# Improving job seekers' employment and earnings through credible skills signals

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Credible skills signals help alleviate information barriers for both job seekers and firms, and often improve employment and earnings at a low cost. More and better information enables applicants to have a more effective job search, often resulting in higher-quality jobs and better employment matches for businesses. Further research should study whether some job seekers lose out when their peers use these skills signals.



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## Summary

Globally, roughly 188 million people[1], were unemployed in 2023. At the same time, 75 percent of employers[2], reported difficulties filling vacancies in a 2023 survey. Youth are particularly hard-hit by lack of access to jobs, and in some regions, they are up to three times more likely[3], than the general population to be unemployed. Limited information between job seekers and employers often hinders matches in the labor market. Job seekers, especially young people, often struggle to showcase or credibly certify their skills and sometimes struggle to assess their own skills in relation to the skill sets required for different jobs. Similarly, employers often find it difficult to assess the qualifications of job applicants, especially in contexts where education quality is unknown and thus does not serve as a credible signal of an applicant's skills.

In contexts with limited information about candidates, employers might rely more on social networks, to decide who to hire. Referrals are a common strategy to derisk hiring but are often biased, as they can lead to systemic exclusion of some groups, , such as women and youth, and perpetuate existing inequalities in the labor market. Improving information flows between job

seekers and employers through certifications and other forms of skill signaling should, in theory, provide an alternative way to derisk hiring without the potentially exclusionary impacts of referrals. As policymakers explore whether and how to roll out these types of interventions (e.g., through strategies like recognition of prior learning[4]), they should consider lessons from existing evidence.

A review of fourteen randomized evaluations found that providing credible signals of job seekers' skills helped alleviate information constraints between applicants and hiring firms, leading to higher employment and earnings for job seekers and reducing costs for firms (when measured). Tools such as certifications from reputable entities, skill assessments, and standardized recommendation letters from previous employers serve as credible signals to employers. Higher-skilled applicants who were better able to credibly signal those higher skills were also more likely to be invited to interview or offered a job in many cases, suggesting firms could find better matches for their vacancies when applicants used a credible skills signal. Women in particular benefited from better signaling of their skills.

Credible skills signals also changed job seekers' search behavior and beliefs: job seekers were more likely to have a targeted job search and want higher-quality jobs when they received accurate information about their own skills. Open questions remain about how these signals can increase firm profits and job creation, whether the skills signals may displace some job seekers or change job search behavior, and whether positive impacts from these interventions hold at scale.

## Supporting evidence

**Skills signals generally improved employment and earnings.** In seven of nine evaluations where it was measured, providing tools to improve skill signaling led to positive effects on employment (i.e., hours worked or employment status) in the short run[5], [1], [2], [4], [6], [8], [9], [12], . In South Africa, a context where there are few sources of information on job seekers' skills, researchers in partnership with the Harambee Youth Employment Service gave job seekers a skills certificate [6], . The certificate showed how the job seeker rated on skills like numeracy and communication, ranking them into "lower third," "middle third," or "upper third" relative to their peers. "Public" certificates included the candidate's name and World Bank and Harambee logos, and the candidates received twenty colored printouts that they could use in their job search. Those who received the public certificate were 5.2 percentage points more likely to be employed and increased hours worked by 20 percent three to four months after receiving the certificate relative to members of the comparison group, who did not receive a certificate. Job seekers who received one copy of a black and white skills certificate with their assessment results but without branding or their name were not more likely to be employed or increase their hours worked, highlighting the value of the more easily verifiable public certificate as a credible signal to employers [6], . In the long run, three of six studies found a lasting increase on employment [3], [4], [9].

In six of eight evaluations, participants had higher earnings in the short run when offered a credible skills signal [3], [6], [8], [9], [10], [12], , and in the two evaluations where earnings did not increase in the short run, earnings did increase in the long run [1], [4], . In the study from South Africa discussed above, job seekers with the public certificate earned US$130 in the first three months after the intervention, which was an earnings gain that was 5.6 times higher than the average cost of adding certification onto the assessment program [6], . Of the five studies that measured earnings in the long run, four found positive impacts for job seekers who had previously been offered a credible skills signal, and one study found positive effects four years after treatment [1], [4], [9], [12].

