ADAPTING SKILLS TRAINING TO ADDRESS CONSTRAINTS TO WOMEN’S PARTICIPATION

KEY MESSAGES

- Across the globe, women face inferior job and income opportunities compared to men, as reflected in women’s lower labor market participation and segregation into lower-productivity employment.
- Disadvantages in level and type of skills limit women’s ability to participate in the labor market and to access higher quality, more productive jobs.
- High-quality skills training in job-relevant hard and soft skills can improve labor market outcomes for both women and men. Yet, women are less likely to enroll, stay in, and graduate from such programs.
- Skills training programs need to adapt to address specific constraints women face to increase enrollment, retention, and graduation.
- A range of adaptation to skills training programs can address operational, behavioral, and financial obstacles, often underpinned by social norms, facing women.
- Programs are also moving from providing women with skills in traditional “female” fields or trades to help them enter “male” fields or trades where returns are higher.

This Jobs Solutions Note identifies practical solutions for development practitioners to design and implement skills training programs that improve outcomes for women. 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 on rigorous evidence stemming from impact evaluations, systematic reviews, meta-analyses, and mixed-methods. The Note focuses on adaptations to address supply-side constraints, while acknowledging the importance of demand-side factors in influencing returns to skills training and labor market outcomes.

MOTIVATION: WHAT IS THE PROBLEM?

Across the globe, women face inferior income opportunities compared to men. Women are less likely to participate in the labor market, and when they do, they are paid less and are less likely to work in formal employment. They also have fewer opportunities for business expansion or career progression. Many other factors contribute to the gender “jobs gap”: women bear a disproportionate share of unpaid home care and domestic work, have fewer choices in their own movements, and face social norms that limit access to higher-paying income opportunities. They also have less access to credit, are less likely to use banks, and have less collateral to grow a business.

Low employment and earnings for women in developing countries stem from both labor supply-side and demand-side factors. On the supply side, women have, on average, lower levels of education than men. Although the education gap for young adults has decreased in most countries—with young women in some regions having higher average schooling than male peers—women are less likely to study for higher paying fields than men. On
the demand side, job demand derives both directly from formal firms’ need for workers and from demand for goods and services, especially those supplied by micro-enterprises or the self-employment where most people work in developing countries. Firms display a bias against women in hiring and promotion. The specific characteristics of growth have substantial implications for women’s income opportunities since women work in different sectors of the economy. Demand factors also influence worker supply by affecting people’s education choices and type of skills they acquire.

Skills training programs can improve employment and earnings for workers. The broad set of programs for out-of-school youth and adults outside of teaching in formal schools or Technical and Vocational Education and Training (TVET) include:

- Entrepreneurial or business training programs to improve business practices in marketing, stock-keeping, record-keeping, and financial planning;
- Apprenticeships;
- Public works projects with a training component; programs to train small-holder farmers; and
- Programs designed for informal self-employed microenterprises and small and medium enterprises (SMEs).

It is more difficult for women to access and complete skills training programs. Women are less likely to enroll, and when they do, they are more likely to drop out and less likely to find a job after training. This is explained by a mix of factors as noted above, such as family obligations, restrictions on mobility, perceptions as to what fields are appropriate for women to pursue, and financial constraints—some of which might also affect men. In Malawi, for example, a range of external factors affected women’s participation decision that did not affect male peers. In India, social norms for women—religious and caste restrictions—decreased the success of skills training for women in basic financial literacy and business skills. In addition, lack of childcare and barriers to mobility contribute to women dropping out of training. Women are also disproportionately enrolled in skills training for female-dominated trades, perpetuating occupational segregation and lower earnings.

In Africa—where informal self-employment is much higher than in other regions—apprenticeships are a common form of training typically not covered in the aforementioned reviews. Apprenticeships are especially common in West Africa, where they are more prevalent than other, formal alternatives combined. Despite being more common, they are less researched. In general, while there is little evidence about the effectiveness of apprenticeship programs to improve labor market outcomes, the existing evidence is mixed. Since apprenticeship programs are structured quite differently than skills training programs, including being highly decentralized in delivery structure, the adaptations described in this note are not intended to necessarily inform such programs.

