Policy Research Working Paper 10744

What Works in Supporting Women-Led Businesses?

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WORLD BANK GROUP
Gender Global Theme
April 2024

Policy Research Working Paper 10744

Abstract

Innovative women entrepreneurs can be agents of change and offer novel solutions to global challenges. However, they face multiple barriers to growing their businesses. This paper reviews the literature on strategies to support women entrepreneurs in improving their business outcomes. It focuses on interventions designed to address four areas of constraints that influence their decisions and can impact their business performance: gaps in human capital, access to finance, access to technology and markets, and contextual factors such as legal and regulatory constraints, social norms, access to care, and gender-based violence. The review concludes that evidence of modest average treatment effects and heterogeneity in treatment effects across various interventions suggest the need for more precise targeting. The multiple constraints faced by women entrepreneurs necessitates testing different packages of interventions. Moreover, the successful implementation and adoption of proposed solutions require consideration of the contextual constraints that differentially affect women-led businesses. While the review highlights several interventions that show promise in supporting women entrepreneurs, significant gaps remain in the evidence concerning the most effective strategies.

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What Works in Supporting Women-Led Businesses?[†]

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JEL Classification: J16, L25, L26, O12

Keywords: entrepreneurship, gender, literature review, women-led businesses

[†] This paper was supported by the World Bank's Group Umbrella Facility for Gender Equality. A previous version was circulated as part of a series that provides an analytical foundation for the World Bank Group Gender Strategy 2024-2030. The findings, interpretations, and conclusions expressed in this work are entirely those of the author and do not necessarily reflect the views of the World Bank or its Board of Directors. The draft greatly benefited from comments by Girum Abebe, Natalia Agapitova, Leslie Ashby, Ana Cusolito, Mona Haddad, Justin Hill, Jacobus de Hoop, David Francis, Fatou Giwa, Arti Grover, Hillary Johnson, Heather Kipnis, Tricia Koroknay-Palicz, Aleksandra Liaplina, Sundas Liaqat, Jana Malinska, David McKenzie, Frederic Meunier, Mary Porter Peschka, Laura Rawlings, Anja Robakowski-Van Stralen, Felicia Siegrist, Heidi Stensland, Farid Tadros, Aileen Yang, and three anonymous referees. Corresponding Author: Diego Ubfal, dubfal@worldbank.org.

1. Introduction

Entrepreneurship can foster innovation, productivity growth, and employment (Schumpeter 1934, Acemoglu and Robinson 2012). According to the Global Entrepreneurship Monitor Survey, over half of the women in developing countries are, or aspire to be, entrepreneurs (Elam et al. 2021). However, most lead subsistence-oriented micro-businesses, which are not seen as key drivers of innovation and growth (La Porta and Schleifer 2014).[2] The narrative among policy makers regarding women's entrepreneurship is gradually shifting from encouraging the creation of a high number of startups to focusing on supporting women who are well positioned to lead growth-oriented enterprises (Elam et al. 2021). While innovative women entrepreneurs have the potential to be agents of change and offer novel solutions to global challenges, they encounter a range of unique constraints that can limit the expansion of their businesses.

This paper reviews evidence on interventions designed to support women-led businesses by addressing their differential constraints and aiding them in making decisions that foster business growth. The focus is on women who lead growth-oriented micro, small, and medium enterprises (MSMEs) with aspirations to scale up their operations, although some interventions may also benefit women managing subsistence enterprises. The paper does not discuss issues covered by other reviews related to differential selection into entrepreneurship between women and men or the role of non-economic outcomes such as work-life balance and community service desires (Campos et al. 2019, Love et al. 2023). It also does not address policies for large, limited liability companies, where the evidence remains scarce.

The review uses a simple analytical framework by which women entrepreneurs face differential constraints that affect their strategic business decisions such as how much to invest in production factors and what sector or market to enter, which in turn determine their business outcomes. Such constraints can also affect returns to their investments, thus directly impacting outcomes. Interventions are organized into four categories of constraints: 1) Human capital, encompassing gender gaps in access to skills and networks; 2) Factors limiting access to finance, 3) Factors inhibiting technology adoption and market expansion; and 4) Contextual factors, such as legal and regulatory barriers, social norms, access to care, and gender-based violence.

The contribution of this paper is to provide an updated narrative review summarizing how various interventions can alleviate constraints and enhance outcomes for women-led businesses. It focuses on a substantial body of high-quality randomized controlled trials (RCTs) primarily conducted with micro and small enterprises in low- or middle-income countries. Where RCTs are unavailable, the review acknowledges this and explores findings from studies using alternative identification strategies and operational insights to identify promising policy solutions.

This paper draws on previous literature reviewing interventions to support women-led businesses. Jayachandran (2021) explores differences in patterns for male and female-run microenterprises. Campos et al. 2019 focus on evidence in Africa, and World Bank (2021) on Southeast Asia. Love et al. (2023) identify

[2] According to the Global Entrepreneurship Monitor data, the share of women-owned businesses with five or fewer employees was 91 percent in 2020, while that of men-owned businesses was 80 percent (Elam et al. 2021).

gaps in the literature that go beyond external constraints and endowments, and include internal constraints, preferences, and non-economic outcomes. Allison et al. (2023) provide data evidence that women-led firms tend to underperform compared to men-led firms around the world. Several policy-oriented reports focus on policy recommendations and include useful reviews of the literature (Kevane et al. 2021; Koshy and Sanchez 2021; and Siegrist 2022). This paper contributes to this literature by reviewing a large set of recent RCTs with the purpose on analyzing what works to support grow-oriented women-led businesses.

2. Motivating facts and analytical framework

2.1 Motivating facts

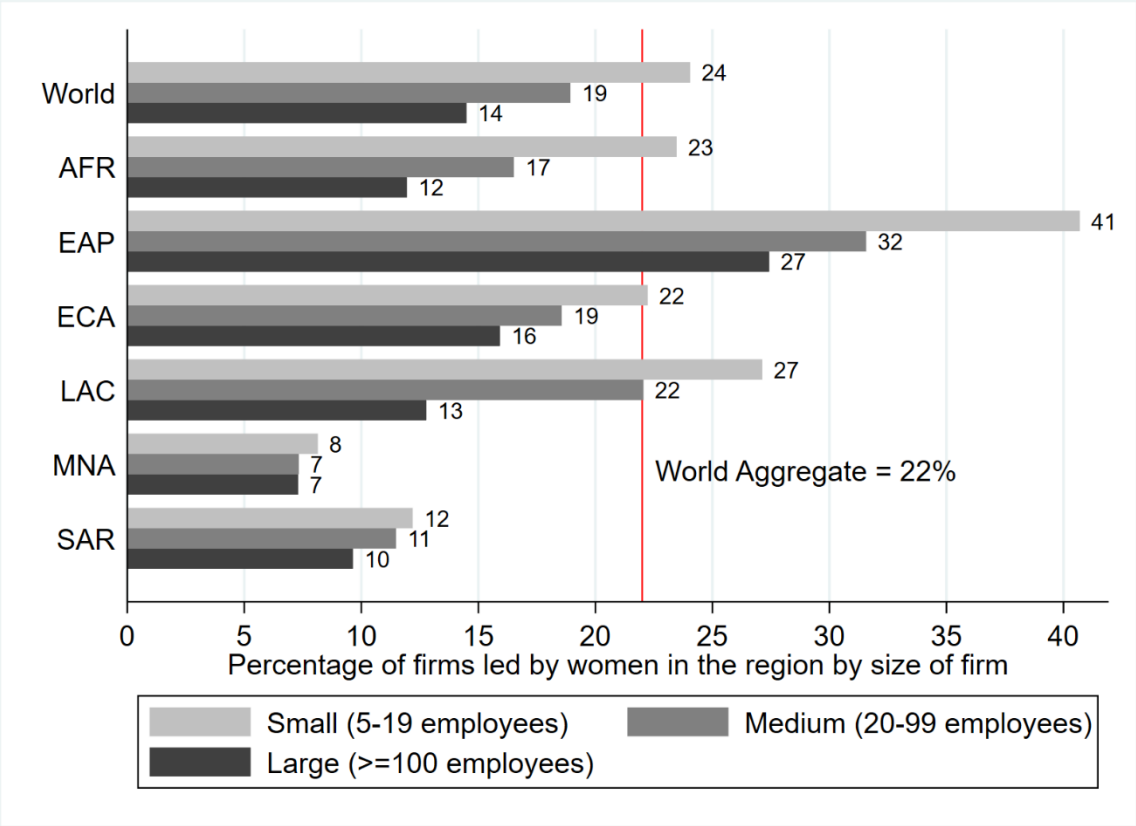
A series of empirical studies documents that women-led firms face differential constraints and have lower levels of labor, total factor productivity, and profits than men-led firms (e.g., Aterido et al. 2011, Bardasi et al. 2011, Campos et al. 2019, Islam et al. 2020, World Bank 2021, Fang et al. 2022, Allison et al. 2023). Moreover, recent studies show that the COVID-19 pandemic has had a disproportionate negative impact on businesses led by women (Goldstein et al. 2020, Kugler et al. 2021, Liu et al. 2021, Torres et al. 2021). However, there is some emerging evidence indicating that gender gaps in profits or productivity are reduced or disappear for enterprises of larger size (World Bank 2021, Fang et al. 2022). This points to the importance of studying constraints restricting the growth of women-led firms, which can generate misallocation of resources and have major implications for economic growth and development (Chiplunkar and Goldberg 2023).

