



**Appendix 1.
Barriers,
Themes,
& Constraints
— A Primer**



For project teams new to designing interventions to support women-owned and -run enterprises, the following section introduces some of the specific challenges unique to, or exacerbated for, women, presented through three overarching horizontal themes: social norms, business climate, and technology. This section begins by examining the general context, including challenges related to the business climate that women may face when starting and growing firms. It then explores technology-related issues and the broader gender norms that may influence and narrow women's choice of business sector, the personal and business goals they pursue, and how they structure and work to grow their businesses.

The section then uses each of the four vertical constraint pillars to identify barriers that may inhibit the growth of women's firms. It also examines how technology and digital enablers can help mitigate these barriers, to help ensure not only that women-owned firms survive but that the women business owners thrive as well.

Technological developments are rapidly changing the way people learn, work, communicate, and do business. Digital solutions thus can benefit everyone, and technology plays a prominent role in making business formalization and growth accessible to all, regardless of gender. The long reach of digitalization extends to facilitating women's participation in shaping legal and regulatory reforms, accessing finance and credit tools, and seizing opportunities to enter new markets and to increase skills and develop business acumen. With the digital economy growing at a rate significantly higher than that of the traditional economy, digital solutions offer emerging economies a unique opportunity to leapfrog traditional paths for accessing markets. These opportunities also include risks, however, particularly relating to issues such as data protection and privacy and digital divides that can leave some communities behind.

1. Examining the General Context

The following section examines key constraints and potential technology enablers under the broad areas of social norms and business climate, with technological issues and approaches embedded across all topics.

OVERARCHING HORIZONTAL THEMES

-  1. Social Norms
-  2. Business Climate
-  3. Technology

MAIN VERTICAL CONSTRAINTS

-  1. Legal & Regulatory Framework
-  2. Access to Finance
-  3. Training, Skills & Information
-  4. Access to Markets



1.1. Social Norms

A society's norms have a pervasive influence on the formation, operation, and performance of women-owned businesses. Women's entrepreneurial endeavors are heavily influenced by social norms surrounding education, permissible economic activities, and interactions with buyers and suppliers, all of which affect women's ability to conduct business and their self-perception, confidence, and ambition. Women's disproportionate responsibility for child- and eldercare constitutes another social norm that influences their economic participation.



Women spend at least twice as much time as men on unpaid domestic tasks and **CARE ACTIVITIES AND AS MUCH AS 58 PERCENT OF THEIR WORKDAY** on unpaid work in family enterprises and farms (World Bank Group 2017a).

In addition, women often lack authority over the allocation of household assets and face pressure to share their own resources. A cultural environment favoring male dominance and decision making limits women's ability to control the revenue generated by their businesses (Simavi, Manuel, and Blackden 2010). These underlying social norms directly impact business growth as well as women's willingness and ability to invest in their businesses. In addition, social norms prevent many women in developing countries from accessing safe and reliable transportation, limiting their mobility, access to information and informal communication networks, and participation in training.



A study of African women and transportation found that they spent over

65%

of the time and effort they allocated to household duties on daily mobility needs (Uteng 2012).

Social constraints also limit women's political engagement — including advocacy efforts, political action networks, and political representation — which is critical to informing policy decisions about issues affecting women (World Bank Group 2017a). In such environments, women overwhelmingly enter “safer,” socially acceptable sectors, which unfortunately offer fewer growth opportunities, have less capital and assets, and are more likely to operate in the informal market (World Bank Group 2019b). Women are also more likely than men to start a business out of necessity and to commingle firm and household monies, while men are more likely to launch entrepreneurial endeavors due to a perceived opportunity (World Bank Group 2019b).



Using Technology to Address Social Norm Constraints

Digital technologies can offer women entrepreneurs the means to overcome constraints imposed by social norms. Technology can allow women to communicate and interact with others without openly violating societal expectations. It can also increase women's access to market information and enable them to work more flexible hours and possibly remotely. For example, the E-Commerce and Women-Led SMEs³³ in MENA (P168392) project helps women entrepreneurs to market and sell their goods on TradeKey and Ebay e-commerce platforms from their homes. Access to networks of peers, mentors, or role models through social media or other Internet platforms can help women entrepreneurs take part in online training or savings programs that would otherwise be unavailable due to the limited geographical reach of program implementers and time constraints on female entrepreneurs. The New Generation of Women Entrepreneurs (Women X) project in Nigeria and Pakistan (P145215) uses e-Learning modules and incorporates a virtual e-Mentoring program to connect women entrepreneurs with mentors and coaches as well as with others in the entrepreneurial ecosystem who can provide them with support.