Among young people in the United States who participated in the state of New York's Summer Youth Employment Program, some of them received a recommendation letter with supervisor feedback and ratings after completing the program [12]. To easily create recommendation letters for participants, supervisors filled out a survey about their employees that automatically generated complete recommendation letters. The young people who received the recommendation letters cumulatively earned

US$1,349 more on average across four years relative to those who did not receive one. Researchers note that youth who received a letter of recommendation could find jobs more quickly, worked in higher-paying sectors, and stayed in their job longer, suggesting that additional information improved job quality and the match between employers and workers.

**Certificates from reputable sources and reference letters serve as credible signals to employers** [1], [2], [3], [6], [11], [12], . Signals with a seal, from reputable organizations, or with positive feedback from former employers helped prove applicants' credibility to employers, and firms were likely to use them in searching for and hiring candidates. For example, an evaluation in Uganda compared the effectiveness of a subsidized, six-month, sector-specific vocational training at BRAC, a nongovernmental organization, to a subsidized in-firm apprenticeship in either manufacturing or service sectors. In the long run, vocational trainees received more job offers and had higher rates of employment compared to firm-provided trainees. The researchers posit this is because vocational trainees could better certify their skills, and as a result received more job offers and could more easily find a new job after an unemployment spell than firm apprentices [3].

Table 1. Types of skill signaling tools

| Skill signaling device | Relevant studies |
|---|---|
| Skill assessment results (raw results, such as in a database) | [6, ][8] |
| Certificate with branding/logos (typically a report after a skills assessment) signaling completion of a skill assessment and often includes measured skills | [1, ][3, ][4, ][6, ][14] |
| Reference letters from former employers | [2, ][12] |
| Identity verification as a signal for trustworthiness with employers | [7] |

| Skill signaling device | Relevant studies |
| --- | --- |
| Fictitious resumes or simulated work-task game to observe hiring firm responses to job seeker skill signals | [5, ][11] |
| Online public rating of employee's previous work, visible to hiring firms | [9, ][10] |
| AI/algorithmic writing assistance to help candidates improve their resumes | [10] |
| Prescreening hiring services provided to firms | [13] |

**Job seekers who used credible and high-quality skills signals were more likely to be invited to an interview or receive a job offer from an employer** [1], [2], [3], [6], [7], [9], [10], [11], . In Ethiopia, where informal work is common, some job seekers were invited to a two-day job application workshop hosted by the School of Commerce of Addis Ababa University, which has a good reputation for its personnel screening tools and services. Job seekers were tested for "hard-to-observe" skills like cognitive abilities, received a certificate of those skill test results, and had an orientation on how to signal their skills in the job application process. These job seekers were more likely to receive a formal and permanent job offer doing the same amount of job search as those in the comparison group [1], . In a global online marketplace offering short-term gig jobs and providing recommendations and public rankings to hiring firms, job seekers were offered algorithmic writing assistance when preparing their resumes to fix common grammatical and stylistic errors. Those who received algorithmic resume writing assistance were more likely than their peers to receive a job offer from an employer in their first month using the service, and researchers hypothesize this is because the AI assistance helped people more clearly signal their abilities [10].

**Job seekers with higher skill levels generally benefited the most from being able to signal their skills, but more evidence is needed to understand if job seekers with lower skill ratings are made worse off** [1], [2], [3], [6], [7], [9], [10], [11], . While skills signals were impactful overall, job seekers who conveyed higher skills were more likely to receive an interview or job offer. In a study on oDesk, a large, global online marketplace where workers seek and perform jobs online as independent contractors, detailed public information about the worker's previous work experience increased earnings for strong performers [9], . On the other hand, something that researchers have not explored is whether skill signaling interventions make people with lower levels of skills worse off than if they had not used a skill signal altogether. In two instances, however, researchers note that most job seekers do not measure poorly on all skills, so better signaling may help these workers look for jobs where their skills are better aligned [1], [6]. More research is needed to better understand if and when workers with lower skill ratings are made worse off by using skill signaling tools, or if they are made worse off when more of their peers use these tools.

