

# JOBS INTERVENTIONS FOR YOUNG WOMEN IN THE DIGITAL ECONOMY

## KEY MESSAGES

- The gender digital divide exacerbates gaps in labor force participation between young men and young women.
- Digital jobs provide a unique opportunity to close the persistent labor market gender gap by increasing young women's productivity, earnings, and financial independence. As young women develop digital skills, they may enjoy greater choice in their personal and professional lives, and access better paid, better quality jobs.
- Programs should proactively adopt gender-inclusive strategies to help young women capitalize on digital economy opportunities.
- Digital jobs interventions should adopt an "integrated approach," addressing both supply-side constraints young women face in accessing digital employment, as well as demand-side constraints to new job creation.
- International organizations, governments, firms, civil society actors, and youth should work together to help young women access digital opportunities.
- Practitioners and policy makers can effectively scale gender-inclusive digital jobs programs using a combination of approaches, including leveraging global partnerships such as [Solutions for Youth Employment \[S4YE\]](#).

This Jobs Solutions Note identifies practical solutions for development practitioners to proactively integrate gender inclusion in digital jobs programs. Based on curated knowledge and evidence for a specific topic and relevant to jobs, the Jobs Solutions Notes are not intended to be exhaustive; they provide key lessons, solutions and approaches synthesized from the experiences of the World Bank Group and partners. This Note draws from S4YE's 2018 annual report, [Digital Jobs for Youth: Young Women in the Digital Economy](#), highlighting new and emerging strategies to designing gender-inclusive digital jobs interventions for youth. The Note employs a nuanced definition of "digital jobs" to enable practitioners and policy makers to develop a range of interventions tailored to specific contexts and target groups, to improve young women's employment outcomes from digital jobs programs.

## MOTIVATION: WHAT IS THE PROBLEM?

**Youth unemployment is a global challenge.** High youth unemployment rates, youth not in employment, education or training (NEET), and the high incidence of poverty among working youth have made youth employment a global priority. Approximately [500 million youth](#) aged 15 to 24 will be in the global labor force as of 2020, rising to a projected 511 million by

2030.<sup>1</sup> In 2017, [65 million youth](#) aged 15 to 24 years were unemployed while approximately 22 percent of young people were NEETs.<sup>2</sup>

**Disparities persist in labor force participation between young women and young men.** The projected global labor force participation rate in 2020 is 49.3 percent for young men aged 15 to 24 and [37.1 percent for young women](#) in the same age bracket.<sup>3</sup>

In 2017, the [female youth NEET rate was estimated at 34.4 percent](#) compared to the estimated male youth NEET rate of less than 10 percent.<sup>4</sup>

**Gender disparity in the labor market is being replicated in the digital economy.** Technological advances have given rise to a growing digital economy, creating new forms of work and job opportunities; but many young women face barriers to participating. The gender digital divide refers to the gap in Internet access and use between men and young women. As of 2019, approximately 58 percent of men globally were Internet users, compared to 48 percent of women. The [Internet user gender gap](#)—that is, the difference between Internet user penetration rates for men and women (relative to the Internet user penetration rate for males, expressed as a percentage)—has risen from 11 percent in 2013 to 17 percent in 2019. This gap is largest in Least Developed Countries (LDCs), increasing from 29.9 percent in 2013 to 42.8 percent in 2019.<sup>5</sup> Additionally, according to the International

Telecommunication Union (ITU), “women are still 10 percent less likely than men to own a mobile phone, and are [23 percent less likely than men to use the mobile Internet](#).”<sup>6</sup>

**This gender digital divide also reinforces gaps in digital entrepreneurship.** In developing countries, women are three times less likely than men to work in the ICT sector and [eight times less likely to work in digital jobs](#).<sup>7</sup> Female entrepreneurs and women-led small and medium-sized enterprises (SMEs) often have limited access to finance. As technology changes the way businesses operate, this [gender gap in entrepreneurship](#) is widening, as many women have less access to digital skills training.<sup>8</sup>

**Several factors contribute to the gender digital divide.** Economic and socio-cultural barriers contribute to the gender gap in mobile ownership and Internet usage. In low and middle-income countries infrastructure gaps, high data costs, lack of content

## BOX 1. WHAT ARE DIGITAL JOBS AND DIGITAL SKILLS?

All work that uses, or is made possible by, ICT may be considered “**digital work**”—a broad definition that encompasses most jobs in advanced economies. “Digital work” is not just about careers within the ICT industry. There is also growing demand for highly skilled workers outside the ICT industry. **Digital jobs** exist across all industries, but they vary in how much they rely on technology. Broadly, there are three types of digital job:

- **ICT-intensive jobs** directly created through the ICT sector and intensively using ICT, such as mobile app development.
- **ICT-dependent jobs** that cannot be performed without technology, such as online freelancing work and customer call centers.
- **ICT-enhanced jobs** that use digital technologies but could be performed without ICT, such as accounting and graphics design.

For youth to successfully perform digital work, they must develop digital skills. **Digital skills** exist on a continuum, ranging in level from basic to advanced:

- **Advanced Digital Skills:** necessary to create, manage, test and analyze ICTs, related to application development, network management, machine learning, big data analysis, among others.
- **Intermediate Digital Skills:** job-ready skills needed to perform work-related functions, such as desktop publishing, digital graphic design, or social media management.
- **Basic Digital Skills:** generic ICT skills required that relate to the effective use of ICT, including performing web searches, sending emails, or the use of professional online platforms.

Additional work-relevant skills that youth need to succeed in the digital economy include: cognitive skills, socio-emotional skills, and foundational literacies.