Such constraints are evidenced by the fact that the share of businesses led by women decreases as the size of the firm increases, as shown in Figure 1. According to calculations using data from World Bank Enterprise Surveys, women-led businesses constitute 22 percent of formal businesses globally.[3] However, the share of women-led firms diminishes from 24 percent among small firms to 19 percent among medium-sized firms, and further to 14 percent among large firms. This trend is observed worldwide, with a less marked pattern in the Middle East and North Africa and South Asia, where there overall share of formal women-led firms is smaller and legal constraints for women are more pronounced (World Bank 2023). The data for Figure 1 include only formal firms with at least five employees, since there is no equivalent cross-country dataset for informal or smaller firms. Nevertheless, the gender-based size

[3] The definition of a "woman-led firm" varies in the literature. To construct Figure 1, the definition adopted includes firms that have either more than 50 percent female ownership or a female top manager. Alternative definitions yield a similar pattern by firm size across regions. In the sample used to prepare the graph, the share of firms with a female top manager (as defined by Islam et al. 2020) is 18 percent; the share with more than 50 percent female ownership is 15 percent, the share with both a female top manager and at least one female owner (as defined by Fang et al. 2022) is 14 percent; and the share with both a female top manager and at least 20 percent female ownership is 12 percent. Finally, the share with at least one female owner is 36 percent; only for this variable the pattern by size is not as clear. Fang et al. (2022) argue that the presence of a female manager better captures firms that are led by women than the presence of least one female owner. The shares reported above are consistent with data collected directly from business registers in eighty-one economies by the We-Data project (see Meunier et al. 2022), which shows that women represent 25 percent of new business owners in limited liability companies, 25 percent of new business directors, and 33 percent of new sole proprietors.

pattern described persists when estimating the share of self-employed activities led by women by region; for instance, women are estimated to account for 39 percent of the self-employed on a global scale.[4]

Figure 1. Percentage of formal firms led by women by region and firm size



Source: Author's calculation using the last survey available for each country in the pooled World Bank Enterprise Surveys (Source: World Bank Enterprise Surveys, http://www.enterprisesurveys.org, dataset version: "New_Comprehensive_March_1_2024"). These surveys target formal firms with at least five employees. Replication codes are available upon request.
Notes: A woman-led firm is defined as a firm with more than 50 percent of female ownership or with a woman top manager. Statistics were obtained by using sample weights considering the design of the Enterprise Surveys. AFR=Africa, EAP=East Asia and Pacific, ECA=Europe and Central Asia, LAC=Latin America and the Caribbean, MNA=Middle East and North Africa, SAR=South Asia.

2.2 Analytical framework

The paper adopts a simple analytical framework to review evidence on effective support for women-led firms, organized around three pillars: 1) Constraints, 2) Decisions, and 3) Outcomes. The emphasis is on business outcomes, particularly survival, sales, and profits, which are commonly measured in the studies reviewed. Other reviews, such as Love et al. (2023), address relevant non-economic outcomes like

[4] Self-employed workers are defined as those who work independently or with partners/cooperatives and earn based on their business profits. This category includes employers, own-account workers, cooperative members, and contributing family workers. To calculate the proportion of self-employed women in a region, one can use indicators from the World Development Indicators Databank. The resulting shares of self-employed women in total self-employment are: 15% in MNA, 25% in SAR, 36% in ECA, 39% in LAC, 46% in EAP, and 50% in AFR. Note that this is different from the share of women self-employed over total female employment by region (ranging from 16% in ECA to 83% in SAR).

flexibility, work-life balance, and community service aspirations, which have not been typically covered by robust impact evaluations.

To enhance business outcomes, women may make various strategic decisions, including investing in labor, human or physical capital, adopting new business practices, products, or techniques, or transitioning to different sectors/markets. These decisions are influenced by a range of constraints that uniquely impact women compared to men. The paper categorizes interventions according to four groups of constraints: 1) Human capital; 2) Access to finance, 3) Technology adoption and market expansion; and 4) Contextual factors, which encompass legal discrimination and social norms. These constraints not only affect women's business expansion decisions but also the returns from those decisions. For instance, social norms may result in cash transfers being appropriated by husbands, limiting women's investment in their businesses. Additionally, even when resources are invested in a woman's business, the returns may be lower than those for men due to a lack of complementary investments, such as work hours, if women's time is constrained by caregiving responsibilities.

This framework is consistent with those used in other studies. Campos et al. (2019) identify contextual factors, endowments (including human capital and finance, as well as confidence and risk preferences), and household-level constraints as underlying constraints. Love et al. (2023) examine how four groups of drivers -preferences, endowments, external constraints, and internal constraints- influence economic and non-economic outcomes. Siegrist (2022) explores the impact of finance, skills, access to markets, and the enabling environment on intermediate outputs and final outcomes. The evidence reviewed in this paper focuses on interventions targeting endowments and external constraints, for which there is robust empirical evidence. While some interventions may also influence factors that Love et al. (2023) categorize as preferences (including motivation, aspirations, personality traits) and internal constraints (such as self-confidence and perceptions), or what Campos et al. (2019) describe as household-level constraints (including time constraints and intra-household resource allocation), these are not the primary focus of the analysis. An alternative theoretical framework, based on social role theory (Fischer et al. 1993, Allison et al. 2023), attributes gender gaps in business outcomes to institutionalized and systematic discrimination against women, positing this as the primary barrier to accessing the resources necessary for business expansion. Although this paper does not adopt this framework, it does acknowledge related issues when reviewing evidence on contextual constraints.

3. Addressing human capital constraints with interventions on skills and networks

Gender gaps are pervasive in the critical skills and networks needed to run a successful business (World Bank 2021b). Globally, more than $1 billion is spent subsidizing business training programs (McKenzie et al. 2021). These traditional training programs typically offer classroom-based learning on a variety of business practices, such as accounting, marketing, human resource management, finance, and business plan preparation. However, rigorous evaluations, including those reviewed in McKenzie and Woodruff (2014), suggest that such programs may not lead to transformative outcomes for women-led businesses.

A growing body of research indicates that business training programs can be more effective for women-led businesses when they incorporate elements that focus on socio-emotional skills -such as personal initiative and resilience- address women-specific constraints, or provide networking opportunities.

Furthermore, adapting these programs to be more accessible and relevant to women can significantly increase their participation (Beegle et al. 2020, IFC 2020).

3.1 Traditional business training programs

An influential review of randomized controlled trials across various contexts has largely found no statistically significant average effects of traditional business training programs on the performance of entrepreneurs, regardless of gender (McKenzie and Woodruff 2014). While these programs have been successful in promoting the adoption of certain business practices associated with business growth (McKenzie and Woodruff 2017), the extent of change has generally been too minor to enhance overall business performance.

However, new evidence suggests that the impact of traditional business training might not be negligible. A meta-analysis reported in McKenzie (2021) and McKenzie et al. (2023), which included new RCTs with greater statistical power, revealed that the average training program could increase sales by 5 percent and profits by 10 percent. This implies that such programs could be cost-effective, provided the expenses are sufficiently low. Nonetheless, some studies, such as the RCT by Gine and Mansuri (2021) and the review by Jayachandran (2021), indicate that the effects are smaller for women entrepreneurs, especially in contexts where social norms limit their opportunities.

