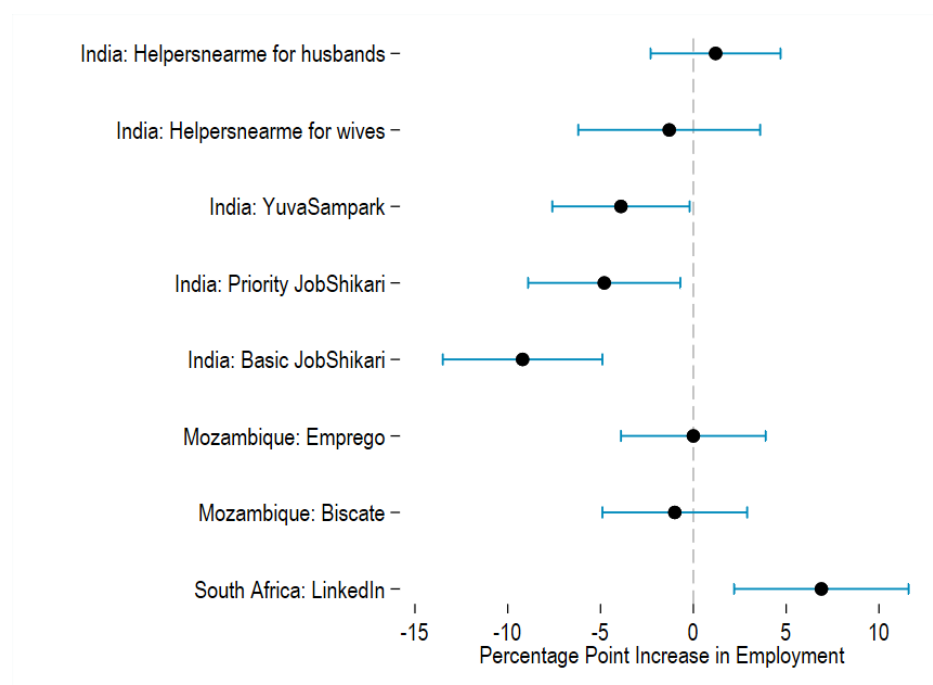
The rise of online job portals raises two questions for public policy. First, should governments be trying to set up additional job portals beyond what the private sector is already doing? It is unclear that governments have a comparative advantage in doing this for most types of jobs. Indeed, governments may be worse at performing ongoing platform maintenance. They may face policy restrictions on the types of jobs they can post: for example, only posting formal jobs that comply with safety and non-discrimination rules in labor markets with a high share of informal jobs. Some attempted government efforts have not performed well. For example, Ghana's Youth Employment Agency set up an online jobs portal (<https://yeajobcentre.gov.gh/>) in November 2019. In March 2023, the entire portal advertised only 60 jobs, in a country of over 32 million people. Our view is that the most compelling case for governments to set up portals are for specialized sectors in which the government plays a strong role in hiring—say, for public employment in health and education—or potentially when setting up new bilateral international

⁷ Estimates here are from the business management software company Freshworks at <https://www.freshworks.com/hrms/indeed-vs-naukri-choose-the-best-prescreening-tool/> [accessed 12 March 2023].

migration agreements. But even in these cases, the government should probably look for private sector firms with a viable business model for operating these portals.

Second, even if the government is not setting up its own portals, should it encourage jobseekers to use such portals? Figure 5 summarizes the results of five recent randomized experiments that provided nudges or assistance to encourage a treatment group to start using an existing platform. In four of these cases, the interventions had minimal or even negative impacts on the likelihood of jobseekers finding employment. One possible reason is that many of those encouraged to use the services do not take them up. Alternatively, Kelley et al. (2022) suggest that jobseekers may be overoptimistic in their expectations of the jobs they can find on such a platform, and take time to adjust their reservation wages downwards. Selection issues may arise here, as well: perhaps the compliers in these experiments—that is, individuals who only use the platform if nudged—are a separate group from those who benefit so use such platforms without any policy assistance and thus are not included in these studies. An exception to these disappointing impacts is Wheeler et al. (2022), who find that training disadvantaged South African youth who had been through a job readiness program to use LinkedIn increases their employment by 6.9 percentage points over the next year. This finding may reflect several factors: perhaps the training provided more information to jobseekers than just encouragement to use the platform; perhaps this program was better targeted at marginal disadvantaged jobseekers; or perhaps this segment of the South African labor market had more information frictions than some other labor markets.