33. For the purpose of this toolkit, SMEs are defined as formalized, non-subsistence sole proprietorships and limited liability corporations (LLCs) with more than ten employees.



1.2. Business Climate

The aggregate result of the social norms discussed above is that women-led firms are concentrated in low-productivity, low-technology, low-growth sectors such as hospitality, services, wholesale and retail trade, garments, textiles, and leather goods. Globally, men own firms in more profitable industries, such as construction and manufacturing, that are considered less appropriate for women. Women-owned firms are more likely to be home-based, with fewer employees, lower average sales, and less value-added than firms owned by men (World Bank Group 2019b). These factors contribute to lags in performance: women-led firms show lower returns to capital and lower profitability (Cirera and Qasim 2014). When women are encouraged and supported to operate outside social norms, they tend to build larger and more profitable companies that operate in male-dominated sectors (World Bank Group 2019b).

Female Labor Force Participation

A foundational understanding of the broader female labor force participation landscape provides both context for and insights into the state of female entrepreneurship, the industries in which women cluster, why women decide to pursue or pass up entrepreneurial opportunities, and whether these business endeavors succeed. Although the global female labor force participation rate is higher today than it was three decades ago (Ortiz-Ospina and Tzvetkova 2017), there has been little recent improvement on average. That said, some countries have seen advances in female economic participation. For example, several nations in Sub-Saharan Africa have significantly closed their economic participation and opportunity gender gap, a measure that blends a participation gap, the difference between women and men in labor force participation rates; a remuneration gap, the ratio of estimated female-to-male earned income; and an advancement gap, wage equality for similar work (World Economic Forum 2020b). The top ten countries globally have closed at least 80 percent of this gap between men and women in the workplace (World Economic Forum 2020b). Several examples include Benin (85 percent), Zambia (83 percent), and Guinea (80 percent) in Africa; Lao PDR (84 percent) in East Asia; and Belarus (84 percent) and Latvia (81 percent) in Eastern Europe (World Economic Forum 2020b). At the opposite end of the spectrum are countries that have closed less than 40 percent of the economic participation and opportunity gender gap: India (35 percent), Pakistan (33 percent), Yemen (27 percent), Syria (25 percent), and Iraq (23 percent) (World Economic Forum 2020b). Furthermore, women tend to be underrepresented in leadership and management positions and overrepresented in lower-quality jobs and informal and vulnerable economic activities, including self-employment in unregistered businesses with no bookkeeping practices and tax payments (ILO 2018). In 2016, the share of women in developing countries who work in the informal economy as a percentage of the total number of employed women was 8 percent higher than that of employed men working in the informal economy (ILO 2018). Women workers are also at greater risk of facing poverty in old age due to such restrictive labor practices, along with typically lower wages, longer life spans than men's, and shorter work lives due to maternity, childcare, and eldercare duties.



The factors that constrain women's labor force participation include prohibitions against working in specific sectors or at certain times of day (such as nocturnal shifts); lack of legal provisions to allow for and regulate part-time work; and limited or nonexistent government support for or provision of childcare services. These factors, individually or collectively, lead to a lower percentage of women business managers and business leaders. Often women's employment decisions reflect the interplay among prevailing gender and social norms associated with education and occupational choices, household and family responsibilities, mobility constraints, and access to labor markets.



Female Entrepreneurship

Women's engagement in entrepreneurship is crucial to improving women's economic status. Not only does owning a business provide a source of income, but female entrepreneurs also tend to hire more female employees than do male entrepreneurs (Carrera and Qasim 2014). Women invest a higher percentage of their entrepreneurship and employment earnings in their households, thereby increasing overall amounts spent on education and health. Female entrepreneurship is also a viable economic and livelihood solution for older women in countries with an earlier mandatory retirement age for women

and can thus help reduce the likelihood of poverty in old age. Launching and growing a business is inherently risky; many women would prefer to work as employees for firms in which they do not have an ownership stake. Yet in developing economies where fewer formal sector jobs are available, women may not have an alternative means of providing for themselves and their families: women globally have a 20 percent or greater likelihood than men of starting a business due to necessity (Global Entrepreneurship Monitor 2017). Owning and operating a business can be particularly attractive in economies where social and legal restrictions as well as a lack of alternative employment opportunities limit other options.