Innovative approaches to business training have shown promise in enhancing outcomes for women. For instance, Field et al. (2016) demonstrated that when women were permitted to bring a friend to training sessions, they set more ambitious business goals and were more likely to take out loans, underscoring the potential importance of peer support in elevating women's business aspirations.[5] Khandelwal and Singh (2023) provided evidence that the effects of a short business training were stronger when participants were matched to attend with a close female friend who is central in the network. Similarly, Lafortune et al. (2018) found that including successful entrepreneurs as role models in training significantly amplified its effectiveness. In summary, while traditional business training programs alone may not substantially improve the performance of women-led businesses, adapting the content, focus, or implementation of these programs could render them more cost-effective and impactful.

3.2 Approaches to make traditional business training cost-effective at scale

The modest impacts of traditional business training can become a profitable investment for women-led firms, especially when participant costs are low or the programs are better targeted. McKenzie (2021) outlines three strategies that governments can employ to deliver business training on a large scale: developing a market for business services, providing virtual training, and targeting.

Firstly, the development of a market for business services is essential for scalability (Argidius Foundation 2021). Maffioli et al. (2023) demonstrate in Jamaica that both men and women-led firms are willing to pay for business training, suggesting that entrepreneurs perceive potential profitability in such training.

[5] However, there is evidence that it is also important to avoid training programs generating unrealistic aspirations that might lead to frustration (McKenzie et al. 2022).

Their findings indicate that those who pay for training are more likely to participate. However, demand drops sharply when the cost to participants exceeds 25 percent of the cost of the training, with poorer and smaller businesses being less inclined to pay and attend as prices increase. Rather than subsidizing business training, an alternative could be to offer firms subsidies to hire specialists in areas that the training would cover. Anderson and McKenzie (2022) illustrate in Nigeria that this can be an effective method for larger firms to engage accountants or marketing experts, whether through insourcing or outsourcing.

Secondly, transitioning to virtual training methods, as opposed to in-person sessions, can potentially lower costs. This could be achieved through educational television programs (edutainment),[6] SMS messages that emphasize rules of thumb, mobile phone applications, or interactive online training modules. The proliferation of such online programs was notable during the COVID-19 pandemic;[7] however, there is still limited evidence regarding their effectiveness.[8] Davies et al (2024) demonstrated that live training sessions over Zoom for microentrepreneurs are feasible. Nevertheless, their RCT with self-employed women from Mexico and Guatemala showed only short-term improvements in business outcomes, which dissipated over time, and the potential cost savings compared to in-person sessions were not substantial. This strategy also necessitates addressing the gender gaps in digital technology access and proficiency.

Lastly, targeting business training programs to firms that will benefit the most can significantly enhance cost-effectiveness. For instance, the World Bank is piloting a funneling approach in Malawi, which offers less costly interventions to a broader group of firms and then selects firms for more expensive interventions based on their performance in the initial stages (Grover and Imbruno 2020).[9] Identifying women-led entrepreneurs who will see the highest returns from various interventions is a complex challenge. McKenzie and Sansone (2019) reveal that even with a substantial amount of data and the use of machine learning tools, accurately predicting top performers is challenging. Bryan et al. (2022) find that incorporating a large set of psychometric variables can significantly enhance predictions regarding the impact of large versus small loans. Similarly, Ellis et al. (2022) discover that including motivations for entrepreneurship and constraints faced can improve predictive accuracy. They emphasize that a broader and distinct set of variables is needed to predict loan growth for women compared to men, which aligns with the greater obstacles faced by women entrepreneurs in business expansion. Bardasi et al. (2021) observe stronger effects of business training in Tanzania for more experienced women entrepreneurs, suggesting that experience could be a useful variable for targeting. This is consistent with evidence from microfinance discussed below in the paper. In small communities, leveraging insights from peer entrepreneurs (incentivized to prevent strategic reporting) can aid in identifying both men and women entrepreneurs who are likely to see the largest returns (Hussam et al., 2022; Masetto and Ubfal, 2023).

[6] Impact evaluations of two edutainment shows for entrepreneurs in Tanzania (Bjorvatn et al. 2019) and the Arab Republic of Egypt (Barsoum et al. 2022) indicate that while the programs increased viewers' interest in entrepreneurship, they did not have an effect on business creation or outcomes.

[7] For instance, Kayumbi (2021) describes how a commercial bank in Kenya utilized the International Finance Corporation's (IFC's) Grow-Learn-Connect Program to transition from face-to-face to online training for MSMEs.

[8] Lafortune et al. (2022) demonstrate that a gamified virtual entrepreneurship challenge for secondary students in Rwanda during the COVID-19 pandemic had statistically significant effects on sustaining their small business activities and increasing the profits for both girls and boys.

[9] The funneling approach involves offering less expensive interventions to a wide range of entrepreneurs and then determining who progresses to more costly interventions that are targeted toward a narrower group of firms likely to benefit the most.

3.3 Changing content with socio-emotional skills training

A growing body of evidence indicates positive effects from psychology-based training programs on businesses led by both men and women. This type of training focuses on changing the way entrepreneurs think about their business, rather than simply recommending a set of business practices.[10] It aims to build soft skills that have been linked to successful entrepreneurship, such as initiative, proactiveness, future orientation, self-efficacy, and perseverance after failure. Soft skills have been shown to predict earnings and productivity in various contexts (Heckman and Kautz 2012, Adhvaryu et al. 2023). This is true for both men and women, although significant gender gaps in soft skills have been found (Ajayi et al. 2022).

An influential RCT in Togo showed that personal initiative training was more effective than traditional business training at increasing profits for both male and female entrepreneurs (Campos et al. 2017). In this context, personal initiative training was highly cost-effective, paying for itself within one year.[11] A randomized study in Ethiopia highlighted the importance of recruiting high-quality trainers for socio-emotional skills training to achieve positive results (Alibhai et al. 2019). Additionally, a randomized study in Jamaica found that personal initiative training was not impactful for women entrepreneurs who were less poor or more likely to be single compared to the Togo sample. This could indicate that the training might be particularly effective for women with less bargaining power (Ubfal et al. 2022). Another piece of causal evidence comes from Mexico, where a program combining personal initiative training with traditional business training found significant effects on business outcomes for women microentrepreneurs (LACGIL 2021). There is a need for more evidence on the complementarity between personal initiative training and other interventions, such as access to finance, and on heterogeneity of returns to understand whether socio-emotional skills training can be effective for larger firms.[12]

3.4 Changing content and focus with gender-oriented training

There is evidence that training programs focusing on the differential constraints faced by women entrepreneurs can improve the performance of women-led businesses. Two RCTs that evaluated the International Labour Organization's Gender and Enterprise Together program found significant effects on the adoption of recommended business practices (Bulte et al. 2016 in Viet Nam) and persistent effects on profits (McKenzie and Puerto 2021 in Kenya). Such programs combine material from traditional business training (e.g., recordkeeping, finance) with gender-oriented topics, such as how to enter male-dominated sectors, overcoming stereotypes, and dealing with household demands. However, there is still no evidence on the additional value of the gender-specific content on top of the traditional content. A significant body of qualitative evidence shows that a training program can achieve positive results if both its content and implementation consider the differential needs of women entrepreneurs (Beegle et al. 2020, IFC 2020, Argidius Foundation 2021). This could mean including implementation features such as

[10] Even without a focus on recommended business practices, soft skills training programs have proven to be more effective than traditional business training in fostering the adoption of those practices (Campos et al. 2017, Ubfal et al. 2022). This aligns with evidence suggesting that merely providing information on recommended business practices is not effective unless it is accompanied by behavioral nudges, such as motivational films or peer counseling (Dalton et al. 2021, Bruhn and Piza 2022).

[11] The impact of this has been significant, influencing World Bank operations with approximately 35 projects in 24 countries either implementing or planning to implement variants of personal initiative training.

[12] Campos et al. (2018) demonstrate that the effects are positive for women with varying levels of education in the Togo sample. Recent studies suggest that similar training can be effective in different contexts as well, such as a field experiment that offered personal initiative training to women farmers in Mozambique (Montalvao 2022).

childcare services or the opportunity to bring a caretaker, convenient times and locations, safe transportation, and anti-harassment policies.

3.5 Personalized services through mentorship and consulting

Mentors (usually for smaller firms) or consultants (typically paid by larger firms) can provide personalized advice to firms. There is mixed evidence on the effect of mentorship for small firms. Brooks et al. (2018) found that mentorship is more effective than traditional business training for women-owned microenterprises in Kenya. However, the effects on profits vanished when the relationship with the mentor ended. This could be linked to the ever-changing demands faced by small enterprises and the need for sustained support. Also looking at Kenya, McKenzie and Puerto (2021) found that mentorship did not increase the effects of the gender-oriented business training offered. Bakhtiar et al. (2022) found that a mentorship program in Ethiopia did not significantly increase the profits of the mentees, but mentoring improved the business performance of the women entrepreneurs who functioned as mentors.

