

Making job platforms work for women

OCTOBER 2025



... A guide for practitioners and researchers



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Executive Summary



This report examines how job platforms can create better work opportunities for women and other underrepresented groups. It focuses on the main barriers they face, how platforms operate, and practical steps to make platforms more inclusive. The findings draw on interviews with platform leaders and researchers, academic studies, and real-world examples, highlighting concrete strategies to improve women's engagement and success on platforms. Based on this evidence, the report outlines nine recommendations for platforms to better engage women and marginalized jobseekers and expand their access to work opportunities.

Key Recommendations for platforms

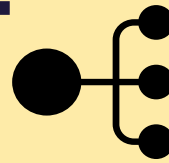
1



Bridge the gendered digital divide through accessible design

Gender gaps in access to technology and digital literacy persist. Platforms can leverage alternative ways of reaching jobseekers, including lower-tech interfaces such as Unstructured Supplementary Service Data (USSD) or Interactive Voice Recording-based phone calls to reach jobseekers who do not have smartphone access. Platforms that combine digital tools with in-person engagement, such as partnering with Technical and Vocational Education and Training (TVET) institutes or leveraging jobseekers' social networks, are more effective in reaching women and low-socioeconomic status jobseekers.

2



Balance screening for interest with jobseeker effort required to sign up and apply for jobs

Long forms and high digital literacy demands can exclude women and marginalized jobseekers who may have lower digital access and literacy. Platforms can reduce these barriers by auto-generating CVs, using chatbots for step-by-step guidance, or letting jobseekers signal interest quickly with a button or short message while still filtering for serious candidates.

3



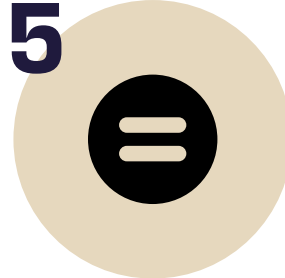
Robustly address privacy and safety concerns for jobseekers

Concerns about data privacy and safety deter women from engaging with platforms. Allowing control over personal information and establishing transparent communication about data use can foster trust.



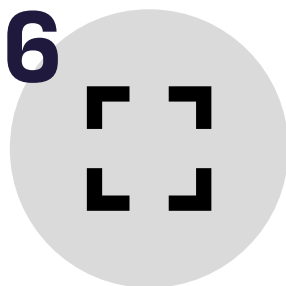
4 Prompt employers to specify information that matters for women in job postings

Women are more likely to apply when job ads clearly state wages, hours, and workplace conditions. Key features like flexibility or remote work, parental leave or childcare, and safe transport are of particular interest to many female jobseekers. Platforms can encourage employers to post this information and enable filtering of job postings based on these criteria, helping women find relevant job opportunities. Requiring employers to post these features may even encourage some to consider offering them, thus making their jobs more female-friendly.



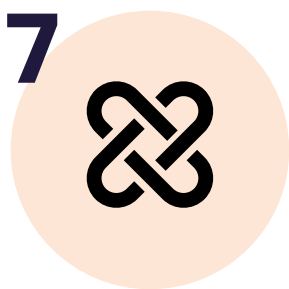
5 Leverage platform access to encourage employers to consider female jobseekers

Platforms can work with employers to ensure female applicants are considered and job ads promote equal opportunity—for instance, by discouraging gender-based criteria.



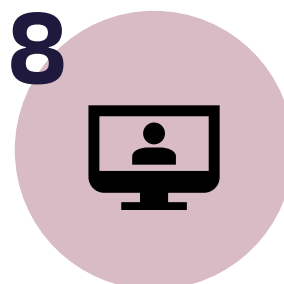
6 Provide reliable big-picture information about the market on the platform to manage jobseekers' expectations

Jobseekers often have mismatched expectations about wages and the availability of job opportunities; research has shown that initial interactions with a job platform can lead to exaggerated expectations. Platforms can share simple labor market insights such as average pay, competition levels, or peer outcomes to help individuals make more informed choices and direct their search effectively.



Use matching algorithms to help jobseekers and employers find good matches but examine and address potential bias

Many platforms are incorporating AI into the algorithms they use to match prospective applicants with employers. While such automation can enhance efficiency and scalability, it risks perpetuating biases if not designed and monitored effectively. Stress-testing algorithms and integrating human oversight are crucial to mitigate these risks.



Offer skills training opportunities, leveraging platform data on what skills are in demand

Because platforms are well positioned to know what skills are in demand by employers, they can guide jobseekers to invest in training on skills that are most in demand—particularly important for women in settings where they have a gap in employable skills. Platforms can also make training more accessible by offering prerecorded, on-demand modules that fit around women's household responsibilities.



Offer skill signaling and certification

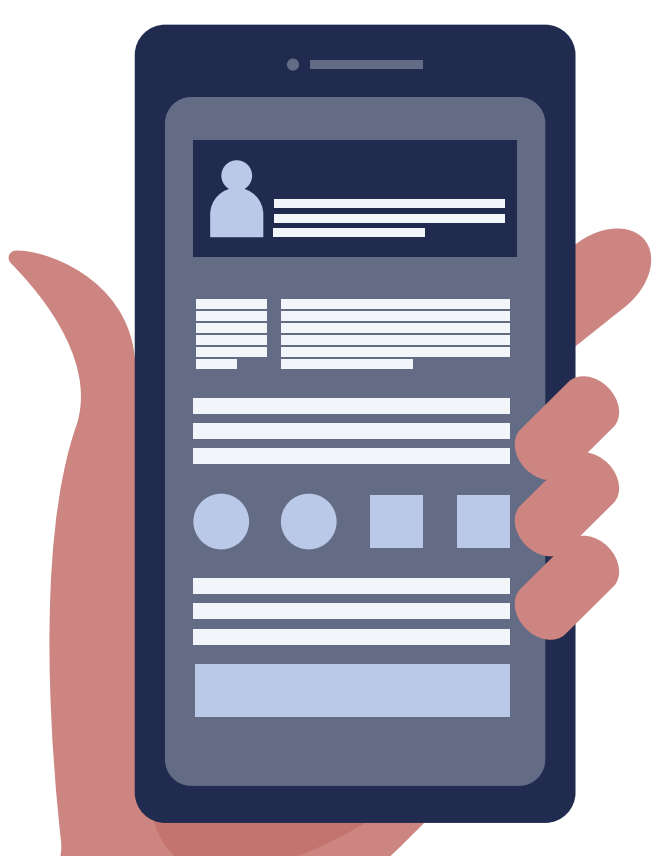
Platforms can help jobseekers signal skills through assessments and certifications, tailored to specific sectors. AI can be used to make the assessment process more cost-effective and scalable. This is particularly beneficial for those with non-traditional work experience. For digitally delivered trainings, platforms can also certify training completion, allowing jobseekers to signal their skills and effort credibly to employers.

This report provides a roadmap for leveraging job platforms to create inclusive and equitable labor markets. Addressing the outlined challenges and investing in scalable, evidence-based solutions will empower platforms to drive meaningful change.



Introduction

Women's employment outcomes continue to lag behind men's, both in terms of participation and job quality. In many low- and middle-income economies, particularly in South Asia, the Middle East, and North Africa, the share of women entering the labor force has stagnated or declined (ILO 2024). This remains the case even though women's education levels have been rising steadily worldwide (World Bank 2023).



One reason for these persistent gaps is that access to job opportunities often depends on informal networks and personal connections. Network-based hiring can disadvantage women, who may have more limited social networks and restricted mobility in many settings (Beaman, Keleher, and Magruder 2018). Digital platforms offer a potential solution by making job information more widely available. Job search through such platforms is a fast-growing and increasingly prominent channel through which jobseekers connect with employment opportunities worldwide (Carranza and McKenzie 2024). Job platforms allow employers to post vacancies, and, in some cases, jobseekers to maintain résumés and profiles. By providing better information about available jobs, they can help reduce reliance on informal networks and broaden access to employment.

Recognizing the potential of digital tools for job search and matching, many governments (with World Bank financing or technical support) have started to incorporate digital job search platforms into their labor market policies (Ezzat, de Lorenzo, and Tovar 2025). Governments may build their own digital job platforms or partner with existing ones to provide job search support.

However, job platforms are not a ‘silver bullet’ for improving employment outcomes. Engagement remains low: a review of recent research shows that jobseekers in developing country labor markets submit between 0.03 and 3.33 job applications per month on platforms, with the vast majority submitting none at all (Vyborny et al. 2024, Table A3). Moreover, platforms do not always work well for women, due to a range of barriers. These include limited access to technology and digital literacy, time and mobility constraints, safety and privacy concerns, and the types of information and practices employers include in job postings. At present, the majority of jobseekers and workers on platforms in developing countries are educated and male (ILO 2020). Understanding how individuals from marginalized groups interact with this technology is crucial for designing platforms that expand access to employment opportunities.

This report focuses on one potential channel to support women’s employment: enhancing their engagement with job platforms. It addresses the question: **How can growing job platform technology be harnessed to enhance labor force outcomes for women—and more broadly for marginalized groups?**

The report contributes to a growing body of global work on job platforms and labor market outcomes and builds on the South Asia Gender Innovation Lab’s (SAR GIL’s) broader research program on improving women’s labor force participation. Ongoing projects include reducing informational barriers to job search by providing labor market information to young graduates in India via job portals; expanding access to job opportunities and training for domestic workers in Bangladesh through a digital platform; supporting recent graduates of technical education programs in Bangladesh with job search assistance including job platform sign-up; and implementing a series of interventions on job portals in Pakistan. These interventions include testing whether publicizing gender-friendly features of jobs such as flexible work arrangements, support for childcare, and safe transportation can reduce information asymmetries and promote women’s employment; using a centralized reference verification service to help close gender gaps; and testing whether firms can be encouraged to open ads to women and how this affects male and female jobseekers.

Methodology

This project brings together expertise from job platform practitioners, academics, and policy makers to better understand how platforms can improve labor market outcomes for women, which includes the following:

Expert interviews: Sixteen platform practitioners and ten academics participated in expert interviews, sharing their experience running or studying platforms, identifying barriers to engagement, and discussing what has worked in different contexts.

Literature review: The report highlights key findings from academic research on jobseeker engagement with platforms and their effects on employment outcomes. It also incorporates evidence from policy briefs and institutional reports that discuss the evolving role of platforms in labor markets.

The scope of this project is as follows:

Platform focus: The primary focus is on platforms that allow employers to post ads and employees to apply for traditional jobs that take place offline (such as LinkedIn or Monster.com), in contrast to freelance or gig work platforms where the work consists of short-term, defined individual tasks online or offline (such as Uber or Upwork). However, the review of evidence includes some material related to gig work and freelance platforms where relevant, particularly when these help illustrate how platform features can support labor force participation for women who face mobility or time constraints. Together, these channels account for a significant share of global job search activity. Recent estimates suggest that the number of workers

engaged in gig work in the global labor force ranges from 160.6 million to 438 million (4.4 to 12.5 percent of the global labor force) (Datta et al. 2023), while over 675 million individuals (18.5 percent of the global labor force) and over 20 million companies use traditional job platforms worldwide (Johnson et al. 2020).

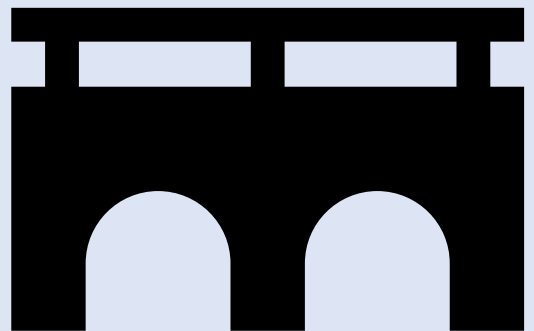
Regional focus: Expert interviews focused on platforms operating in South Asia and Sub-Saharan Africa. The literature review complements these interviews with relevant case studies and research from other regions, including high-income settings where relevant.

Sectoral focus: Among the sixteen platforms reviewed, four target white-collar jobs, three focus primarily on blue-collar work, and the rest serve a mix. While the case studies and recommendations apply broadly, particular attention is paid to features that may enhance engagement among women, low-SES individuals, and other marginalized jobseekers.

Each section of the report synthesizes insights from interviews, academic research, and policy documents related to a core aspect of the job search process and provides recommendations for platforms to support more inclusive practices. The report concludes with suggestions for areas of future research.

1

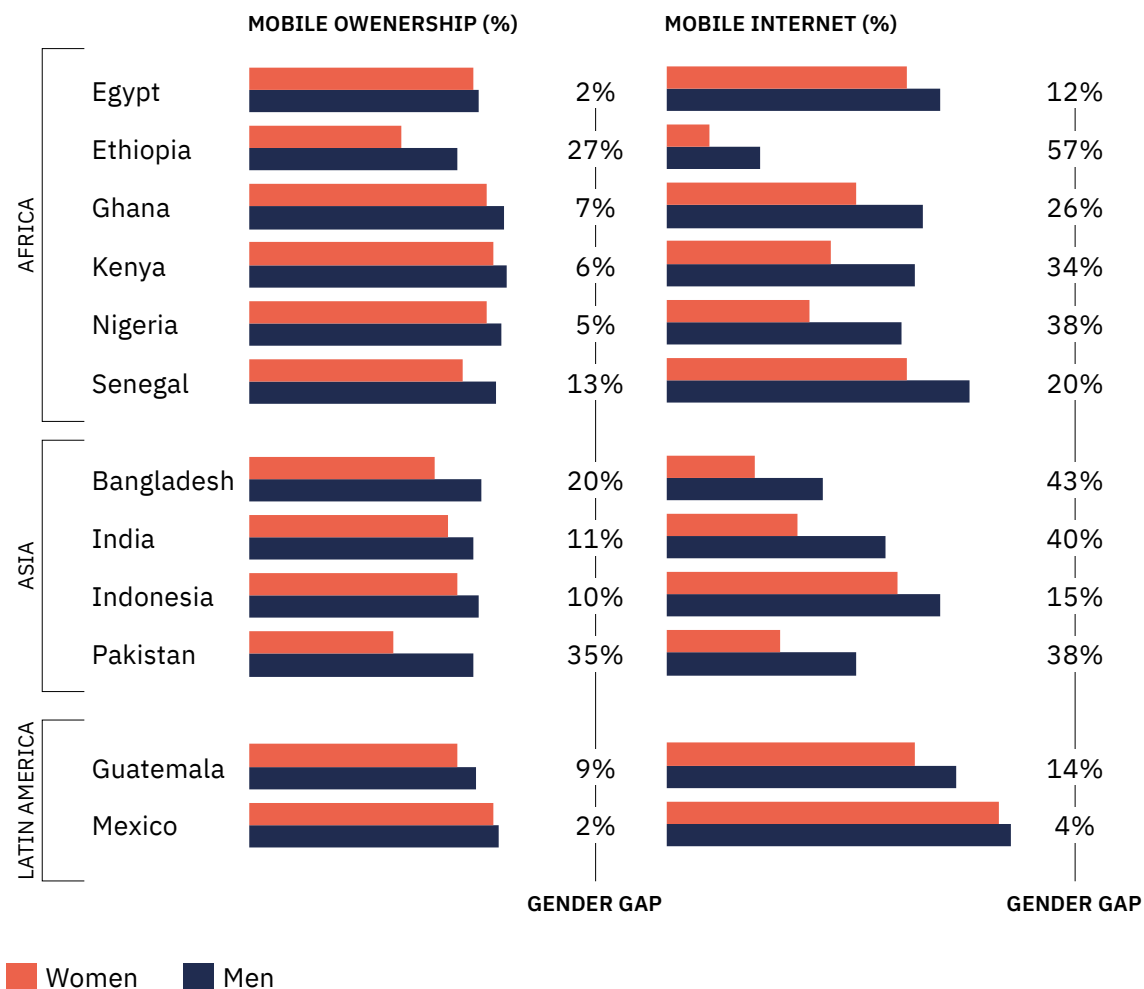
Bridge the Gendered Digital Divide through Accessible Design



Access to digital job platforms typically depends on digital literacy and reliable technology—barriers that disproportionately affect marginalized groups. These barriers are particularly gendered. One of the more accessible types of technology is the mobile phone; however, gender gaps in access to mobile phones persist globally. In South Asia, the gender gap in phone ownership stands at 15 percent, in smartphone ownership at 42 percent, and in internet use at 41 percent. In Sub-Saharan Africa, the pattern is similar; the gender gap in phone ownership stands at 13 percent, in smartphone ownership at 28 percent, and in internet use at 36 percent (GSMA 2023).¹ **Figure 1** breaks down these gaps by country.