Source: S4YE (2018). [Digital Jobs for Youth: Young Women in the Digital Economy](#). Washington, DC: World Bank



Photo credit: Arne Hoel / World Bank

relevant to women's lives, and the prevalence of online harassment and violence targeting women also reinforce this [digital gender divide](#).<sup>9</sup>

**Nevertheless, [new opportunities](#) are emerging for young women, because digital jobs can increase their productivity, earnings, and financial independence.**<sup>10</sup> Jobs involving remote, online, flexible work can help young women overcome mobility constraints and challenge restrictive gender norms by increasing women's access to income-generating activities. Digital jobs (defined in Box 1) can also help reduce longstanding occupational segregation in traditionally male-dominated industries, such as ICT. As young women develop digital skills, they may enjoy greater choice in their personal and professional lives and access better paid and better-quality jobs.<sup>11</sup>

**New youth employment programs should aim to integrate digital skills training with private enterprise promotion.** [Almost two-thirds of youth employment programs fail to have any jobs impact.](#)<sup>12</sup> That's because traditional programs often focus only on the labor supply side, focusing on skills training, counseling, and other related services. While these activities are important, many programs under emphasize demand-side components, which work with firms to ensure that good quality jobs are being created,

that the better-trained youth can move into. So, youth employment programs should adapt strategies to [address both labor supply- and demand-side constraints](#).<sup>13</sup> While digital skills training is important, it is also critical to promote the growth of firms and create jobs that will utilize the new digital skills.

**In addition, new program models are needed that specifically address women's needs.**

Programs intended to connect youth with digital jobs often fail to address women's constraints in accessing and using ICT. Practitioners and policy makers must adopt strategies that overcome these constraints to increase women's participation in the digital economy. This Jobs Solutions Note presents practical strategies for practitioners to design and implement inclusive digital jobs programs for young women.

**Practitioners must be intentional about helping young women access more and better digital jobs.**

Instead of reinforcing the idea that women must stay at home to do digital jobs, practitioners should emphasize that digital jobs can help young women to challenge misconceptions about gender-appropriate work. Even as young women enter digital jobs in the ICT sector and across other industries, social norms, stereotypes and gender biases may limit their career advancement.<sup>14</sup> As a result, they may find themselves stuck in low-skill, low-paying roles at the bottom of the digital jobs ladder. In addition to providing digital skills training to young women, practitioners must be willing to work with employers to ensure that young women can enter and retain digital jobs. This Jobs Solutions Note proposes strategies for practitioners to work on the supply and demand side to help young women succeed in high-quality digital jobs, and also move up to higher skilled and higher paying digital jobs over time.

## WHAT ARE WE DOING?

**Practitioners and policy-makers must understand demand drivers for digital jobs, in addition to the supply of available skills for young women to perform those jobs.**

To stimulate youth digital employment, development programs must first identify the sectors where digital jobs are found and the types of jobs being created. Providing digital skills training to young women may not improve their jobs outcomes if not enough jobs are being created in the market that require those skills.

**Table 1**  
Typology of drivers of digital jobs<sup>1</sup>

<b>Sector Classification</b>	<b>Definition</b>	<b>Examples</b>	<b>Type of Digital Work</b>	<b>Digital Skills Level</b>	<b>Additional Skills</b>
<b>I. PUBLIC SECTOR</b>					
<b>I. A. Public sector agencies</b>	Regular operations and functions in government departments and agencies [e.g. record keeping, billing]; New e-public goods using specialized software	E-public goods; cybersecurity; e-governance; IT maintenance; artificial intelligence; administrative [health, education]	ICT-intensive ICT-enhanced	Advanced Intermediate Basic	Varied
<b>II. PRIVATE SECTOR</b>					
<b>II. A. ICT sector</b>	Services and manufacturing related to computer, telephone, broadband and audiovisual networks	Web development; network administration; virtual reality; cybersecurity; IoT; AI; blockchain	ICT-intensive	Advanced	Strong cognitive and analytical skills
<b>II. B. Non-ICT sectors</b>	Non-specialist jobs using digital tools such as word processing. Includes routine operations and specialized software	Billing and finance services; business consultants; desktop publishing; in-house ICT services	ICT-intensive ICT-dependent ICT-enhanced	Advanced Intermediate	Varied
<b>II. C. Digital entrepreneurship</b>	Ventures using Internet, digital products or services or digital distribution channels, incl. cloud services	Application development; online education; web hosting; membership sites	ICT-intensive ICT-dependent	Advanced Intermediate	E-business skills; strong cognitive and analytical skills
<b>III. ONLINE OUTSOURCING</b>					
<b>III.A. Business Process outsourcing (BPO)</b>	Outsourcing of entire business processes to another country, incl. low-skill front office processes [e.g. customer service] and high-skill back office processing [billing, accounting, medical diagnostics]	Call centers [e.g. in India, Philippines, China, South Africa, Kenya]; Impact sourcing service providers [ISSPs]; medical diagnostics [radiology]	ICT-dependent	Intermediate Basic	Foundational cognitive skills; socio-emotional skills; strong cognitive and analytical skills
<b>III. B. Virtual Freelancing</b>	Jobs involving complex tasks [translation, coding, web/graphic design, software development, technical writing], distributed via an online platform	Upwork; freelancer.com; 99designs	ICT-dependent	Advanced Intermediate Basic	Strong cognitive and analytical skills; socio-emotional skills

Sector Classification	Definition	Examples	Type of Digital Work	Digital Skills Level	Additional Skills
III. C. Microwork	Business processes are broken down into small tasks [e.g. data input, image tagging, text transcription] and then distributed to workers via an online platform.	MTurk, Figure Eight; ISSPs [e.g. Samasource, CloudFactory]	ICT-dependent	Basic	Foundational cognitive skills

#### IV. DIGITAL PLATFORMS FOR IMPROVING LIVELIHOODS

IV. A. On-Demand Services Platforms	Online on-demand services that require ICT	Ride hailing [e.g. Lyft, Uber, Gojek]; Food delivery [e.g. Deliveroo, UberEats]	ICT-dependent	Basic <sup>2</sup>	Varied
	Online on-demand for traditional services facilitated by ICT	Babysitting; Home services [e.g. Taskrabbit]; Home cleaning	ICT-enhanced	Basic <sup>2</sup>	Varied
IV. B. Business Services for Farmers and SMEs	Online information services for farmers and small entrepreneurs, providing price and weather info; links to buyers; funding and technical services; online markets	For farmers: M-Farm [Kenya], ict4dev.ci; Lelapafund [Kenya]  For SMEs: Alibaba, Etsy	ICT-enhanced	Basic <sup>2</sup>	Varied
IV. C. Job-Matching Platforms	Online services matching job seekers and employers; Online career counseling	SoukTel, Kazi Connect, Jobberman [Nigeria]	ICT-enhanced	Basic <sup>2</sup>	Varied

**Note 1:** This table is a condensed version of the complete typology in the [full report](#).

**Note 2:** For digital platforms, this refers to digital skills needed to access platforms, not to the work that is enhanced or located through the platforms.