More promising results were found by Anderson et al. (2023), who demonstrated significant effects on sales for small business owners in Uganda when mentored via Skype by volunteer international coaches. The improvements in sales were more pronounced for firms that were linked to experts in marketing (Anderson et al. 2021); however, the results were not disaggregated by gender. In a subsequent study, Germann et al. (2023) randomized the gender of the assigned mentor and found that mentorship via Skype had positive effects for female entrepreneurs when matched with a female mentor, but not when matched with a male mentor. The costs of coaches should be considered when contemplating the application of this intervention in other contexts, and could be related to the outsourcing approach previously discussed.

For larger enterprises, more expensive individual consulting has shown significant and persistent effects on businesses performance (Bloom et al. 2013, Bloom et al. 2020). These findings are not disaggregated by gender, nor did the programs lead to well-developed consulting markets (McKenzie 2021). A potentially more cost-effective model is offering small-group consulting rather than individual sessions, as demonstrated in Colombia (Iacovone et al. 2022). Another promising approach involves the use of artificial intelligence tools for providing advice. Otis et al. (2024) found that this method had no significant average impact on small business owners in Kenya, regardless of gender. However, it did significantly benefit those who were high performers ex-ante, underscoring the importance of targeted interventions.

3.6 Networking opportunities

There is a wide consensus about the importance of social networks in the process of innovation and entrepreneurship. A few RCTs indicate that interventions encouraging firms to interact with other firms can significantly improve entrepreneurship outcomes (e.g., Cai and Szeidl 2018, for in-person interaction in China; Vega-Redondo et al. 2019, for virtual interaction across Africa). Non-causal evidence from programs focusing on networking activities for women entrepreneurs suggests that these may lead to an expansion of women's business networks.[13] However, there is still limited causal evidence on the effects of networking opportunities on the business performance of women-led businesses. An exception is

[13] For example, IFC (2017) reports that a mini-MBA program focusing on networking activities helped women expand their business networks in the West Bank and Gaza.

Asiedu et al. (2023), who found that access to online networking opportunities for growth-oriented female entrepreneurs in Ghana led to greater innovation, better business practices, and higher profits, although the effect on profits was concentrated in the upper tail of the distribution.

Studies around the world indicate that women entrepreneurs have smaller business networks than men and that their networks are mostly comprised of other women, which could make networking interventions more impactful for them. Indeed, Asiedu et al. (2023) showed that their intervention offering online networking opportunities shifted business collaborations from friends and family members to business network members. Relatedly, incubators and accelerators usually incorporate networking activities into their package of support (Gonzalez-Uribe and Hmaddi 2022). A promising avenue for research is to evaluate how the different services offered by accelerators (including networking) and their interaction benefit growth-oriented women entrepreneurs.

4. Interventions to increase access to finance

Numerous studies have shown that female entrepreneurs are less likely to gain access to financial services than male entrepreneurs in various contexts worldwide. This disparity extends to services such as credit and equity financing, insurance, and savings. Evidence suggests that the gender gaps are more pronounced for middle-sized firms, which are too large for microfinance institutions and too small for the riskier products offered by banks, venture capitalists, and private equity firms (Siegrist 2022). IFC (2017b) estimated that the finance gap for women-owned microenterprises amounts to $173 billion, representing 24 percent of the overall finance gap for microenterprises. The finance gap for women-owned small and medium-sized enterprises (WSME) is estimated at $1.5 trillion, accounting for 33 percent of the overall SME finance gap. Since women are less likely than men to own property, collateral requirements significantly hinder women-led firms' ability to access loans. Discriminatory practices by male investors, who make most large funding decisions in debt financing, may further compound this issue (IFC et al. 2019).

4.1 Traditional microcredit

The traditional microcredit lending model focuses on providing women with small loans to start and grow microbusinesses. The model relies on social collateral (women are asked to form groups and are jointly liable for their loans) as an alternative to physical collateral to solve moral hazard and adverse selection problems and to provide dynamic incentives (slightly larger loans) for repayment. Randomized controlled trials from several contexts show no evidence of transformative effects for the average borrower (Banerjee et al. 2015, Cai et al. 2021). Studies find increases in borrowing and some business creation, but no significant effects on performance for the average business.

More recent studies indicate that microcredit, if targeted appropriately, can have significant effects on business performance. Positive effects are found for entrepreneurs who started business operations before the expansion of microcredit in their area (Banerjee et al. 2019, Chernozhukov et al. 2018, Meager 2019). Moreover, relaxing some of the features of the traditional approach (e.g., allowing for flexible repayment and removing joint liability) shows promise (Field et al. 2013, Barboni and Agarwal 2018,

Battaglia et al. 2023). More research is needed on how these innovations could be adapted to design products for larger businesses (Siegrist 2022).

4.2 Reducing the role of traditional collateral in lending decisions

Microloans using social collateral have increased access to finance for women microentrepreneurs. Other financial instruments that reduce the role of traditional collateral are also being tested to expand lending at larger loan sizes for women-led businesses.[14] These instruments include alternative forms of assessing risk (e.g., psychometric tests, cashflow-based lending, and digital footprints[15]) and securing loans (e.g., invoice financing, revenue-based financing, capital leasing, asset-based finance, digital collateral,[16] microequity, and mutuality).

Psychometric tests can be used to predict probability of repayment and to reduce collateral requirements. Studies show that these tests have predictive power to distinguish differences in credit risk (Klinger et al. 2013, Bryan et al. 2022). Recent pilots in Peru and Ethiopia show promising effects of their use in assigning higher-value loans, with the pilots in Ethiopia focusing on women entrepreneurs (Arraiz et al. 2017, Alibhai et al. 2019b, Alibhai et al. 2022).[17] However, evidence is still limited on the impacts of using alternative methods of assessing lending risk and securing loans on business performance. A study in Ethiopia found positive impacts of psychometric score-based lending on access to credit and firm survival among women-led firms (Alibhai et al 2022).[18] Offering alternative ways to secure loans, such as asset-based finance (Bari et al. 2024), digital collateral (Gertler et al. 2021), or microequity and mutuality (Cordaro et al. 2022) may also help expand women's access to credit. These products show promise, but so far, there is no causal evaluation estimating their effects on the performance of women-led businesses.

4.3 In-kind or targeted larger cash grants or loans

A series of experimental studies have found that cash grants to micro or small firms improve business outcomes primarily for business led by men (see Jayachandran 2021 for a review). One key reason is that women entrepreneurs often do not manage to invest in their own business because they use the funds to satisfy other household demands or family requests, or they invest in their husbands' business (Jakiela

[14] A complementary strategy to increase access to finance for women-led businesses is to increase women's control over assets; for example, by encouraging joint titling for spouses. There is causal evidence that joint titling can increase women's access to capital in agricultural settings (Ali et al. 2014).

[15] Digital footprints, which include mobile phone usage, social media data, and digital transaction records from mobile money, banking, or e-commerce platforms, can be valuable for credit assessment. For instance, IFC (2022) describes how a digital distribution platform active in Indonesia and the Philippines plans to use the digital footprint of women-owned firms to refine its credit-scoring algorithm.

[16] Digital collateral refers to a digital technology that enables the lender to temporarily disable the use of the product serving as collateral.

[17] In Africa, uncollateralized high-interest rate loans of small size offered via mobile money have shown large uptake rates (Robinson et al. 2022). However, concerns arise from opaque loan terms and hidden costs, coupled with the low financial literacy of many clients (Brailovskaya et al. 2021).

[18] Alibhai et al. (2022) collaborated with microfinance institution in Ethiopia to randomize the offer of uncollateralized loans among 131 women who had passed a psychometric test. The study found that the women offered loans significantly increased their access to formal finance and were more likely to keep their business open during the COVID-19 pandemic, although there was no significant improvement in their business outcomes.

and Ozier 2016, Bernhardt et al. 2019).[19] Offering in-kind grants (Fafchamps et al. 2014, James et al. 2022) or large grants to more successful women entrepreneurs (McKenzie 2017) has been found to be more effective at improving their business performance. The combination of less fungible funds that function as a commitment device (either because they are in-kind or large enough and labeled for the business) and targeting grants to growth-oriented businesses (e.g., to winners of business plan competitions[20]) can have strong positive effects.