Figure 1: Gender gap in mobile ownership and internet adoption

Male and female mobile ownership and mobile internet adoption, by country



Source: Figure 1 from GSMA Mobile Gender Gap Report (2023). It uses data from the GSMA Consumer Survey, 2022. Base: Total population ages 18+. A mobile owner is defined as a person who has sole or main use of a SIM card (or a mobile phone that does not require a SIM) and uses it at least once a month. Mobile internet users do not have to personally own a mobile phone. The gender gap in mobile ownership and mobile internet use refers to how much less likely a woman is to own a mobile (or to use mobile internet) than a man.

¹ In this report, the gender gap is calculated as the percentage of the male population who own a phone minus the percentage of the female population who own a phone, divided by the percentage of the male population who own a phone.

Even among those who access any technology, women may be less able to use it effectively (WEE-Connect Initiative 2024; World Bank 2023c). For instance, in Pakistan, among individuals who had used a computer in the previous three months, 42 percent of women could perform no tasks or only one task out of nine tasks assessed in a survey (such as sending emails or creating presentations) versus just 16 percent of men, highlighting a gender gap in digital skills even among those with access (World Bank 2024b).

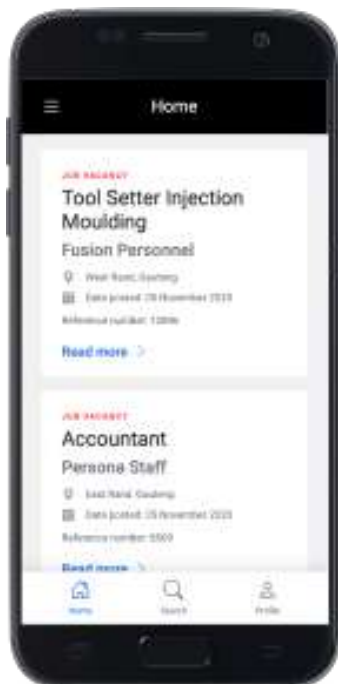
To address these barriers, most platforms reviewed for this report incorporated some level of in-person support alongside digital tools. While technology typically supports functions such as recruitment, CV creation, interviews, and employer screening, these services often rely on

offline engagement to reach and retain marginalized users.

Finding the right mix of technology and ‘live’ human support is critical for inclusion. Platforms targeting underserved groups must navigate how to deliver services efficiently while remaining accessible to users with limited digital skills or connectivity. This raises three key questions: **What type of technology can best balance accessibility and functionality? What combination of automated and ‘live’ (in person or telephone) engagement is most effective for reaching marginalized jobseekers? And how can this approach be delivered in a cost-effective way?**

The platforms reviewed in this report used a variety of technologies:

Figure 2: Harambee/SA Youth



Smartphone Applications: Some platforms relied entirely on smartphone apps, while others offered them in addition to websites.

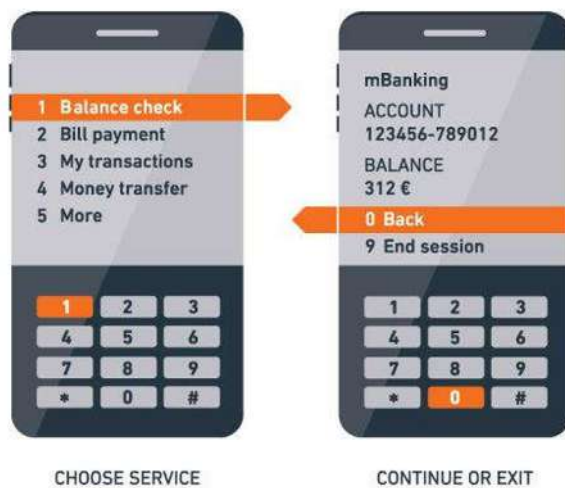
Launched in 2021 by President Cyril Ramaphosa, as part of the Presidential Youth Employment Intervention, SAYouth.mobi is a multi-channel (inbound/ outbound calls, text, WhatsApp) platform that helps young, unemployed South Africans find work by connecting them through the online platform to private and public sector employers.

Figure 3: Job Talash



SMS: A few platforms used SMS to connect jobseekers with vacancies.

Figure 4: Example of USSD



Unstructured Supplementary Service Data (USSD): USSD uses characters on a mobile keypad to foster real-time interaction based on the options selected.

Source: Figure 3 from Non-Repudiation for VoIP Communication in UMTS and LTE Networks - Scientific Figure on ResearchGate.

Interactive Voice Response (IVR): IVR systems use automated voice menus to help callers get information or make requests. Callers can interact with these systems (which use prerecorded messages) using their voice (short phrases or words) or by pressing buttons on their phone's keypad.



Table 1 summarizes the types of technology use reported by platforms reviewed.

Table 1: Job Platform Technology				
Type of Technology	Technology Access	Skill Required from Jobseeker	Strengths	Weaknesses
Websites	Requires access to the internet	Requires basic computer or mobile web page literacy	Allow for richer information and profile building for jobseekers, more details in vacancies posted	Access to computers and the internet is expensive; marginalized populations excluded
			Can build many features (such as networking, learning) on website	
Smartphone applications	Requires access to a smartphone with stable internet	Requires familiarity with smartphone usage and apps	Easily accessible for those with smartphones	Requires access to steady phone internet; not cheap in all settings
			More frequent interaction possible	
SMS	Requires access to a basic phone	Requires minimal digital skills and literacy	Cheaper and easier to access	SMSs get lost among spam
				Limited information can be collected and conveyed
USSD	Requires access to a basic phone	Requires minimal digital skills and literacy	Instant interactions (unlike 'blast' SMS) for searching or applying for jobs	Limited information can be collected and conveyed
				Can be expensive to set up and monitor
IVR	Requires access to a basic phone	Requires basic phone use	Allows interactions over phone for groups who cannot read	Limited information can be collected and conveyed
				Can be expensive to set up and monitor
In-person interaction	No technology needed	No skills needed	Easier to reach low-income jobseekers	Expensive; not easily scalable
			Makes platforms accessible to those with limited digital skills	
			Fosters trust in the platform; more personalized	

Case Study: Yuvasampark India

Chakravorty et al. (2023) supported jobseekers in rural India to sign up with a government job platform, Yuvasampark, in an effort to help them during economic recovery from the COVID-19 pandemic. Unfortunately, the results of the experiment showed no improvement in labor market outcomes; the researchers found in followup surveys that key barriers included a cumbersome the registration and log-in process, as well as a user interface that was difficult to use and provided only in English.

Case Study: Text4Jobs Ghana

In settings where internet access is limited and many workers are engaged in informal or low-skilled jobs, low-technology solutions can expand access to digital job platforms. In Ghana, the Text4Jobs initiative demonstrates how USSD technology can help overcome connectivity and digital literacy barriers. The platform uses an AI-enabled system to match jobseekers with relevant vacancies from a central job database and sends notifications encouraging them to apply. Early results indicate positive user feedback and improved job placement outcomes, suggesting that low-tech solutions can be effective in contexts with limited internet penetration or with populations with limited smartphone access (Lambon-Quayefio et al. 2024).

Case Study: Harambee South Africa

In South Africa's Gauteng province, the government launched the Tshepo 1 Million youth empowerment initiative to connect underserved unemployed youth to job opportunities. The initiative was implemented in partnership with Harambee, a youth employment accelerator. Harambee used a combination of 'feet-on-the-street'

agents, social media, and word-of-mouth to recruit jobseekers (World Bank 2023b). Youth were required to register on a central website, after which Harambee agents contacted them directly to initiate the job-matching process. Harambee now uses a data free mobile platform where young people can sign up and complete their profiles without incurring any costs. This blended outreach model, combining in-person support with digital engagement, may help in reaching disadvantaged young people who might otherwise be excluded from online platforms.

Recommendations:

- **1. Provide Low-Technology Alternatives:** To reach users without smartphones or consistent internet access, platforms should offer low-technology channels such as SMS, USSD, or IVR. These channels can broaden participation among jobseekers with limited digital skills or access to infrastructure.
- **2. Negotiate Lower Data Rates for Digital Services:** Platforms that rely on internet-based access can explore partnerships with mobile network operators to reduce data costs. Lowering the cost of connectivity may increase platform accessibility for low-income users, making their services more accessible.
- **3. Combine 'Live' Human Engagement and Automated Digital Technology to Expand Access:** Blending in-person engagement with digital tools can help platforms reach marginalized jobseekers more effectively:
 - Many platforms report that some level of in-person interaction is crucial for engaging low-SES women. For example, the online job portal of the

Punjab Ministry of Labor in Pakistan maintained 36 local labor offices in districts with office assistants who helped jobseekers sign up to the platform in person.

- Platforms can partner with organizations that have an existing field presence, such as Technical and Vocational Education and Training (TVET) institutes, to engage jobseekers in person effectively.
- Evidence from a large-scale experiment in Lahore, Pakistan, shows that even small reductions in the effort required to apply can have dramatic effects on jobseeker behavior. When a platform followed up initial vacancy texts with phone calls inviting jobseekers to apply immediately, application rates increased more than sevenfold (Vyborny et al. 2024). The study did not report results by gender. While one-on-one phone calls may be costly at scale, similar approaches could be adapted using automated IVR systems to lower barriers to application for marginalized jobseekers.

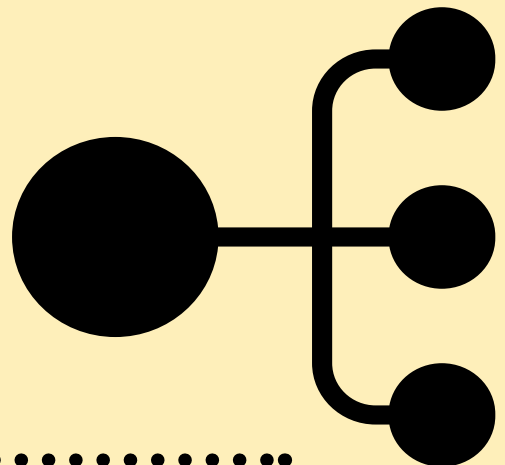
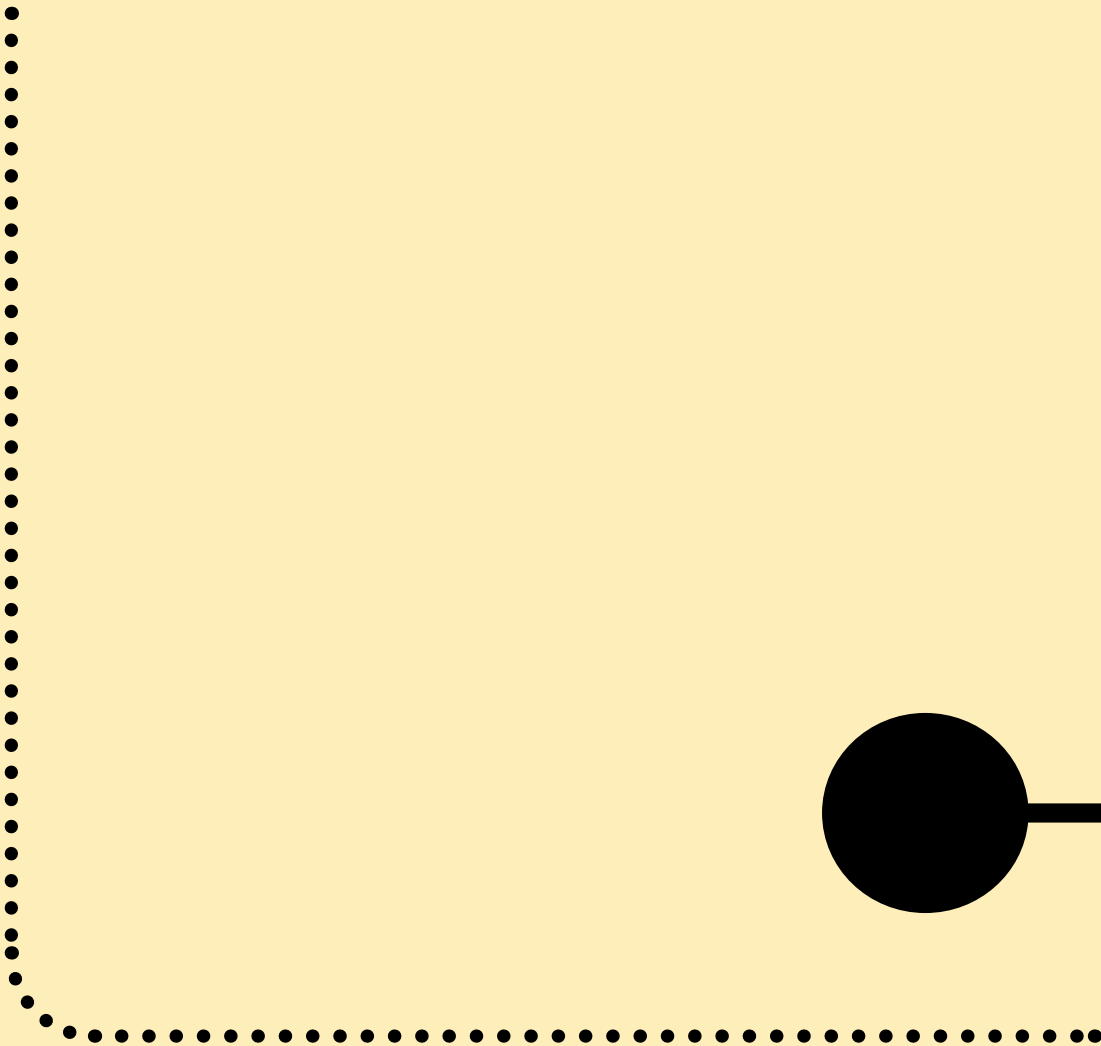
● 4. Facilitate Take-Up through Social

Networks: Evidence from other settings indicates that networks matter for women (Afridi et al. 2023; Anukriti, Herrera-Almanza, and Karra et al. 2022). Research also shows that women may have less access to informal networks that facilitate employment opportunities (Beaman and Magruder 2012).