Figure 5: Most Efforts Encouraging Job-Seekers to Use Online Job Portals Have Not Significantly Boosted Employment



Notes: Point estimate and 95 percent confidence interval shown of experimental impacts of offering use of online job portals.

Data sources: India *Helpersnearme* results are from Alfridi et al. (2022) who encouraged husbands and wives to register on a local blue collar job platform; India *YuvaSampark* results are from Chakravorty et al. (forthcoming) who encouraged vocational training graduates to register for a government jobs app; India *JobShikari* results are from Kelley et al. (2022) who enrolled vocational training graduates in a platform that sends SMS messages about relevant openings, with a priority group getting a higher rank and more messages; Mozambique results are from Jones and Sen (2022) who encouraged graduates of technical and vocational colleges to sign up for two local jobs platforms: *Biscate* (informal manual jobs) and *Emprego* (formal jobs); South Africa results are from Wheeler et al. (2022) who trained young, disadvantaged youth who had participated in a job readiness program how to use *LinkedIn*

Government policy might also seek to improve the functioning of these job portals. One problem is fragmentation: that is, a proliferation of job portals can make it more difficult for jobseekers and employers to find one another. A potential solution is for government employment agencies to work as an aggregator of vacancy information from different platforms, as is done in Colombia. Another problem is trust issues: after all, firms have often relied on personal connections and networks for hiring in part to overcome trust issues. In a study of small firms in India, Fernando et al. (2022) find that offering verification of skills along with an expanded pool of candidates makes these firms more likely to hire workers on an online platform. While platforms

themselves can provide some verification services, government education and training programs can also do this, and government can also play a role through criminal background checks, credit records, and other reputation mechanisms.

Conclusion

Employment in developing countries is often dominated by small and informal firms, and thus faces a shortage of good wage formal-sector jobs. Job training and job search policies by themselves are unlikely to generate a lot of new employment, and there is a need for complementary policies that aim to spur the demand for labor. Nevertheless, there is still a role for well-designed policies to help speed up the process of structural transformation in labor markets, in ways that will improve employer-employee matches and thus increase the productivity and wages of available jobs, while also improving the employment prospects of disadvantaged groups.

However, governments often struggle to implement these job training and job search policies successfully at scale. How might these policies be implemented more effectively? We have discussed some general principles, but much depends on tailoring solutions to meet the needs of specific localities, sectors, and types of jobseekers—which is another reason that centralized national programs often struggle. For job training, programs need to be closely tied to market demand, so that employers want to hire workers who are trained. The returns to training to the average jobseeker in a large-scale government program are typically very modest, and much more work is needed to determine how best to target training programs and how to expand successful pilot programs to larger scale. Job search assistance seems to work best when it helps jobseekers learn not just about a particular job, but rather learn something more fundamental that causes them to update their beliefs about the types of jobs they should be considering (including which sectors and locations to search in), and the wage levels and trajectories in those jobs. Efforts to credibly certify the existing skills of workers can help reduce information frictions when education systems do not provide good signals. Performing these tasks well requires investing in good data systems: otherwise, labor markets in which it is difficult for workers, and firms are failing to create lasting and well-paid jobs, will also be challenging for governments to understand.

