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Women's Economic Empowerment in Vietnam: Performance and Constraints of Female-Led Manufacturing SMEs

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Abstract: This paper identifies whether there was a performance difference among micro, small and medium enterprises (MSMEs) led by men and by women in Vietnam during the period 2005–2013 and aims to provide explanations for the differences, if any, in various performance indicators. The paper adopts a quantitative approach using a firm-level panel dataset in the manufacturing sector in 10 provinces/cities in Vietnam in five waves from 2005 to 2013. Fixed effect models are estimated to examine the influence of firm variables and demographic, human capital characteristics of owners/managers on firms' value added, labor productivity and employment creation. We found that men led MSMEs did not outperform those led by women on average. Although the average value added was lower for female-led firms in the informal sector, the opposite was true in the formal sector where women tend to lead medium-size firms with higher value added and labor productivity. The performance disparity was more envisaged across levels of formality and less clear from a gender perspective. Moreover, while firms owned by businessmen seemed to create more jobs, firms owned by women had a higher share of female employees. No significant difference in business constraints faced by women and by men was found.

Keywords: women's empowerment; entrepreneurship; gender inequality; firm performance; SMEs; Viet Nam



Citation: Bui, MinhTam, and Trinh Q. Long. 2021. Women's Economic Empowerment in Vietnam: Performance and Constraints of Female-Led Manufacturing SMEs. *Journal of Risk and Financial Management* 14: 255. <https://doi.org/10.3390/jrfm14060255>

Academic Editor: Alexandra Horobet

Received: 9 May 2021

Accepted: 4 June 2021

Published: 7 June 2021

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1. Introduction

The linkage between entrepreneurship and economic growth has been widely discussed in economic theory on the U-shape relationship as well on the types of entrepreneurship leading to economic growth (Acs and Virgill 2010; Audretsch et al. 2006; Carree and Thurik 2010; Hoselitz 1952; Leibenstein 1968; Stam and Stel 2011; Wennekers and Thurik 1999). Allen et al. (2007) Entrepreneurship is considered to be an important mechanism for economic development, innovation and welfare effects (Allen et al. 2007). Through new businesses, job creation, more competition and higher productivity, the high measured levels of entrepreneurship will translate directly into high levels of economic growth (Acs and Audretsch 1990). As the promotion of entrepreneurship is a key to economic growth and the primary engine for creating a country's wealth, many governments of developing countries and economies in transition have renewed their focus on this vital factor of production (Maksimov et al. 2017; Smallbone and Welter 2001).

Along this development path of developing countries and transition economies, gender equality issues are frequently discussed (Naudé 2010) to ensure that both men and women are both benefited from the fruits of economic growth. Since the early 2000s, the expansion of female entrepreneurship witnessed in most parts of the world is considered one of the fastest growing entrepreneurial populations worldwide (Brush et al. 2006). A more recent report of the ILO Women's Entrepreneurship Development (WED) program in over 25 countries around the globe shows that nowadays, female entrepreneurs account for up to a third of all businesses operating in the formal economy worldwide (ILO 2011). Female-owned enterprises can play a significant role during the process of economic

development by promoting economic growth, creating job and alleviating poverty. They make significant contributions to innovation, employment and wealth creation in all economies (Brush et al. 2009).

In some transition economies women-owned, women-led enterprises have made a significant contribution to their countries' development because they tend to employ other women more frequently, or they help reduce gender discrimination in the labor market by expanding economic opportunities for other women (World Bank 2011). Women with higher income tend to invest more in their children's health and education to build up high quality human capital for future generations. It is also noted that entrepreneurship is a significant source of women's economic opportunities in both urban and rural areas, especially in agrarian and urbanizing economies where waged employment opportunities for women are scarce. Yet the majority of female entrepreneurs in developing and transition economies leads very small and micro enterprises, with little potential for growth. The ILO estimates that while 22 percent of men's productive potential is underutilized, women's is as high as 50 percent. These impediments do not only limit their ability to earn an income for themselves and their families, but also prevent them from realizing their full potential to contribute to socioeconomic development, job creation and environmental stewardship (ILO 2011).