- Leveraging Networks for Recruitment: Platforms can organize outreach activities at the community level to facilitate sign-up. Involving trusted local figures such as religious leaders or members of local savings groups may increase credibility and participation. Platforms can also encourage co-registration among women in the same household and offer referral incentives to expand outreach within social networks.
- Encouraging On-Platform Social Engagement: Allowing users to view and share job-seeking activity within their networks may strengthen engagement. For example, LinkedIn notifies users when a connection starts a new job. Similar features can be adapted for platforms targeting blue-collar workers and may be particularly effective for encouraging participation among women.

2

**Balance Screening
for Interest with
Jobseeker Effort
Required to Sign Up
and Apply for Jobs**



Detailed information about jobseekers is essential for accurate matching and personalized recommendations. However, completing detailed online forms can be challenging for individuals with low digital literacy or limited access to technology. These barriers are especially pronounced for women, who often face time constraints, lower digital familiarity, and less access to devices or internet connectivity (World Bank 2023c). As a result, women may be disproportionately excluded from opportunities that require completing detailed online profiles.

A key challenge is the trade-off between improving match quality through richer jobseeker data and avoiding burdens that may discourage participation. When platforms require less information, employers may receive large volumes of applications from individuals who are not well suited for the role. On the other hand, requiring too much information up-front may lead some jobseekers to drop out of the process entirely. **How can platforms balance the demand for richer jobseeker information to improve matches and screen for serious applicants without discouraging participation from some groups?**

Table 2 highlights some application features and their trade-offs. Some of these are discussed in more detail below.

Photo: Wulandari Wulandari / Shutterstock



Table 2: Application Features and Jobseeker Effort

Application Feature	Jobseeker Effort	Strengths	Weaknesses
Detailed demographic and preference information	High: requires digital literacy and steady access to technology	Provides rich information for personalized matching, helps employers pre-screen candidates	May exclude low-literacy users or those without stable internet, time-consuming
AI and bot-guided form filling	Medium - High: requires basic digital skills	Assists jobseekers during the signup process, reducing drop-off, improves completion rates	Still requires some digital familiarity, may fail to capture rich jobseeker information
Answering vacancy-based questions	Medium: requires basic digital skills	Demonstrates candidate interest, helps filter applicants without heavy burden	Jobseekers with low literacy or confidence may skip, depends on job ad quality
Signalling interest in specific vacancies	Medium - Low: Can range from sending messages to recruiters, or clicking to indicate preference for a vacancy	Highlights more serious applicants to employers	Effectiveness depends on employer responsiveness
Uploading documents and text parsing	Low: requires comfort with technology	Minimizes jobseeker effort, simpler profile creation especially for low-literacy users	May yield incomplete or low-detail profiles
Phone based assistance	Low: requires access to a phone where jobseekers can answer questions to build a profile	Supports low-literacy users, reduces drop-off among digitally excluded jobseekers	Limited ability to gather detailed jobseeker information, costly to scale

Signaling interest: To reduce the burden of collecting detailed jobseeker information while still allowing employers to assess candidate suitability, platforms can introduce features that help jobseekers signal interest in specific vacancies. For example, the platform Dost asks applicants to answer a few short questions as part of the application process. These questions help confirm that the applicant has read the job description and meets basic requirements. Examples include questions assessing English proficiency or asking practical questions such as, *Do you have a bike for use on the job?* or *Can you work a night shift?*

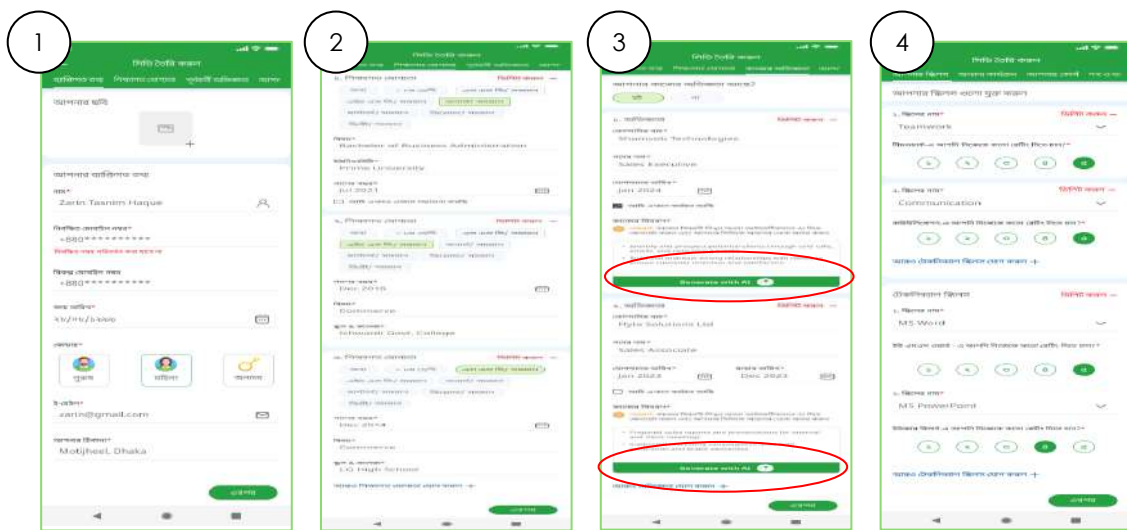
Effort in initiating applications: Jobseekers may face psychological barriers that discourage them from starting the application process. A study by SAR GIL in Pakistan on the Job Talash platform tested a low-cost intervention in which selected jobseekers received follow-up phone calls prompting them to begin their applications. This led to a 600 percent increase in applications with no decrease in the interview rate, highlighting the magnitude of these barriers and the potential benefits of reducing them (Vyborny et al. 2024).

Recommendations:

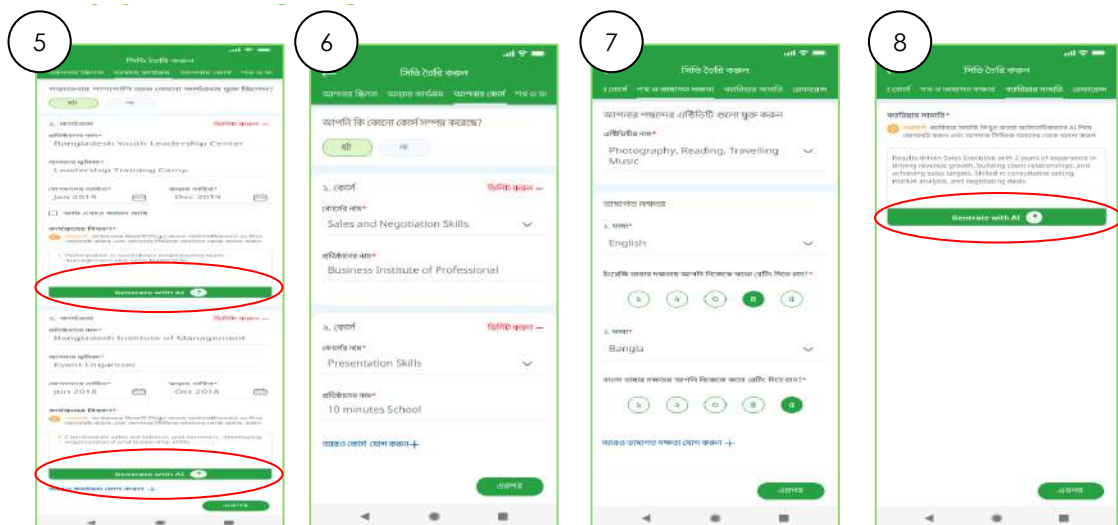
To reduce entry barriers while maintaining the quality of information available to employers, platforms can consider the following strategies:

● **1. Use AI to Enhance Jobseeker Profiles:** Platforms can use AI tools to extract information from uploaded documents and automatically generate CVs. This reduces the effort required from jobseekers and can support greater participation. The platform Shomvob applies this approach in Bangladesh's labor market (**Figure 5**).

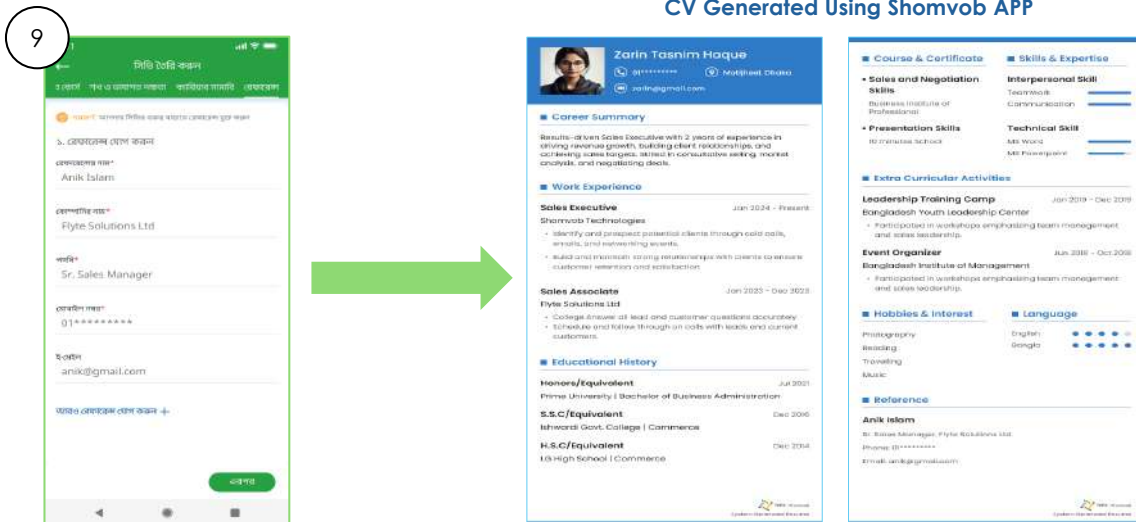
Figure 5: Screenshots from Shomvob's Platform



AI helps jobseekers to create CVs based on the details they provide



AI helps jobseekers to create CVs based on the details they provide



AI helps jobseekers to create CVs based on the details they provide

- **2. Guide Jobseekers through the Sign-up Process:** Bots and AI tools can provide step-by-step assistance during the sign-up process, helping users complete profiles and navigate platform features. These tools are particularly useful for engaging jobseekers with low digital literacy.
- **3. Enable Jobseekers to Signal Interest Efficiently:** Platforms can introduce low-effort features, such as a personalized message or an 'I'm interested' button, that allow jobseekers to express interest in specific vacancies. Limiting the number of signals helps distinguish motivated candidates from passive users and encourages jobseekers to focus on roles for which they are well-suited. For employers, these signals serve as a useful tool to identify engaged applicants. A parallel can be drawn from the economics job market, where the American Economic Association (AEA) introduced a formal signaling mechanism that allows candidates to send expressions of special interest to up to two employers. Evidence shows that these signals increase the likelihood of receiving an interview, demonstrating how structured signaling can reduce congestion in the market and improve matches (Coles et al. 2010).

3

Robustly Address Privacy and Safety Concerns for Jobseekers



Even when technology is accessible, privacy concerns can limit participation on job platforms (World Bank 2023c). Women, in particular, may be reluctant to share personal information, such as names or addresses, on CVs or sign-up forms due to concerns about harassment or misuse of their data. **What challenges have platforms faced in addressing these concerns, and how have they adapted to better engage women jobseekers?**

Case Study: Video/Photo Requirements

Dost, a platform serving the blue-collar labor market in Pakistan, introduced a feature on its smartphone app requiring jobseekers to upload video interviews. Employers responded positively, as the videos helped assess candidate interest and communication skills. However, many women were discouraged from using the platform. They expressed concerns about app permissions accessing their phone gallery and uncertainty over how their videos might be used. In response, Dost made video and photo uploads optional. This change increased engagement among women, although it may also result in men disproportionately submitting such materials—potentially giving them a competitive advantage.

Case Study: Fraudulent Employers

A survey of jobseekers in urban India found that fake job postings discouraged 36 percent of respondents from using platforms (IFMR 2024). In Sri Lanka, the platform Ikman encountered cases where fraudulent employers posted vacancies and later solicited payments from applicants. In response, Ikman introduced verification measures. Employers active on the platform for over three months were eligible for ‘Verified Employer’ status after verification of their email, identification number, business name, location, and contact details. Verified employers were given a badge to signal credibility. The platform also monitored suspicious activity and removed flagged accounts. These steps helped jobseekers interact with credible employers and strengthened trust in the platform. Similarly, Rozee in Pakistan maintained a public list of ‘fraudulent companies’ that had been reported by users for practices such as fictitious interview calls or soliciting of payments.

Photo: Freepik



Recommendations:

● 1. Communicate Clearly and Transparency about Data Privacy:

Platforms should clearly communicate how jobseekers' data will be used and who will have access to it. Transparency in data practices can strengthen user trust and support greater engagement with the platform.

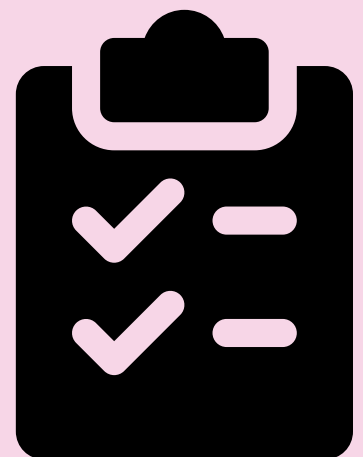
● 2. Provide Jobseekers Control over Their Data: Enabling jobseekers to control what information they share, and when, can help address privacy-related barriers:

- Jobseekers should be able to decide when their data are shared and with which employers (for example, limiting visibility to employers they have applied to).
- Platforms should allow users to select which personal details to share (for example, phone number, email, address) and provide secure in-platform messaging to reduce the need for sharing sensitive information.

● 3. Provide Accessible Channels for Feedback and Complaints: Platforms should offer simple and accessible channels for reporting issues such as harassment or fraudulent employers. These channels can support early action, enhance accountability, and improve overall trust in the platform.

