Skills as a Barrier to Women’s Start Ups: A Model with Evidence from Eswatini

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Abstract

The shortages of entrepreneurial skills, both perceived and actual, have lowered the rate of opportunity-driven women’s entrepreneurship. This paper contributes to the literature on entrepreneurship, gender and development with a theoretical and empirical analysis linking gender differences in entrepreneurial outcomes to skills and business training. The role of skills, including self-confidence, and training for the entrepreneurial performance is tested on a survey of urban entrepreneurs in Swaziland. The results help explain why narrow business training programs for female entrepreneurs have often limited success in improving performance of women-run firms. Training programs for women entrepreneurs encompassing advanced business and technical (e.g. hard) skills as well as networking and confidence building (e.g. soft skills) could be more effective.

Keywords: women’s entrepreneurship, firm performance, hard and soft skills, model, micro data

JEL classification: L53, O12, J4,

1 Introduction

Policymakers in developing countries have been increasingly turning to inclusive entrepreneurship, with people of all backgrounds having opportunities to

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*In April 2018, Swaziland changed its name to Eswatini. While in most places the paper reflects this change, several documents and reports issued prior to this change still make reference to ‘Swaziland’

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become successful entrepreneurs, as a potential source of employment, innovation, and societal well-being (OECD, 2017b; World Bank, 2012; GEM, 2017). Concomitant with this recognition has been a rise in studies on women’s entrepreneurship in developing countries including in Africa (Hallward-Driemier, 2013; De Vita et al., 2014; Velilla, 2017). Various factors explain this surge which started in mid-2000s. The main ones include the view of entrepreneurship in developing countries as a potential driver of structural transformation (Brixiová, 2010; Gries and Naudé, 2010).

Research on gender differences in the entrepreneurial activity and performance in developing countries has also started to emerge but the evidence remains mixed (Minniti, 2010; GEM, 2017). Overall, the bulk of the empirical evidence points to a persistent gender gap in entrepreneurial performance in Sub-Saharan Africa, with female entrepreneurship more concentrated in the low-value added and low-productivity activities in the informal sector and less in higher value-adding activities such as manufacturing (Hallward-Driemier, 2013; Campos et al., 2014). Examining Latin America, Sub-Saharan Africa and Eastern Europe and Asia, Sabarwal and Terrell (2009) found that women entrepreneurs had smaller scales of operation, but gender performance gaps diminished when individual and environmental characteristics were taken into account.

This paper examines gender gaps in entrepreneurial performance through a model that links productivity with skills and training. The model is tested on survey of urban entrepreneurs in eSwatini, a small middle-income country in southern Africa with one of the highest female unemployment rates globally. Our theoretical framework reflects the stylized facts that women in less developed countries are often starting their businesses with less education, work experience and participation in professional networks, as evidenced in, for example, Hallward-Driemier (2013). Moreover, women tend to be less confident than men in their entrepreneurial abilities, i.e. their capacity to open and run productive businesses (Brixiová and Kangoye, 2016; Brush et al., 2017; GEM, 2017). Besides narrow business skills (accounting, marketing), women often have less background than men in technical skills such as ICT that would facilitate their entry into higher value-added sectors or help them raise productivity in existing firms.

Our empirical results from a survey of entrepreneurs in Eswatini suggest that a perceived shortage of skills is associated with a weaker performance of women-run entrepreneurial firms. Specifically, we found that firms run by women who perceived skill shortages to be a key barrier to opening or running a firm posted weaker performance than firms run by women who did not perceive skills to be a barrier. However, business training has a positive and statistically significant impact on performance of men but not women entrepreneurs, suggesting that narrow business training programs may have limited success in closing the...
gender gaps in entrepreneurial skill and performance. This is consistent with recent research on productive potential of soft skills and recommending balanced development of hard and soft skills (Ruback, 2015; Balcar, 2016). The limited effectiveness of training for women entrepreneurs in Eswatini also contrasts with evidence from other African countries, where broader training programs that included life-skills boosted women’s earning potential (Bandiera et al., 2017). We conclude that entrepreneurial training programs in Eswatini and elsewhere could be more effective if they were better targeted to women’s needs and in particular encompass soft skills such as confidence building.

The paper is organized as follows. After this Introduction, Section II reviews the literature, while Section III highlights several stylized facts on on human capital, skills and entrepreneurship as well as gender gaps in entrepreneurial outcomes and skills in emerging markets and developing countries. Section IV presents a model that links entrepreneurship to skills and training. Section V discusses empirical results from a survey of entrepreneurs in Eswatini. Section VI concludes.