Multiple constraints discourage both women and men from becoming entrepreneurs and starting firms, including time and number of procedures to start a business, cost as a percentage of income to start a business, and government resources available to entrepreneurs, but women's early-stage entrepreneurial activity is half or less that of men in 40 percent of economies (Global Entrepreneurship Monitor 2017), and women own only 28 percent of all MSMEs globally (International Finance Corporation 2014), with larger variation between and within regions. Female total entrepreneurial activity (TEA)³⁴ rates have ranged from 3 percent in France, Germany, Italy, Jordan to 37 percent in Senegal (Global Entrepreneurship Monitor 2017). In Brazil, Indonesia, Mexico, the Philippines, and Vietnam, women participate in entrepreneurship at equal or higher rates than men (Global Entrepreneurship Monitor 2017). Regionally, MENA has the lowest number of women entrepreneurs and largest gender gap in business ownership: for every three male business owners, there is only one female-owned business (Global Entrepreneurship Monitor 2017). Somewhat surprisingly, at 37 percent, entrepreneurs in the MENA region have the highest average growth expectations for their businesses worldwide, and women business owners' growth expectations for their firms are nearly equal (about 80 percent) to those of their male counterparts (Global Entrepreneurship Monitor 2017). In contrast, North America has the lowest regional gender gap³⁵ among entrepreneurs and the highest level of innovation³⁶ among women business owners; 38 percent of them state they offer innovative products, whereas only 18 percent of women in sub-Saharan Africa make the same claim (Global Entrepreneurship Monitor 2017).

34. The ratio of women to men participating in entrepreneurship.

35. Global Entrepreneurship Monitor defines innovation as exhibiting newness to customers, with offerings generally not available from the competition.

36. The World Economic Forum defines "innovation-driven" in its Global Competitiveness Report as characterizing the most developed economies with more knowledge-intensive businesses and expanding service sectors.

It is also noteworthy that in the 63 economies surveyed biannually by Global Entrepreneurship Monitor (GEM), as economic development and educational levels in a country increase, entrepreneurial participation among women declines and the gender gap widens, while business closure decreases (Global Entrepreneurship Monitor 2017). Women in innovation-driven economies³⁷ start businesses at 60 percent the rate of men, but men are one-third more likely than women to close their businesses due to lack of profitability, lack of financing, sale, and/or retirement (Global Entrepreneurship Monitor 2017).

This indicates a significant difference between male and female entrepreneurs, including the tendency of women not to start businesses as frequently as men but also to fail less, in part because they take fewer risks. Marked differences can also be seen in the prevalence of women in informal employment across economies. These women are not covered by labor laws, part of the tax system, or offered social protection or employment benefits such as severance pay or sick leave. Even though globally fewer women than men take informal employment (approximately 740 million women versus 1.26 billion men), these women are more often found in the most vulnerable situations, employed as domestic workers, home-based workers, or unpaid workers in their own households, as compared to their male counterparts (ILO 2018). The gender-specific constraints that women entrepreneurs worldwide routinely face affect how they manage their businesses relative to men and inhibit business productivity and growth. By removing or significantly reducing barriers to female entrepreneurship, not only do women's individual autonomy and economic and social well-being increase, but broader benefits accrue to the economy, including the development of new products and services offered and increased employment.

Using Technology to Improve the Business Climate

Technology, even when introduced at small scale, can facilitate the growth of all MSMEs and especially women-owned MSMEs in business environments where, without digitalization, it might not otherwise be conducive to or safe for women to operate businesses. For example, technology gives women greater control over their operating environment. It can facilitate cashless business transactions, thus improving women's financial privacy, independence, and autonomy; provide online platforms to virtually meet suppliers and buyers; and employ software to digitally track products over long distances to ensure arrival without damage or the added logistical complication of arranging transportation to physically accompany the shipment of goods. Technology thus holds potential to benefit women particularly, strengthening their contribution to a country's economy and enlarging the footprint of WSMEs on a national or even international scale.