The importance of targeting is confirmed by recent findings that point to significant heterogeneity in the returns on loans. Crépon et al. (2024) show in the Arab Republic of Egypt that the heterogeneity of effects for the same instrument across entrepreneurs is more important than differential effects across instruments (in-kind or cash grants, or loans). Similarly, Bryan et al. (2022) find significant heterogeneity of effects when offering larger loans in Egypt, with large negative effects for the worst performers and large positive effects for the top performers, who were less likely to be women. Finally, Ellis et al. (2022) provide evidence that a distinct set of variables predict loan growth for women than for men. This highlights the relevance of designing effective targeting tools, as discussed above.[21]

4.4 Blended finance

Blended finance instruments can help reduce gender gaps in access to finance by rebalancing the risk-return profile of investing in women-led businesses. These instruments may include performance-based incentives to banks, equity co-investments, partial portfolio guarantees, or a combination of these products (Liaplina and Sierra-Escalante 2022). Additionally, large commercial banks and multilateral development banks are beginning to issue gender bonds with concessional elements. Blended finance instruments show promise in benefitting larger women-led businesses. However, there is a lack of robust impact evaluations for these products.[22] One notable exception is a recent study by Aydin et al. (2023) that used quasi-experimental methods (synthetic difference-in-differences) to analyze the impact of a blended finance program for female entrepreneurs in Türkiye. The program provided credit lines to banks, risk mitigation through a first-loss risk cover, and technical assistance. The study found that participating banks significantly increased lending to female entrepreneurs, and female clients of treated banks experienced positive outcomes such as increased borrowing, investment and business performance.

[19] Friedson-Ridenour and Pierotti (2019) demonstrate, based on answers to qualitative surveys, that women in Ghana may choose to conceal income from their husbands and might even prefer to limit their business expansion if it jeopardizes their ability to secure economic support.

[20] Several studies indicate that women are less likely than men to participate in competitions; however, they are more likely to enter competitions when they are competing against other women rather than men (Campos et al. 2019). This suggests that designing women-only competitions might significantly increase participation.

[21] Cai and Szeidl (2022) found that the positive effects of a loan program in China were offset by negative impacts on competitors that did not receive the loan. This suggests that financial expansion programs should carefully consider possible negative spillover effects on firms that are not program participants.

[22] Several large initiatives are focused on channeling funding to women entrepreneurs. Two examples are the Women Entrepreneurs Finance Initiative (We-Fi) and the Women Entrepreneurs Opportunity Facility (WEOF). We-Fi invests in the design and evaluation of interventions that increase WSMEs' access to finance, training, mentorship, networks, and markets, and it works to improve the enabling environment. As of 2022, it has provided $1 billion in direct financing for women entrepreneurs and mobilized $1.9 billion in funding from public and private sources. WEOF is a 10-year facility designed to help expand access to capital for women entrepreneurs and to demonstrate the commercial viability of investing in women. It offers funding for blended finance, advisory services, and market research to catalyze financial services for WSMEs. By 2022, it had reached 144,000 women entrepreneurs.

The range of products could be expanded to include equity co-investments in startup accelerators and early-stage funds that target women-led businesses (Liaplina and Sierra-Escalante 2022). It could also encompass trade credit, guarantees, and insurance for exporters. Currently, there is limited evidence on the effects of trade and supply chain finance, private equity or venture capital funds, accelerators, and crowdfunding on the performance of women-led businesses (Argidius Foundation 2021, Siegrist 2022). A relevant complementary intervention is an investment readiness program, which aims to prepare firms to be open to considering equity, to make necessary changes, and to pitch to investors. Cusolito et al. (2021) evaluated such a program in the Western Balkans and found that it significantly increased the likelihood of receiving external funding for smaller firms and teams with at least one female founder.

4.5 Secure and convenient savings instruments

Globally, the proportion of adults who report saving to start, operate, or expand a business is lower among women than men, which is also the case for access to savings accounts at financial institutions.[23] The absence of reliable savings mechanisms, coupled with the challenge of accessing convenient formal saving products, can exacerbate credit constraints and hinder business growth (Blattman et al. 2014). An early influential experiment in Kenya demonstrated that providing basic savings accounts to women market vendors working near a bank had substantial impacts on their business investments (Dupas and Robinson 2013). In a study spanning three countries, Dupas et al. (2018) examined a broader sample and observed limited average effects from access to basic savings accounts. They suggest that more tailored products with lower transaction costs, along with complementary interventions, may be necessary. For instance, when microfinance loans were disbursed by default into digital savings accounts earmarked for women's business, there were noticeable improvements in business performance (Riley 2024).[24] Mobile banking can significantly reduce transaction costs (de Mel et al. 2022). Moreover, combining access to savings instruments with additional interventions, such as incentives to register or training, has proven to be effective.[25] Further research is required to understand the impact of savings products on larger firms.

4.6 Insurance

In various contexts, research has found that women tend to be more risk-averse than men, which may lead to less risky investments in their businesses and a tendency to diversify their entrepreneurial activities. Additionally, there is evidence that women generally have lower confidence than men in financial decision-making and investments, potentially deterring them from seeking formal financing

[23] Based on the author's own calculations using the World Bank Gender Data Portal and the 2017 Global Findex Database. The 2021 Global Findex data indicate that the gender gap in account ownership across developing economies decreased to 6 percent from 9 percent, where it had remained stable for several years.

[24] Default effects can serve as a catalyst for encouraging savings. The RCTs by Somville and Vandewalle (2018) and Field et al. (2021) demonstrate that savings tend to increase more when funds are directly transferred into accounts rather than when participants are given the option to deposit the funds themselves.

[25] Campos et al. (2023) found that combining monetary incentives for business registration with access to banking services significantly improved business performance for both male and female entrepreneurs in Malawi. Buvinic et al. (2020) showed that an intervention that combined financial training, business training, mentorship, and incentives to promote agent banking savings accounts had significant effects on women-led business in Indonesia. Additionally, Batista et al. (2022) observed significant effects in Mozambique from combining a short rule-of-thumb training with mobile saving accounts.

(Love et al. 2023). While insurance products hold significant potential, they have not been rigorously evaluated with women-led businesses. IFC and AXA (2015) estimate that women's spending on insurance premiums will triple its current size, reaching $1.4 trillion to $1.7 trillion by 2030. Battaglia et al. (2023) assert that flexible loan repayment options can serve as an insurance mechanism and enhance business performance. Bianchi and Bobba (2013) suggest that predictable income from cash transfers can decrease risk aversion and promote business investment. Groh and McKenzie (2016) designed and evaluated an innovative product for entrepreneurs to cover macroeconomic risks, but they did not observe significant effects on business outcomes.

Innovations in design are necessary in this area, including those tailored to the needs of women-led businesses. For instance, products that offer business interruption protection for women entrepreneurs, such as permitting the suspension of loan payments during maternity leave, could be beneficial. Considering women's dual roles as caregivers and entrepreneurs, solutions that enable them to manage risk and provide protection during personal crises or business interruptions hold promise.[26]

4.7 Reducing gender biases among financial intermediaries

Some studies suggest that women investors are more inclined than their male counterparts to fund women-led businesses (IFC et al. 2019), highlighting the importance of increasing women's representation in leadership roles within banks and investment funds. However, two studies in Türkiye reveal that both male and female loan officers exhibit implicit biases against women, although such biases diminished with experience (Alibhai et al. 2019c is based on a loan-application experiment and Brock and De Haas 2023 conduct lab-in-the-field experiments). Implementing gender intelligence training may be an effective strategy to combat unconscious bias.[27] Many financial institutions do not track sex-disaggregated data, leaving them unaware of potential gender biases in their services. Therefore, collecting and analyzing sex-disaggregated data should be a strategic imperative for financial institutions, governments, regulators, and corporations (Bonfert et al. 2023).

5 Interventions to increase access to markets and technology

One leading explanation for the gender gap in business performance is that women-led businesses tend to be concentrated in lower-paying industries and sectors worldwide (World Bank Group 2021).[28]

[26] An example is IFC's Women Insurance Program, which has collaborated with eight insurance companies across Africa and Asia to pilot insurance solutions tailored for women. These include a life insurance policy to support personal goals of women entrepreneurs in Nigeria, an insurance bundle that protects against accidents, fire, and burglary for microbusinesses, and comprehensive insurance coverage for women-led MSMEs in Ghana.

[27] IFC (2021) details Gender Sensitivity Training provided to 660 senior managers, staff, and agents at an insurance company in the Philippines. A non-causal evaluation indicated that the training led to noticeable changes in the participants' gender biases and enhanced their interactions with women customers.