**In most cases, providing information about skills caused job seekers to update their beliefs to be more in line with their actual strengths and helped them target their job search** [1], [4], [6], [8], [12], . In many contexts, job seekers do not have the opportunity to learn about their own skills, creating misaligned beliefs between their perceived and measured abilities. Additional information often led job seekers to redirect their job search efforts, search more efficiently and effectively, and apply to jobs to which they were better suited. In Johannesburg, South Africa, young job seekers from low-income backgrounds updated their beliefs about their skills and job prospects when provided with an assessment of their communication and numeracy skills coupled with a one-day job search workshop provided by a job search agency. These individuals redirected their search to jobs where their skills were better aligned [8], . On the other hand, youth given a recommendation letter from their previous employer in the United States were no more likely to increase their rate of applications or improve their confidence in applying, but they did have higher employment rates than the comparison group [12], . In urban areas of Uganda, when participants of a vocational training program were given information about their soft skills after a skills assessment through the BRAC Job Placement Program, they shifted their expectations closer in line with reality about which jobs they could apply for. However, participants were less willing to accept lower-quality jobs, and thus the overall impacts on employment were unclear [4].

**Credible skill signals help firms assess job seeker skills, fill vacancies more quickly, and better identify successful matches, which can lead to better fit hires who stay in the job longer** [1], [2], [4], [5], [6], [7], [8], [11], [12], [13], . In the United States, employees who had used recommendation letters stayed in jobs for an additional 0.36 months relative to those who had not used a letter, suggesting that both workers and firms were satisfied with the arrangement and signals could offer firms the opportunity to hire and retain high-productivity employees [12]. Given how costly it is for firms to hire and train new workers, the potential of improved signaling to reduce turnover and increase firm productivity is an important consideration for firms and policymakers.

**Credible certificates and skill signals changed employer beliefs about candidates, particularly for women, in most but not all cases where measured** [1], [2], [5], [11], . In many contexts, women are often underestimated, overlooked, or have smaller networks, thus hindering their employment and earnings potential. In South Africa, where use of reference letters is uncommon, some job seekers received a simple reference letter template that they could use to ask a previous employer to rate their attitude and technical skills. Women were more likely to use the reference letters in their applications than men, likely because they perceived their disadvantage and were more open to new tools. Hiring firms were also more likely to review women's applications when a reference was included, respond to applications with positive reference letters, and change their beliefs about women's abilities with additional information. As a result, women were more likely to receive job interviews and be employed three months later, effectively closing the gender gap in hiring and improving equity within the study population [2], . On the other hand, after a simulated work-task intervention in Ghana, some hiring employers remained biased against women despite receiving more information about their trustworthiness and skills [5].

**Programs that provide effective tools for job seekers to better signal their skills are cost effective.** Six studies measured the cost effectiveness of interventions or programs that provided credible signals to job seekers, and five of six were cost effective and improved labor market outcomes for workers [1], [3], [4], [6], [8], [14], . Four of six interventions cost approximately US$20 per participant but generated larger benefits per participant [1], [4], [6], [8], . For example, in South Africa, youth cumulatively earned roughly 1.8 times more than the cost of operating the program 3.5 months after a communication and numeracy skills assessment intervention [8]. While their impacts typically are not transformative, providing certification through an assessment or reference letters within job search assistance programs are often low-cost ways for government agencies and nongovernmental organizations to improve labor market outcomes.

**There are some contexts where we expect these programs would not work well, and more research is needed on firm-level impacts, displacement effects, and the ability of these programs to perform well at scale.** In contexts where there is structural unemployment or where skills or jobs are unavailable, these programs may be less effective at improving labor market outcomes. It would be valuable to better understand how skill signals could improve the efficiency of matches to fill existing vacancies, trigger additional firm growth through better matches, or create additional vacancies as firms become more productive and have additional information. More research should explore how to best measure "hard-to-measure" skills like soft skills, and what types of skills are most important to signal in different contexts. Additional research should also shed light on when and how skills signals might displace job seekers who may have otherwise obtained a job, how they impact the job prospects of lower-skilled workers, and whether and how these interventions work at scale.