37. Global Entrepreneurship Monitor refers to the following countries as innovation-driven, in ascending order: Italy, Germany, United Arab Emirates, Spain, France, Norway, Greece, Belgium, Republic of Korea, Finland, Qatar, Sweden, Slovenia, Switzerland, Portugal, Taiwan, United Kingdom, Luxembourg, Hong Kong, Austria, Puerto Rico, Ireland, Netherlands, Israel, Cyprus, United States, Australia, Estonia, and Canada.

2. Assessing Main Constraints



2.1. Legal and Regulatory Framework

Of the 190 economies surveyed in Women, Business, and the Law (World Bank Group 2020e), 90 percent have at least one law impeding women's economic opportunities. For example, Colombia forbids women to work as industrial painters; Bangladesh forbids women to clean, lubricate, or adjust any part of machinery; and Sierra Leone forbids women from working in underground mines (World Bank Group 2020e). Restrictive legal and regulatory frameworks can render more difficult the processes to register a business or open a bank account and may prevent women from working without the permission of a husband or male family member. Women also face significant legal and regulatory barriers to ownership, access, and control over key productive assets such as land, housing, finance, insurance, and technology. Asset ownership is a critical means to generate income, facilitate access to credit, strengthen the ability to respond to shocks by diversifying income potential, and serve as a store of wealth. Constraints to ownership and control of assets that women face include family laws that disadvantage them, such as requiring a spouse's permission to work outside the home, limited public knowledge about women's rights, and uneven implementation and enforcement of gender-neutral laws.

Using Technology to Improve Design and Implementation of Legal and Regulatory Frameworks

Sound legal and regulatory frameworks seek to promote transparent, predictable, and nondiscriminatory processes. Digitalization can make it easier for female entrepreneurs to comply with legal and regulatory business requirements. For example, electronic transactions to obtain an ID, register a business, or obtain a business license — areas where women tend to be disadvantaged because of social norms and mobility constraints (World Bank Group 2015) — can contribute to access and transparency. Effectively deployed, technology can contribute to less discriminatory, more standardized processes and provide workable approaches to overcome some of the restrictions that women face. E-government services, such as digital cash transfers or electronic public-private dialogues (ePPD), offer the potential of better online user experiences for citizens, increased public participation, improved internal efficiency and productivity, and increased access to information, such as the data found on electronic collateral registries (United Nations 2012).

Governments are beginning to actively encourage stakeholder engagement when evaluating laws and regulations related to digitalization. Digitalization can also help women's voices to be heard in legal and regulatory formulation and implementation. For instance, public-private dialogues that employ digital tools (World Bank Group 2015) provide the opportunity for women to engage in direct conversations about business-critical issues, share insights, and develop more informed policy. Reviews of laws and regulations as well as proposed public budgeting for improvements affecting businesses can be published online for public review, soliciting comments by female and male entrepreneurs alike, to support more inclusive feedback.





2.2. Access to Finance

Persistent barriers limit women's access to financial services. Women continue to be less likely than men to have access to financial institutions or to possess a bank account. In spite of rapid increases in financial services between 2014 and 2017 — men's bank account ownership in developing countries increased from 60 percent to 67 percent, and women's ownership grew from 51 percent to 59 percent (Demirguc-Kunt et al., 2018) — the gender gap has stubbornly remained at 9 percentage points for emerging economies since 2011 (Demirguc-Kunt et al., 2018).

In an IFC study of developing economies,³⁸ female-owned businesses accounted for 33 percent or US\$1.5 trillion of the total SME finance gap, defined as the difference between the available supply and potential demand that could be met by financial institutions (International Finance Corporation 2017). Many women entrepreneurs do not even apply for loans because of low financial literacy, risk aversion, or fear of failure (Morsy 2020). Among those who do seek financing, lack of collateral is the most commonly cited impediment. The World Bank's Enterprise Surveys reveal that 78 percent of the assets of a typical business in the developing world consists of movable property, such as equipment, inventory, and accounts receivable, while only 22 percent include real estate. Women may also be subject to unfavorable banking practices, such as being charged higher interest rates and having to meet shorter repayment periods. As a result, women lose opportunities to invest in their businesses, create jobs, reduce poverty, and strengthen economies. It is estimated that closing the credit gap by 2020 for women-owned SMEs in the BRIC (Brazil, Russia, India, and China) and the Next-11 (Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea, and Vietnam) emerging markets could result in 12 percent higher income per capita in those countries by 2030 (Stupnytska et al. 2014).