[28] Evidence from Africa and Southeast Asia shows large gender gaps in profits even within sectors, which means that sectorial segregation cannot fully explain the profits gender gap (Campos et al. 2019, World Bank 2021). Moreover,

Correlational evidence suggest that women entrepreneurs in female-concentrated sectors earn lower profits than their counterparts in male-dominated sectors (Goldstein et al. 2019).[29] Interventions that encourage women to enter male-dominated sectors show promise. Additionally, women-led businesses are less likely to engage in exporting, have limited access to corporate value chains, and receive a small share of public procurement (IFC 2021b). On the demand side, constraints are linked to gender gaps in networks, skills, and finance. On the supply side, many large corporations report a lack of sex-disaggregated data on procurement and distribution channels, which hinders their ability to take positive action. Furthermore, women entrepreneurs generally have less access than male entrepreneurs to digital skills and digital technologies and platforms (Aranda and Qasim 2023). This disparity may be related to gender gaps in smart phone ownership and internet access, which can be attributed to affordability, gender norms, or security concerns, and which limit the expansion of women-led firms in e-commerce. There is still little causal evidence on the impact of interventions addressing these constraints on the performance of women-led businesses.

5.1 Encouraging women to enter male-dominated sectors

A report with data from ten countries provides non-causal evidence that women in male-concentrated sectors earn higher profits than women in female-concentrated sectors, even after controlling for a series of observable characteristics (World Bank 2022). Interventions encouraging women entrepreneurs to cross over to male-dominated sectors show promise. Factors correlated with entering male-dominated sectors include higher access to male mentorship (including spousal support), role models, and information (Goldstein et al. 2019, LACGIL 2021). A recent field experiment in the Republic of Congo showed that providing young women with information on trade-specific earnings can shift their preferences toward male-dominated trades (Gassier et al. 2022). Interventions that foster the participation of husbands, role models, or networking could have similar effects. Addressing men's misperceptions and engaging adolescents in discussions about gender attitudes could encourage crossover, as these efforts have increased labor force participation for women in some contexts (Bursztyn et al. 2020, Dhar et al. 2022). However, there is still no rigorous evidence on whether these types of interventions help women entrepreneurs improve the performance of their businesses. Moreover, it is important to complement crossover interventions with measures to avoid harassment and other challenges of operating in typically male-dominated sectors (World Bank 2022).

5.2 Interventions fostering trade readiness and access to new markets

Compared to male entrepreneurs, women entrepreneurs face stronger constraints that restrict their ability to trade and realize the benefits of trade (International Trade Centre 2015, World Bank and World Trade Organization 2020). Multidimensional, country-level approaches that address the multiple supply and demand constraints women entrepreneurs face in accessing finance and markets might be required.

sector of activity explains little, if any, of the gender gap in microenterprise profits in Indonesia, the Lao People's Democratic Republic, and Viet Nam (World Bank 2021).

[29] There is significant concentration of women-led business in retail, education, social services, tourism—all sectors hit hard by the COVID-19 pandemic (Torres et al. 2021).

Women entrepreneurs are more likely to lack information about the tastes, preferences, and price sensitivity of foreign customers (Campos et al. 2019), which could be linked to limited learning due to smaller access to networks. They are also more likely to view customs and trade regulations as major constraints, and since their businesses are smaller, they are more affected by non-tariff measures (International Trade Centre 2015). Possible interventions, yet to be evaluated, include marketing interventions to attract new customers and improve product design, export-readiness programs, virtual trade missions, participation in fairs, and information on and simplification of trade regulations. The interventions discussed above that encourage crossover to male-dominated sectors, which are typically less protected and more profitable, and access to trade finance can also make women-led businesses more likely to become exporters. More evidence on the effects of these policies is crucial since the literature finds a strong correlation between exporting and increases in productivity (Verhoogen 2023). Furthermore, if a lack of demand for their products is a binding constraint for women entrepreneurs (as shown in Ghana by Hardy and Kagy 2020), interventions on skills and capital alone might not be effective. Rather, interventions that help women access new markets (e.g., crossing over to tradeable industries, exporting, using digital technology to sell online, or accessing procurement) would be a priority.

5.3 Increasing access to public and private procurement

Some estimates indicate that women-led firms earn less than 2 percent of purchases made by large corporations and governments (Vazquez and Frankel 2017). A significant share of large corporations do not collect sex-disaggregated data on procurement, which is usually the first step in designing corporate supplier diversity programs (IFC 2023). Initiatives in several countries aim to connect women entrepreneurs with market opportunities through corporate procurement. Women-led businesses can benefit from these initiatives by expanding access to markets and internal value chain financing. Moreover, there is potential for external value chain financing even for smaller firms by linking microfinance with value chains. Casaburi and Willis (2024) review the evidence on bunding financial contracts with value-chain contracts and highlight how it can reduce transaction costs.

However, evidence on the effectiveness of these programs is not yet available, nor is there clarity on how best to integrate women-led businesses into corporate value chains. Qualitative studies suggest that when public procurement has open procedures with clear guidelines and streamlined application processes, women-led firms are more likely to apply and win contracts (Siegrist 2022). An RCT evaluating a training program on how to win large contracts showed positive effects on small business performance in Liberia, but effects were not disaggregated by gender (Hjort et al. 2020).

5.4 Increasing access to digital platforms and e-commerce

The growing role of services in the global economy and trade creates new opportunities for women to reap the rewards of trade (World Bank and World Trade Organization 2020). However, women entrepreneurs face a series of constraints that prevents them from benefitting from e-commerce. Women-led firms lag behind in the adoption of new digital technologies for several reasons.[30] First, there are significant gender gaps in mobile phone ownership and Internet access, email accounts, and business

[30] See Verhoogen (2023) for a non-gendered survey of factors constraining the uptake of new and traditional technologies.

websites. Second, women entrepreneurs have lower levels of digital skills, with skill upgrading limited by time and mobility constraints (Campos et al. 2019).[31]

There is still a scarcity of causal evidence on the effects of digital skills training for women entrepreneurs. Alhorr (2023) studied the effect of assisting female entrepreneurs in Jordan with creating and managing Facebook pages for their business, and of offering women digital marketing training. The findings indicated that the Facebook business page intervention had positive effects on business outcomes for women more affected by mobility constraints. However, women with higher mobility constraints were also less likely to apply for digital marketing training, resulting in muted average effects.

Business-to-business distribution platforms can assist women entrepreneurs in connecting with corporate manufacturers and improve their integration into corporate value chains.[32] Additional research is needed to determine how to encourage women entrepreneurs to join these platforms and to assess the impact of training designed to help women better navigate and use these platforms.[33] Jin and Sun (2020) found that a program in China, which trained over 2 million new sellers on a large e-commerce platform, had small positive effects on revenues for both men and women; however, women sellers were less likely to participate in the training. Finally, recent research cautions that merely bringing many firms onto e-commerce platforms may not be sufficient to foster their growth due to significant demand-side frictions. Policies such as the creation of premium market segments or focusing on promising newcomers might be necessary to enhance market efficiency (Bai et al. 2021).

6. Interventions that Address Contextual Constraints

According to the 2023 World Bank's Women, Business and the Law dataset, in 101 of 190 economies, women face at least one legal constraint that prevents them from operating a business in the same way as men (World Bank 2023). Significant improvement over the last 50 years has led to most economies allowing women to sign contracts, register a business, and open a bank account in the same manner as men. However, only 47 percent of economies prohibit gender discrimination in access to credit, and nearly 40 percent of economies limit women's property rights, including right to inherit assets.[34] Furthermore, socio-cultural factors linked to restricted gender norms are still pervasive in some regions and hinder the implementation of laws; for example, Braunmiller and Dry (2022) observed this in the Democratic Republic of Congo.

One crucial gender norm concerns the division of time for household activities. If women are overburdened by care responsibilities and domestic work, their ability to work longer hours in their business is limited. This can partly explain the gender gap in profits (World Bank 2021). The prevalence of gender-based violence (GBV) may also affect women's choice of business sector, location, and networking activities. Promising interventions include legal reforms, information campaigns and discussions around

[31] For example, a survey with informal retailers on a digital platform in Egypt shows that, compared to male retailers, women retailers are less likely to know how to use the mobile application and are more likely to end up with stock-outs due to not tracking inventory (Mignano and Kipnis 2022).

[32] IFC (2022) describes the experience of digital business-to-business distribution platforms in Nigeria, Egypt, and the Philippines.