**Demand drivers for digital jobs are emerging.** In the [Digital Jobs for Youth: Young Women in the Digital Economy](#) report, S4YE applied a typology of drivers of digital jobs to examine sectors that use ICT to enable jobs or enhance livelihoods. The typology identifies four drivers of demand for digital jobs: (a) Public Sector, (b) Private Sector, (c) Online Outsourcing, and (d) Digital Platforms for Improving Livelihoods.<sup>15</sup> The four drivers are further divided into subcategories, as shown in Table 1.

**By mapping the drivers of digital jobs, policy makers can better target investments for different**

**youth populations.** For example, a policy maker focusing on job creation for rural women with limited digital skills may prioritize microwork opportunities. On the other hand, if the goal is to create quality jobs for unemployed, college-educated young women, investing in digital entrepreneurship might be more transformative.<sup>16</sup> Rather than relegating the most vulnerable women (including low-income, rural, low levels of education) to low-skill or low-paying digital work, practitioners and policy makers may use the typology to determine the type of support necessary to upskill young women for more advanced, better quality, and higher-paying digital jobs.

## BOX 2. DIGITAL JOBS ACTIVITIES FUNDED BY THE JOBS UMBRELLA MULTI-DONOR TRUST FUND

**GENIE Broadband for Development Program** (Georgia): The grant finances an impact evaluation to understand the implications of ICT adoption and e-commerce on firm growth and job creation. The project identifies and addresses societal norms and other barriers preventing women from adopting innovative technology. Strategies include conducting education campaigns to build community buy-in, providing subsidies and digital literacy training to female entrepreneurs, and organizing women-only events to facilitate networking with female entrepreneurs.

**Linking Vulnerable Youth with Digital Employment Opportunities** (Pakistan): Linked to the **Digital Jobs for Khyber Pakhtunkhwa** project (Box 3), the grant supported training 3,000 youth in digital skills, and provided post-training support and guidance to help trainees access online income opportunities. One cohort of 900 trainees focused solely on women, and the program reserved 30 percent of seats in the remaining 2 cohorts for women. Training content focused on particular needs of women in the digital economy based on updated findings from project monitoring. For example, modules added focused on content development and graphic design, as well as digital rights and safety modules to help women feel safer when engaging online.

**Rapid Skills Training for Youth Employment** (Colombia, Lebanon, Kenya): The grant aimed to identify success factors for rapid skills training programs (coding bootcamps) and to measure their benefits on youth employment and employability. Findings from a randomized control trial of coding bootcamps in Medellín, Colombia complemented qualitative studies of bootcamps in Beirut, Lebanon and Nairobi, Kenya. The studies found that women were under-represented in training, and they had fewer opportunities to find high-quality jobs in the ICT sector compared to male participants. The study emphasizes the need for more female-centered digital jobs interventions. Key success factors are captured in the [toolkit methodology for rapid technology skills training programs](#).

*Source:* Jobs Umbrella Multi-Donor Trust Fund Annual Report 2018–2019; Grant Reporting; Coding Bootcamps for Youth Employment: Evidence from Colombia, Lebanon, and Kenya.

**The World Bank's youth digital employment portfolio is supporting governments to create opportunities in digital employment for young women.** The [World Bank's youth employment portfolio](#) includes over 140 active and pipeline lending operations around the world, with a net commitment exceeding US\$17 billion.<sup>17</sup> An increasing number of these initiatives are designing project components to include digital skills training, digital entrepreneurship, and digital employment for youth; and over 50 percent of projects include strong gender themes.

**The World Bank is implementing integrated youth employment programs to address both labor supply-side and demand-side constraints.** Some examples from a variety of contexts include:

- The “Digital Jobs in Nigeria” pilot empowers youth in **Kaduna State, Nigeria** by [training them to access employment opportunities in the digital economy](#). Lessons learned from pilot activities are now being scaled-up in Nigeria and across other

World Bank projects in fragile, conflict and violence-affected (FCV) contexts (Box 8).<sup>18</sup>

- In 2016, 100 young women in **Kosovo's** Gjakova and Lipjan municipalities were struggling to find their first jobs. They enrolled in the World Bank's [Women in Online Work \(WoW\) pilot](#), a digital skills training program to prepare unemployed and under-employed young women for online freelancing jobs. Within three months of completing the program, these women were earning twice the average national hourly wage in Kosovo. Some graduates even started their own ventures and hired other young women to work with them (Box 6).
- In 2018, the World Bank approved a US\$18 million grant to provide short-term employment support to youth in the **West Bank and Gaza**. Of that grant, US\$3 million supports a [component to fund skills training and digital job support for 750 unemployed youth](#), 375 of them young women, by connecting them with online freelancing opportunities (Box 7).<sup>19</sup>

- On the demand side, the **World Bank’s E-Commerce for Women-Led SMEs** project is designed to support women-led SMEs in the Middle East and North Africa (MENA) region to access global markets through e-commerce platforms. The program adopts gender-responsive strategies to help women-led SMEs access financial resources, develop technical and operational capacity, and increase sales (Box 10).<sup>20</sup>

**The Jobs Umbrella Multi-Donor Trust Fund (Jobs MDTF) also funded several activities to help young women access digital employment opportunities.** As described in Box 2, design of

these interventions took several forms, including pilot training programs to train vulnerable youth for online freelancing, intensive coding bootcamps to prepare young women for ICT-intensive jobs and digital entrepreneurship, and helping firms adopt ICT and engage in e-commerce activities.