Using Technology to Increase Access to Finance

Digital financial services can help bridge the gender gap in account ownership and access to credit by decreasing the cost of access to financial services and bypassing constraints imposed by social norms and limited mobility. Digital financial services can also contribute to women's empowerment and autonomy by increasing their control over their financial resources.³⁹ Data and insights from Global Findex have shown that digital financial services, including mobile money, have contributed to a marked increase in women's access to financial services in many economies in recent years.⁴⁰ Digital technology can enhance women's ability to control and access financial services, including remittances and wage payments, through the use of debit/credit cards, mobile phones, and other digital channels. Digital infrastructure,⁴¹ including digital IDs⁴² and biometric verification,⁴³ can facilitate customer on-boarding and customer due diligence, often major barriers to access to finance.

In environments where women are less likely than men to own assets that could serve as collateral for credit, the World Bank Group has successfully piloted the use of psychometric testing. (See Box 3: Improving Access to Credit for Women Through the Use of Alternatives to Collateral.) Analysis of big data, including data accessed through mobile phones and utility bills, can improve understanding of entrepreneurs' cash flow, character traits, and networks to assess credit default risk and predict the likelihood of loan repayment.



38. The IFC study included 128 countries, of which 112 were low- and middle-income countries.

39. See results from the Tanzania case study.

40. Global Findex Database, 2017.

41. Digital tools refer to platforms and software that can be used with computers, tablets, and mobile devices to work with text, images, audio, and video.

42. Digital identification (ID) is defined as data about persons stored in computer systems that are linked to their civil or national identities.

43. Biometric verification is defined as any means by which a person can be uniquely identified by evaluating one or more distinguishing biological traits, such as fingerprints, hand and earlobe geometry, retina and iris patterns, voice waves, and DNA.

Mobile money⁴⁴ and e-Wallets⁴⁵ have been game changers in a number of developing countries, by bringing formal financial services within the reach of a majority of the population for the first time. Kenya is a global leader in mobile money, with the M-Pesa⁴⁶ products that offer a phone-based money transfer service, payments, and microfinancing services. Access to the M-Pesa mobile money system has been adopted by at least one member in 75 percent of households and is estimated to have lifted 194,000 (2 percent) of households out of poverty, with a greater impact on women (Suri and Jack 2016). The relative impact of mobile money versus more traditional bank accounts for women's financial services varies among countries.⁴⁷

BOX 3: Improving Access to Credit for Women through the Use of Alternatives to Collateral

Another opportunity to increase women's access to finance is using data derived from apps, digital financial services, credit reporting and other digital sources. Information can take the form of “alternative data” such as reports from utilities, government payments, or social media. In some instances, data are collected through direct surveys and interviews with consumers to develop a psychometric profile that can help to predict the probability of repayment. In Ethiopia, the World Bank has supported a project to develop psychometric data on women entrepreneurs that has shown positive results. Both Kenya and Tanzania have improved access to credit by distributing so-called alternative data on individuals' positive and negative payment histories with utility companies and retailers. Women and other consumers who may be underrepresented in financial markets and traditional credit bureaus particularly benefit from access to new sources of data that can be leveraged for financial analysis.

However, expanded use of both financial and nonfinancial data also increases risks to data protection and privacy. While many providers seek the customer's consent to consult and use personal data, these consent clauses may provide little protection against data misuse. Instead, they may offer more legal protection to the financial services provider (by showing they have the customer's agreement to use their data) than for the consumer whose data is being analyzed. The General Data Protection Regulation (GDPR) passed in the European Union in 2016 provides the most widely used legal and regulatory framework for information sharing, including in financial markets.

While mobile money holds potential, intervention designs must be sensitive to country context and consumer risks, including online abuse and fraud. Many microentrepreneurs do not have formal accounts and therefore no pathway to savings, credit, or other financial products and services provided by financial service providers that could help their businesses expand. MSMEs generally rely on multiple forms of consumer finance to meet both personal and business operating needs. For example, over six million Kenyans have taken out at least one digital loan for meeting day-to-day household needs and for working capital for small enterprises. According to a 2019 report by Financial Sector Deepening Kenya, usage of *non-regulated* digital credit grew from 0.6 percent in 2016 to 8.3 percent in 2019.⁴⁸ Governments need to proactively review these new digital finance products as part of the larger discussion on how finance and credit can be made more attainable for the many microentrepreneurs and others who are unbanked and operate unregistered firms on the margins of a developing country's economy.