[33] See Burga et al. (2021) for a toolkit providing practical guidance to help teams working on women's entrepreneurship projects apply digital solutions to project design and policy advice.

[34] Based on the author's own calculation using the WBL 2023 dataset (World Bank 2023).

informal norms, and the provision of child and elder care. More causal evidence is needed to assess the effectiveness of each of these interventions.

6.1 Changing gender-biased laws

There is emerging evidence that gender-biased laws correlate negatively with women's employment and entrepreneurship (Elefante et al. 2023, Adnane 2021, Hyland et al. 2020, Islam et al. 2017). The literature suggests that while legal reform alone may not be enough to effect change, it can serve as an initial step towards fostering social transformation (Adnane 2021). This an area where RCTs are usually not feasible or appropriate; therefore, more quasi-experimental studies are needed to analyze the effects of changes in diverse types of gender-biased laws on the performance of women-led businesses.

6.2 Interventions to shift informal gender norms

While considerable progress has been made in reforming gender-biased laws over time, the implementation and enforcement of these new laws are often constrained by informal social norms and customary laws that discriminate against women (Muñoz Boudet et al. 2023). These informal norms can influence women's aspirations and their perceptions of their own abilities impacting their decisions regarding business location, investments, and growth.

Interventions that involve husbands and adolescents, encouraging them to reconsider the role of women, show promise in promoting women's participation in the labor force, in their choice of business location and sector, and could potentially foster crossovers to male-dominated sectors (Halim et al. 2023). Connecting women entrepreneurs with other women, role models, or mentors, and facilitating information sharing through media campaigns or school-based programs, can also be effective in changing aspirations (Jayachandran 2021b). However, causal evidence on the effects of these interventions on the performance of women-led businesses is still lacking.

6.3 Child and elder care programs

Emerging evidence suggests that subsidized daycare can alleviate women's time constraints and promote income-generating activities (Evans et al. 2021, Halim et al. 2021). Research in Uganda has shown that that childcare duties are associated with lower business profitability (Delecourt and Fitzpatrick 2021), and access to childcare causally enables mothers to be more productive at work, yielding higher revenues without increasing working hours (Bjorvatn et al. 2022). The location, costs, and hours of childcare services, along with societal norms regarding the acceptability of childcare, are crucial determinants of their success and can also influence women's business location decisions (Ahmed et al. 2023, Love et al. 2023). Quasi-experimental evidence from Indonesia suggests that the expansion of preschools significantly impacts on plant-level total factor productivity by boosting the labor supply of educated women, enhancing talent allocation, and reducing turnover (Cali et al. 2022). However, more research is needed on the impact of childcare on the performance of women-led firms. Women entrepreneurs could contribute to the solution by providing innovative care-related services and products. Additionally, there is scarcity of evidence on the effects of elder care.

6.4 Addressing gender-based violence

While there is no direct causal evidence linking the effects of gender-based violence (GBV) to the performance of women-led business, the impact of GBV on women's mental and physical health can indirectly affect their ability to manage their business. Furthermore, the high prevalence of violence may deter women from working outside the home, expanding their networks, hiring more employees, or venturing into male-dominated sectors (World Bank 2023b). Business training programs tailored for women who have experienced trauma showed promise for aspiring entrepreneurs in Colombia (Ashraf et al. 2022).[35] Interventions that mitigate GBV in non-entrepreneurial settings could potentially be explored for their applicability to women entrepreneurs.[36]

7. Summary of Evidence

Appendix Table A1 provides a summary of the evidence reviewed in this paper on interventions addressing the constraints faced by women-led businesses. The table evaluates the impact of each intervention, categorizing the evidence as positive or negative, or indicating the need for further causal research. It also includes the papers analyzed, along with their methodology (in parentheses), and offers a brief conclusion for each intervention.

Overall, while the number of randomized control trials that evaluate the effect of various policies on the performance of women-led firms has been growing, there is still limited evidence for each specific intervention. The interventions showing some positive impacts on business outcomes include socio-emotional skills and gender-oriented training, secure and convenient savings instruments, and grants delivered through business plan competitions. However, it is important to note that, even for these interventions, the evidence is still limited to at most a few contexts, and more research is needed to understand under what conditions these interventions are effective and for what groups of women.

The table also highlights some promising interventions that address the constraints faced by women-led businesses for which there is the need for more causal evidence. For addressing constraints on access to skills and networks, promising approaches include developing a market for business training providers, using technology to deliver training, improving training targeting, offering high-quality personalized services (e.g., virtual coaching, group consulting, or through insourcing and outsourcing), and supporting networking activities for women entrepreneurs. To improve access to finance, innovative financial products such as alternative credit scoring, uncollateralized loans, insurance products, and blended finance show promise. Reducing gender biases among financial intermediaries is also important. To enhance access to markets and technology, interventions can encourage women to enter male-dominated sectors, increase access to public procurement and corporate value chains for women-led businesses, foster trade readiness, and promote the use of digital platforms for e-commerce. Lastly, to address contextual constraints, interventions can focus on increasing the supply of child and elder care,

[35] Related interventions that provided cognitive behavioral therapy for women entrepreneurs in Bangladesh and Pakistan were found to reduce stress levels and improve mental health, although they did not demonstrate a clear impact on business outcomes (Lopez Pena 2022, Saraf et al. 2019).

[36] For instance, involving men in group discussions about GBV led to a reduction in reported violence and increased decision making in Rwanda (Doyle et al. 2018). Additionally, a youth empowerment program in Bolivia that offered soft and technical skills training, sexual education, mentoring, and job-finding support during the COVID-19 lockdown resulted in increased earnings for girls and a decrease in violence against them (Gulesci et al. 2021).

changing gender-biased laws, shifting gender norms, and protecting women from gender-based violence. Engaging men to create a more supportive environment may also be crucial.

8. Conclusions

This paper reviews evidence on interventions that can address the constraints faced by growth-oriented, women-led micro, small, and medium-sized enterprises (WMSMEs). Three cross-cutting recommendations emerge from the reviewed interventions. First, evidence of modest average treatment effects and treatment effect heterogeneity across various interventions suggests the need for better targeting and segmentation. Second, women-led firms face multiple constraints, and addressing them requires a package of multiple interventions. Evaluating the components of the optimal package represents a promising avenue for future research. Third, the successful implementation and uptake of the proposed solutions require consideration of contextual constraints that differentially affect WMSMEs and the appropriate adaptation of program implementation.

The modest average treatment effects observed in various interventions, along with the evidence of heterogeneity, indicate that not all strategies are equally effective for every WMSME. This variability in effectiveness underscores the importance of developing a nuanced understanding of which interventions work best for specific types of businesses or entrepreneurs. Better targeting and segmentation can be achieved by analyzing characteristics such as the industry sector, geography (e.g., rural vs. urban areas), business size, and the entrepreneur's background, including her motivations and reported constraints. For instance, WSMEs in the technology sector might benefit from training in digital skills, while those in agriculture might prioritize access to land that can serve as collateral. Start-ups might need help with business planning and seed funding, the allocation of which could be improved through psychometrics, while more established businesses might benefit from blended finance and export assistance. Improved targeting will require surveys, focus groups and data analysis to identify distinct segments with the WSME population and tailor interventions accordingly. As more sex-disaggregated data become available, machine learning techniques may offer better predictions and be used in combination with expert analysis, peers' and trainers' evaluations to conduct this segmentation.

Most of the evaluations reviewed in this paper focus on interventions that address only a single group of constraints. However, the multifaceted nature of the challenges faced by WMSMEs necessitates a comprehensive approach that combines various types of support. For instance, access to finance can be coupled with capacity-building initiatives, and its effect may be enhanced with expanded access to markets. Additionally, networking opportunities and mentorship can provide peer support and guidance. Research into how these interventions can be bundled effectively will help to identify the most effective combinations that drive growth and sustainability in WMSMEs.

Finally, the implementation and uptake of interventions are heavily influenced by the context in which WMSMEs operate. Contextual constraints, such as gender norms, regulatory environments, and the availability of enabling services like childcare, can either facilitate or hinder the success of proposed solutions. There is a need for more evidence on how addressing these contextual constraints can impact WMSMEs' performance. Furthermore, it is crucial to conduct thorough assessments of these contextual constraints to ensure that programs are designed with sensitivity to local realities. Adapting implementation strategies to align with the specific needs and challenges of WMSMEs in different regions or communities will increase the likelihood of achieving meaningful and lasting outcomes.