2 Skills and gender in firm performance: where does the literature stand?

The empirical literature on entrepreneurship has provided ample evidence about the existence of a significant, robust and causal relationship between entrepreneurs’ skills and the performance of their businesses. The theoretical explanation of this finding argues that the more skilled and experienced entrepreneurs are in identifying and seizing business opportunities and in securing capital, the more able they will also be to run successful and sustainable businesses (Bates, 1990; Honig, 1998; Kangasharju and Pekkala 2002; Pena 2002; Ucbasaran et al, 2008).

Within this stream of the literature, several studies have underscored entrepreneurs’ experience and record of specific trainings as important determinants of firm performance. For example, in an empirical study focusing on US firms, Bosma et al. (2004) showed that experience in the specific industry has a positive causal impact on firm performance. These results are consistent with those of Brush and Chaganti (1998) who found that human capital and industry specific experiences significantly impact the growth of firm’s revenues and employment. Using a sample of 8,808 start-ups during 1975-2000, Gompers et al. (2006) showed that previously successful entrepreneurs are more likely to succeed than first timers and those who have previously failed, suggesting that entrepreneurial skills built through experience matter for firms’ growth. Similarly, Eesley and Roberts (2006) and Chatterji (2005) used micro survey data to show that knowledge acquired through prior entrepreneurial experience and prior experience in the same industry positively affect the likelihood for firms to be successful (measured by revenues).

Several papers have also investigated the gender differences in the skills-
performance nexus in both developed countries. The majority of the studies have highlighted the lower human capital among women entrepreneurs’ (especially in terms of relevant experience) relative to those of men as a factor behind differences in entrepreneurial performance (Watkins & Watkins, 1983; Hisrich & Brush, 1984; Kalleberg & Leicht, 1991; Boden & Nucci, 2000). Analyzing confidential microdata from the US Census Bureau, Fairlie and Robb (2008) found that women-owned firms are not as successful as men-owned firms because women owners have lower business human capital acquired through prior work experience than men. Welter and Smallbone (2003) support the hypothesis that due to human capital gaps, women-owned micro and small enterprises in transition economies are more likely to underperform in comparison with men-owned ones.

The relationship between entrepreneurship and development is complex, since so far there is no unified scientific approach towards the role of entrepreneurship in economic development (Hessels and Naudé, 2018). Turning to empirical research on developing countries, Roy, Tripathy and Tripathy (2017) have posited that inadequate access to training helps explain weaker performance of women entrepreneurs in India, based on a sample of 150 firms. Even though work on Africa has been limited relative to other developing regions, studies on skills, gender and entrepreneurship have started to emerge in recent years. For example, Kithae et al (2012) showed that managerial experience matters for the performance of African and women-owned businesses alongside infrastructure as well as access to business information and financial services. Similarly, Onyango (2012) investigated the determinants of the performance of micro enterprises in the agricultural sector in Kenya and found that on top of business location, education and business training importantly and positively affect the performance of women entrepreneurs. Similar findings are contained in Chinomona and Maziriri (2015) who based their study on a sample of small businesses in the urban areas of the Gauteng province in South Africa.

It is also important to note that some empirical studies did not find differences with respect to the role of gender and skills in explaining firms’ performance. For example, using a sample of 540 successful entrepreneurs in tech firms, Cohoon et al. (2010) found some small gender differences in business growth, successful men and women entrepreneurs do not fundamentally differ in their personal characteristics (especially education). This suggests that successful entrepreneurs share some key characteristics and initial conditions, regardless of gender.

Conclusions of the empirical literature on the impact of entrepreneurial performance are mixed. Analyzing a survey of 100 men and women entrepreneurs in Tunisia, Drine and Grach (2010) pointed out that the mainstream approaches of supporting women entrepreneurs (networking and peer-learning) were ineffective as they were not tailored to women’s specific needs. Brixiová and Kangoye (2016a) examined urban entrepreneurs in Eswatini and found that while business training has had positive impact on performance of men (in terms of sales), it has not been associated with higher sale levels among women-entrepreneurs. The underscores that this finding should not be interpreted as a call for abol-
ishing training programs for women entrepreneurs; instead their design and targeting should be revisited. Similarly, Giné and Mansuri (2014) found that in rural Pakistan business training improved performance of men but not of women entrepreneurs. In contrast, de Mel et al. (2015) showed positive impact of business training for women start-ups in Sri Lanka.

In sum, in recent years, research on entrepreneurship and gender has rapidly expanded rapidly and started to explore several new directions. While the past studies have covered developed countries, with greater availability of data (by, for example, the Global Entrepreneurship Monitor or the World Bank) developing economies have gradually gained more attention. Nevertheless, research on developed countries predominates; only recently has women’s entrepreneurship started to be systematically covered in international journals (De Vita et al., 2014). Within gender, entrepreneurship and development nexus, the traditional topics (access to finance, property rights) and the more developed regions prevail, leaving topics such as the role of skills, especially the soft skills, and Africa understudied. Moreover, as Yadav and Unni (2016) pointed out, the field of gender and entrepreneurship is still a long way from establishing a strong theoretical foundation.