44. Mobile money is defined as a fast, safe, secure, convenient way to receive, store, spend, and save money using a mobile phone.

45. E-Wallet is defined as an electronic card used for transactions made online through a computer or smart phone.

46. M stands for “mobile”; pesa is the Swahili word for money.

47. In Cameroon, Gabon, Kenya, Liberia, Mali, Mozambique, and Zimbabwe, the gender gap in mobile money access is significantly smaller than the gap in bank account ownership. Some large markets, such as Ethiopia and Nigeria, have yet to see important gains from mobile money because they have not fully embraced an enabling environment for digital financial services. In Bangladesh, the 22% gender gap in mobile money is higher than the 18% gender gap in bank accounts.

48. Recent survey research by FinAccess provides evidence of worsening views of financial wellness among the population in Kenya, at the same time that financial services are growing. Increased access to, and use of, short-term, high-cost digital credit may be the root cause of this unfortunate combination.



2.3. Training, Skills, and Information

Women entrepreneurs frequently start businesses with less schooling and work experience and lower levels of management skills than their male counterparts, constraining their businesses' growth and chances of success (Cirera and Qasim 2014). Approaches to addressing WSME skill gaps traditionally centered around a single intervention, such as business training workshops, but research has shown that, particularly for poor women, a more holistic approach is needed that bundles interventions, such as by combining skill enhancements with financial management training and access to credit or savings accounts (United Nations Foundation and ExxonMobil Foundation 2013).

While a stand-alone or single service may lead to positive changes in business practices, they have little impact on firm performance (Qasim, Lu, and Ford 2018). Furthermore, when starting a business, women often do not have access to information regarding profitable sectors, market size, and local supply and demand dynamics. They also are limited in accessing networks to share best practices relative to a specific industry or to gain information on market prices. Analysis (Cirera and Qasim 2014) of data collected by the Global Entrepreneurship Monitor about entrepreneurs worldwide indicates that subjective perceptions about one's own skills, the likelihood of failure, and ability to access opportunities explain a significant portion of the gender gap in entrepreneurial activity. Studies show that men have more social connections that enable them to access business opportunities, information, and contacts than do women (Simavi, Manuel, and Blackden 2010). In this way, women are disadvantaged from the start, having fewer professional connections, role models, and mentorship opportunities, which can adversely affect their businesses. Encouragingly, female Ugandan entrepreneurs who had launched businesses out of necessity and were subsequently paired with male role models were 55 to 74 percent more likely to successfully cross over into higher productivity sectors than were women entrepreneurs who did not have access to such role models (Cirera and Qasim 2014). Furthermore, female entrepreneurs in Togo who engaged in personal initiative training focused on developing soft skills increased firm profits by 30 percent compared to women who did not participate in the training. Women who received training were also more innovative, introduced a higher number of new products, accessed more credit, and made greater investments in their businesses (Campos et al. 2018).



Using Technology to Close Training, Skills, and Information Gaps

Even among the poorest 20 percent of the population in developing countries, 70 percent have access to mobile phones – more than those who have access to household sanitation improvements or electricity (Deichmann, Goyal, and Mishra 2016). More than 40 percent of the world has Internet access, with ongoing initiatives to reach the unconnected living in rural areas of developing countries. Innovations in digital technology are showing potential to help address skills and information gaps. The use of digital technology in programs to improve women's business acumen and technical skills can reach a subset of women who are unable to attend extensive in-class trainings or who face logistical challenges in accessing support programs. Online services can decrease the cost of delivering workshops, attract a larger pool of participants, and enable interventions that combine forms of enterprise support activities such as training and financial services (Bastian et al. 2018). E-learning programs permit women to complete coursework from their workplace or home and offer them the advantage of pacing themselves in fully absorbing and thoughtfully applying the knowledge presented. E-extension systems can act as online information repositories, with specific information on best practices for different sectors as well as databases of input retailers and prices.