**With support from the Jobs MDTF, the World Bank’s Jobs Group is leveraging global partnerships to inform design of digital jobs interventions across World Bank Global Practices.**

First, the Jobs Group has leveraged the S4YE network of global partners to connect World Bank operations with cutting-edge innovations from external

**Table 2**  
Practices to Address 8 Major Challenges in Digital Jobs Programs for Young Women

Phase	Challenges		Promising Practices
Context and Constraints	1	Navigating Shifts in Demand for Digital Skills	<ul style="list-style-type: none"> <li>• Assess market demand for digital skills</li> </ul>
	2	Understanding Gender Differences in Roles, Needs, Opportunities, and Limitations	<ul style="list-style-type: none"> <li>• Conduct context-specific gender analysis</li> </ul>
Supply-side Constraints	3	Recruiting Young Women to Digital Jobs Programs	<ul style="list-style-type: none"> <li>• Utilize mixed recruitment techniques</li> <li>• Establish program centers in safe and accessible locations</li> <li>• Promote early-age-exposure to ICTs</li> <li>• Provide stipends, accommodations, and other incentives</li> </ul>
	4	Retaining Female Beneficiaries in Programs	<ul style="list-style-type: none"> <li>• Design a rigorous screening process</li> <li>• Incorporate a blended approach to training delivery</li> <li>• Implement on-the-job learning work schemes</li> <li>• Provide access to ICT infrastructure and devices</li> </ul>
	5	Building Self-Confidence in Young Female Beneficiaries	<ul style="list-style-type: none"> <li>• Support and engage women in interactive learning experiences</li> <li>• Improve women’s self-confidence</li> <li>• Provide female role models</li> </ul>
	6	Combating Misperceptions, Stereotypes, and Other Biases Against Young Women	<ul style="list-style-type: none"> <li>• Influence parents, spouses, and others to support women’s career choices</li> <li>• Connect employers directly with young women</li> <li>• Provide inclusivity training to employers</li> </ul>
Demand-side Constraints	7	Helping Female Entrepreneurs to Access and Control Financial Resources	<ul style="list-style-type: none"> <li>• Leverage digital financial services to support women’s financial inclusion</li> <li>• Connect entrepreneurs with traditional and alternative funding sources</li> </ul>
	8	Digital Entrepreneurs Require Skills and Support for Success	<ul style="list-style-type: none"> <li>• Train, mentor, and support women digital entrepreneurs to succeed</li> <li>• Shift national mindsets on women’s roles and capabilities</li> </ul>

Source: S4YE (2018). *Digital Jobs for Youth: Young Women in the Digital Economy*.

### BOX 3. ADOPTING AN INTEGRATED APPROACH TO DIGITAL JOBS IN PAKISTAN

The World Bank's **Digital Jobs for Khyber Pakhtunkhwa** [KP] project shows how governments can integrate labor supply, demand, and policy approaches when implementing digital jobs interventions for youth.

**Supply Side: Digital Jobs for KP** supports flagship skills building activities. The Youth Employment Program [YEP] equips youth with in-demand skills for the global digital economy, and encourages youth to enter self-employment and entrepreneurship by connecting them to online freelancing work. The team adopted several strategies to attract and retain female beneficiaries, including creating gender-inclusive work spaces for young women to access computers and the internet.

**Demand Side:** The KP IT Board [KPITB] developed a global marketing campaign to position itself as an outsourcing destination and promote investment in the IT and business processing outsourcing [BPO] sectors. This campaign includes a package of subsidies for operational costs, tax rebates, recruitment and training, customized business facilitation, and incentives to support businesses in the province. The KPITB also launched a US\$1 million effort to prepare BPO-ready spaces for local and international service providers to use.

**Policy and System-Level Considerations:** The KPITB also invests in the enabling environment and infrastructure to attract international and national BPO companies. The Government of KP removed taxes on BPO and IT businesses and reduced the broadband tax from 19.5 percent to 10 percent, which combine to reduce the cost of operating IT businesses in the province by 30 percent.

stakeholders. Second, the Jobs Group has curated global emerging practices based on knowledge and experiences captured through its global partnerships, as discussed in the next section.

### WHAT WORKS?

**S4YE's 2018 annual report, [Digital Jobs for Youth: Young Women in the Digital Economy](#), highlights practical approaches for gender-inclusive programs to connect youth with digital jobs.** The report illustrates how World Bank and S4YE's external partners' past and ongoing digital jobs interventions address supply and demand-side barriers to young women's digital employment.<sup>21</sup> Activities include providing digital skills training; offering intermediation services; connecting young people with income-generating opportunities through online platforms; promoting digital entrepreneurship; and helping firms, including women-led SMEs, to connect to the digital economy, create more jobs, and hire more youth. This section proposes practical program design ideas to overcome 8 common challenges to improve gender-inclusive digital jobs interventions for youth (Table 2).<sup>22</sup>

**It can be challenging for youth employment programs to diagnose constraints women face on the supply side or that firms face on the demand side.** There are few digital employment interventions for young women that operate on the demand side by specifically helping firms to create jobs, and even fewer digital jobs projects intervene on both the supply and demand side. A notable exception is the World Bank's [Digital Jobs for Khyber Pakhtunkhwa](#) project in Pakistan (Box 3).

Specific strategies and recommendations to overcome the eight challenges project teams face in designing digital job skills training programs are discussed in the section below.

### Challenge 1: Navigating Shifts in Demand for Digital Skills

**Assess Market Demand for Digital Skills.** The digital landscape is constantly changing, with skills becoming obsolete and new skills constantly in demand. When designing digital jobs program for youth that include technical skills-building, project teams should conduct market analysis to evaluate local and international demand for digital skills.

#### BOX 4. DESIGNING BUSINESS-DIRECTED TRAINING CURRICULA IN LATIN AMERICA

**Laboratoria** is a coding bootcamp and job placement program in Peru, Chile, Mexico, and Brazil that combines applied coding education, socio-emotional training, and employer engagement to create opportunities for low-income young women.

**Laboratoria** works closely with tech companies in Latin America and Silicon Valley to develop a business curriculum to ensure that its education program teaches relevant, in-demand skills. **Laboratoria** surveys company hiring managers to learn what skills they need for web developer openings. Based on these findings, program staff develop a project-based, open source training curriculum, then share it widely with developers and industry professionals for feedback and input into the training program.

#### BOX 5. GENDER MAINSTREAMING YOUTH EMPLOYMENT PROGRAMS IN INDIA

Before implementation of the [Saksham](#) youth employment and entrepreneurship project, the team at **Plan International—India** collected data to understand job requirements in Delhi, Hyderabad, and Uttarakhand. Jobs indicators included the number of men and women in the workforce, type of skills required by employers, remuneration levels for men and women, and differences in work timing and shifts for young men and women.