References

- Abebe, Girum, Stefano Caria, Marcel Fafchamps, Paolo Falco, Simon Franklin, Simon Quinn and Forhad Shilpi (2020) “Matching Frictions and Distorted Beliefs: Evidence from a Job Fairs Experiment” Mimeo.
- Abebe, Girum, Stefano Caria, Marcel Fafchamps, Paolo Falco, Simon Franklin, Simon Quinn (2021) “Anonymity or Distance? Job Search and Labour Market Exclusion in a Growing African City” *The Review of Economic Studies*, 88 (3): 1279–1310.
- Abel, Martin, Rulof Burger, Eliana Carranza, and Patrizio Piraino (2019) "Bridging the Intention-Behavior Gap? The Effect of Plan-Making Prompts on Job Search and Employment." *American Economic Journal: Applied Economics*, 11 (2): 284-301.
- Abel, Martin, Rulof Burger, and Patrizio Piraino (2020) "The Value of Reference Letters: Experimental Evidence from South Africa." *American Economic Journal: Applied Economics*, 12 (3): 40-71.
- Abel, Martin, Eliana Carranza, Kimberly Geronimo and Maria Elena-Ortega (2022) “Can Temporary Wage Incentives Increase Formal Employment? Experimental Evidence from Mexico”, Mimeo.
- Acevedo, Paloma, Guillermo Cruces, Paul Gertler, and Sebastian Martinez (2020) “How vocational education made women better off but left men behind”, *Labour Economics* 65: 101824
- Afridi, Farzana, Amrita Dhillon, Sanchari Roy, and Nikita Sangwan (2022) “Social Networks, Gender Norms and Women’s Labor Supply: Experimental Evidence Using a Job Search Platform”, *IZA Discussion Paper no. 15767*.
- Agarwal, Neha, and Subha Mani. 2023. “New Evidence on Vocational and Apprenticeship Training Programs in Developing Countries.” Forthcoming in the *Handbook of Experimental Development Economics*, edited by Utteeyo Dasgupta and Pushkar Maitra.
- Allemand, Mathias, Martina Kirchberger, Sveta Milusheva, Carol Newman, Brent Roberts, Vincent Thorne (2023) “Conscientiousness and Labor Market Returns: Evidence from a Field Experiment in West Africa.” TEP Working Paper No. 0123.
- Alfonsi, Livia, Oriana Bandiera, Vittorio Bassi, Robin Burgess, Imran Rasul, Munshi Suliaman and Anna Vitali (2020) “Tackling Youth Unemployment: Evidence from a Labor Market Experiment in Uganda”, *Econometrica* 88(6): 2369-2414.
- Alfonsi, Livia, Mary Namubiru and Sara Spaziani (2022) “Meet your future: Experimental evidence on the labor market effects of mentors”, Mimeo. UC Berkeley.
- Assaad, Ragui (2014) “Making sense of Arab labor markets: the enduring legacy of dualism”, *IZA Journal of Labor & Development* 3:6
- Attanasio, Orazio, Adriana Kugler and Costas Meghir (2011) “Subsidizing Vocational Training for Disadvantaged Youth in Colombia: Evidence from a Randomized Trial”, *American Economic Journal: Applied Economics* 3(3): 188-220.

Attanasio, Orazio, Arlen Guarín, Carlos Medina, and Costas Meghir (2017) “Vocational Training for Disadvantaged Youth in Colombia: A Long-Term Follow-Up”, *American Economic Journal: Applied Economics* 9(2): 131-43.

Bandiera, Oriana, Niklas Buehren, Robin Burgess, Markus Goldstein, Selim Gulesci, Imran Rasul, and Munshi Sulaiman (2020) “Women’s Empowerment in Action: Evidence from a Randomized Control Trial in Africa”, *American Economic Journal: Applied Economics* 12(1): 210-259.

Banerjee, Abhijit and Sandra Sequeira (2020) “Learning by Searching: Spatial Mismatches and Imperfect Information in Southern Labor Markets.” Mimeo.

Bassi, Vittorio and Aisha Nansamba (2022) “Screening and Signaling Non-Cognitive Skills: Experimental Evidence from Uganda,” *Economic Journal*, 132 (642): 471–511.

Bertrand, Marianne and Bruno Crépon (2021) “Teaching Labor Laws: Evidence from a Randomized Control Trial in South Africa”, *American Economic Journal: Applied Economics* 13(4): 125-49.

Bertand, Marianne, Chang-Tai Hsieh and Nick Tsivanidis (2022) “Contract Labor and Establishment Growth in India”, Mimeo. University of Chicago, Booth.