Delivery of WSME business training and technical assistance through digital technologies can narrow knowledge gaps and yield more impact in terms of improved business practices and overall firm performance if the programs are well designed in terms of the topics covered (e.g., strategic communications, program marketing), delivery mechanisms (e.g., whether to include videos, e-learning platforms, face-to-face training), and the availability of IT staff for technical setup and troubleshooting. However, using video or other remote tools to reach women entrepreneurs may not significantly increase their participation if it is not combined with services like childcare, family outreach, and transportation for in-person activities and events (Buvinic and O'Donnell 2016).

Increasing financial capability is one especially promising area for technology-based training and skills attainment. Courses aim to improve the knowledge, attitudes, skills, and behaviors of participants so that they can better manage their resources and select and make use of financial services that best fit their needs. Successful interventions that have focused on women include the use of tablets loaded with games, videos, and other engaging content to build financial capability among rural women in Colombia (National Bureau of Economic Research 2019). Even several years after this intervention was implemented, the women continued to demonstrate improved financial behavior. Illustrative narratives, including stories and soap operas disseminated through mass media, have also been shown to be effective learning tools in strengthening financial capability. For example, a study based on financial capability messages in a South African (Berg and Zia 2017) soap opera showed improvements in knowledge of concepts relating to gambling and high-cost credit raised in the program.



2.4. Access to Markets

All SMEs located far from markets face uncertainty in sourcing inputs that can affect the volume and consistency of production as well as creating difficulties in selling what they produce. Female entrepreneurs' access to markets can be further constrained by social norms against women travelling alone or without a male relative, thereby impeding access to critical information about markets. In addition, women-owned businesses tend to be smaller, with fewer employees, and lower average sales. As a result, the volume requirements in some markets may be a barrier to their participation, particularly in large, centralized, domestic and international markets.

Moreover, information about the type of goods in demand, quality standards, branding and presentation requirements, and pricing, is not as readily accessible to women entrepreneurs who are unable to regularly interact with buyers. Established buyers and sellers can engage in collusive activity that impedes new entrants from participating in a market. For example, some Latin American women fishers receive lower prices because they sell in smaller volumes to powerful intermediaries who then set the price (United States Agency for International Development 2005). In combination, these factors can prevent women from accessing new and larger markets. To help address these issues, under its Public Procurement Strategic Plan (2002-2004), the Chilean government created an e-Procurement platform, ChileCompra (“Chile Buys”), that enables private sector businesses to bid electronically to provide goods and services to the government (Chile, Ministry of Finance 2016). ChileCompra increases the transparency of public sector demand-side data and automates and streamlines the Chilean government’s sourcing process, resulting in easier, equal access for all SMEs. It also facilitates WSMEs’ ability to participate directly in the public sector procurement process without preexisting relationships with government officials and with the added convenience and efficiency of doing so through a digital platform. The result has been a more competitive bidding process for government contracts.

Another bright spot in relation to WSMEs’ access to markets has been global supply chains. Goods whose component parts were once produced and assembled in one location may now be manufactured in factories on different continents. In some industries, such as textiles and apparel, this has increased the demand for female workers (World Bank Group and World Trade Organization 2020). In addition, SMEs, including women-owned firms, are

increasingly exposed to foreign markets through their integration into larger firms’ supply chains (World Bank Group and World Trade Organization 2020). However, women-owned businesses may lack the financial resources that allow their male counterparts to successfully weather supply chain realignments, such as when larger companies decide to shift aspects of their production closer to larger consumer markets or to automate labor-saving tasks within supply chains (World Bank Group and World Trade Organization 2020).



Using Technology to Access Markets

ICT permits more small-scale entrepreneurs to participate in markets and provides innovations in logistics chains that can lead to closer links between buyers and sellers. Mobile phones in rural areas provide entrepreneurs, including women, access to local markets and enable them to carry out financial transactions, including arrangements of sale and delivery of goods and services. Developing country governments, such as Nigeria, partner with mobile operators in e-Wallet initiatives to use electronic vouchers delivered by phone to coordinate distribution of inputs, including improved seeds and fertilizers, to remote areas (Suri and Jack 2016). Women entrepreneurs are able to use mobile phones to connect directly to a virtual market platform that is a transparent, open, and trustworthy space in which to gauge market demand, negotiate fair sales prices, and arrange delivery with agents and traders, potentially eliminating intermediaries and increasing profit margins. Conversations via phone and SMS are a convenient and efficient means for female entrepreneurs to communicate with buyers and sellers if physical meetings are culturally discouraged or laws mandate that workers be segregated by sex. Fully 81 percent of women in India use ICT for communication and networking purposes, including female business owners who use ICT to create and maintain marketing channels, collect customer information, and improve efficiencies in their business processes (United Nations Economic and Social Commission for Asia and the Pacific 2013). Data analytics can also be used to help identify and reduce collusion between suppliers.