Staff researched local employer facilities, infrastructure, and benefits, including availability of maternity benefits, existence of separate restrooms for women, availability of transport subsidies, and compliance with labor and safety regulations. Program staff also monitored market trends to identify companies that hired only or mostly female staff.

The gender mainstreaming strategy throughout project design and implementation included analyzing gender-based norms, needs, roles, and barriers for women and men; providing transportation, childcare or other support services to enable young women's participation; ensuring gender parity in faculty, and providing gender-sensitivity training to all faculty and staff; and collecting gender-disaggregated data throughout the program cycle.

[Laboratoria](#) adopted strategies to prepare vulnerable young women for digital jobs according to local market demand (Box 4).

#### Challenge 2: Understanding Gender Differences in Roles, Needs, Opportunities, and Limitations

**Conduct context-specific gender analysis.** Before starting to design an operation, project teams should analyze and understand gender dynamics within the specific labor market—gender roles, relations, constraints and opportunities—to align design decisions. Digital youth employment programs should study local gaps in ICT access and use, and the challenges and opportunities for women. USAID's [Gender and ICT Survey Toolkit](#) is a useful resource for practitioners conducting a landscape assessment of women's ICT access and usage.<sup>23</sup> Using the digital jobs typology, teams should also analyze cultural

biases, trends in occupational segregation, and other labor market failures that may relegate young women to lower-level digital jobs. [Plan International—India](#) integrated gender mainstreaming throughout its project cycle to identify and meet the needs of female beneficiaries (Box 5).

#### Challenge 3: Recruiting Young Women to Digital Jobs Programs

**Utilize mixed recruitment techniques.** Young women often have severe time constraints because of family and household responsibilities. To recruit young women from disadvantaged communities into jobs programs, program teams can create promotional campaigns for spaces frequently visited by young women. For example, **Plan International's Saksham** project in India applied a mix of youth and community mobilization techniques to recruit girls and young women, including door-to-door outreach,



Photo credit: Charlotte Kesl / World Bank

announcements on cars, strategically located information kiosks, and social media advertisements. Promotional messages should be context-specific, reflect the local realities of young women's lives, highlight their specific needs, and describe benefits and opportunities from participation.

**Establish program centers in safe and accessible locations.** Programs should consider geographic proximity for youth beneficiaries. Many youth face [mobility constraints](#), which inhibit traveling to training programs, job searching, and commuting to and from work.<sup>24</sup> In many contexts, social norms compound these restrictions by limiting young women's access to safe, affordable, and reliable transportation. In South Africa, the [Harambee Youth Employment Accelerator](#) adopted a "one-taxi-ride-away-from-the-job" rule—beneficiaries were assigned to jobs that were within reasonable distance of their home addresses. This not only reduced financial costs for beneficiaries, but also helped women feel safer commuting. Recognizing young women's disproportionate mobility constraints and safety concerns, digital jobs programs should also host activities in central locations where young women feel safe accessing.

**Promote early-age exposure to ICT.** A 2018 Accenture report found that exposing young women to digital skills at an early age [increases likelihood that they pursue tech-related education or employment opportunities](#).<sup>25</sup> This requires a comprehensive targeting approach that not only recruits girls and young women into digital skills programs, but also educates family members and household decision

makers on the benefits of having girls develop technical skills. In the United States, [Girls Who Code](#) (see Box 9) implements various programs to engage girls aged 10 to 18 in learning computer science and programming concepts. [AkiraChix](#) started a high school outreach program in Kenya to encourage girls to join STEM fields. Program activities include bi-weekly training sessions at high schools on thematic areas such as programming, graphic design, user experience, and robotics during every school term.

**Provide stipends, accommodations, and other incentives.** Reducing the cost of attending digital skills training can make programs more accessible for young women, who often have limited access and control over their own financial resources. Providing stipends and other incentives for beneficiary participation can also reduce program attrition. However, implementers should be aware of risks related to providing financial, meal, and transportation accommodations: stipends and other incentives can create tension if only some beneficiaries receive them, and beneficiaries may accept stipends without commitment. In Kosovo, the [WoW Pilot](#), for example, provided transportation and meal stipends to beneficiaries, helping more trainees to participate in classroom exercises and bid for online freelancing jobs. However, the stipends also disrupted training as some beneficiaries complained that students were accepting the stipend but not attending courses. Box 6 describes additional strategies used to recruit beneficiaries to the WoW pilot.

#### **Challenge 4: Retaining Female Beneficiaries in Programs**

**Digital youth programs reported facing significant challenges to retain young women in training, work-based learning, and employment programs.** There are several strategies for programs to reduce high incidence for drop out by female beneficiaries, as described below.

**Design a rigorous screening process.** Digital jobs programs should screen applicants to help ensure the program truly meet the needs, abilities, and ambitions of accepted beneficiaries. Candidates who do not meet the criteria can be directed to local skills remediation programs and invited to reapply once their competencies improve. [Laboratoria](#) uses popular social media to recruit new cohorts. The application

## BOX 6. RECRUITING YOUNG WOMEN FOR A DIGITAL JOBS PILOT IN KOSOVO

The World Bank's [Women in Online Work](#) (WoW) pilot trained women in digital and socio-emotional skills to help them find online freelancing and microwork. **WoW** recruited beneficiaries through both digital as well as traditional media channels, a critical strategy to the success of the pilot.

**WoW** staff conducted information sessions at universities to inform potential beneficiaries about the program. Program staff also used social media marketing through targeted Facebook advertisements. The **WoW** team also partnered with Kosovo's Ministry of Economic Development, which led a recruitment drive through traditional media, including TV, radio, and newspapers. Moreover, to include disadvantaged people, staff worked with local advocacy groups representing ethnic minorities and people with disabilities.

## BOX 7. ON-THE-JOB TRAINING FOR YOUNG WOMEN IN WEST BANK AND GAZA

A new World Bank youth employment project in West Bank and Gaza, the [Gaza Emergency Cash for Work and Self-Employment](#), is designed to provide youth with short-term income and increased access to Internet self-employment opportunities.

The project will connect 375 young women with e-work opportunities, including complex "e-lancing" contracts—such as software development, graphic design, and media production—and simpler microwork tasks such as labeling photos or videos and transcribing scanned documents.