Business training programs show mixed results on improving female entrepreneurs’ performance in developing countries, such as Sri Lanka; Peru; and in India, among others. In some cases, for example Tanzania, these interventions show strong positive effects for men, but much smaller for women. This is partly because women do not have the same business connections for advice and support compared to men. Programs may also not address the most binding constraints for women’s participation. The vocational training program in Malawi cited shows no benefits for female participants: women were more likely to drop out due to adverse shocks and their participation was constrained by family obligations.
This Solutions Note provides evidence-based guidance to World Bank Task Team Leads (TTLs) and development practitioners to design and implement skills training programs that improve outcomes for women. The Note compiles rigorous evidence stemming from impact evaluations, systematic reviews, meta-analyses, and mixed-methods studies. This Note focuses on adaptations to address supply-side constraints, while acknowledging the importance of demand-side factors in influencing returns to skills training and labor market outcomes. Relatedly, the success of a training program for any participant, man or women, lies in the income opportunities realized after the program finishes. Yet, the programs described below do not discuss what happens to women after completing skills programs, which is pivotal to judging the success of such programs. Again, this Note is not advocating for more skills training per se or informing general design of such programs, but rather advocates for more intentional design features to address women-specific barriers. Although important, this Note does not discuss challenges related to implementing adaptations, such as getting providers to innovate and collaborate with the private sector. Clearly, implementation involves a number of complex details, as is the case for everything in this note. Finally, this note does not assess the marginal costs versus benefits of the adaptations recommended.

WHAT ARE WE DOING?

World Bank project teams are adapting skills training programs to address constraints for female participants. Two pillars of such adaptations are: (a) innovations in World Bank operations, and (b) examples of knowledge products.19

Innovations in World Bank operations

In Kenya, the Youth Employment and Opportunities project engages training providers and private sector employers to offer training and work experience for youth between 18 and 29 years of age who have experienced extended unemployment or who are working in vulnerable jobs. Recognizing this is the stage of life when women form a family and are most likely to drop out of training and the labor force, the project offers a bonus to trainers for each female trainee with children under age 5 who completes the program.

In the Democratic Republic of Congo, the SME Development and Growth Project provides a mix of interventions to support entrepreneurial growth. Its training program focuses on bridging the gender digital gap by providing female entrepreneurs with skills. These range from basic literacy to preparation of a simple business plan and legal training related to the new Family Code, the Labor Code, and Equality Law, among others. Trainers also include life skills such as self-confidence, team building, and negotiation. The program also includes technology training on how to establish and maintain business contacts.

The Tajikistan Socioeconomic Resilience Strengthening Program offers skills training tailored to young women, following a systematic assessment of their needs. Building on UNICEF’s Upshift program, the package of services includes basic digital literacy, psychosocial services, critical thinking, teamwork, communication, decision making, conflict resolution, violence prevention, and problem solving. Mindful of mobility constraints in rural areas, as well as social norms and a high percentage of vulnerable young women, the program finances mobile teams to deliver services to remote locations.

In select districts of the state of Jharkhand, India, the Tejaswini—Socioeconomic Empowerment of Adolescent Girls and Young Women Project aims to improve market-driven vocational and business skills training. Jharkhand state has among the lowest female labor force participation rates in India. Three months prior to the vocational training, the program offers participants a life-skills course covering resilience, health and nutrition, financial literacy, and rights and protection. The program also pays additional fees to trainers when they implement adaptations to account for women’s constraints. These include establishing ad-hoc training centers within a five km radius of participant homes and arranging for transport or transport reimbursement for beneficiaries to access the centers. Skills training providers must also adopt a code of conduct to mitigate beneficiary sexual harassment or abuse risk.