4

Prompt Employers to Specify Information That Matters for Women in Job Postings



Job platforms vary in the type and level of detail employers include in vacancy postings. These differences can significantly affect how women search and apply for jobs. Women may place high value on workplace features such as hours, location, proximity to home, transport options, flexibility, and amenities; and they may be more willing to accept a more modest salary offer in exchange for these kinds of features (Mas and Pallais 2017). Clear information on these characteristics can reduce uncertainty, boost confidence, and increase the likelihood that women apply, especially for jobseekers with limited formal experience. Key features such as flexible or remote work, safe transport, parental leave, or childcare are particularly important for many female jobseekers. Ongoing work by SAR GIL in Pakistan is testing this directly: an impact evaluation on one of the country's largest job portals is measuring how publicizing gender-friendly features such as flexible work arrangements, childcare support, and safe transportation affects women's job search and labor force participation.

Platforms can encourage or require employers to include such information in job postings and allow users to filter vacancies based on these criteria, making it easier for women to identify suitable opportunities. Asking employers to report such features might also prompt them to reflect on and expand the types of support they provide.

Wage information: Including wage information in job postings can help jobseekers target higher-paying opportunities (Banfi and Villena-Roldan 2019). However, not all employers disclose salary details, particularly for higher-wage roles. This lack of information may disproportionately deter women from applying. Evidence shows that women are less likely to apply for jobs that do not include salary information, which can lead to lower application rates for better-paying positions; mandating pay transparency thus helps close the gender gap (Jalal 2025).

However, employers may choose to omit salary or other details from job postings to avoid attracting a high volume of applications, particularly for better-paying roles where screening costs are higher. This creates a challenge: when job postings lack detail, women may self-select out of applying and unknowingly miss high-skill, high-wage opportunities. Platforms must balance the benefits of transparency for jobseekers with employers' preferences for managing application volumes.

In a similar vein, researchers in the U.S. have found that men are more likely to negotiate a salary offer, widening the gender wage gap - but this pattern disappears when job ads clearly indicate that the salary is negotiable (Leibbrandt and List 2015).

Remote or Flexible Work

Case Study: Part-Time Work and Flexible Opportunities for Women

Researchers conducted an experiment in urban India to evaluate women's preferences for flexible work arrangements. Married women

were offered identical jobs, such as contributing speech recordings for identity verification, but the location of work varied. Some were offered jobs at home, while others were offered positions at nearby, women-friendly offices located within a five-minute walk. These offices

included female supervisors and allowed women to bring their children. Overall, 42 percent of women accepted a job offer. Take-up was 56 percent for home-based jobs and 27 percent for office-based jobs (Jalota and Ho 2024). The results suggest that flexible or home-based work can significantly increase women's willingness to engage with job platforms.

In related work, Ho, Jalota, and Karandikar (2024) studied the longer-term effects of providing women with access to digital jobs, including contributions to local-language speech datasets used in training AI models. Women were randomly offered short-term digital jobs with varying levels of flexibility, including the ability to choose work hours, work from home, or combine work with caregiving. Flexible job offers saw more than triple the take-up rates and served as a stepping stone to less flexible, outside-the-home jobs in later months.

Transport options: Garlick et al. (2025) show that the anticipation of safe transport to work can triple women's job application rates in urban Pakistan. Kapoor and Gade (2024) found that in India connecting and providing a coordinated interview schedule for groups of women from the same neighborhood, allowing them to coordinate travel for the interview, increased women's interview attendance and employment. Platforms could support jobseekers to address mobility constraints by providing information on transport options to reach a given job, whether employer provided or through collaboration with other partners such as ride-sharing services.

Case Study: Providing Workplace Information

Information about workplace conditions, such as work hours, travel requirements, and expectations around overtime, can be especially important for women. In contexts where social norms limit women's mobility or discourage them from working alongside men, details about the gender composition of the workplace can influence whether women choose to apply. In Pakistan, Subramanian (2024) finds that when job postings include the gender of the supervisor, women target postings with female supervisors. This demonstrates that there are certain costs associated with working outside the home that women face due to social norms. At the same time, providing simple, low-cost information about workplace attributes allows women to select firms that reduce these costs, leading to higher application rates.

Case Study: Encouraging Women to Apply

Evidence suggests that men are more likely to apply for a broad range of jobs, while women tend to apply only when they meet most listed criteria (OECD 2023). To address this, platforms and employers could potentially use language in job ads that explicitly invites applications from women, or indicate that individuals who may not meet every requirement are encouraged to apply. Some job postings already include such language (see **Figure 6**), and the Gender Equity in Hiring project provides additional examples.² However, the evidence on how best to address this issue is still emerging.

² <https://genderequityinhiringproject.org/include-an-invitation-to-apply/>

Abraham, Hallermeier and Stein (2024) ran an experiment with recruiting in partnership with Uber; removing “extra” (desired but not essential) qualifications from job descriptions resulted in more applications by less skilled women and fewer by highly skilled women, while drawing more applications from men of all skill levels. Leibbrandt and List (2025) find in an experiment in the US that adding an equal opportunity statement to job ads does not increase applications by racial minorities or women – and in fact may

sometimes backfire, perhaps by reminding jobseekers of potential discrimination. In contrast, however, when the statement indicates credibly that women will receive serious consideration, this may have more positive impact: Ibanez and Riener (2018) ran an experiment with job ads in Colombia, finding that informing candidates that affirmative action would be used in the selection of candidates increased women’s application rates to jobs.

Figure 6: Screenshot of GiveWell’s Job Post Text

We don’t want to miss candidates that could do great things at GiveWell. Practically, that means a GiveWell staff member reads all components of every application carefully and considers the whole picture of your background and potential. If you’re on the fence about applying because you meet some but not 100% of our preferred qualifications (some studies suggest this hesitation is especially common for women and people of color), we encourage you to apply anyway.

Recommendations:

● 1. Expand Vacancy Information and Allow Jobseekers to Search by Criteria Relevant to Female Jobseekers:

Platforms can require or encourage employers to post more detailed information in job postings—such as wages, workplace amenities, job location, and the gender composition of the team—and test how these disclosures affect application behavior and matching outcomes. Providing clearer information can encourage more qualified women to apply, improve decision-making for jobseekers, and strengthen the quality of matches on the platform. Making these features easy for jobseekers to search or filter may help increase women’s application rates and successful job placement.

● 2. Proactively Identify and Enroll Employers Offering Jobs with Female-Friendly Features:

Platforms can engage with employers to identify and source jobs that offer flexibility, such as part-time roles, remote work, or adaptable hours. These opportunities are especially valuable for jobseekers balancing paid work with caregiving or other responsibilities.

● 3. Engage Employers on Job Advertisement Content:

Platforms can work directly with employers to review and revise job advertisements. This includes offering guidance on replacing gendered language and reconsidering the use of gender-based criteria. These efforts can help attract a wider, more diverse pool of applicants.

5

**Leverage Platform
Access to Encourage
Employers to
Consider Female
Jobseekers**



Platforms can play a role in encouraging equal-opportunity recruitment. This might include addressing gendered language and imagery in job advertisements, engaging directly with firms that include gender requirements in postings, and refining recommendation algorithms to avoid reinforcing bias when suggesting candidates for specific roles.

Case Study: Social Norms and Gender in Employment

Archibong et al. (2024) examine how social norms influence hiring decisions in Nigeria, using data from the country's largest job platform. The study finds that ethnicity affects hiring outcomes differently for men and women: male applicants who share an ethnicity with the hiring manager are more likely to be hired, while co-ethnic female applicants are less likely to be selected, particularly for senior positions. To address these patterns, the researchers conducted an experiment in which a subset of hiring managers received a message highlighting evidence of gender bias in hiring, along with information on how hiring qualified women and promoting workforce diversity can improve firm performance. The message stated: Hiring Managers are, on average, more likely to hire qualified men over equally qualified women applicants for jobs. Evidence shows that hiring a more diverse workforce and hiring more qualified women can significantly improve firm performance and value. After receiving this message, hiring managers participated in an incentivized résumé rating (IRR) exercise in which they selected top candidates for a senior role. Exposure to the message reduced the co-ethnic gender hiring penalty and increased the share of qualified women selected—both co-ethnic and non-co-ethnic.

Challenges: For such initiatives to be sustainable, they must align with platform incentives. Platforms need to see long-

term value in investing in these efforts, which often require ongoing engagement and resources. Ultimately, the viability of such initiatives also depends on employer buy-in. If firms do not recognize the benefits of more inclusive hiring practices, adoption may remain limited.

Case Study: Should Platforms Require Gender-Neutral Language in Ads?

Del Carpio and Fujiwara (2025) ran a field experiment in which some ads were randomly assigned to use gender-neutral language. These ads attracted more female applicants—but only when few of the other ads applicants were likely to view were also treated, so the gender-neutral ads stood out. However, when most of the ads a jobseeker saw were gender-neutral, this no longer made an impact. This finding suggests the potential limitation of this kind of policy to have an impact when scaled up.

Case Study: Should Platforms Gender-Blind CVs for Firms?

When information such as gender and race is restricted from the employer during initial selection (“gender blinding” the CV), this can result in women being more likely to reach interview and to proceed past the interview to receive a job offer (Aslund and Skans 2012); women who know that their CVs will be gender-blinded are also more likely to apply (Boring et al. 2025). However, there is also a risk that “blinding” CVs can also discourage some firms from engaging at

all, and may stop firms from giving women or minority jobseekers consideration for the disadvantages they have faced when considering their accomplishments (Behagel, Crepon and Le Barbachon 2015).

Case Study: Should Platforms Prohibit Gender Preferences in Ads?

In some contexts, job postings explicitly state gender preferences. In Pakistan, 60 percent of advertisements from a representative sample of firms were closed to women, accounting for a significant portion of the gender gap in employment (Gentile et al. 2025). In other cases, gender preferences appear implicitly, for example, through gendered language. Chaturvedi, Mahajan, and Siddique (2024) examine over 160,000 job ads in India and find that those targeting women, whether explicitly or implicitly, tended to offer lower wages. Similarly, Chowdhury et al. (2018) find that in a dataset of over 800,000 urban job ads in India, women were more frequently preferred for low-skill, low-wage positions, while ads preferring men offered higher salaries.

Kuhn and Shen (2023) examine a policy reform in China that banned employers from including gender preferences in job advertisements. When restrictions were unexpectedly removed for a subset of postings on a major job platform, the composition of applicant pools became more integrated. Similarly, Card, Colella, and Lalive (2024) study a comparable reform in Austria and find that eliminating gender preferences increased the share of women hired into roles that had previously been targeted to men—and vice versa.

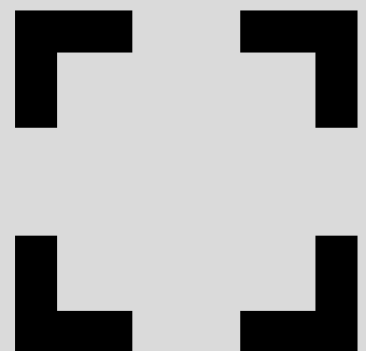
In more gender-segregated labor markets, policies banning gender preferences in ads might also lead to unintended consequences. If certain roles are effectively closed to women in practice, removing gender filters could lead to jobseekers applying for roles with little chance of success, reducing their willingness to search. Employers may also receive applications from candidates they do not intend to consider. While evidence from China (Kuhn and Shen 2023) and Austria (Card, Colella, and Lalive 2024) shows that banning gender preferences led to more integrated applicant pools and increased hiring of women, it remains unclear whether these effects extend to more restrictive settings. Ongoing research by SAR GIL and Center for Economic Research in Pakistan is testing these trade-offs through interventions on the Job Talash platform in Pakistan.

Recommendations:

- **1. Use Platform Access to Engage with Employers and Encourage Them to Consider Female Candidates:** Platforms are uniquely placed to nudge employers to reconsider a default preference for male candidates.
- **2. Consider Discouraging Gender-Restricted Job Ads:** The evidence to date shows that disallowing gender restrictions in ads has had positive consequences in some countries; while evidence is still needed on how well this generalizes across settings, it suggests that platforms should consider at least discouraging firms from placing these restrictions.

6

**Provide Reliable
Big-Picture
Information about
the Market on
the Platform to
Manage Jobseekers'
Expectations**



Jobseekers may hold unrealistic expectations about their employment prospects. In recent work, Kelley, Ksoll, and Magruder (2024) randomly assigned jobseekers in India to receive job vacancy text messages. The study found that employment rates declined among recipients, as they developed overly optimistic beliefs about the number and types of jobs they could get. Women often have weaker informal job networks (Beaman and Magruder 2012), reducing their access to credible labor market information. As a result, with less formal work experience, they may be more vulnerable to holding mismatched expectations about wages, job types, or hiring likelihood.

Photo: WESTOCK PRODUCTIONS / Shutterstock



Could platforms help correct mismatched expectations by improving access to labor market information?

Case Study: Local Labor Market Information

Fernando and Singh (2024) examine the effects of providing labor market information to jobseekers through an online job portal in India. Participants were randomly assigned to receive information about job postings, about other applicants, or about both for their preferred city and occupation. Among jobseekers who were already employed at baseline, receiving this information reduced the likelihood of looking outside the portal and helped them stay in their jobs. For unemployed jobseekers, the information encouraged more active job search, although it did not lead to higher employment. The impacts were strongest in competitive labor markets, suggesting that jobseekers used the information to adjust their expectations. The study did not report results by gender. Further details on the intervention and scripts used are available in Appendix subsection A.1.3.1.

Case Study: Information about Search and Unemployment

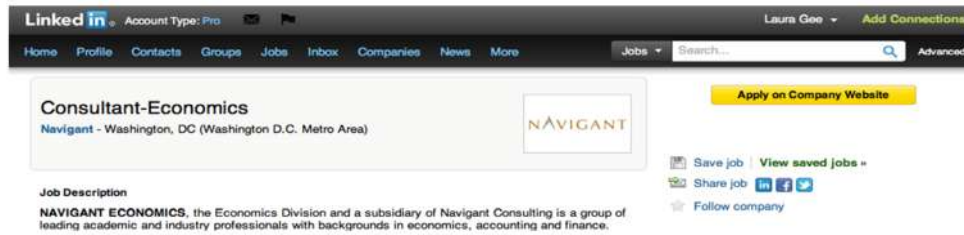
In Germany, Altmann et al. (2018) tested the impact of a low-cost informational brochure that provided jobseekers with job search strategies and emphasized the risks of prolonged unemployment. The brochure aimed to encourage more active job search behavior and was found to improve both employment and earnings outcomes, particularly among individuals at higher risk of unemployment. The study did not report results by gender. Details of the brochure are provided in Appendix subsection A.1.3.2.

Case Study: Information on Job Application Rates

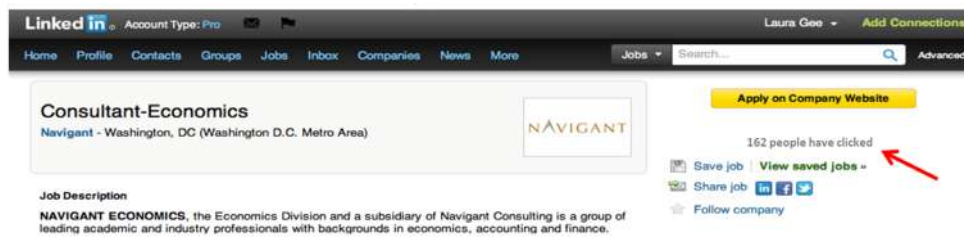
In an experiment conducted on LinkedIn, Gee (2019) added an option for jobseekers to view the number of applicants for a given job posting (**Figure 7**). Individuals who received this information were 3.5 percent more likely to complete a job application. The effect was larger for women, suggesting that visibility into applicant volume can help reduce gender gaps in application behavior. The impact did not depend on whether the number of applicants was high or low; the presence of information influenced application decisions.