The project team designed a support package including up to two months of skills training and six months of on-the-job support. This is critical to help young women to earn immediate income, develop confidence to pursue online contracts, and build their professional experience to find future jobs.

process originally included an interview and an aptitude test. After many young women withdrew from the program because it was too demanding, staff adjusted interviews to identify traits, such as creative problem solving and determination, that help young women meet program demands.

**Incorporate a blended approach to deliver training.** Online training programs can be convenient for young women facing time and mobility restrictions; but in-person training at centers with reliable computer and Internet may help young women who have limited ICT access at home. An approach that blends online and classroom training can offer young women flexibility and reduce transportation and other costs. [Digital Divide Data \(DDD\)](#) recruits and trains youth to work as data management operators to deliver BPO services to clients. Beneficiaries undergo business education and "soft" and technical skills training through both face-to-face (70 percent) and online learning (30 percent). This provides youth flexibility to complete assignments on their own schedules, while helping

develop team-building and communication skills through group activities.

**Implement on-the-job learning schemes.** Young women often withdraw from training programs because they do not perceive a clear connection for how their new skills will improve employment prospects. To incentivize young women's participation, digital jobs programs should connect job experiences with skills training, including through internships, apprenticeships, or other on-the-job learning. The [EOH Youth Job Creation Initiative](#) in South Africa adopted a "learnership" model with 30 percent classroom teaching and 70 percent structured workplace learning in jobs in manufacturing, IT, finance, and engineering industries. This model allowed youth to embed themselves in organizational culture, increasing likelihood of employment after program. The World Bank's [Gaza Emergency Cash for Work and Self-Employment](#) project also provides digital skills training combined with on-the-job support (Box 7).

**Provide Access to ICT Infrastructure and Devices.** Many young women, particularly those in

## BOX 8. THE ROLE MODEL EFFECT: INSPIRING YOUNG FEMALE ENTREPRENEURS IN NIGERIA

The World Bank's [Click-On Kaduna](#) pilot program in Kaduna State, Nigeria aims to empower disadvantaged youth in fragile and conflict zones by training them for employment in the digital economy. The project includes three main components: [a] a three-day "e-lancing" workshop followed by an online freelancing pilot; [b] targeted digital skills development for 180 youth, 50 percent of whom are women; and [c] digital entrepreneurship support to 180 youth entrepreneurs and youth-led startup teams.

The Click on Kaduna team found that many young women were uncomfortable participating in training sessions with young men: as a result, they were less communicative, asked fewer questions, and interacted less with other trainees. They were also reluctant to engage with male trainers.

As a result, the program team developed a women-only cohort using only female trainers. They also connected trainees with female mentor/role model entrepreneurs from the same communities. Beneficiaries engaged more actively during training and were more motivated to achieve their goals after seeing other women from similar backgrounds had succeeded.

lower-income groups or rural areas, lack affordable access to ICT. Furthermore, young women generally have lower Internet access and utilization than young men. This gender gap limits women's remote work and training opportunities. Digital jobs programs should create hubs and other spaces for young women to safely share ideas and access critical tools. In Ghana, [Friends of the British Council \(FoBC\)](#) launched a Digital Innovation Center (DIC) as a space for young people to share ideas, network, and access IT tools, software, and high-speed Internet. The DIC also served as a workspace for beneficiaries to launch digital startups and access online freelance jobs.

### Challenge 5: Building Self-Confidence in Young Female Beneficiaries

**Support and engage women in interactive learning.** Teaching methods should encourage young female beneficiaries to contribute. Interactive extracurricular programs promote active learning, inspire greater confidence, and [boost interest in STEM](#).<sup>26</sup> Program teams can dedicate class time for beneficiaries to speak in front of peers, including expressing difficulties with courses. Some programs may need women-only cohorts to promote engagement. For example, The [Youth Banner](#)—a Rockefeller Foundation's Digital Jobs Africa (DJA) grantee—reported difficulty recruiting women for economic empowerment clubs because women are not comfortable in clubs with men, which keeps them from sharing their thoughts and ideas. Based on these experiences, The Youth Banner's "She Will Connect" initiative in Kenya created comfortable spaces dedicated for young women to learn.

**Develop female beneficiaries' communication and leadership skills.** Many employers value socio-emotional skills at least as much as technical expertise. Program teams should incorporate socio-emotional skills modules into curricula, including training on communication, leadership, and workplace readiness. [Maharishi Institute](#) found that many youth were unable to find jobs because they could not communicate their skills and experience to potential employers. In response, the team modified its curriculum to incorporate socio-emotional skills, including training on workplace readiness. As a result, female beneficiaries reported feeling more resilient to challenges in the workplace.

**Provide female role models in jobs programs.** Speaking and connecting with female role models in digital jobs and learning about their experiences can [build the confidence female beneficiaries need](#) to navigate in traditionally male-dominated ICT careers.<sup>27</sup> This "role-model effect" also helps young women relate to peers, instructors, and mentors. The "Digital Jobs in Nigeria" pilot program created women-only spaces for beneficiaries, hiring female trainers who also served as role models (Box 8).

### Challenge 6: Combating Misperceptions, Stereotypes, and Other Biases against Women

**Influence parents, spouses, and others to support women's career choices.** Program teams should engage with family and community members to combat social norms that restrict young women's participation in training and job programs. For example,

## BOX 9. CLOSING THE GENDER DIGITAL DIVIDE: ADVOCATING FOR GIRLS AND WOMEN IN STEM

Early exposure to coding drives interest in computing among girls. In the U.S., with support from Accenture and other companies, [Girls Who Code](#) implements various programs to engage girls aged 10 to 18 in learning computer science and programming concepts.

Girls Who Code also runs national and local campaigns to raise awareness about the gender gap in coding, counter misconceptions about gender roles in technology, and drive program enrollment and participation. National campaigns leverage social media, online and print publications, and television to educate various groups (parents, schools, girls, among others) about opportunities in the digital economy.

Girls Who Code also published a book series to reach girls who might not have access to a Girls Who Code classroom. These books include explanations of computer science concepts using real life examples and relatable characters profiling women in technology. This series advocates for girls' participation in computer science by telling stories using many girls' voices.