In Côte d’Ivoire, the Agricultural Support Program developed agricultural extension training for couples to help women crossover into rubber cultivation, a male-dominated cash crop sector. In addition to standard agricultural extension related to rubber
cultivation, the training has two main components: (a) a “gender reflection” exercise that requires couples to reflect on division of labor, asset ownership, and household decision-making and income sharing; and (b) preparation of an action plan for farmers to list activities and resources required for crop maintenance. These adaptations aim to enhance couples’ accountability to one another and communication as well as reducing biases toward women. Preliminary results of the World Bank Africa Gender Innovation Lab’s impact evaluation reveal substantial increase in household agricultural production, quality of agricultural planning, use of non-labor and labor inputs, and decision sharing.

In Benin, the Youth Employment project delivers training sessions in small groups, which improves accessibility and reduces travel costs. Participants receive a small stipend of US$4 per day to cover transportation costs and a small kit of stationery and training materials. To facilitate women’s participation, trainees with young children needing childcare are invited to bring a second person to look after children. Both the trainee and her “babysitter” receive transportation and a midday meal.

Knowledge products

The Jobs Multi-Donor Trust Fund (MDTF) contributes to global analytical work by investing in jobs solutions to respond to the needs of priority groups, such as women, youth, the poor, and those living in conflict settings. Below are some examples of World Bank knowledge products the MDTF supports:

In Mozambique, an innovative World Bank Africa Gender Innovation Lab intervention examines the effectiveness of pairing agricultural extension services, or “hard skills,” with “soft skills” including personal initiative training to foster proactiveness, future orientation, and perseverance. This initiative, the first personal initiative training adapted to an agricultural setting, targets illiterate female farmers in very remote areas (see Box 1 for a description of the initiative in a different setting). A rigorous impact evaluation using a randomized control trial is currently testing the effectiveness of the intervention.

The Digital Jobs for Youth: Young Women in the Digital Economy flagship Solutions for Youth Employment (S4YE) report provides recommendations to design and implement jobs interventions to connect young women to the digital economy. The report identifies demand drivers across various categories of digital work and presents lessons learned to overcome barriers to youth digital employment.

In Kenya, the International Labor Organization’s (ILO) Gender and Enterprise Together implements a “Get-Ahead” five-day business training course for low-income female business owners. Get-Ahead teaches traditional business skills, such as marketing and accounting, to help women overcome barriers to business growth, such as dealing with gender stereotypes and networking. A study of the program revealed that after three years, participating women earned 15 percent higher profits than those in the control group. Participants are also three percentage points more likely to have businesses survive, and have 13 percent higher weekly sales. Participants’ mental health and subjective well-being also improved.

Drawing on the experiences of 25 coding bootcamps—a short-term intensive skills training program for the digital economy—and seven digital skills training programs, the Women wavemakers: practical strategies for recruiting and retaining women in coding bootcamps World Bank report presents strategies to recruit women into coding bootcamps and approaches to increase women’s participation in technology occupations.

WHAT WORKS?

There is a growing body of evidence on factors that improve skills training programs, including for women. This Solutions Note draws on evidence and experience to distill lessons to adapt training
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program for women; it highlights factors to address gender gaps and critical constraints women face to participate and complete skills training. The Note spotlights women-only, female and male, and even couple-based interventions to address multiple constraints simultaneously, and presents key finding from the evidence and systematic reviews. While the precise set of skills or program feature to promote female participation in, and completion of, training programs are not yet clear, programs that incorporate “smart design” aspects can help women overcome specific constraints. Given evidence of what works and what does not in skills training programs in general, and known gender gaps in income opportunities, “smart design” features or adaptations for skills training programs can be grouped in three areas: (a) Information, Aspirations, and Norms; (b) Financial Aspects; and (c) Operational Features (Figure 1).

Information, aspirations, and norms comprise strategies to promote behavioral change, to shift attitudes and to encourage women to make better choices. These range from providing information—for example, about the profitability of male-dominated sectors—to offering support and guidance through mentorship. Financial aspects encompass alternatives to relieve economic constraints preventing women from participating in, and graduating from, training programs. This might include cash grants, or capital or asset transfers. Operational features refer to adjustments to reduce time and childcare-related barriers, such as provision of childcare or transportation.