Bhorat, Haroon, Adaiah Lilenstein and Ben Stanwix “The Impact of the National Minimum Wage in South Africa: Early Quantitative Evidence”, A Report for the National Minimum Wage Commission.

Blattman, Christopher and Stefan Dercon (2018) “The Impacts of Industrial and Entrepreneurial Work on Income and Health: Experimental Evidence from Ethiopia”, *American Economic Journal: Applied Economics* 10(3): 1-38.

Blattman, Christopher and Laura Ralston (2015) ““Generating employment in poor and fragile states: Evidence from labor market and entrepreneurship programs”. Available at SSRN: [prohttps://ssrn.com/abstract=2622220](https://ssrn.com/abstract=2622220) or <http://dx.doi.org/10.2139/ssrn.2622220>

Brown, Gabriel, Morgan Hardy, Isaac Mbiti, Jamie McCasland and Isabelle Salcher (2022) “Can Financial Incentives to Firms Improve Apprentice Training? Experimental Evidence from Ghana”, <https://www.dropbox.com/s/4fd6lc6dgz3kbmh/Can%20Financial%20Incentives%20to%20Firms%20Improve%20Apprentice%20Training.pdf?dl=0>

Bryan, Gharad, Shyamal Chowdhury and A. Mushfiq Mobarak (2014) “Underinvestment in a profitable technology: The case of seasonal migration in Bangladesh”, *Econometrica* 82: 1671-1748.

Caicedo, Santiago, Miguel Espinosa, Arthur Seibold (2022) “Unwilling to Train?—Firm Responses to the Colombian Apprenticeship Regulation”, *Econometrica* 90(2): 507-550.

Card, David, Jochen Kluve and Andrea Weber (2018) “What works? A Meta-analysis of Recent Active Labor Market Program Evaluations”, *Journal of the European Economic Association* 16(3): 894-931.

Carranza, Eliana, Robert Garlick, Kate Orkin, and Neil Rankin. 2022. "Job Search and Hiring with Limited Information about Workseekers' Skills." *American Economic Review*, 112 (11): 3547-83.

Carranza, Eliana and David McKenzie (2023) "Reproducibility package for Job Training and Job Search Assistance Policies in Developing Countries", World Bank Reproducible Research Repository <https://doi.org/10.60572/hm2r-nj04>

Chakravorty, Bhaskar, Apurav Yash Bhatiya, Clément Imbert, Maximilian Lohnert, Poonam Panda, and Roland Rathelot (forthcoming) "Impact of the COVID-19 Crisis on India's Rural Youth: Evidence from a Panel Survey and an Experiment", *World Development*

Chen, Yawen (2022) "This Chinese jobs crisis could be its worst", Reuters, June 20, <https://www.reuters.com/breakingviews/this-chinese-jobs-crisis-could-be-its-worst-2022-06-20/>

Crépon, Bruno and Patrick Premand (2021) "Direct and Indirect Effects of Subsidized Dual Apprenticeships", Mimeo. World Bank.

De Mel, Suresh, David McKenzie and Christopher Woodruff (2019) "Labor Drops: Experimental Evidence on the Return to Additional Labor in Microenterprises", *American Economic Journal: Applied Economics* 11(1): 202-235.

Donkor, Audrey (2021) "Africa's Youth Unemployment Crisis is a Global Problem", Foreign Policy, October 19, <https://foreignpolicy.com/2021/10/19/africa-youth-unemployment-crisis-global-problem/>

Fernando, A. Nilesh, Niharika Singh and Gabriel Tourek (2022) "Hiring frictions and the promise of online job portals: Evidence from India", Mimeo. Notre Dame.

Franklin, Simon (2017) "Location, Search Costs and Youth Unemployment: Experimental Evidence from Transport Subsidies", *The Economic Journal*, 128 (614): 2353–79.

Gehrke, Esther and Renate Hartwig (2018) "Productive effects of public works programs: What do we know? What should we know?", *World Development* 107: 111-124.