As of 2018, Girls Who Code reached 50,000 girls in all 50 U.S. states, inspiring girls to consider studying computer science and paving the path for future technology careers. Nearly 90 percent of Girls Who Code alumni say they are more likely to pursue a career in technology because of their participation. Girls Who Code is helping to close the 13 percent gap, roughly 11,000 individuals, in entry-level computer science jobs between men and women, to create gender parity in the U.S. by 2022.

[Saksham](#) project staff organized parents' visits to prospective job places to increase family comfort that beneficiaries would be working in safe environments. The project team also engaged parents throughout the program, creating a supportive and enabling environment for young participants. [Girls Who Code](#) runs national campaigns to promote positive images of girls and women in STEM careers (Box 9).

### **Connect employers directly with young women.**

Hiring bias persists in societies where taboos keep [women from working in STEM or ICT-related careers](#)—or work anywhere.<sup>28</sup> To overcome this, digital jobs programs should host events to display female beneficiaries' skills and aptitudes. They can also work directly with private sector companies to identify skilled young women to fill employer needs. Before graduating from "bootcamp," [Laboratoria](#) students participate in Talent Fest, a 36-hour hackathon. In-person participation in Talent Fest gives company representatives the chance to see how young women work, providing crucial insight into finding the right fit for openings. Companies can also interview high-potential candidates.

**Provide inclusivity training to employers.** Some employers may have negative perceptions about women in STEM, have assumptions about the types of tasks women can perform, or assume that female candidates are unqualified. For example, [ACWICT](#)

program staff reported that companies placed many female beneficiaries in back-office roles while putting young men in client engagement; most young women did not feel empowered to address this with their employer. To counter this, digital jobs programs should work to raise employer awareness about the financial and social benefits of hiring women and creating diverse teams. Programs can also work with employers to train staff to recognize and mitigate hiring bias.<sup>29</sup> [Ada Developers Academy](#), a U.S.-based software developer training program, provides "Implicit Bias" workshops where trainers provide companies with concrete tools to become more aware of bias and mitigate its negative effects. In the Academy's



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## BOX 10. CONNECTING WOMEN-OWNED SMES TO E-COMMERCE PLATFORMS IN MENA

In November 2018, the World Bank launched the \$3.82 million regional project “[E-commerce for Women-led SMEs](#),” targeting women-led SMEs producing e-commerce marketable goods. The project will facilitate access to domestic and export markets by training e-commerce consultants who, in turn, will train and help the women-led SMEs access e-commerce platforms.

The project also aims to facilitate access to finance for participating SMEs. The project helps connect SMEs to financial institutions that lend to women, particularly the IFC’s [Banking on Women](#) network. It will also work to create an ecosystem conducive to e-commerce by diagnosing and helping governments eliminate regulatory, logistical, and e-payment constraints.

The regional Women Entrepreneurs Finance Initiative ([We-Fi](#)) initiative supports institutions providing women entrepreneurs with access to debt, equity, venture capital, insurance products, capacity building, networks and mentors, and opportunities to link with domestic and global markets.

“Ally Skills” workshops, trainers teach ways to support staff who are targets of systematic oppression based on gender or other personal characteristics.

### Challenge 7: Helping Female Entrepreneurs to Access and Control Financial Resources

**Leverage digital financial services to support women’s financial inclusion.** Financial institutions are increasingly delivering services—such as payments, credit, savings, remittances, and insurance—through digital channels. These technologies increasingly support [women’s financial inclusion](#).<sup>30</sup> Digital jobs programs should also help women-owned businesses access payment systems and bank accounts as they help female entrepreneurs exert autonomous control over their earnings.



*Photo credit:* Visual News Associates / World Bank

**Connect entrepreneurs with traditional and alternative funding.** Young women typically have less access to and/or control over assets than young men, limiting their ability to access credit to start or grow a business. Digital job programs should support young female entrepreneurs by connecting them to non-traditional finance institutions and alternate forms of finance. The World Bank’s [Caribbean Mobile Innovation Project \(CMIP\)](#) hosted three regional one-day pitch competitions, called PitchIT Caribbean, where promising digital start-ups and mobile app developers compete for US\$5,000 in seed funding. Over 80 percent of the top 5 teams each year have been led by women. Another World Bank project combines connecting women-owned SMEs to e-commerce platforms with facilitating access to finance (Box 10).

### Challenge 8: Digital Entrepreneurs Require Skills and Support for Success

**Train, mentor, and support female digital entrepreneurs to succeed.** Women’s participation is lowest in STEM fields that offer more commercial opportunities, such as engineering, biotech and computer science. Labor market barriers often compound for female digital entrepreneurs: once women overcome barriers to entering STEM fields, they also barriers women entrepreneurs face more broadly. ICT can help self-employed young women transition to business owners and help micro-firms grow and create jobs. To reap these benefits, digital jobs programs must help equip young female digital entrepreneurs with digital, social, and business skills. Program teams should also help women develop supportive professional networks, including

## BOX 11. GLOBAL PLATFORMS TO SUPPORT YOUNG FEMALE DIGITAL ENTREPRENEURS

Germany's Federal Ministry for Economic Cooperation and Development ([BMZ](#)) launched the [#eSkills4Girls](#) initiative to promote female participation in the digital economy and address the gender digital divide.

In May 2017, BMZ, the United Nations Educational, Scientific and Cultural Organization ([UNESCO](#)), and SAP brought together over 30 female tech leaders from around Africa at the [#eskills4girls](#) Africa Meetup. The event offered a unique opportunity for young female entrepreneurs, thought-leaders, and industry experts to network, discuss challenges and approaches, and develop capacities and strategies for running and scaling initiatives related to girls in ICT.

Using the results of a participant survey of current needs, the Meetup included [trainings](#) to access EU funding opportunities, moderation techniques, media and communication, networking strategies, and design thinking.

established professionals and women leading early-stage digital start-ups. The World Bank's 2019 [Profiting from Parity](#) report is a helpful resource for practitioners designing programs to support female digital entrepreneurs.<sup>31</sup> A global effort under [G20](#), the [#eskills4girls](#) initiative, aims to close the gender digital divide and promote female participation in the digital economy (Box 11).