This paper contributes to the literature on gender, entrepreneurship and development with examining the role of skills, including soft skills, for performance of women entrepreneurs in Africa. More specifically, it uses unique dataset from Eswatini, a small lower middle-income country in Southern Africa, which has one of the highest rates of female unemployment globally combined with a relatively high self-employment among women. The paper derives testable hypotheses from a theoretical model of costly start-ups in an economy where women have lower relevant skills and higher opportunity costs of establishing a firm than their men counterparts.

3 Stylized facts on human capital, skills and women’s entrepreneurship

This section presents key stylized facts on human capital, skills, and new firm entry, with a focus on emerging market and developing countries. For measurement of the human capital we utilize the recently released (October 2018) World Bank’s human capital index.\(^2\) It is important to note that among countries where values of the human capital index (HCI) were further decomposed by gender, most Sub-Saharan countries recorded lower HCI values for women than men.

\(^{2}\)The World Bank defines human capital as the sum of a population’s health, skills, knowledge, experience and habits. More broadly, human capital, which is a combination of the level of education and health in a population, is an important determinant of economic growth. The World Bank’s index measures the health as well as quantity and quality of education that a child born today can expect to achieve by the age of 18. As these factors change only very slowly over time, the 2018 index is a good approximation of the state for the past 5 years.
emerging market countries. These include traditional factors such as access to credit, the regulatory framework and property rights and more recently studied ones such as human capital (Figure 1) and the quality and extent of entrepreneurial networks. The Global Entrepreneurship Monitor (GEM) divides factors that create the enabling framework conditions for entrepreneurship according to countries’ level of development. The GEM emphasizes the role of the infrastructure in low income countries and the framework for innovation in advanced economies as key.

The GEM operationalizes the concept of entrepreneurship as ‘... any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team, or an established business... ’ (GEM, 2016).

The GEM thus views entrepreneurship as a process in which individuals become increasingly involved in entrepreneurial activity (GEM, 2016). For the purposes of this paper, we combine the concepts of self-employment and creation of new businesses (that is enterprises that are less than 42 months old), but do not consider corporate entrepreneurship. Regarding gender differences in self-employment rates, the ratios of self-employment rates of women relative to those of men vary markedly across countries. The varied rates reflect an array of factors, including differences in levels of country development and attitudes towards women’s participation in the labor market.

More specifically, women are more likely than men to be self-employed in low income countries and less likely in upper-middle income countries (Figure 2). Self-employed women are more likely than men to operate in less productive sectors such as trade. They are also more likely than men to run solo firms, without employees (OECD, 2018). These observations are consistent with the Global Entrepreneurship Monitor (2017) report on women’s entrepreneurship, which documents that women are, on average, more driven by the necessity rather than opportunity reasons when opening firms, especially in low and lower-middle income countries.

Data in the OECD (2017a and 2017b) show that fewer women than men entrepreneurs have tertiary education or managerial experience. Given the distribution of university graduates by area of specialization, self-employed women are less likely to have technical skills (engineering, manufacturing or construction). The skills shortages contribute to women’s lower presence in technology-based manufacturing than in the services, especially retail.

Besides cognitive skills, studies have pointed to shortages of soft skills, including self-confidence, among female entrepreneurs. In particular, individuals who view themselves as having skills and knowledge to start a business are more likely to become entrepreneurs and be more successful. The positive link between self-confidence, especially one’s belief in having entrepreneurial skills and

3The literature on the motivational value of overconfidence posits that individuals with higher beliefs in their ability, even the overconfident ones, will put higher effort into activities where effort and ability are complements (Chen and Schildberg-Hörisch, 2018). The role of other soft skills in enterprise performance, such as empathy or motivation, has been documented (Khalid and Sekiguchi, 2017; Rey-Marti et al., 2015).
knowledge, and entrepreneurial activity is shown also in Figure 3. In most developing and emerging market countries women entrepreneurs have more negative perceptions of their abilities than men (Brixiová and Kangoye, 2016a; Brush et al., 2017; Figure 4).

Skill shortages are not easy to address, especially among women, as female entrepreneurs often have more limited access to entrepreneurial education and training than men (Figure 5). For example, GEM (2010) report on entrepreneurial training and education posits that on average less than half (44%) of individuals who received training in starting a business were women. Women’s lower access to training amplifies challenges stemming from a limited access to start-up capital.