Figure 7: Screenshot of the Intervention in Gee (2019)

(a) Control



(b) Treatment



Case Studies: Information on Peer Earnings

In Mozambique, researchers followed university graduates over two years as they entered the labor market and conducted an experiment in which some participants received information about their peers' employment outcomes and wages. The study found that participants initially held overly optimistic expectations about their future earnings, and those who received peer information gradually adjusted these expectations over time (Jones and Santos 2022). The study did not report results by gender. Appendix subsection A.1.3.3 provides further details on the intervention.

A related study in the Republic of Congo studied beliefs about earnings across different trades. Researchers provided jobseekers with trade-specific wage information in a context where

occupations were highly gendered and male-dominated trades offered higher pay. Although both men and women were aware of the earnings gap, receiving concrete information led more women to consider and enter male-dominated trades. As a result, both men and women shifted away from lower-paying occupations (Gassier, Rouanet, and Traore 2022).

Challenges: Platforms can provide information that improves jobseeker welfare, but receiving more accurate or realistic details may lead some users to disengage from certain opportunities, reducing the overall number of applications. While this may look like lower engagement, it often reflects more focused and higher-quality job search. Some platforms prioritize metrics like total clicks or applications, but this approach can be self-defeating if it overwhelms employers with unsuitable

candidates and discourages jobseekers. By helping users filter options and specify preferences, platforms can streamline the process, reduce wasted effort, and signal seriousness to employers, ultimately improving match quality and building trust on both sides.

Recommendations:

To balance the goal of providing jobseekers with useful labor market information while supporting platform performance and employer engagement, platforms can experiment with different strategies:

- **1. Provide Comprehensive Labor Market Information:** Platforms can offer jobseekers a fuller picture of the labor market by sharing information not only on available vacancies but also on competition levels within sectors or occupations.

- **2. Present Digestible Data:** Platforms can display simplified data, such as average wages or basic statistics by occupation or skill level. For example, Glassdoor includes salary ranges in job postings but does not report how many people have applied for each role (**Figure 8**).

Figure 8: Screenshot of a Job Posting on Glassdoor

Base pay range

\$88K – \$96K/yr (Employer provided)

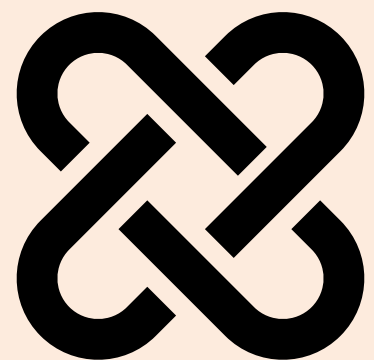
\$92K/yr Median

Washington, DC

ⓘ If an employer includes a salary or salary range on their job, we display it as "Employer Provided". If a job has no salary data, Glassdoor displays a "Glassdoor Estimate" if available. To learn more about "Glassdoor Estimates," see our [FAQ](#) page.

7

Use Matching Algorithms to Help Jobseekers and Employers Find Good Matches, but Examine and Address Potential Bias



Most platforms reviewed use algorithms to support job matching. Understanding how these systems operate, and how they can be adapted, is key to promoting more inclusive outcomes. For example, in contexts where women face mobility constraints, matching algorithms could prioritize jobs located closer to home or those that offer transport. Algorithms can also be designed to highlight qualified female applicants to employers who might otherwise overlook them in a large applicant pool.

Five of sixteen interviewee platforms report using algorithms for some features including: helping jobseekers sign up for the platform and fill out their profile information (**Figures 5–7**) and search for specific jobs (suggest top jobs as recommendations, or filter jobs for which jobseekers qualify (**Figure 9a**)). Additionally, algorithms are used to score candidates for employers based on their suitability for a given job and make recommendations to employers (**Figures 9b–9d**).

Figure 9a: Screenshot of a Job Recommendations on Fuzu

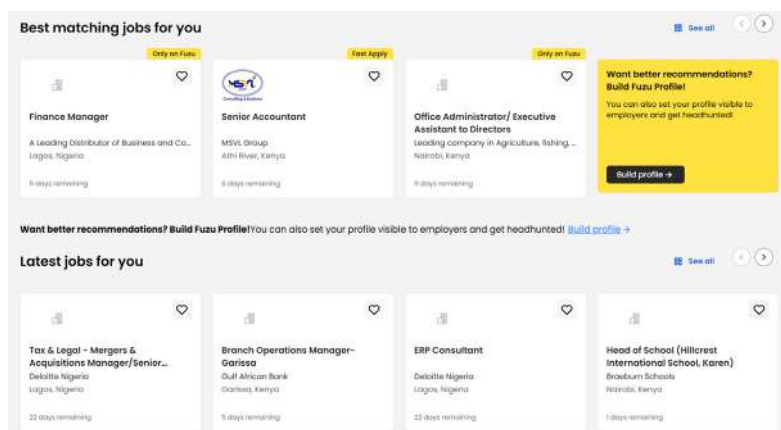


Figure 9b: Screenshot of an Employer's Dashboard on Rozee

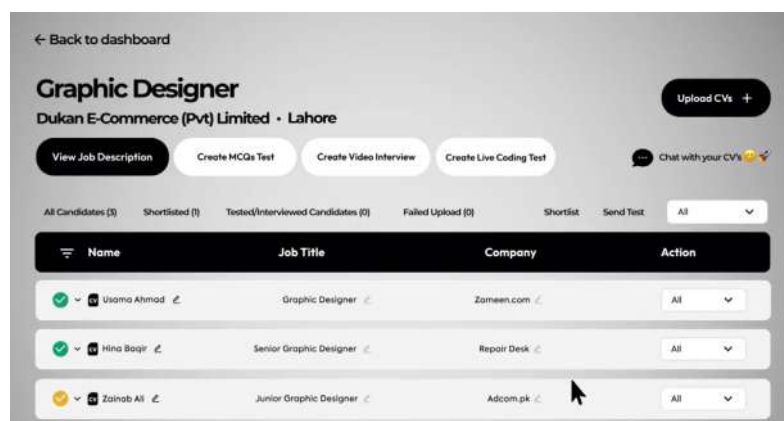


Figure 9c: Screenshot of an Employer's Dashboard on Rozee

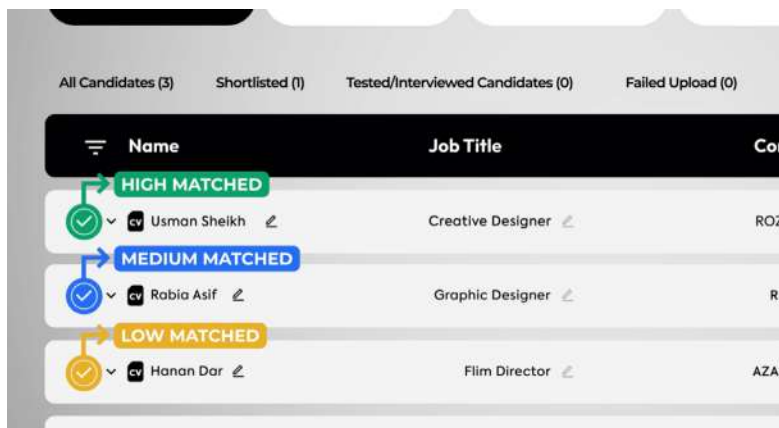
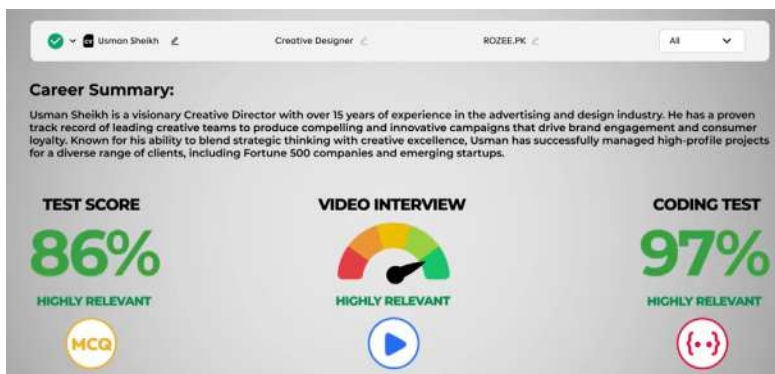


Figure 9d: Screenshot of an Employer's Dashboard on Rozee



Platforms are increasingly using AI across various stages of the job posting and application process. These tools can help reduce bias in vacancy language that may unintentionally discourage women from applying and can highlight opportunities that women might not otherwise consider. At the same time, AI systems trained on historical data risk reinforcing existing patterns of exclusion if not carefully designed and monitored. **How can AI tools be harnessed to automate and simplify platform features, reduce biases in hiring, and engage more women?**

Case Studies: Using Algorithms to Guide Jobseeker Search

Le Barbanchon, Hensvik, and Rathel (2023) developed a machine learning tool that used a jobseeker's click and search history to generate personalized job recommendations. The tool was deployed on Sweden's largest job board and evaluated for its effects on job search

behavior and employment outcomes. Jobseekers who received recommendations were more likely to be employed within six months and more likely to accept jobs at the recommended workplaces. Effects were strongest among those who were unemployed, had lower levels of education, or expanded their geographical scope of search. The study did not find significant differences in outcomes by gender.

Belot, Kircher, and Muller (2019) tested an algorithm that combined jobseeker profile data, preferred occupations, and platform-wide labor market data to generate tailored recommendations for alternative occupations and vacancies. The intervention led jobseekers to consider a wider range of jobs and increased interview rates, particularly among individuals with narrow search behavior or short spells of unemployment. The study did not report results by gender.

In contrast, a study in France evaluated a job search assistance program that provided search tips and recommendations for occupations and locations based on personal and labor market data (Dhia et al. 2022, **Figure 10**). The intervention showed modest effects on job search and no significant effects on employment. The study did not report results by gender.

Figure 10: Example of Personalized Advice and Information on Bob Emploi from Dhia et al. (2022)

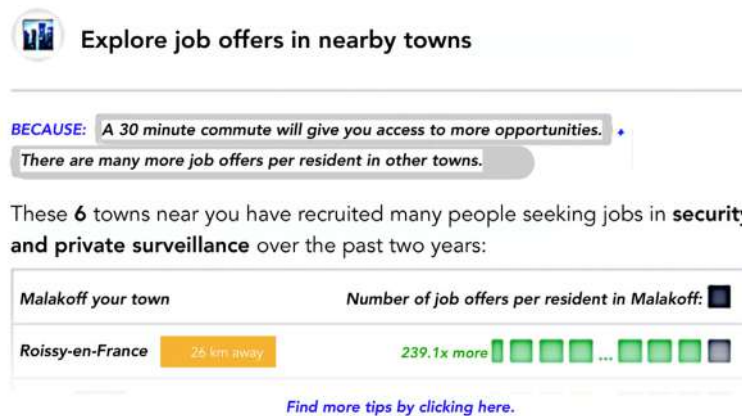
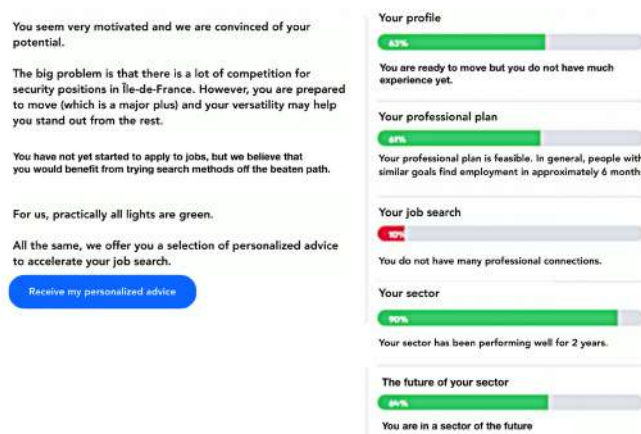


Figure A5: Bob Emploi, example of diagnosis of employability (accessed July 2018) - English translation



Together, these studies highlight the potential of AI-based tools to improve job search outcomes while underscoring the need for further testing across diverse

labor markets. Appendix subsections A.1.3.8–A.1.3.10 provides additional details on these interventions.

Case Study: Using Algorithms to Recommend Workers to Employers

Horton (2017) conducted an experiment on a US-based job platform where employers received algorithm-generated recommendations for suitable candidates. The algorithm drew on historical hiring data, measures of worker relevance and ability, and candidate availability. Employers with technical vacancies who received recommendations were 20 percent more likely to fill their positions. The recommended candidates closely resembled those employers would have selected on their own, and the recommendations were especially valuable for employers with smaller applicant pools. The study did not report results by gender.

Case Study: Using AI to Streamline the Recruiting Process

Avery, Leibbrandt, and Vecchi (2024) studied the use of AI-driven hiring software on a US-based job platform. The system, similar to tools like HireVue and Paradox.ai, simulated an interview through a chat interface, asking applicants to respond to standardized questions. Machine learning and natural language processing (NLP) were used to evaluate responses and generate scores on personality traits, work-related attributes, and communication skills. The study found that in some cases, the use of AI doubled the share of top-rated female applicants compared to human hiring managers. It also reduced gender gaps in application completion. These effects were driven by women's greater trust in AI's perceived objectivity and the availability of transparent scoring mechanisms. The findings suggest that AI can improve trust and equity in recruitment and candidate evaluation.

Challenges: The use of AI in job platforms remains relatively new and understudied, particularly in low- and middle-income countries. Its impact on women's outcomes is ambiguous and depends heavily on the algorithms and datasets involved. A key concern is transparency: AI systems often do not make clear what information they are using to filter candidates. As a result, they can reproduce or even amplify gender or racial bias, even when no explicit indicators of gender or race are included. For example, if algorithms prioritize patterns drawn from past hiring data, they may unknowingly reinforce existing disparities.

A well-known example is Amazon's AI recruiting tool, which was trained on historical résumé data from a male-dominated applicant pool. Some evidence suggests that as a result, the system penalized résumés submitted by women (Dastin 2018).

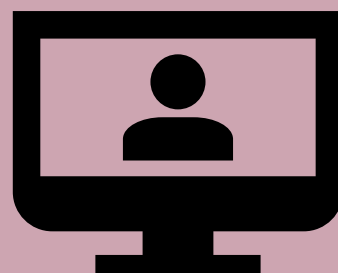
Another case involves Gild, an online tech hiring platform that used AI to rank candidates for programming roles by analyzing both traditional résumés and 'social data' such as activity on platforms like GitHub. While it was intended to expand the range of hiring signals, this approach inadvertently introduced bias. Women often face constraints on online engagement due to disproportionate unpaid care responsibilities, leading to lower volumes of social data. Some also adopt male usernames on technical platforms to avoid harassment. Rather than accounting for these patterns, Gild's system systematically ranked women lower than men (Smith and Rustagi 2019).