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10. Appendix

Table A1. Summary of Evidence on the Effects on Women-Led Businesses

Constraint	Intervention	Evidence	Selected Papers Reviewed	Conclusion
Human Capital	Traditional business training programs	Evidence suggests that the average effects are positive but modest, but they are typically smaller for women-led businesses	McKenzie and Woodruff 2014 (review), McKenzie 2021 (meta-analysis) McKenzie et al. 2023 (review), Jayachandran 2021 (review), Gine and Mansuri 2021 (RCT), Field et al. 2016 (RCT), Lafortune et al. 2018 (RCT)	The literature indicates negligible or low effects on average for women. Adapting content to women’s specific constraints and tailoring implementation may improve impact.
	Variations on business training programs	More causal evidence is needed on cost reduction through virtual training methods, targeting, insourcing and outsourcing, and on the impact of charging for training	McKenzie 2021 (review), Maffioli et al. 2023 (RCT), McKenzie and Sansone 2019 (heterogeneity analysis), Ellis et al. 2022 (heterogeneity analysis), Bryan et al. 2022 (RCT), Bardasi et al. 2021 (RCT), Davies et al. 2024 (RCT), Anderson and McKenzie 2022 (RCT)	There is a need for more evidence to demonstrate that training programs can be made cost-effectively optimized to enhance business outcomes for women-led businesses through cost reduction and improved targeting. Alternatively, insourcing and outsourcing services has shown promise in one context.

	Socio-emotional skills training	There is positive evidence of the impact of personal initiative training on micro/small women-led business, although not in all contexts	McKenzie et al. 2023 (review), Campos et al. 2017 (RCT), Alibhai et al. 2017 (RCT), Ubfal et al. 2022 (RCT), LACGIL 2021 (review)	Large and positive effects have been observed in one RCT for both male- and female-led businesses, which has spurred interest. However, these effects have not yet been widely confirmed. More evidence is needed to understand why it works in some contexts and not others, and to assess the impacts of combining it with other interventions.
	Gender-oriented training	Positive effects are observed when combined with traditional training; further evidence is required on the additional impact of gender-specific components	Bulte et al. 2016 (RCT), McKenzie and Puerto 2021 (RCT)	More evidence is needed to understand the cost-benefit analysis of adding gender-oriented components to traditional programs.
	Mentorship and consulting	Mixed evidence indicates low or non-persistent effects for micro/small women-led businesses but more positive effects for new approaches; a lack of causal evidence exists for larger women-led firms	Brooks et al. 2018 (RCT), McKenzie and Puerto 2021 (RCT), Bakhtiar et al. 2022 (RCT), Anderson et al. 2023 (RCT), Germann et al. 2023 (RCT) Bloom et at al 2013, 2020 (RCT), Iacovone et al. (2022), Otis et al. 2024 (RCT)	The literature points to low average effects, but more evidence is needed on the impact on women-led businesses of novel approaches using technology and female mentors, which show more positive effects, and on consulting for larger women-led firms.
	Networking	There is a need for more causal evidence on the impacts on women-led businesses	Asiedu et al. 2023 (RCT), Cai and Szeidl 2018 (RCT), Vega Redondo et al. 2019 (RCT), Gonzalez-Uribe and Hmaddi 2022 (review)	There is a growing consensus on positive effects, but only one RCT has studied the impact on women-led businesses.

Access to Finance	Microcredit	Evidence shows no effect on business outcomes for the average borrower	Banerjee et al. 2015 (review), Cai et al. 2021 (review), Banerjee et al. 2019 (RCT), Field et al. 2013 (RCT), Barboni and Agarwal 2018 (RCT), Battaglia et al. 2023 (RCT)	No significant average effects have been found, but there is growing evidence of more positive effects when targeted and when introducing variations of the traditional model (e.g., flexible repayment).
	Reducing collateral requirements	More causal evidence focused on women-led businesses is necessary	Alibhai et al. 2022 (RCT), Bari et al. 2024 (RCT), Gertler et al. 2021 (RCT), Cordaro et al. 2022 (RCT)	Some evidence suggests that it can increase access to finance, but more evidence is needed on the effects on business outcomes for women-led businesses, with various promising new products not yet evaluated.
	Grants or Loans	Evidence shows no effects of cash grants or loans to micro/small firms, with evidence of positive effects from in-kind grants or larger grants targeted at growth-oriented women-led businesses	Fafchamps et al. 2014 (RCT), James et al. 2022 (RCT), McKenzie 2017 (RCT), Crépon et al. 2024 (RCT), Bryan et al. 2022 (RCT), Bertrand et al. 2019 (non causal), Jakiela and Ozier 2016 (RCT)	The literature highlights the importance of targeting support to growth-oriented women and offering solutions to prevent resource capture by husband and kinship networks.
	Blended Finance	A lack of causal estimates is noted	Aydin et al. 2023 (quasi-experimental), Liaplina and Sierra-Escalante 2022 (review), Cusolito et al. 2021 (RCT)	More causal evidence is needed on the effect of blended finance instruments, one RCT shows the potential of preparing firms to be ready for equity investments.
		Positive evidence exists for products with low transaction costs and features that	Dupas and Robinson 2013 (RCT), Dupas et al. 2018 (RCT), Riley 2024 (RCT), de Mel	The literature highlights the importance of offering convenient savings instruments

	Savings Instruments	increase resource control for women-led micro businesses; positive effects are also seen when combined with training	et al. 2022 (RCT), Campos et al. 2023 (RCT), Batista et al. 2022 (RCT), Buvinic et al. 2020 (RCT), Field et al. 2021 (RCT), Somville and Vandewille 2018 (RCT)	that can increase control over resources. More evidence is needed for products targeting larger women-led firms.
	Insurance	A lack of causal estimates is noted	Battaglia et al. 2023 (RCT)	More evidence is needed on insurance products tailored for women-led businesses, and on the positive effects of loan repayment flexibility, which can function as insurance.
	Reducing gender biases among financial intermediaries	There is a need for more causal estimates	Alibhai et al. 2019c (loan application experiment), Brock and de Haas 2023 (lab-in-the-field experiment)	More evidence is needed on the effect of reducing agents' bias; the literature provides evidence that bias does exist and decreases with experience.
Access to Markets and Technology	Encouraging women to enter male-dominated sectors	There is a need for more causal estimates	World Bank 2022 (non-causal), Goldstein et al. 2019 (non-causal), Gassier et al. 2022 (RCT)	Emerging evidence suggests that interventions can encourage women to enter male-dominated sectors (with only one RCT), but there is a lack of evidence on the effects on profits.
	Fostering trade readiness and access to new markets	There is a need for more causal estimates	Hardy and Kagy (RCT), World Bank and World Trade Organization 2020 (review), Verhoogen 2023 (review)	More evidence is needed on market expansion and trade readiness interventions; there is only one RCT focusing on a specific product.
	Increasing access to procurement	A lack of causal estimates is noted	Hjort et al. 2020 (RCT), IFC 2023 (review)	More evidence is needed; there is only one non-gendered RCT on training on how to

				win large contracts, and none on the direct expansion of procurement.
	Increasing access to digital platforms and e-commerce	There is a need for more causal estimates	Alhorr 2023 (RCT), Jin and Sun 2020 (RCT), Bai et al. 2021 (RCT)	Mixed evidence exists, one RCT shows promising results for women with mobility constraints, while another finds low effects due to demand-side constraints.
Contextual	Changing gender-biased laws	A lack of causal estimates is noted	Elefante et al. 2023 (review), Adnane 2021 (non causal) (review), Hyland et al. 2020 (non-causal), Islam et al. 2017 (non-causal)	More evidence is needed on specific laws; there is a consensus that change in laws is important but not sufficient.
	Gender Norms	A lack of causal estimates is noted	Muñoz Boudet et al. 2023 (review), Halim et al. 2023 (review), Jayachandran 2021b (review)	More evidence is needed linking change in norms to business performance.
	Child and elder care	There is a need for more causal estimates	Bjorvatn et al. 2022 (RCT), Delecourt and Fitzpatrick 2021 (non-causal), Ahmed et al. 2023 (review), Cali et al. 2022 (quasi - experimental)	There is a growing literature, but only one RCT links access to childcare with business outcomes.
	Gender-based Violence	There is a need for more causal estimates	World Bank et al. (2023 review), Ashraf et al. 2023 (RCT), Lopez Pena 2022 (RCT), Saraf et al. 2019 (RCT)	More evidence is needed to establish the link between GBV and business outcomes, existing RCTs focus on mental health with mixed effects on business outcomes.