Even when female entrepreneurs gain access to training, its effectiveness is often lowered by focus on ‘hard skills’, such as writing a business plan or a loan application, accounting, or marketing, with ‘soft skills’ such as communication, networking, and confidence building mostly missing (Ruback, 2015). Only in recent years researchers and NGOs have started paying increasing attention to soft skills as a key part of entrepreneurship (GEM, 2014). Examples of training focused on soft skills and addressing social-cultural barriers to women’s entrepreneurship have been emerging in countries ranging from Mexico to Zimbabwe. So far, however, these efforts have been sparse, carried out on small scale and not systematically (UN, 2016; McEachern, 2018).

To what extent does the lack of entrepreneurial skills constrain the start-up creation by women entrepreneurs in developing countries? How effective our training programs in improving female entrepreneurial performance? The next sections provide a theoretical model that links the incentives for entrepreneurs to develop new business and their skills, while putting special emphasis on a skill gap between women and men entrepreneurs. The model is tested on data from Eswatini, a country which continues to have one of the highest female unemployment rates in Africa and globally and exhibits persistent gender gaps in labor market outcomes.

4 The theoretical framework

Reflecting the stylized facts, this section presents a model with entrepreneurial search frictions and skill shortages. It is a model of structural transformation, with all entrepreneurs facing some skill shortages while searching for more productive business opportunities. At the same time, the model reflects the fact that relative to their men counterparts, women in developing countries, including in Africa, tend to start their businesses with lower level of education, experience, and start-up capital as well as with less diverse networks. Reflecting this observation, in what follows we assume that women are less efficient in their search for business opportunities, i.e. are low-skilled.

The economy consists of individuals that live for one period and are endowed with one unit of time and $b$ units of a single consumption good. The population size is normalized to one. All individuals have the same risk neutral preferences
expressed as $U = c$, where $c$ denotes consumption. They are either unemployed and earning income $w$ in the informal subsistence sector or searching for a business opportunity with productivity $z > w > 0$ and if successful run a firm in the formal sector. Those individuals who do not find a business opportunity also work in the informal sector earning, $w$, but incur search costs. A portion $p_h$ of individuals (men) have high entrepreneurial skills (due to more relevant experience, higher education, stronger networks) and the remaining portion, $p_l$ (women) have low entrepreneurial skills, and hence $p_h + p_l = 1$.

New firms are created at cost to an individual $i$ amounting to $d(i) = x_i^2/2\gamma_i$ units of consumption good, where $x_i$ denotes search effort by an individual of type $i$, $i = h, l$. The search effort levels $x_i$ then determine the probability that an individual of type $i$ finds a business opportunity. Similarly, $\gamma_i > 0$ denotes the efficiency of search by an individual of type $i$, $i = h, l$, where highly skilled individuals are more efficient $\gamma_h > \gamma_l > 0$. The optimization problem of an individual $i$ becomes:

$$\max\left[(-\sigma_i + b + \max_x(-x_i^2/\gamma_i + x_iz + (1-x_i)w); b + w]\right] \quad (1)$$

where $\sigma_l > \sigma_h > 0$ is the opportunity cost (disutility) of search. Individuals with fewer entrepreneurial skills incur greater search disutility. This parameter can be also interpreted as start-up cost of running a business.

At the beginning of the period, each individual chooses between working in the subsistence sector and searching for a productive business opportunity. The return on search equals the initial endowment combined with the sales from the business net of cost of finding a business opportunity and net of disutility of search or opportunity cost related to home production. Equation (1) shows that the individual $i$ searches for opportunities in the formal sector when the total net payoff from search exceeds the income to be made in the subsistence informal sector combined with the opportunity costs. Denoting $\zeta_i \in [0, 1]$ as the probability that the individual $i = h, l$ searches for a business opportunity, the individual’s decision to search can be described as:

$$\zeta_i = 1 \text{ if } x_i^2/2\gamma_i \geq \sigma_i \text{ and } \zeta_i = 0 \text{ otherwise} \quad (2)$$

Each individual $i$ when making a decision whether to search for a business opportunity or to remain in the subsistence sector takes into account the return on their optimal search effort, $x_i$, with the marginal cost of search equal to the marginal payoff, $z - w$:

$$x_i = x_i(z - w) \quad i = h, l; \quad (3)$$

In (3), $z$ is the value (productivity) of a business opportunity. Denoting $m_i$ to be the number of entrepreneurs running a firm with productivity $z_i, i = h, l$, their number becomes:

$$m_i = p_i x_i = p_i \gamma_i(z - w), i = h, l \quad (4)$$
Letting $m_{ui}$ as the total number of unemployed or self-employed in the informal sector, the labor market clearing conditions for agents of type $i$ (highly skilled and less skilled) become:

$$p_i = m_i + m_{ui}, \text{where } i = h, l \text{ and } p_h + p_i = 1$$  (5)