Recommendations:

- **1. Ensure High-Quality and Representative Training Data:** The performance of AI systems depends heavily on the quality and diversity of the training data used. Larger and more representative datasets, capturing a range of occupations, jobseekers, and stages of the job search process, can improve the accuracy and fairness of algorithmic recommendations. Ensuring that datasets reflect the broader labor market helps reduce the risk of embedded bias.
- **2. Monitor and Stress-Test Algorithms for Gender Bias:** Platforms should regularly review their training data to identify gendered language or imbalances. Algorithms should be stress-tested by comparing outputs from identical candidate profiles, varying only the gender. This can help detect unintended biases in scoring or recommendation outcomes and ensure more equitable results.
- **3. Balance Scale with Quality in Job Posts and Applications:** AI tools can make it easier for employers to generate job postings and for jobseekers to submit applications, which can dramatically increase volume on platforms. But more does not always mean better: too many generic postings or low-effort applications can overwhelm both sides and reduce match quality. Platforms should therefore build tools that emphasize relevance, for example, filters that help employers attract the right candidates or prompts that encourage jobseekers to apply only for suitable roles. This helps ensure that automation supports better matches rather than simply more activity (Kaashoek, Raghavan, and Horton 2024).
- **4. Include Human Oversight in AI Decision-Making:** Platforms should adopt a ‘human-in-the-loop’ model, where people remain involved at key stages of the AI workflow. In practice, this can mean humans label or check training data, review algorithmic outputs, and make final calls on hiring or candidate screening. For example, an AI system might generate a ranked list of applicants, but recruiters decide who advances. This approach helps catch errors, monitor fairness, and maintain accountability (OECD 2023).

8

**Offer Skills
Training
Opportunities,
Leveraging Platform
Data on What Skills
Are in Demand**



Digital platforms can use their scale and reach to provide training services that support both jobseekers and employers. These services may be especially valuable for women, who often face barriers to accessing in-person training due to time, mobility, or social constraints.

Three of the platforms reviewed, LinkedIn, Fuzu, and Shomvob, reported offering active learning modules directly on their sites. These include a range of content, from job search support such as interview preparation and salary negotiation to technical and professional development in areas like accounting, software, and coding.

Digital training can help jobseekers become more competitive, particularly those with limited exposure to formal employment. For women with restricted mobility, remote access to training may be critical. Platforms can also use their own labor market data to identify in-demand skills and tailor content to meet employer needs. **How can platform technology be leveraged to provide effective skills training at scale?**

Challenges: Skills gaps clearly constrain many jobseekers, which makes it attractive for platforms to engage in training. Yet evidence shows that designing effective programs is far from straightforward. Reviews of training programs in developing countries find that impacts on employment and earnings are typically modest (Carranza and McKenzie 2024). Success depends heavily on aligning course content with market demand and ensuring quality delivery—elements that are costly and difficult to scale. Digital delivery offers new opportunities but also trade-offs. Zoom-based programs in Mexico and Guatemala showed that recruiting and training women entrepreneurs online is feasible; however, cost savings relative to in-person classes were smaller than expected (Davies et al. 2023). Fully prerecorded, self-paced options can scale more cheaply, but some evidence on MOOCs suggests that they tend to suffer from high dropout and low completion rates (Rivard 2013). Overall, platforms face a balancing act: while they can leverage their reach and data to identify

in-demand skills, delivering training that is both engaging for jobseekers and credible to employers requires careful design and often sustained interaction. Without this, programs risk low engagement and limited impact on labor market outcomes.

Recommendations:

- **1. Leverage Platform Information to Guide Jobseekers on What Skills Are in Demand:** Platforms hold a treasure trove of data—from vacancies posted to applicant pools—on what skills are in demand by employers and which are in short supply. Platforms can use this to help guide jobseekers on where to best invest their efforts in skill development. This can be achieved through skills mapping tools—either simple or more complex AI-powered tools that help jobseekers identify skill gaps and receive personalized recommendations (Ezzat, de Lorenzo, and Tovar 2025).
- **2. Use Blended On-Demand and Interactive Elements in Training:** Instead of relying solely on live remote sessions,

which may pose scheduling challenges—particularly for women balancing household responsibilities—platforms can offer prerecorded, on-demand training modules. These formats are easier to access and can be scaled at relatively low cost. However, evidence from MOOCs suggests that fully self-paced courses often suffer from high dropout and low completion rates (Rivard 2013), and recent Zoom-based training programs showed limited cost savings compared to in-person delivery (Davies et al. 2023). This indicates that while on-demand modules can broaden access, ensuring engagement and effectiveness remains an open question in the literature. Blended approaches, combining prerecorded material with interactive elements or periodic human support, may offer a better balance between scale and impact.

● **3. Incentivize Participation and Completion:** Engagement with remote or self-paced learning may be limited. Platforms can encourage participation by offering badges or certificates upon completion. These credentials may also serve as signals of effort or skill acquisition, increasing motivation and improving jobseeker visibility to employers.

Photo: Freepik



9

Offer Skill Signaling and Certification



Many jobseekers, especially women and those with informal work experience, face challenges in demonstrating their skills to employers. Traditional hiring practices often rely on formal work history, which can disadvantage individuals such as artisans or caregivers whose experience may not be captured in a conventional résumé. Online job platforms can help bridge this gap by offering tools that allow jobseekers to credibly signal their skills and potential. **How can platforms help jobseekers credibly signal skills to employers?**

Skill Certification: Evidence from off-platform studies conducted in Ethiopia, South Africa, and Uganda shows that skill certification can be an effective signal to employers, improving both employment and earnings outcomes (Abebe et al. 2021; Bassi and Nansamba 2022; Carranza et al. 2022). Kiss et al. (2023) find that when jobseekers receive the results of skill assessments, they are more likely to target jobs that match their strengths. The study also finds that at baseline, men and women have similar beliefs about their skill levels. Appendix subsections A.1.3.4–A.1.3.7 provides further details on the certification and assessment tools used in these studies. Platforms can potentially adapt such programs and deliver them digitally at scale. Over time, if these tools improve match quality, employers may have an incentive to co-finance the integration of skill certification into platform systems.

Challenges: Adopting skill certification tools presents several challenges. Developing and hosting skills assessments increases platform operating costs, which jobseekers or employers may be unwilling to bear. A further concern is to ensure that the right person is taking the test, jobseekers may hand over their device to someone else. While biometric or proctoring technologies could address this, they may be invasive or raise privacy issues and are not yet widely available at low cost. Verification of existing credentials is another major constraint. Employers and

jobseekers often spend considerable time verifying degrees or references through manual processes, as in Pakistan where Higher Education Commission (HEC) checks are required. Digital verification could streamline this process: for example, Fernando, Singh, and Tourek (2023) show that providing employers with verified applicant identity information on an Indian job portal increased hiring through the platform by expanding trust in unfamiliar candidates. Similar innovations such as government/university-issued digital credentials could save time and increase trust, making skill signals more credible to employers. SAR GIL is currently piloting and evaluating a system of centralized reference checks on a job-matching platform in Pakistan, with a focus on the potential gendered impacts.

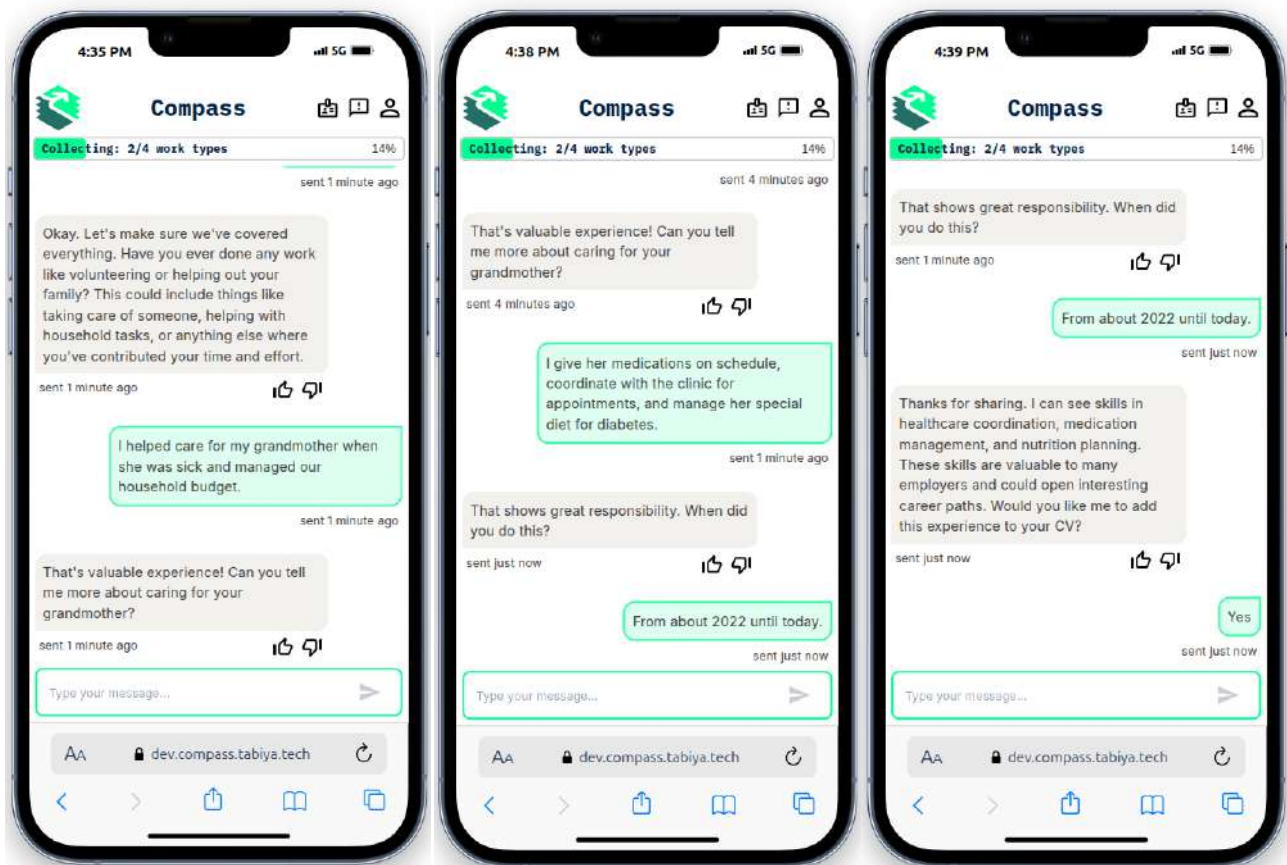
Tabiya's Work: The nonprofit organization Tabiya focuses on tackling youth unemployment by developing open-source digital public goods that make skills more visible and usable, particularly for marginalized jobseekers. A core component of this work is the Inclusive Livelihoods Taxonomy, which maps informal and traditionally unrecognized activities—such as unpaid care work and household management—to formal skill categories. The taxonomy is built using a global time-use framework and is aligned with the European Skills, Competences, Qualifications and Occupations (ESCO) taxonomy. It helps identify transferable

skills within the ‘unseen economy’, a space where women and young people are disproportionately represented. More details can be found in subsection A.1.3.11.

Building on this foundation, Tabiya has developed digital tools to support inclusive skill recognition in practice:

1. *Compass*, an AI-powered conversational tool, engages jobseekers in a dialogue about their lived experiences, including informal and unpaid work. It translates these responses into a comprehensive skills report and CV, helping jobseekers understand, articulate, and present their capabilities more effectively.

Figure 11: Compass AI Tool in Action



2. *Livelihoods Classifier*, an NLP tool, analyzes unstructured job postings and maps vacancy requirements to the Inclusive Livelihoods Taxonomy. It is currently being used by partners such as HahuJobs in Ethiopia to structure labor market data and improve job-matching accuracy.

3. *Horizon*, an AI-powered matching tool, helps connect jobseekers to employment opportunities by translating informal skills into formal job requirements. It is designed to make these matches more transparent and easier to understand across different labor markets.

Organizations working with marginalized jobseekers can adopt the Inclusive Livelihoods Taxonomy directly or integrate tools like *Compass* into their platforms (*Horizon* will soon be made publicly available). These tools are designed to reduce the gap between informal experience and formal labor market entry, expanding access to job opportunities for individuals who are often excluded from wage employment.

Challenges: One potential challenge with this approach is verification. Unlike formal jobs, unpaid or informal activities often lack supervisors, references, or standardized evaluations, making it difficult for employers to assess not only what individuals did but also how well they performed it. Without credible mechanisms for validation, such as assessments, peer endorsements, or digital credentials, platforms risk skepticism from employers about the reliability of these signals.

The University of Oxford and Harambee Youth Employment Accelerator are engaging in a scaled on-platform evaluation of the impact of skills-based hiring. Harambee worked closely with Tabiya to create a localised Inclusive Livelihoods Taxonomy and this taxonomy is being built into SAYouth.mobi, South Africa's national youth employment platform, which serves millions of users.

Using a randomized design, the study will assess whether recognizing informal and “unseen” skills, and work experiences, leads to higher interview rates and better job matches. This is the first rigorous evaluation of how recognizing invisible skills might improve equitable access to formal employment.

Recommendations:

● **1. Leverage AI and Behavioral Science for Assessments:** AI-based tools can help make skill assessments more scalable and cost-effective. For example, Harver (formerly Pymetrics) uses neuroscience-based games and machine learning to evaluate behavioral traits, cognitive ability, and job fit without relying on résumés or traditional credentials. The tools generate candidate profiles based on gameplay data and benchmark them against high-performing employees in specific roles. Public platforms are also piloting similar approaches. India’s National Skill Development Corporation (NSDC) tested KnackApp, a gamified assessment tool that identifies hidden skills among vocational students. Based on how users play simple games, the app recommends training and job opportunities across sectors such as retail, construction, hospitality, and data science. The tool is designed for broad accessibility, with support for low-literacy users and availability in both

English and Hindi. World Bank (2023b) provides additional detail on these tools. While these innovations show promise, they have not yet been rigorously evaluated, and more research is needed to understand whether they improve employment outcomes at scale.

● **2. Support Skill Signaling to Broaden Hiring Pools:** Improving how jobseekers communicate their skills can help level

the playing field, especially for those without formal credentials. Platforms can enable jobseekers to list and share their skills with employers or integrate skills-testing tools that produce interpretable results. These approaches offer employers more comprehensive data to inform hiring decisions and can improve representation by surfacing talent that might otherwise be overlooked.