Adaptations can also be classified according to types of target population. Depending on a program’s focus, “smart design” features can be grouped into domains that refer to demographic or socioeconomic characteristics of the target population. For example, adaptations might be framed in terms of those needed for training programs in rural areas, for groups with low levels of education, or for the long-term unemployed, among others.

In addition to these three adaptation domains, two “cross-cutting” themes are important to the success of skills training programs for women.

First, encouraging women to train in non-traditional occupations cuts across these three areas. Growing evidence shows that women benefit from crossing into traditional male occupations. To achieve greater gender parity, skills training programs should help women enter non-traditional fields. The many impediments to women entering non-traditional occupations include lack of information about opportunities in male-dominated industries, including lack of information about labor market

Figure 1
Adaptations for skills training programs

Encourage training in non-traditional occupations
Prevent, respond, and report sexual harassment and abuse
returns. Traditional gender roles is also a major factor preventing women from taking up male-dominated trades, as shown for instance in Kenya. In Uganda, women who move into male-dominated sectors make as much as men, and three times more than women who remain in female-dominated sectors. For the self-employed, traditional sectors for microenterprises, typically earn less, and are in markets that have low product differentiation and low-demand products, which limits business growth. In Ethiopia, women who had businesses in male-dominated sectors have higher profits and more employees than their peers in female-dominated sectors; women who cross over do not necessarily have more education or greater skills than other women, pointing to the issue of networks and again to information about greater opportunities in male-dominated sectors.

A second cross-cutting aspect is the need to build-in mechanisms to prevent, respond, and report cases of sexual harassment and abuse. Sexual harassment is a leading cause of high turnover and school and work absenteeism. Hence, addressing it and other forms of violence at work and in education is not only moral, but it is also smart in terms of workplace efficiency and productivity. Importantly, women who cross over into male-dominated fields might be more exposed to sexual harassment, given the unequal sex ratio and large power differentials between women and men. Skills training programs should include:

a. A clearly defined, strongly worded, and readily accessible anti-sexual harassment policy and code of conduct.

**BOX 1. REDUCING BARRIERS TO ENTRY AND ATTENDANCE FOR WOMEN IN ENTREPRENEURSHIP SKILLS TRAINING**

A randomized control trial in Togo tested whether teaching a proactive mindset and focusing on entrepreneurial behaviors could be more effective than standard business training programs in raising microenterprise outcomes. The intervention increased firm profits by 30 percent over 2 years, compared to 11 percent for traditional training (but not statistically significant). The impacts were similar for male and female-led microenterprises.

While the intervention focused on psychology-based personal initiative, several operational adaptations also encouraged female training participation and completion:

**Schedule:** Full-day sessions made it difficult for women to simultaneously run their businesses and prepare lunch for their families. The training consisted of half-day sessions, three times per week to enable entrepreneurs to manage their businesses and to enable earnings to fulfill family responsibilities. Morning sessions began after women left their children at school and before they needed to return home to prepare lunch. Afternoon sessions started after children returned to school and finished before trainees needed to prepare evening meals.

**Location:** Female entrepreneurs noted greater time constraints related to businesses and family responsibilities. Training sessions were organized in hotel conference rooms in neighborhoods throughout the capital Lomé, so no entrepreneurs would have to travel more than 15 minutes to a training location.

**Cost:** Entrepreneurs noted that people do not value things they receive for free, and encouraged having an enrollment fee. The price was set low (about US$10) to avoid barriers to entry. A scholarship option helped reach those facing the greatest financial constraints, particularly women.

**Language:** Literacy rates are lower for women in Togo. To enable participation of entrepreneurs of all literacy levels, instruction was given in simple French at elementary school reading level with some explanation in local language.

**Outreach:** The team worked with several partner organizations, including an association of female entrepreneurs and three micro-finance institutions, one of which had over 75 percent women clientele. The team also worked with market organizations with specific marketplaces, and the president of the central market championed the program to encourage women in her market to participate.
b. A fair, accessible, and transparent complaints mechanism that ensures confidentiality and security.

c. Training and awareness-raising.

d. Some monitoring and evaluation of these systems.  
e. Integration of sexual harassment content into the program’s core curriculum, including at orientation sessions.