The equation (5) states that population of people with a skill level $i$ comprises of entrepreneurs, $m_i$, running a firm in the formal sector and people who remain unemployed or self-employed in the informal subsistence sector. Defining to be the total number of private firms and the total number of the unemployed or self-employed in the underground economy, the aggregate entrepreneurial market clearing condition becomes:

$$1 = m + m_u$$  (6)

The equilibrium of this economy is the allocation of individuals into self-employment and entrepreneurship such that: (i) each individual $i$ chooses whether to be self-employed in the subsistence sector or search for business opportunities in the formal sector, $\zeta_i$; (ii) each searching entrepreneur chooses how much effort to put into search for business opportunities, $x_i$; and (ii) labor and product markets clear.

Equation (4) shows that the productive private sector is larger with higher net productivity of the business and higher differential between payoffs in the formal and informal sector. This is because when the value of a business opportunity is low, potential entrepreneurs will lower search intensity or may stop searching for business opportunities altogether, $\zeta_i = 0$. Specifically, the net value of a business opportunity at which a potential entrepreneur $i = h, l$ chooses to search for business opportunities, $\hat{L}_i = (z - w)^2 \gamma_i / 2 - \sigma_i \geq 0$ is more challenging to achieve for low-skilled than high-skilled (skilled) entrepreneurs, i.e $\hat{L}_h > \hat{L}_l > 0$.

Hence due to their lower search efficiency and higher opportunity cost associated with search, individuals with lower entrepreneurial skills will either opt out of searching for business opportunities or put less effort into their search than their more skilled counterparts. Subsequently, a smaller (larger) share of less skilled individuals become entrepreneurs (self-employed) in the formal (subsistence) sector than their more skilled counterparts:

$$m_h / p_h = \gamma_h (z - w) > \gamma_l (z - w) = m_l / p_l$$  (7)

Solving the social planner’s problem (8), which maximizes output in the formal sector net of search costs, shows that the search effort exerted by potential entrepreneurs and the number of firms created fall below the optimal levels. Specifically:

$$\text{Max}(m_h z + m_l z - p_h x_h^2 / 2 \gamma_h - p_l x_l^2 / 2 \gamma_l)$$  (8)

Specifically, solving (8) yields the socially optimal level of search, $\bar{x}_l = \gamma_l z$, which exceeds the profit-maximizing levels derived in (3).
These results have several policy implications. First, to raise the suboptimal search efforts exhorted by all entrepreneurs to their socially-optimal levels (derived in (8)), the government would need to offset disincentives to search for business opportunities, which stem from payoff to working in the informal sector. This can be done, for example, by subsidizing start-up activities or by bringing the activities from the informal into the formal sector and regulating them.

While support to start-ups would raise rates of entrepreneurship among individuals of all skill-levels, the sectoral and income inequalities between individuals with different skills would prevail. To address these disparities, the policies would need to support training while reducing skill gaps, by putting greater emphasis on less-skilled entrepreneurs. This would raise the ability of all but especially less-skilled entrepreneurs to recognize business opportunities and turn them into productive firms. Finally, to be effective, the training programs would need to be accompanied by measures aimed at reducing the opportunity costs of household work ($\sigma_i$ in our model). The example is social assistance or services provided to individuals who have care-taking responsibilities, which prevent some of them to pursue opportunities and run firms.

5 Empirical evidence from Eswatini

The sections below present empirical results on constraints to women’s entrepreneurship in the urban Eswatini to support the theoretical model in the previous section. Eswatini is a small lower middle-income country in southern Africa, which at about 26% of the labor force in 2016 posts one of the highest female unemployment rates in Sub-Saharan Africa and globally.\footnote{The 2016 estimate is based on the 2016 Eswatini Labor Force Survey, produced by the Ministry of Labor and Social Security of Eswatini. Earlier labor market trends in Eswatini are detailed in Brixiová and Kangoye (2016b).} Unemployment has disproportionately impacted women with less than tertiary education, pointing to self-employment and skills as important factors in addressing the female employment challenge.

Based on the model, we expect individuals with higher level of entrepreneurial skills to be more likely to operate firms with higher productivity than their less-skilled counterparts. Since this paper studies gender differences in entrepreneurial performance, the empirical part examines whether higher levels of education, skills (perceived and/or actual) are associated with weaker entrepreneurial performance, utilizing a survey of urban entrepreneurs in Eswatini.