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1. International Labour Organization. 2024. "World Employment and Social Outlook: Trends 2024." 1st ed. Geneva: ILO. Report
2. Manpower Group. 2024. "2024 Global Talent Shortage." ManpowerGroup. Data
3. International Labour Organization. 2024. "ILO Modelled Estimates and Projections database ( ILOEST )." ILOSTAT, Geneva: ILO. Data
4. International Labour Organization. 2024. "Recognition of Prior Learning." Geneva: ILO. Webpage

5. For this policy insight, we define short-term results as results collected 12 months or less after program completion, and long-term results as results collected after 12 months.

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1. Abebe, Girum, Stefano Caria, , Marcel Fafchamps, , Paolo Falco, , Simon Franklin, , and Simon Quinn. 2021. “Anonymity or Distance? Job Search and Labour Market Exclusion in a Growing African City.” Review of Economic Studies 88, no. 3 (May): 1279–1310.Research Paper

2. Abel, Martin, , Rulof Burger, , and Patrizio Piraino. 2020. “The Value of Reference Letters: Experimental Evidence from South Africa.” American Economic Journal: Applied Economics 12, no. 3 (July ): 40–71.Research Paper, | J-PAL Evaluation Summary

3. Alfonsi, Livia, Oriana Bandiera, , Vittorio Bassi, , Robin Burgess, , Imran Rasul, , Munshi Sulaiman, and Anna Vitali. 2020. “Tackling Youth Unemployment: Evidence from a Labor Market Experiment in Uganda.” Econometrica 88, no. 6 (November): 2369–2414.Research Paper, | J-PAL Evaluation Summary

4. Bassi, Vittorio, and Aisha Nansamba. 2022. “Screening and Signaling Non-Cognitive Skills: Experimental Evidence from Uganda.” The Economic Journal 132, no. 642 (February): 471–511. Research Paper, | J-PAL Evaluation Summary

5. Caria, Stefano, , and Paolo Falco. 2022. “Skeptical Employers: Experimental Evidence on Biased Beliefs Constraining Firm Growth.” Review of Economics and Statistics (July): 1–45. Research Paper

6. Carranza, Eliana, Robert Garlick, , Kate Orkin, and Neil Rankin. 2022. “Job Search and Hiring with Limited Information About Workseekers’ Skills.” American Economic Review 112, no. 11 (November): 3547–3583.Research Paper, | J-PAL Evaluation Summary

7. Fernando, A. Nilesh, , Niharika Singh, , and Gabriel Tourek. 2023. “Hiring Frictions and the Promise of Online Job Portals: Evidence from India.” American Economic Review: Insights 5, no. 4 (December): 546–562. Research Paper, | J-PAL Evaluation Summary

8. Kiss, Andrea, Robert Garlick, , Kate Orkin, , and Lukas Hensel. “Jobseekers’ Beliefs About Comparative Advantage and (Mis)Directed Search.” Working Paper, June 2023. Research Paper

9. Pallais, Amanda. 2014. “Inefficient Hiring in Entry-Level Labor Markets.” American Economic Review 104, no. 11 (November): 3565–3599.Research Paper, | J-PAL Evaluation Summary

10. Wiles, Emma, Zanele T. Munyikwa, and John J. Horton. “Algorithmic Writing Assistance on Jobseekers’ Resumes Increases Hires.” NBER Working Paper #30886, October 2023. Research Paper

11. Piopiunik, Marc, Guido Schwerdt, Lisa Simon, and Ludger Woessmann. 2020. “Skills, Signals, and Employability: An Experimental Investigation.” European Economic Review 123 (April): 1–25.Research Paper

12. Heller, Sara B., , and Judd B. Kessler. “Information Frictions and Skill Signaling in the Youth Labor Market.” Working Paper, June 2022.Research Paper

13. Algan, Yann, , Bruno Crépon, and Dylan Glover. “Are Active Labor Market Policies Directed at Firms Effective? Evidence from a Randomized Evaluation with Local Employment Agencies.” Working Paper, November 2022. Research Paper, | J-PAL Evaluation Summary

14. Bertrand, Marianne, , Bruno Crépon, Alicia Marguerie, and Patrick Premand. “Do Workfare Programs Live Up to Their Promises? Experimental Evidence from Cote D’Ivoire.” Working Paper, January 2024. Research Paper, | J-PAL Evaluation Summary