Groh, Matthew, David McKenzie, Nour Shammout, and Tara Vishwanath (2015) "Testing the importance of search frictions and matching through a randomized experiment in Jordan", *IZA Journal of Labor Economics* 4:7.

Hardy, Morgan, Isaac Mbiti, Jamie McCasland and Isabelle Salcher (2019) "The Apprenticeship-to-Work Transition: Experimental Evidence from Ghana", World Bank Policy Research Working Paper no. 8851.

Hirshleifer, Sarojini, David McKenzie, Rita Almeida and Cristobal Ridao-Cano (2016) "The impact of vocational training for the unemployed: Experimental evidence from Turkey", *Economic Journal* 126(597): 2115-2146.

Jones, Sam and Kunal Sen (2022) "Labour market effects of digital matching platforms: Experimental evidence from sub-Saharan Africa", *WIDER Working Paper* 2022/69.

Kelley, Erin M., Christopher Ksoll and Jeremy Magruder (2022) “How do Online Job Portals affect Employment and Job Search? Evidence from India”, Mimeo. UC Berkeley.

Ladipo, Ebunoluwa. 2022. “Jobberman places 130,000 Nigerians in paid employment in 2 years.” *Business Day* (Nigeria), January 25, : <https://businessday.ng/news/article/jobberman-places-130000-nigerians-in-paid-employment-in-2-years/> [accessed 12 March 2023].

List, John (2022) *The Voltage Effect*. Currency.

Maitra, Srabani, Saikat Maitra and Manish Thakur (2022) “Uncertain itineraries: dual system of training and contemporary TVET reforms in India”, *Journal of Vocational Education & Training* DOI: 10.1080/13636820.2022.2042724

McKenzie, David (2017) “How Effective are Active Labor Market Policies in Developing Countries? A Critical Review of Recent Evidence”, *World Bank Research Observer*, 32(2): 127-54

McKenzie, David, Christopher Woodruff, Kjetil Bjorvatn, Miriam Bruhn, Jing Cai, Juanita GonzalezUribe, Simon Quinn, Tetsushi Sonobe, and Martin Valdivia (2021) “Training Entrepreneurs” *VoxDevLit*, 1(2).
https://voxdev.org/sites/default/files/Training_Entrepreneurs_Issue_2.pdf

Middle East Monitor (2023) “Jordan unemployment rate hits 23.1%”, January 6, <https://www.middleeastmonitor.com/20230106-jordan-unemployment-rate-hits-23-1/>

Mitchell, Harrison, A. Mushfiq Mobarak, Karim Naguib, Maira Emy Reimão, and Ashish Shenoy (2022) “External Validity and Implementation at Scale: Evidence from a Migration Loan Program in Bangladesh”, Mimeo. Yale.

NewsIn.Asia (2023) “India is sitting on a time bomb’: Jobs crisis looms as population soars”, NewsIn.Asia, January 18, <https://newsin.asia/india-is-sitting-on-a-time-bomb-jobs-crisis-looms-as-population-soars/>

Ridgwell, Henry (2018) “Robots Pose Big Threat to Jobs in Africa, Researchers Warn”, Voice of America, March 28, <https://www.voanews.com/a/robots-in-africa/4320405.html>

Shonchoy, Abu, Tomoki Fujii and Selim Raihan (2018) “Barriers to Labor Migration for the Rural Poor: Experimental Evidence from a Vocational Training Program in Bangladesh”, Mimeo.

Taylor, Lin (2019) “Rising heat stress could cost 80 million jobs by 2030, UN says”, Thomas Reuters Foundation, <https://www.globalcitizen.org/en/content/rising-heat-stress-cost-jobs/>

Wheeler, Laurel, Robert Garlick, Eric Johnson, Patrick Shaw and Marissa Gargano (2022) “LinkedIn(to) job opportunities: Experimental evidence from job readiness training”, *American Economic Journal: Applied Economics* 14(2): 101-125.

World Bank (2020) *Demand-Driven Skills Training and Results-Based Contracting : Lessons for Youth Employment Programs*. World Bank: Washington D.C.