The analysis focuses on the role of skills in gender differences in entrepreneurial performance, encompassing a broader concept that takes into account differences in education and work experiences as well as gaps in softs skills such as confidence (or perceptions of own capability), links with supportive networks and motivation. With their limited work and managerial experience and weaker links to professional networks, we expect women entrepreneurs to be less skilled and thus run on average less productive firms. The lack of soft skills (for ex-
ample, self-confidence) on the part of the business owner/manager could also reduce firm productivity.

(a) Who are the female urban entrepreneurs in Eswatini?

In November 2012, the UN Eswatini surveyed 640 small and medium-sized enterprises (SMEs) in urban Eswatini (in Hhoho and Manzini regions) through face-to-face interviews. The sampling frame were all SMEs listed in the directory of the SME Unit of the Ministry of Commerce, Industry and Trade. Using this frame, all firms listed in the major six cities that provided their full addresses were selected for interviews. The survey sought information about the entrepreneurs’ personal characteristics and background, goals of their firms and the key constraints. It also collected data on the main characteristics of the enterprises (years of operations, sector, employment and sales).

The empirical analysis defines entrepreneurs as in Parker (2009) where entrepreneur is ‘...an individual engaged in setting up or running a venture which is less than 42 months old’. Among 640 firms surveyed, this concept of entrepreneurship encompassed 290 entrepreneurs; 148 were men and 142 were women. The survey allows studying gaps between men and women entrepreneurs in terms of performance, personal characteristics, skills, social networks, and values.

First, Table 1 presents key descriptive statistics from this survey. It reveals that on average, only slightly more than one third of female entrepreneurs have higher education, in contrast to almost half of the men entrepreneurs. This indicator points out to possible skill shortages among women entrepreneurs in terms of both general and/or specialized skills that higher education typically provides. Furthermore, analysis points to (significant) differences in sales, turnover and employment between men and women entrepreneurs.

While more women than men entrepreneurs received business training, the difference is not statistically significant. Similar observation applies to advanced business training, which was received by more men than women entrepreneurs, but again at 6% and 3%, respectively, the shares were low in both groups. Similarly, even though more women than men received government support towards entrepreneurship, the incidence of such support has been low for both groups of entrepreneurs. Finally, neither women nor men perceived gender discrimination to be an obstacle to entrepreneurship, but over half of men and two out of five women entrepreneurs perceived social and cultural attitudes towards entrepreneurship to be a key impediment (Table 1).

(b) Gender differences in entrepreneurial sales, training and skill shortages’ perception

Second, the parts below present the kernel density estimates of the probability function of (log of) monthly sales for men and women entrepreneurs. They

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5Cities in Manzini and Hhoho regions were selected as areas where most entrepreneurial activities are concentrated and have potential to create positive spillovers to the rest of the country. Given that many people from rural Eswatini commute to cities on daily basis, the line between rural and urban entrepreneurs is blurred.
also examine whether perception of skill shortages impact women’s entrepreneurial performance, measured in monthly sales (Table 2).

Specifically, Figure 6a shows that both the sales distributions for men and women entrepreneurs have nearly uni-modal distributions, with men outperforming women especially in the higher sales ranges. Stronger performance of men relative to women entrepreneurs prevails also within the group that received business training (Figure 6b). Moreover, within women entrepreneurs, those who view the lack of skills as a key barrier to starting or running a business record a weaker sales performance than women who do not perceive the lack of skills as an obstacle (Figure 6c). Adult women outperformed young women through most of the sales range (Figure 6d).

(c) How are entrepreneurs’ skills and gender driving firm performance?

The model in the previous section showed that individuals with higher entrepreneurial skills are more likely to operate more productive firms than their less-skilled counterparts. This subsection, which links firm performance with own skill perceptions, training and gender, presents results from a multivariate probit regression analysis. Specifically, it tests whether entrepreneurs’ personal characteristics related to skills and training remain significant for firm performance (e.g., whether business is currently stable/growing or declining). Our identification strategy is as follows:

\[
Firm\ performance_i = \gamma + \rho(training)_i + \theta(skill\ perception)_i + \beta X_i + \epsilon_i \tag{9}
\]

where \(i\) stands for the individual entrepreneurs, \textit{firm performance} is a dummy variable taking the value of ‘1’ if the firm performance is stable or growing or 0 when it is declining. \textit{Training} is our first proxy of entrepreneurs’ skills and is a dummy variable indicating whether they have received a business training (value of 1) or not (value of 0). Skill perception is our second proxy of skills and is a dummy variable indicating whether the entrepreneur perceives lack of skills as a barrier (value of 1) or not (value of 0). \(X\) is a set of covariates including entrepreneurs characteristics (including the age of the entrepreneur, a dummy variable indicating whether the entrepreneur has at least a primary education level or not, a dummy variable indicating whether the entrepreneur is pursuing business activities based primarily on a monetary motive), business characteristics (including the age of the business, the number of employees, a dummy variable taking the value of 1 of the entrepreneur has an up-to-date license) and two access to finance-related variables including a dummy variable indicating whether or not the entrepreneur has applied for a formal source of credit (formal financial institutions) and a dummy variable indicating whether or not the entrepreneur has relied on an informal source of start-up capital (personal savings, family, friends and social networks). \(\gamma\) is the intercept and \(\epsilon\) the idiosyncratic error term.