**Shift National Mindsets on Women's Roles and Capabilities.** For ventures to succeed, female digital entrepreneurs must participate in an inclusive digital ecosystem that recognizes them as equals. To help build this network, digital jobs programs can organize annual start-up pitch competitions for female entrepreneurs to showcase their innovations and compete for national and global funding. Digital jobs programs can also lead national campaigns to amplify the success of women-led businesses and combat negative perceptions or stereotypes. The World Bank's [Caribbean Mobile Innovation Project](#) (CMIP) team organized the 2016 PitchIT Caribbean Breakfast for Women Tech Entrepreneurs to foster greater women's involvement in tech entrepreneurship. This event recruited young women into the CMIP training program and raised awareness of CMIP benefits among advocacy organizations supporting women's employment, entrepreneurship, and empowerment.

## WHAT'S NEXT?

### Creating Impact at Scale

**To close the gender digital divide and create youth employment opportunities for young**

**women, practitioners and policy makers should commit to scaling digital jobs programs.**

"Scaling up" refers to deepening and/or spreading development benefits of an intervention, increasing participation of vulnerable populations previously excluded, and trying to replicate, sustain, and adapt program results in different contexts. When making strategic decisions about scaling, stakeholders should consider how to scale, what actors to involve, and how to retain program quality. As stakeholders consider these questions, they may use a combination of the following approaches:

- **Create ripple effects through partnerships.** Use existing networks and platforms to share experiences, lessons, success, and failures. Global coalitions such as [S4YE](#) curate innovations, share best practices, and facilitate learning from shared experiences. The [Principles for Digital Development \(PDD\)](#) represent 9 guidelines to practitioners to adopt best practices in technology-enabled programs. The [Digital Principles Community](#) established an [online forum](#) to facilitate peer learning.
- **Embed program in a policy framework.** Stakeholders should leverage established institutions and infrastructure, such as existing community education and training models. For example, [Year Up](#) has [grown from a local start-up](#) to a national NGO offering work-readiness and skills training to disadvantaged youth in urban areas across the U.S.<sup>32</sup> Year Up's successful scaling is due in large part to partnering with community colleges.
- **Change mindsets.** Implementing transformative, gender-inclusive digital jobs programs requires stakeholders to combat social norms that limit



Photo credit: Shynar Jetpissova / World Bank

women, and to support participatory, community-based advocacy and strategies to change discriminatory attitudes and practices.

- **Leverage public investment projects.** Digital jobs programs may maximize their potential for scaling by leveraging public investment projects, such as rural or infrastructure development projects. For example, the Kosovo Women in Online Work ([WoW](#)) digital jobs pilot is now being scaled within a digital infrastructure project to expand rural broadband access.<sup>33</sup> Governments integrating youth digital jobs initiatives into internet connectivity, digital infrastructure, or ICT policy development projects can increase broadband access while creating options for women's productive Internet usage and employment.
- **Make the business case.** Youth employment interventions achieving private sector uptake become more sustainable and more likely to scale. Investing in integrated, inclusive digital jobs programs for youth helps to create a highly-skilled, diverse workforce that meets firms' needs. Increasing women's employment is also linked with positive business outcomes, including [increased](#)

[productivity, firm performance and employee retention](#).<sup>34</sup> It is important to partner with companies, as private-sector support for digital jobs interventions can increase revenue and reduce costs for firms across all industries.

## Develop a Robust Evidence Base

There is a dearth of evidence on the effectiveness of youth employment interventions, particularly those connecting youth with digital job opportunities. Supporting these and other innovative projects can develop a global evidence base for digital jobs programs for marginalized young women, including those in rural communities characterized by poor education and limited broadband access. Tools such as the World Bank's [Jobs M&E Toolkit](#) can help practitioners collect data on key jobs indicators throughout a project cycle to support systematic digital jobs program assessment.<sup>35</sup>

**To fill these knowledge gaps, donors, governments, private sector partners, and other stakeholders can also invest in experimentation.**

S4YE's [Impact Portfolio](#) partners are developing new approaches to tackle youth unemployment across a variety of contexts. As these programs innovate, they can track gender- and age-disaggregated indicators to measure jobs impacts, business performance, and return on investment. Findings can point to new program designs and implementation strategies for testing on a larger scale. Topics for further research include:

- **Determining the right "dosage."** Case studies reveal promising practices for youth employment programs to overcome supply-side labor market barriers to women's recruitment and retention. Yet, questions remain on specific best practices to design programs, such as the minimum duration needed for skills training programs to maximize employment outcomes for young women, as well as determining the most effective combination of technical and socio-emotional skills development.

The Jobs MDTF is funding randomized control trials in Colombia, Kenya, and Pakistan to test the effectiveness of women's coding bootcamps. These studies are evaluating the most effective and efficient "dosage" for digital skills training programs—that is, the duration, frequency, and intensity of curricula. Further investment is also needed to prove how

best to modify traditional skills training programs to target the most vulnerable, including displaced, disabled, and low-literacy youth.

- **Leveraging new technologies and non-traditional sources of data.** There is little evidence of what works to promote more, better, and gender-inclusive digital job creation in firms. Most private sector interventions have not focused on employment outcomes such as job creation. Fortunately, as technology transforms business strategies, job openings, and worker hiring, more data may become available to help researchers understand relationships between demand-side programs and digital youth employment outcomes

Technology is accelerating the pace at which work is changing globally, affecting types of jobs and how youth train and search for them. These rapid shifts require policy makers and researchers to not only constantly track, experiment, and share lessons, but also adopt more agile, just-in-time methods to source and use data. Stakeholders may also increasingly use big data analytics and artificial intelligence to understand labor market opportunities for youth.

New technological solutions are emerging that can also help solve persistent market failures, such as asymmetrical information about labor markets.

For instance, [LinkedIn](#), [Lynk in Kenya](#), and other online job platforms are now adapting to include the informal labor market. Partnering with these platforms will open new avenues for data collection and analysis, supporting evidence-based approaches to youth employment.

- **Designing integrated programs addressing supply-side and demand-side issues.** Evidence shows that supply-side interventions alone are not enough to create more and better long-term jobs for youth; however, the potential for integrated approaches remains to be tested. While several programs identified promising approaches to overcome challenges female entrepreneurs and women-led SMEs face, less evidence exists on successful interventions to address **demand-side constraints** to digital jobs creation or to promote growth of women-led digital economy firms. More evidence is needed to establish effectiveness of different program methods to integrate demand-side and supply-side components of youth employment broadly.

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