Skills training programs should rely on diagnostics to better understand the challenges women face to prioritize adaptation most likely to benefit them. While beyond the scope of this Note to address, jobs diagnostics, gender assessments, and qualitative work can help identify gender and context-specific constraints women face in accessing and completing skills training programs, and in accessing productive jobs.

Finally, adapting training programs may require balancing tradeoffs between development objectives. Trade-offs exist between measures addressing the causes of inferior labor market outcomes and those dealing with symptoms, between helping as many poor women as possible and focusing on specific subgroups with urgent needs, between targeting only women and training both men and women together (which could facilitate networking), and between addressing short-term and long-term constraints. To illustrate such tradeoffs, consider a context with unmet demand for skills in female-dominated trades: increasing female participation in a training program to improve short-term income opportunities may perpetuate occupational sex-segregation.

To address the range of women’s constraints, projects can include several “smart” design features in each of the three pillars described in Figure 1 and Box 1.

**Adaptation 1: Information, aspirations, and norms**

Information—or more precisely, lack of it—aspirations, and social norms are three interconnected areas that influence whether both women and men participate in skills training, which types of programs they pursue, and successful completion of programs.

Provide labor market opportunities and income information. Participants in skills training may choose subjects based on insufficient information about which trades are suitable or highest earning. Women may have less information in these areas. Providing information about higher-return jobs in male dominated trades can increase women’s enrollment for training in these trades; in other words, information directly influences women’s decisions on which programs in which to enroll. In Kenya, an intervention invited participants to informational sessions where posters and handouts displayed returns to vocational education for women and men engaged in different fields of work. The sessions also included a video about successful female mechanics. In Nepal, the Employment Fund, a program providing vocational training and placement services, sponsored radio and newspaper advertisements specifically targeting young women, in addition to regular training advertisement. Many of the ads encourage women to enroll in male-dominated trades such as construction. Employment rates, hours of work, and earnings increased substantially for female participants; in particular, women’s self-employment outside dwellings increased.

Incorporate specific strategies, such as life skills, in program designs. To help participants access the labor market or to promote business development, programs can support a range of helpful job-related skills, such as preparing a curriculum vitae (CV), improving decision making, and managing time and stress. In Ethiopia, a job application workshop
taught participants how to apply and interview for jobs; 4 years after the intervention, the workshop improved wages and employment among the most disadvantaged job-seekers, particularly women. In Kenya, the Ninaweza program trained young women in ICT and life skills, along with providing on-the-job experience through internships and job placement support; the intervention not only increased participants’ earnings but also improved trainees’ confidence and life skills related to searching for a job and workplace behavior. Is it not clear whether these features matter more for women than for men, but such program features are likely to be more helpful for women because they have smaller networks and fewer mentors to guide transition from training to landing a job.

**Address constraints driven by low aspirations and norms.** More recently, the development community has recognized the influence of aspirations as a factor in decision making. Higher aspirations can result in better outcomes; and conversely, better outcomes—gained through greater effort or shifting into new occupations—can encourage higher aspirations. These effects can be intergenerational or operate through peer networks. Women and men both make decisions conforming with societal gender expectations, and may have lower aspirations to participate in non-traditional trades. Gender norms may also affect women’s confidence to compete in activities deemed stereotypically male. How to influence aspirations and norms is a growing field of study—beyond the scope of this Note to overview—but one approach is to address norms directly. The aforementioned Côte d’Ivoire agricultural program has a “gender sensitization” component based on the Gender Action Learning System (GALS)—a community-led empowerment methodology using inclusion principles to improve income, food, and nutrition security. Other ways to address norms are more indirect. One example is “edutainment” in the form of media programs, proven to influence preferences, attitudes, and behavior by providing information and showing role models. Likewise, the sex and engagement of trainers is critical. Recruiting female trainers and putting women in skills training program leadership positions makes them role models, which can help raise aspirations for women and lower barriers related to social norms (see TechnoServe, Box 2).