Business training has a varied impact on performance of men and women entrepreneurs (Table 2). We find a positive and statistically significant effect
of training on entrepreneurial performance of men, but not on women entrepreneurs. Specifically, in columns 3 and 4 specifications of the model, men entrepreneurs with business training are significantly more likely to have a stable or growing business than those without training. Conversely, training has no statistically significant impact on performance of women entrepreneurs (columns 1 and 2). These findings, which are consistent with work of El-Hamidi (2011) for Egypt and Mel, McKenzie and Woodruff (2012) for Sri Lanka, suggest that business training programs in Eswatini are not well-targeted to women’s needs.

We also found that self-confidence matters for women entrepreneurs: firms run by women who did perceive skills to be a major barrier to their operations posted lower performance than those run by women who did not perceive skills to be a key obstacle. This is illustrated by the negative and significant coefficient of the skill perception variable for both regression model specifications for women entrepreneurs (columns 1 and 2). This finding is in line with the work of Bohlmann, Rauch and Zacher (2017), which suggests that lower perceptions of skills for entrepreneurship could ultimately lead to lower entrepreneurial activity.

Results in Table 2 also confirm that access to informal credit during the start-up stage is linked with a stronger performance among women entrepreneurs, reflecting their lower access to the formal sector finance and relatively strong informal networks. This echoes the work of Asiedu et al. (2013), who found that women-owned firms in Sub-Saharan Africa are more likely to be financially constrained than men-owned firms. Having an up-to-date license and a larger firm has a positive effect on predictive probability of entrepreneurial performance among women.

To test the robustness of key findings and enhance our insights, the link between entrepreneurs’ skills (still proxied mostly by business training and skill shortages perceptions) and performance (now proxied by the level of sales) is re-examined with quantile regressions (Table 3). Commitment to the enterprise (measured by hours worked per week) was introduced as an additional control. In contrast to the probit model, quantile regressions allow testing for differences in impacts across the distribution of sales performance.

Consistently with the probit regressions analysis, results of the quantile regressions show that business training only has a positive and statistically significant impact on the performance of only men entrepreneurs (Table 3). The positive effect on sales of firms run by men is higher for the lower-end of the sales distribution (25th percentile). In line with the business training literature, this could suggest that business training, when well-matched with entrepreneurs’ needs, tends to be most useful for firms with weak performances (Henry et al., 2003).

In this specification we have not found evidence that perception of skill shortages negatively affects sales performance of women, only high-performing men entrepreneurs. Education, however, turns out to be an important positive determinant of firm performance, particularly at higher sales levels among both male and female entrepreneurs. Similarly, greater commitment to the business (measured by hours spent) has a positive and statistically significant association
with sales for women at low and men at medium sales ranges. In contrast, the age of an entrepreneur (some proxy for experience) negatively impacts sales for the best performing businesses in the sample for men, and for the least performing businesses in the sample for women.

Interestingly, we found that the nature of the access for financial services only matters for level of sales among men entrepreneurs. More specifically, men entrepreneurs in mid and higher ranges of sales that applied for formal credit posted lower sales. This finding is in line with research emphasizing that firm growth can be negatively affected by the cost of formal financial services (Rahaman, 2011; Beck, Demirgüç-Kunt and Maksimovic, 2005). Finally, and in line with our probit regressions findings, size positively affects performance of men entrepreneurs (least performing businesses) and women (consistently across the distribution of sales). Having an up-to-date license has also positive effect on the level of sales of both men and women entrepreneurs.6

6 Conclusions and policy recommendations

This paper contributes to reducing a gap in the literature on gender gaps in entrepreneurship in developing countries and especially in Africa. First, it presents a theoretical model that links productive entrepreneurship to skills, training and opportunity costs related to household work. The model showed that targeted training geared towards women entrepreneurs, alongside addressing their time constraints stemming from household responsibilities, can raise the overall rate of productive start-ups while reducing the gender gaps in entrepreneurial skills and outcomes. Second, the paper has demonstrated the importance of skills, especially soft skills such as self-confidence, for female entrepreneurial performance. However, while business training was associated with better firm performance among men entrepreneurs, we have now found such link for women. Training programs for women entrepreneurs with more balanced hard and soft skill components, that is encompassing advanced business and technical skills (e.g. hard skills) as well as networking and confidence building (e.g. soft skills) are more likely to be effective.