Photo: CRS PHOTO / Shutterstock



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A Appendix

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A.1.1: Platforms and Policy Practitioners Interviewed

1. Dost (Pakistan)
2. Ethiojobs (Ethiopia)
3. Fixa (Rwanda)
4. Freelance Ethiopia Afriwork
5. Fuzu (Kenya, Nigeria, Uganda)
6. Harambee (South Africa, Rwanda)
7. Ikman (Sri Lanka)
8. Jobberman (Nigeria)
9. Job Talash (Pakistan)
10. LinkedIn (Global)
11. Job Center, Punjab Labor Department (Pakistan)
12. Rozee (Pakistan)
13. Shomvob (Bangladesh)
14. Solutions for Youth Employment (S4YE), World Bank
15. The Talent Firm (Ethiopia)
16. Text4Jobs (Ghana)

A.1.2: Academics Interviewed

1. Amrita Dhillon, Professor, King's College London
2. Lukas Hensel, Assistant Professor, Guanghua School of Management, Peking University
3. Amen Jalal, PhD candidate, London School of Economics
4. Sam Jones, Research Fellow, UNU-WIDER in Mozambique
5. Erin Kelley, Assistant Professor, Harris School of Public Policy at the University of Chicago
6. Caroline Krafft, Associate Professor, St. Catherine University
7. Jean Lee, Senior Economist, Office of the Chief Economist for the Africa Region, World Bank
8. Nishtha Sharma, Postdoctoral scholar, New York University in Abu Dhabi
9. Kailing Shen, Associate Professor, College of Business and Economics, Australian National University
10. Niharika Singh, Assistant Professor, University of Notre Dame

A.1.3: Additional Details on Interventions

A.1.3.1: Providing labor market information intervention used by platform QuikrJobs in India and studied in Fernando and Singh (2024)

Section 5 describes how an intervention that provided local labor market information affected search and employment outcomes for jobseekers in India. This subsection provides specific implementation details of the intervention:

- **Demand:** This group received information about the number and attributes of job postings in the local labor market. In particular, we shared the average number of new job postings in a month, their average minimum monthly salary, and the percent of new job postings with no experience requirements.
- **Supply:** This group received information about the number and attributes of other applicants in the local labor market. There were two variations. In the first version, we shared information on the distribution of educational qualifications and the English skills of other applicants. In the second version, we shared information on the average number of applications in a month and percent of jobseekers applying to multiple job postings. Both versions always included the average number of unique job applicants in a month in the local labor market.
- **Tightness:** There were also two variations in this group. In the first, we included information about the average number of job postings, applications, and unique jobseekers in a month. The second version was similar to the first but also included information about the likelihood of employer contact through the portal, based on click data that tracked the fraction of applicants whose contact details were accessed by employers.

Figure A.1: Control and Demand Treatment Script

Control

Job Search Tips

Apply to newer job postings, as these employers are more likely to be hiring.

Keep applying to jobs instead of waiting to hear back! If interested in your application, employers usually contact you within 30 days.

It takes many applications to get an interview or a job. Keep applying!

Demand

Monthly Overview of
New Jobs in Delhi
for Sales

New Job Postings	177
Average Minimum Salary	₹13,750
% Postings Requiring No Experience	72%

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

On average, in a month:

- 177 new Sales jobs are posted in Delhi
- These jobs offer an average minimum salary of Rs. 13,750
- 72% of these jobs do not require or mention any minimum experience

What about other roles in your city?
Compare and consider applying.

Monthly Overview of Similar
Roles in Delhi

	Marketing	Host/ Hostess
New Job Postings	102	111
Average Minimum Salary	₹14,890	₹20,243
% Postings Requiring No Experience	78%	99%

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

See more helpful tips below!

Job Search Tips

Apply to newer job postings, as these employers are more likely to be hiring.

Keep applying to jobs instead of waiting to hear back! If interested in your application, employers usually contact you within 30 days.

It takes many applications to get an interview or a job. Keep applying!

Figure A.2: Supply Treatments Script

Supply 1

Monthly Overview of
Jobseekers in Delhi
for Sales

Education level	% of Jobseekers
10th pass or below	17%
12th pass/Diploma	41%
Bachelor's degree	36%
Master's or above	7%
Report English Language Skills	55%

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

On average, in a month:

- 1,968 users apply to Sales jobs in Delhi, and about 65% of them share their education details
- 43% of these users report having a Bachelor's degree or above
- 55% report English skills on their profile

What about other roles in your city?
Compare and consider applying.

Monthly Overview of Similar
Roles in Delhi

Education level	% of Jobseekers	
	Marketing	Host/Hostess
10th pass or below	13%	18%
12th pass/Diploma	36%	44%
Bachelor's degree	39%	32%
Master's or above	11%	6%
Report English Language Skills	57%	60%

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

Supply 2

Monthly Overview of
Jobseekers in Delhi
for Sales

Active Users	1,968
Total Applications	3,845
% users applying to more than 1 job	33%

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

On average, in a month:

- 3,845 applications are submitted by 1,968 users in Delhi for Sales jobs
- About 33% of these users apply to more than 1 Sales job

What about other roles in your city?
Compare and consider applying.

Monthly Overview of Similar
Roles in Delhi

	Marketing	Host/Hostess
	Active Users	1,029
Total Applications	1,745	6,469
% users applying to more than 1 job	27%	40%

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

Figure A.3: Market Tightness Treatments Script

Tightness 1

Monthly Overview
in Delhi for Sales

New Job Postings	177
Active Users	1,968
Total Applications	3,845

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

On average, in a month:

- 177 new Sales jobs are posted in Delhi
- 3,845 applications are submitted by 1,968 users in Delhi for Sales jobs

What about other roles in your city?
Compare and consider applying.

Monthly Overview of Similar
Roles in Delhi

	Marketing	Host/ Hostess
New Job Postings	102	111
Active Users	1,029	2,991
Total Applications	1,745	6,469

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

See more helpful tips below!

Job Search Tips

Apply to newer job postings, as these employers are more likely to be hiring.

Keep applying to jobs instead of waiting to hear back! If interested in your application, employers usually contact you within 30 days.

It takes many applications to get an interview or a job. Keep applying!

Tightness 2

Monthly Overview in
Delhi for Sales

New Job Postings	177
Active Users	1,968
Total Applications	3,845
% applications accessed by employers (within 10 days)	18%
% applications accessed by employers (within 30 days)	19%

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

On average, in a month:

- 177 new Sales jobs are posted in Delhi
- 3,845 applications are submitted by 1,968 users in Delhi for Sales jobs
- Employers access contact details of 19% of these applications within 30 days, meaning you have upto a 19% chance of being contacted. Do not wait, keep applying!

What about other roles in your city?
Compare and consider applying.

Monthly Overview of Similar
Roles in Delhi

	Marketing	Host/ Hostess
New Job Postings	102	111
Active Users	1,029	2,991
Total Applications	1,745	6,469
% applications accessed by employers (within 10 days)	30%	46%
% applications accessed by employers (within 30 days)	32%	47%

The table above shows monthly averages using QuikrJobs data from Oct-Dec 2020

See more helpful tips below!

Job Search Tips

Apply to newer job postings, as these employers are more likely to be hiring.

Keep applying to jobs instead of waiting to hear back! If interested in your application, employers usually contact you within 30 days.

It takes many applications to get an interview or a job. Keep applying!

A.1.3.2: Intervention on providing information about search and unemployment in Germany and studied in Altmann et al. (2018)

Section 5 describes an intervention that provided jobseekers with information on job search strategies and the consequences of prolonged unemployment in Germany. This subsection provides more information on the original brochure image along with a translation from the paper.

Figure A.4: Information Brochure



Translation of brochure text:

Unemployed - What to Do? Knowledge, Ideas, Perspectives

Now is the ideal time!

You'd like to find a new job as soon as possible. Now is the ideal time to successfully search for a new position! In 2010, the German economy has recovered noticeably from the economic crisis. Companies and businesses are increasingly hiring new employees again. Since the beginning of the year, more than 2

million people have already found a new job. Right now, there are several hundred thousand vacancies available as well.

Did you know that...

- Active job search is a key to success? Many people greatly underestimate the impact of their personal initiative. Scientific studies show that active job search proves much more successful than most people think. Personal initiative and intensive job search increase your chances of finding a

job much more than you might guess. Hence, taking the initiative pays off.

- The chance of finding employment decreases with the duration of unemployment? Research has shown that the likelihood of finding work decreases with every passing month of unemployment. So don't hesitate. Every day counts.

Chart 1: Chances of Finding Work, Level of Personal Initiative (low, high)

Chart 2: Chances of Finding Work, Duration of Unemployment (short, long)

Job search pays off, not just financially!

Job search pays off. Scientific studies document a positive impact of working on personal life satisfaction. Being employed is often associated with more stable family bonds and lower divorce rates. Moreover, employed individuals suffer less frequently from episodes of depression and don't fall ill as often. Furthermore, their average mortality rate is lower and their general health condition is better. In addition, a new job also comes with new social contacts and acquaintances.

There are Many Ways to the Goal

You can find job openings in your local daily newspaper, online, or on the job platform of the Employment Agency. Also, don't miss the opportunity to send unsolicited applications to companies.

You might not yet be aware that many unemployed people find work through their social network of relatives, friends, and acquaintances. So don't hesitate to tell them about your job search. Many people were unemployed at one point in their life and can relate well to your situation.

Do you sometimes feel depressed and doubt that your search for employment will eventually be successful? These feelings are perfectly normal and are experienced by most people after the loss of their job. Stay on top of things nonetheless—your next application could already get you a new job!

Stay Active!

- Begin your job search already today:
- Use the job search platform of the Employment Agency
- Search online (look for the keyword 'Job Fair' on the internet)
- Ask your friends and acquaintances about vacant positions
- Take the initiative and apply directly to potential employers.

Contact: University of Bonn—
Department of Economics—Adenauerallee
24-42-53113

Bonn—Phone: +49 228 823 69 456—
Email: wastun.info@uni-bonn.de Photo
credits: @iStockphoto.com

A.1.3.3: Intervention on the provision of information about peer earnings in Mozambique and studied in Jones and Santos (2022)

Section 5 describes an intervention that provided jobseekers with information about their peers' employment outcomes and wages in Mozambique. This subsection provides more information on their intervention and the script used in the study:

'Given the scarcity of reliable data on graduate wages, both in general as well as specifically for new labor market entrants, we used information on realized wages from prior rounds of the telephone survey to construct three distinct SMS information treatments.':

1. General message: summarizes wage information from the entire sample—for example, *Survey results as of December 1: of all graduates in Mozambique (class of 2017), 59 percent are working and their average wage is 14,000 Mts/month.*
2. University-specific message: summarizes wage information from the sub-sample of participants who attended the same university as the recipient—for example, *Survey results as of December 1: of all graduates from your university (class of 2017), 52 percent are working and their average wage is 24,000 Mts/month.*
3. Field-specific message: summarizes wage information from the sub-sample of participants in the same study field as the participant—for example, *Survey results as of December 1: of all graduates from your area of studies (class of 2017), 50 percent are working and their average wage is 13,500 Mts/month.*

The messages were sent by SMS at the beginning of each telephone survey round, excluding the first. The specific information contained in each SMS varied across the rounds as peer earnings changed, and, in the second and third types of message, the information also varied by individual according to the specific university they had attended or their field of study. Mirroring variation in actual wages, this maps to substantial variation in the underlying wage information received.

Directly after the baseline survey, individuals were randomly allocated to one of five treatment arms, distinguished by the type of message they would receive: a control group, who received no messages; a group receiving the general message in all relevant rounds; a group receiving the university-specific message in all relevant rounds; a group receiving the field-specific message; and a mixed group, who received the general message in round two, the university-specific message in rounds three and four, and the field-specific message in round five.

A.1.3.4: Skills-testing intervention used by Harambee/SA Youth in South Africa and studied in Kiss et al. (2023)

Section 8 describes interventions that implement skill certification programs. This subsection provides an intervention in South Africa:

- The numeracy assessment captures practical arithmetic and pattern recognition. It was developed by a large retail chain to assess potential cashiers.
- The communication assessment captures English-language listening, reading, and comprehension skills at

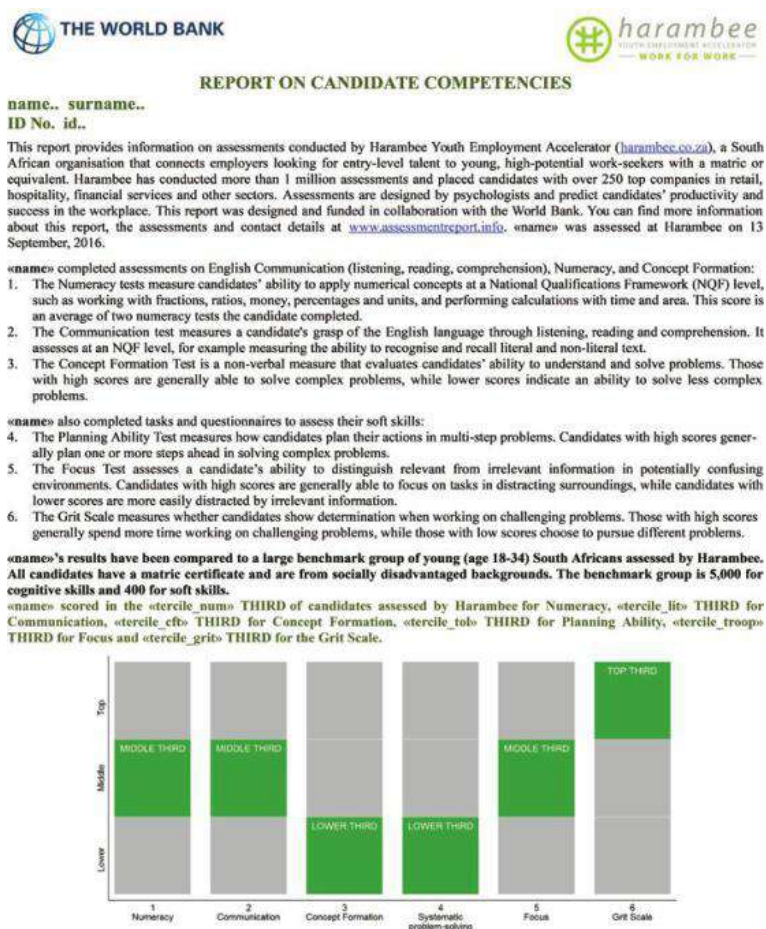
a high school level. It was developed by an adult education provider (www.mediaworks.co.za).

- Candidates also complete a ‘concept formation’ assessment that captures fluid intelligence or ability to identify patterns across situations and use logic.

A.1.3.5: Skills testing and certification intervention in South Africa and studied in Carranza et al. (2022)

This study in South Africa used assessments similar to Kiss et al. (2023) and then provided skill certificates to treated jobseekers.