**Engage men and communities.** Projects can engage husbands and entire communities to offset gender norms or attitudes preventing women from participating in programs. Again, the World Bank Côte d’Ivoire Agricultural Support Program described above invites couples to participate in agricultural trainings for this specific purpose.

**Complement skills training programs with peer groups, networks, and mentorship opportunities.** Often, networks are less available and less diverse for women, disadvantaging them in the labor market. When offered as part of business training, peers can be valuable as business partners or for support or career counseling, and increasing the probability that women find employment in sectors with higher returns. Moreover, evidence underscores the importance of peers to gain market or customer information. This adaptation might be particularly relevant in societies that acutely restrict female mobility since women have fewer interactions with other entrepreneurs.

**Adaptation 2: Financial aspects**

Women typically face additional financial constraints compared to men, which inhibit participation in skills training; or, if they participate, limit the benefits of these programs.

**Offer cash grants, financial capital, asset transfers, or savings accounts in combination with skills training.** As discussed above, where labor demand is low and quality wage jobs are unavailable, combining training with services can stimulate self-employment and increase income outcomes. Providing cash grants to women conditional on training attendance can lower dropout rates and encourage women to enroll and graduate. This may be particularly effective for training women in male-dominated occupations. Many programs combine capital with training. Constraints to accessing microenterprise or SMEs capital are well known to be higher for women, which argues that the case for integrating capital with skills training may be stronger for women.

**Financial assistance should focus on disadvantaged women.** Given high women’s dropout rates, limited resources for financial assistance, such as cash grants and subsidies described below,
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should focus on the most disadvantaged. Partnering with the private sector can also couple skills training with loan schemes for talented trainees. In that sense, encouraging women to enter male-dominated fields might increase repayment likelihood while broadening employment opportunities.

Adaptation 3: Operational features

Arrange childcare options to help women participate. Maternity and childcare are arguably among the most important barriers preventing women from participating in skills training. In almost all countries, women bear an unequal responsibility for childcare and household chores. This problem is exacerbated in developing countries due to lack of infrastructure and childcare alternatives. Providing childcare subsidies, or day care at schools, helped achieve high participation rates for women with children under seven in the Jovenes en Accion program in Colombia, and employment rates and income for women participants improved more than for men when measured eighteen months after the program.

Hold training in accessible and safe locations. High attrition and low participation are often due to poor choice of training locations. In response, programs such as the Empowerment and Livelihood for Adolescent Girls (ELA) program in Uganda offer trainings in participants’ neighborhoods to accommodate young women. “Blended” or “e-learning” solutions can benefit women, given the scheduling flexibility and safety they provide.

Make transportation easy and safe, including transportation subsidies to increase training program completion. Barriers to women’s participation in both rural and urban areas include transportation distance and cost. Women—but not men—often cite safety concerns, particularly distance to training facilities and sexual harassment risks, as a constraint. Less mobility outside their homes decrease women’s ability to participate in training and income-generating opportunities. In Peru, the ProJoven program doubles the stipend to female trainees with children under the age of five for transportation, meals, and medical insurance. ProJoven results show long-term positive, gender differentiated benefits in formal employment for both women and men.

Incentivize training operators with bonuses for female completion. In Nepal, the Employment Fund pays a 70 percent bonus over the base cost for

BOX 2. REDUCING BARRIERS TO ENTRY AND INCREASING ATTENDANCE FOR WOMEN IN AGRICULTURAL SKILLS TRAINING

TechnoServe, a nonprofit international development organization, works with women and men in 29 developing countries to build competitive farms, businesses, and industries. Technoserve’s Coffee Initiative implemented between 2008 and 2016 focused on improving livelihoods for smallholder coffee farmers in Ethiopia, Kenya, Rwanda, and Tanzania. Activities benefited over 200,000 smallholder farmers by increasing yields and improving coffee quality; the program trained 139,600 farmers, and increased their coffee yields by 42 percent. Women made up 36 percent of the farmers trained across the four countries.