The paper also leaves several important issues related to women’s entrepreneurship to further research. First, given the very high youth unemployment in Eswatini and other middle-income countries in southern Africa, further research could highlight specific skill and other constraints facing young women entrepreneurs in the region. Second, a greater understanding of digital divide and digital skill gap in Africa could facilitate productivity increase, while tapping into innovativeness of youth. Furthermore, given the need of Eswatini and other low and lower-middle income countries in Sub-Saharan Africa to participate in global value chains with higher value-added products, future research

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6 Although not statistically significant in the previous regressions, being profit-driven tends to negatively affect sales of high performing men entrepreneurs and low performing women entrepreneurs. This can be reflective of the fact that focus on profit maximization could undermine quality and ultimately sales.
could examine key barriers to international entrepreneurship.

References


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<tr>
<th></th>
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<th>Men</th>
<th>SE and stat. sign.</th>
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<tr>
<td></td>
<td>(in % of all entrepreneurs, unless otherwise indicated)</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td></td>
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<td>Sales (monthly average, E thousand) 1/</td>
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<td>65.5</td>
<td>33.0**</td>
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<td><strong>Perceptions of success, usefulness of training</strong></td>
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<td>87.7</td>
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**Source:** Authors’ calculations based on data from the UN 2013 survey. Note: E stands for emalangeni; employment is in the number of workers. *, **, and *** denote 10%, 5% and 1% significance levels.
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<td>Lack of skills perceived as a barrier</td>
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<td>-2609</td>
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<td>Profit motive</td>
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<td></td>
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**Source:** Authors’ calculations based on the UN Eswatini survey of entrepreneurs. Note: Probit model and variables are specified in Annex. Standard errors are in parenthesis. ***p < 0.01. ** p < 0.05. * p < 0.1.
### Table 3. Entrepreneurial performance and training, skills: quantile regressions, by gender (dependent variable is log of sales)

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th></th>
<th>Men</th>
<th>Women</th>
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<tr>
<td></td>
<td>25th percentile</td>
<td>50th percentile</td>
<td>75th percentile</td>
<td>25th percentile</td>
<td>50th percentile</td>
<td>75th percentile</td>
</tr>
<tr>
<td>Received business training</td>
<td><strong>0.940</strong>*</td>
<td><strong>0.849</strong>*</td>
<td>0.525</td>
<td>-0.019</td>
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<td>-0.236</td>
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<tr>
<td></td>
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<td>-0.342</td>
<td>-0.358</td>
<td>-0.371</td>
<td>-0.388</td>
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<td>Lack of skills perceived as a barrier</td>
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<td><strong>-1.608</strong>*</td>
<td><strong>-1.080</strong>*</td>
<td>-0.005</td>
<td>-0.067</td>
<td>-0.121</td>
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<tr>
<td></td>
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<td><strong>-0.388</strong></td>
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<td><strong>-0.359</strong></td>
<td>-0.353</td>
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<td><strong>-1.295</strong>*</td>
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<td><strong>-0.009</strong></td>
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<td>0.075</td>
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<td><strong>0.599</strong>*</td>
<td><strong>0.666</strong>*</td>
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<td>Having an up-to-date business license</td>
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<td><strong>0.738</strong>*</td>
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<tr>
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<td>Applied for formal credit</td>
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</tbody>
</table>

**Source:** Authors’ calculations based on the UN Eswatini survey of entrepreneurs. Note: Probit model and variables are specified in Annex. Standard errors are in parenthesis. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.**
Figure 1. Human capital and entrepreneurship

1a. New firm entry and human capital index, 2016 – 2018

1b. Innovation and human capital index, 2016 – 2018

Source: World Bank (human capital index, new firm entry) and INSEAD (innovation).
Figure 2. Self-employment rates among men and women in developing countries, 2017 (% of total employment)

Source: Adapted from the World Bank data.

Figure 3. Perceived entrepreneurial capabilities and activity across countries, 2014 % of population

Source: Adapted from the GEM database (October 2018). Note: 2014 is the latest year available.
Figure 4. Women’s positive perceptions of their capacity to become entrepreneurs, by region
In % of female population and relative to men


Figure 5. Entrepreneurs’ access to training & start-up capital, by gender
In % of male or female entrepreneurs

Source: Adapted from OECD.
Figure 6. Kernel density estimate of weekly hours and (log of) sales for entrepreneurs

6a. Men vs. women, sales in new firms

6b. Trained men vs. trained women

6c. Women, sales in new firms, by skill barrier

6d. Young vs. adult women