Novel technological advances have been made recently in the field of blockchain digital ledgers that eliminate the need for transaction validation by third-party entities and lower the costs related to working capital and cost of goods sold for SMEs. Blockchain is a decentralized, distributed, and secure ledger that records information about commercial transactions (World Bank Group 2020a (forthcoming)). Blockchains are protected by cryptographic technologies that render them virtually invulnerable to corruption or hacks (World Bank Group 2020a (forthcoming)). The net result of using blockchain is that suppliers have lower working capital costs and buyers have a lower cost of goods sold. All of the above-mentioned digital technology advances can be used to increase inclusion and equity among female and male entrepreneurs conducting business in the same sector.

Goods travel increasingly long distances to reach the end-user, which has created the need for efficiency gains in transport and logistics. Mobile and digital communication, such as text messages between entrepreneurs and product buyers, can confirm pick-ups and monitor the movement of goods, including real-time updates about the quantity and condition of products, as well as estimated arrival times. These technical advances in logistics help eliminate product waste in developing countries where, for example, food loss reduces income by at least 15 percent for 470 million smallholder farmers and downstream value-chain actors (Food and Agriculture Organization 2013).

SMEs' increased integration into the international movement of goods and global value chains (GVCs) has become more ubiquitous. Virtual marketplaces (VMPs) or "e-commerce" platforms are increasingly accessible to SMEs in developing countries through the expanded use of improved digital technologies and make significant contributions to this phenomenon. E-commerce ventures present many advantages for WSMEs: access to a larger, "virtual" customer base; freedom from geographic limitations; opportunities to engage in commercial activity around the clock; and lower business operating costs due to the elimination of the need for a brick-and-mortar storefront. In addition, VMPs have the potential to lower trade barriers for women business owners by bringing female producers and traders closer to markets and making it easier for female entrepreneurs to borrow (World Bank Group and World Trade Organization 2020).



BOX 4: Limitations of Technology

New technologies are helping women entrepreneurs increase their efficiency and productivity as well as foster innovation. However, technology has its limitations.^a Women typically lag men in using technology-enabled devices, and usage across countries and regions is uneven. For example, while Mexico has no gender gap in cellular phone ownership, the gap is 24 percent in Mozambique and 37 percent in Pakistan. In China, the mobile Internet gender gap is 1 percent, whereas in Guatemala it is 20 percent and in Bangladesh it is 58 percent.^b Overall, across low- and middle-income countries,^c 15 percent of adults do not have a cell phone and 45 percent do not use mobile Internet.^d So, even when digital solutions can help address the economic gender gap, they must be tailored and adjusted to country realities. These may include infrastructure-related barriers and rural-urban differences.

Technology also has disadvantages that can make implementation expensive or risky. Barriers remain to mobile phone ownership and use by women, including the high cost of mobile equipment; lower technical literacy and confidence; safety and security concerns related to user location, communication logs, and breaches of personal data; and perceived lack of relevance.^e Working with technology can require costly investments and high technical proficiency. Women entrepreneurs may not have access to the training or capital required to invest in hiring experts or buying equipment. Technology use also increases criminal opportunities; in Nigeria, the National Information Technology Development Agency estimated that customers lost \$450 million to digital fraud in 2015.^f Because technology is transforming the way people communicate and conduct business at a rate faster than the relevant legal and regulatory frameworks can evolve, concerns about privacy, security, and individual rights continue to emerge. Furthermore, the technology industry's inherent gender bias systemically disadvantages women, including their underrepresentation in the industry itself.^g This bias affects how products are designed, developed, marketed, and distributed, ultimately impacting women's ownership and use of technologies.

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Connected Women: The Mobile Gender Gap Report, GSMA, 2019.
"Fighting Cybercrime in Africa with Data Analytics", Forbes, 2016.
"We have to fight for a fairer tech industry for women", World Economic Forum, 2019.