Figure A.5: Sample Skills Certificate



A.1.3.6: Skills-testing intervention in Uganda and studied in Bassi and Nansamba (2022)

This subsection provides information on an intervention in Uganda, where researchers developed tests of soft skills and varied whether these certificates are disclosed to employers and jobseekers during interviews:

- Our screening activities targeted seven soft skills identified as relevant in initial focus groups with firm owners: creativity, communication skills, willingness to help others/pro-sociality, pro-activity, trustworthiness, discipline, and attendance/time keeping.
- We used teacher surveys to measure those skills that are easier to assess for an external examiner, namely, attendance, discipline, communication, pro-sociality, and pro-activity.
- To measure creativity and trustworthiness, we developed our own assessments: for creativity, we used a battery of questions; for trustworthiness, we made trainees play incentivized trust games. Graded A–E.

A.1.3.7: Skills testing and certification intervention in Ethiopia and studied in Abebe et al. (2021)

As part of a larger experiment in Ethiopia, researchers carried out skills testing and certification using a mix of standardized personnel selection tests. This subsection provides more details:

- The certification session includes four tests: (i) a Raven matrices test, (ii) a test of linguistic ability in Amharic, (iii) a test of mathematical ability, and (iv) a ‘work-sample’ test.
- The results of the tests are presented in a certificate, which jobseekers can use in support of their job applications. The certificates explain the nature of the tests and report the relative grade of the individual for each test, and an aggregate measure of performance. The certificates are officially issued by the School of Commerce and the Ethiopian Development Research Institute.

A.1.3.8: Intervention used by platform Platsbanken.se in Sweden and studied in Le Barbanchon, Hensvik, and Rathel (2023)

Section 6 describes interventions that use algorithms to guide job search strategies. This subsection provides the details of an intervention implemented on Platsbanken.se, Sweden’s largest job board:

- The machine learning algorithm uses ad views (which user views which ad) as input. The choice of the input data comes from legal and operational constraints that are common across many online job boards. Namely, using external data from administrative registers (for example, to condition recommendations on previous jobs or on demographics) is not feasible under European Union (EU) law.
- The recommender system uses the implicit feedbacks that jobseekers provide when clicking on a vacancy. These feedbacks are stored into a user-item rating matrix R , with jobseekers i as rows and vacancy j as columns. $R(i, j)$ is the number of times that jobseeker i clicked on vacancy j . These implicit feedbacks are used to estimate the unobserved types of the jobseeker and of the vacancies (embeddings).

A.1.3.9: Intervention in the UK and studied in Belot, Kircher, and Muller (2019)

This subsection provides the details of an intervention that deployed an algorithm to aid job search. The algorithm used publicly available data and job search data from the platform to create tailored occupation suggestions for jobseekers:

- We designed an online job search interface to provide a tailored list of suggestions of possible alternative occupations that may be relevant to jobseekers, based on a preferred occupation that jobseekers prespecify (but can change at any time).
- We use two methodologies to compile a list of suggested alternative occupations. The first methodology builds on the idea that successful labor market transitions experienced by people with a similar profile contain useful information about occupations that may be suitable alternatives to the preferred occupation. British Household Panel Survey and the national statistical database of Denmark (because of larger sample size). Both databases follow workers over time and record in what occupation they are employed.
- The second methodology uses information on transferable skills across occupations from the US based website O*net, which is an online ‘career exploration’ tool sponsored by the US department of Labour, Employment and Training Administration. For each occupation, they suggest up to 10 related occupations that require similar skills. We retrieved the related occupations and presented the ones related to the preferred occupation as specified by the participant.

A.1.3.10: Intervention used by platform Bob Emploi in France and studied in Dhia et al. (2022)

This subsection provides the details of an intervention that deployed an algorithm based on the France Public Employment agency's (Pôle emploi) datasets. The algorithm provided search tips and recommendations for occupations and locations based on personal and labor market data:

1. The first database covers all periods of unemployment over the previous 10 years for individuals ever enrolled. It also contains sociodemographic characteristics of the jobseekers (gender, age, level of education, and municipality of residency), the job search strategy they adopted at the beginning of unemployment (target sector, reservation wage, and skill level of the desired occupation), and the Pôle emploi activities in which they participate (for example, meetings with caseworkers and job training programs). Bayes Impact obtained access to a representative sample of the 'Fichier historique'.
2. The second database contains job offers posted by employers on Pôle emploi's job board. Each observation indicates the job title and description as well as the number of applications received. This information provides a proxy for market tightness for each occupation in each location. It also allows Bayes Impact to identify the skill requirements of different types of jobs using text analysis.
3. The third dataset is an annual survey of a sample of 500,000 employers conducted by Pôle emploi to learn about their hiring needs in the six subsequent months and the skills they deem particularly difficult to recruit ('Besoins en Main d'Oeuvre'). Pôle emploi uses this survey to measure the labor demand across sectors and orient jobseekers toward high-demand sectors.

The intervention provided jobseekers four types of assistance:

1. **Personalized advice/information:** When creating a profile on Bob Emploi, each user is asked to fill in their sociodemographic characteristics (gender, age, level of education, and municipality of residency), desired occupation, and target geographic area and salary. Based on this information and leveraging the labor market information provided by Pôle emploi, the website presents the user with a diagnosis of employability in the form of a numerical score based on the labor demand for the target job, the competition for these jobs, and the quality of the match between the user's profile and the job requirements. In addition to the employability diagnosis, the website provides users recommendations to undertake some actions, ranked by order of importance. For instance, Bob Emploi's algorithm may advise users targeting a tight market to explore related careers with higher demand. If the data indicate that the market for that occupation is less

tight in neighboring municipalities, users may be advised to widen the geographic perimeter of their search. To customize its recommendations, Bob Emploi also asks users to indicate how many job opportunities they identified over the past weeks, how many applications they sent, and how many interviews and job offers they received. The website uses the ratio between any two of these indicators to customize pieces of advice focusing on steps to overcome the most important obstacles to finding a job. For example, if the number of interviews received by a user is disproportionately low relative to their number of applications, Bob Emploi may advise them to edit their résumé or to improve other parts of their application file.

2. **General advice and external useful links to assist job search:** Bob Emploi provides general advice, such as how to conduct oneself during a job interview. Recommendations are often supplemented with referrals to external resources, most often also online. Both the general and personalized advice provided by the website may help jobseekers overcome informational barriers and increase their chances to find a job.
3. **Stepwise planning assistance to organize job applications:** Bob Emploi also provides step-by-step planning assistance to its users. The goal of these action plans is to help jobseekers organize their job search efficiently and prioritize the tasks they need to complete.
4. **Reminder emails and messages:** Bob Emploi sends regular reminders and messages of encouragement to jobseekers as a motivation technique. Users can control how often they receive these emails.

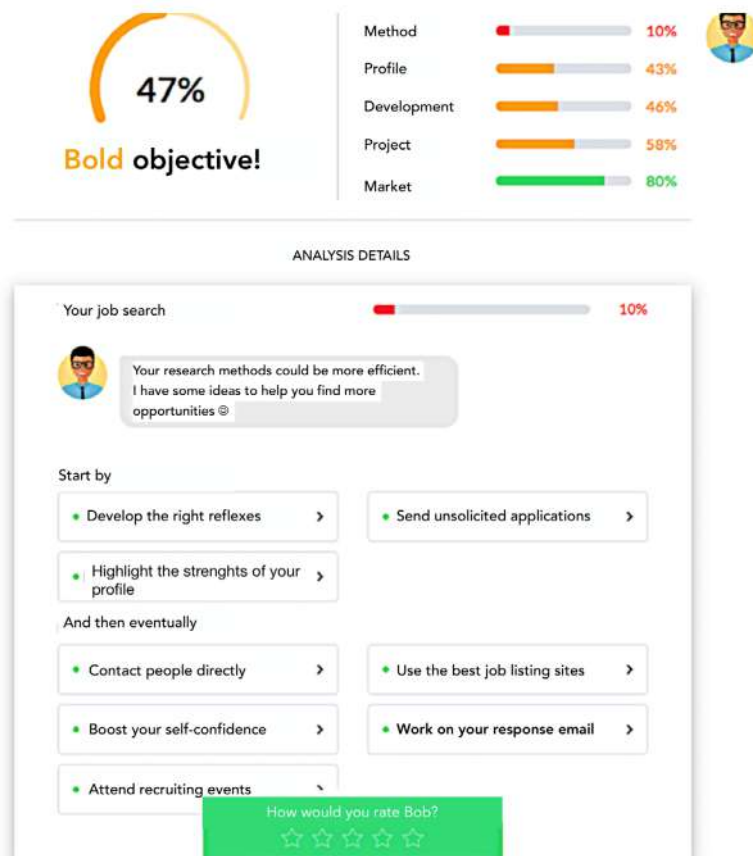
Figure A.6: Example of General Advice and Motivation

Figure A7: Bob Emploi, example of general advice (accessed July 2018) - English translation

The screenshot shows a message titled "Be sure to demonstrate motivation during your interviews" with a smiling face emoji icon. Below the title, it says "BECAUSE: Certain mistakes are easy to avoid in interviews" followed by a plus sign. A text box below contains "You reported having completed many interviews unsuccessfully". Underneath, it lists "The qualities that recruiters are most looking for:" followed by two bullet points: "You are well-organized and hardworking" and "You are adaptable and have strong problem-solving skills". At the bottom, there is a link: "Find more tips by clicking here."

Figure A.7: Example of Planning Assistance

Figure A8: Bob Emploi, example of planning assistance (accessed July 2018) - English translation



A.1.3.11: Details about Tabiya’s operations

This subsection provides a graphical overview of Tabiya’s model at work, as discussed in Section 8.

Figure A.8: Tabiya’s Operations

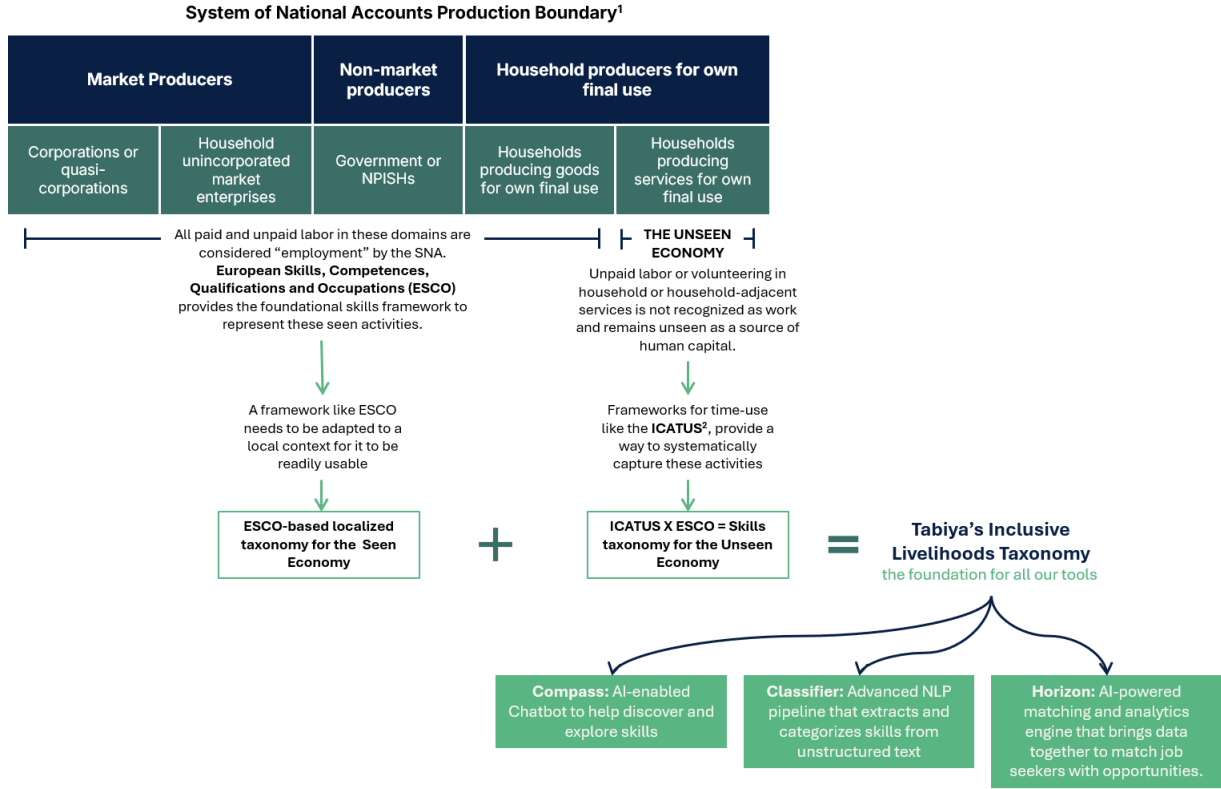


Figure A.9: Example of Identifying Unseen Skills (I)

Surfacing Unseen Skills: Breaking down a day in the life of a stay-at-home mom

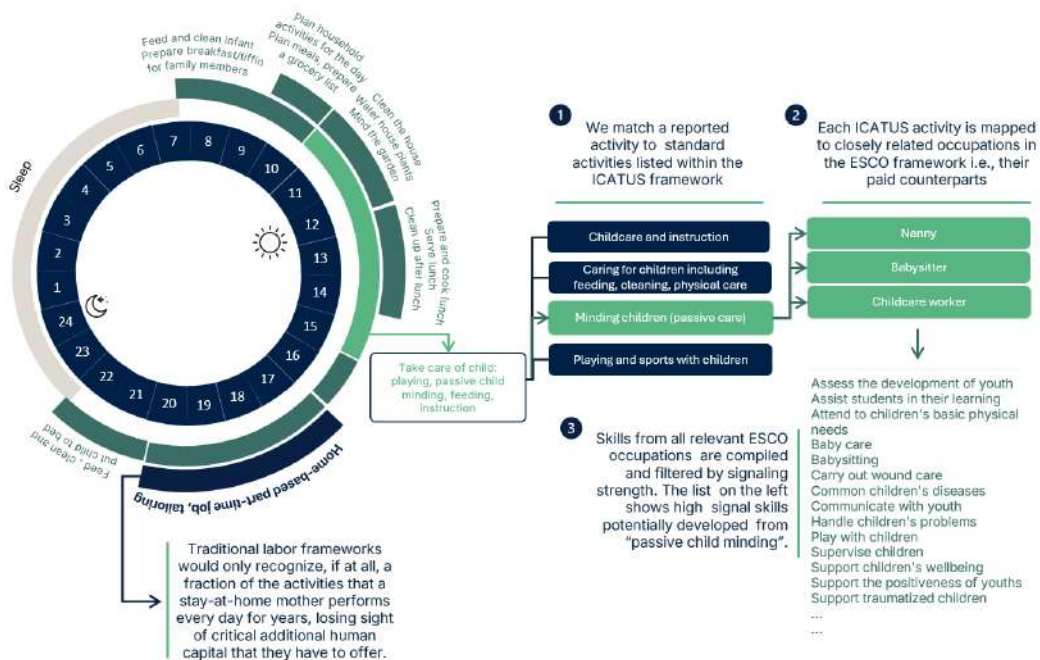


Figure A.10: Example of Identifying Unseen Skills (II)