To ensure that women and girls represent at least 40 percent of programs beneficiaries, TechnoServe adjusted trainings with simple and cost-effective activities to reach women farmers, including:

• Explicitly inviting men and women from the same farming household to attend trainings.
• Explaining to men the potential benefits of having women enroll and attend trainings.
• Adapting selection processes to recruit women as Farmer Trainers.
• Scheduling training sessions to accommodate women and use demo plots located close to their households.
• Encouraging women to bring their children to trainings to reduce attrition.
• Training men and women on all best practices, regardless of whether the community views the tasks as “men’s work” or “women’s work.”
successfully training a poor woman, and an 80 percent bonus if she is poor and belongs to a disadvantaged group, such as an ethnic minority or displaced or disabled person. The Kenya Youth Employment and Opportunities program, among others, offers a similar bonus structure.

**WHAT’S NEXT?**

This note outlines a range of skills training program adaptations to address women-specific constraints that decrease their participation in, and completion of, skills training. Evidence from diagnostics and impact evaluations points to the need for such adaptations in almost all skills training programs. Moreover, multiple women’s constraints require multiple adaptations—one tweak alone is unlikely to work. Importantly, evidence accompanying some recommendations, particularly related to financial incentives, is still nascent, so exploring these topics further could improve women’s outcomes. There are many open questions as to how well, and in what contexts, adaptations succeed.

**Moving forward, more research to fill gaps is needed in four general knowledge areas:**

- **Analysis of marginal cost and benefits of adaptations:** Different adaptations come with different cost implications, so more evidence to inform project design is needed on the marginal cost and benefits associated with implementing different adaptations.

- **Influencing social norms:** Since social norms underly nearly all constraints women face, more evidence is needed on how to influence social norms to improve outcomes: Which tools and approaches are most effective?

- **Skills training mix:** More information is needed regarding the specific types and mix of technical, business, and soft skills that work best, and how to best deliver these skills cost-effectively, whether in classrooms, livelihood opportunities, apprenticeships, peer-to-peer learning, or through mentors.

- **Apprenticeship programs:** Finally, little is known about what works with formal or informal apprenticeship programs, which are important in many low-income countries. Designing better programs requires knowing, for example: What encourages program completion? What labor market returns do apprenticeships deliver? What are the incentives for both master craftsmen and apprentices? How do these aspects differ between women and men?
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A full bibliography of underlying evidence can be found at www.Jobsanddevelopment.org.

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16 Herrington and Kew 2017
17 Carranza et al. 2018
18 Cho et al. 2013
19 The term “innovations” refers to new or less common approaches to tackle persistent problems where existing solutions have not succeeded. Of note, some innovative approaches may be untested or unproven.
20 McKenzie and Puerto 2017
21 World Bank 2017
22 It is widely recognized that traditional approaches, such as technical and vocational education and training (TVET) programs geared towards income-generation skills, have had mixed results in terms of securing employment and cost effectiveness (Alzúa et al. 2016).
23 Including the following: Arias, Evans, and Santos 2019; Beegle and Bundervoet 2019; Chakravarty, Das, and Vaillant 2017; Kluve et al. 2019; McKenzie and Woodruff 2013.
24 Buvinić and O’Donnell 2019
25 We do not map constraints to specific interventions in these three domains partly because one constraint can require different interventions and one intervention may address multiple constraints.
26 Hicks et al. 2011
27 Campos et al. 2015
28 Hardy and Kagy 2018
29 Alibhai et al. 2017
30 Chinen et al. 2018; Hammond et al. 2018
31 Rubiana, forthcoming
32 Campos et al. 2017
33 Hicks et al. 2015
34 Chakravarty et al. 2019
35 Abebe et al. 2017
36 De Azevedo et al. 2013
37 Appadurai 2004; Dalton, Ghosal, and Mani 2016.
38 Bernard et al. 2014
See Arias et al. (2019) for a detailed discussion of efficiency and equity in higher education.