The questions of how different the performance and productivity of men-owned and women-owned firms are and the reasons for such differences have received mixed answers. In some transitional economies in Eastern Europe and Central Asia, when comparing particular performance indicators, Sabarwal and Terrell (2008) found that female entrepreneurs had significantly smaller scale of operations (as measured by sales revenues) and were less efficient in terms of Total Factor Productivity (TFP), although this difference is very small. However, they generated the same amount of profit per unit of revenue as men. Meanwhile, Coleman (2016) reports that women and men do not differ in measures of firm survival or profitability when we control for factors such as industry, firm size, and firm age. Vietnam is classified by the World Economic Forum as a factor-driven economy among the three stages of economic development, namely factor-driven, efficiency driven and innovation-driven. Data from the Global Entrepreneur Monitoring—GEM (2016) reported Vietnam as one among 10 countries where women were as likely as men to be entrepreneurs. The total early-stage entrepreneurship activity (TEA) rate in Vietnam for women and men are both over 15 percent while the rate for established business ownership is 24 percent among women and 20 percent among men. This is in contrast to the results in many European efficiency-driven and innovation-driven countries where women exhibit the total early-stage entrepreneurship activity (TEA) rates less than half of those of men (GEM 2016). The rates in Vietnam are also higher than those in other factor-driven economies in Asia such as China, Indonesia, or even some efficiency-driven economies like Malaysia but lower than those in Thailand. As the International Finance Corporation IFC (2017) put it "SMEs are the lifeblood of the Vietnamese economy".

These contrasting facts make Vietnam an interesting case to study further. Over the last three decades, Vietnam has achieved considerable and significant success in economic development since the country embarked on the "doi moi" (renovation) process in 1986, with an average growth rate per annum of over 7 percent (General Statistics Office of Vietnam 2015). The economic transformation has also encouraged a generation of entrepreneurs to create their own opportunities in both the domestic and international markets (IFC 2017). Meanwhile, women are more likely to experience higher rates of unemployment or to have vulnerable forms of self-employment in the formal and informal sectors (World Bank 2011). At the same time, Vietnamese female entrepreneurship covers a wide range of activities and scales from income-generating projects that poor women undertake in their home to selling products on the street, from the open markets by individual producers to owning or managing a business in a fixed location with one or more employees. They played an important role in this transition economy over time. In addition, there is evidence that women who own SMEs are more likely than men who own similar firms to provide

employees with fringe benefits such as annual leave, social benefits and health insurance (John and Tarp 2011).

Despite a high participation rate of Vietnamese women in entrepreneurship as well as their developmental benefits, little is known about the performance of their business as compared to those of men, as well as the causal factors for such differences, if any. Although quite a bit of attention has been paid to the existence of gender differences in entrepreneurial behavior in Vietnam, the understanding of their performance differences is less clear quantitatively and the causes of such differences are significantly less understood. Among important performance indicators, productivity and employment creation are of utmost interest due to their contribution to economic growth, as previously discussed.

The disadvantages in business performance of female entrepreneurs in many empirical studies are driven by societal attitudes and norms which inhibit some women from considering starting a business, which, in addition to systemic barriers, mean that many women entrepreneurs stay confined to very small businesses and often operate in the informal economy. Such barriers and constraints include discriminatory property and inheritance laws, discriminatory customary laws, poor access to formal financial institutions and time constraints due to family and household responsibilities, which inhibit business opportunities for sustainable enterprises run by women. While such barriers exist in the case of Vietnam, there have been improvements in regulations in Land law and Gender Equity Law in and evidence As, for access to credits, there is little evidence in the case of Vietnam that female entrepreneurs have more difficulties compared to men in getting credit and that women are more likely than men to tap informal sources of credit (IFC 2006, 2017).

This research examines the performance of female-led micro, small and medium enterprises and compares to those of male-led enterprises in Vietnam over the period of 2005–2013 while controlling for individual human capital characteristics and firm characteristics. We found that women-led firms did not seem to underperform as compared to men-led firms in terms of the firms' value added and labor productivity. Meanwhile, both male and female entrepreneurs face the same challenges of access to resources, finance and business training. More specifically, this research aims to examine the performance of female-owned firms with a special focus on micro, small and medium enterprises (MSMEs) in the manufacturing sector across 12 provinces in Vietnam over the period of 2005–2013. We measure the performance gaps between women-led and men-led firms with similar characteristics in terms of value added and labor productivity and employment growth.

This study is different from the existing literature on women entrepreneurship Vietnam in a number of aspects. First, it will not look at the probability of entrepreneurship as the proportion of female-headed firms out of the total population and look at changes in that rate over time or compare it to the proportion among males (as summarized in the literature review in Section 2), but rather explore who owns female-owned enterprises and the characteristics of female account owners. Second, the study provides a thorough analysis on firm performance with various indicators, including but not limited to sales, profit margin, employment growth, productivity and efficiency, thereby determining performance gaps between firms owned by women versus by men. Third, disaggregate data also allows us to look into specific industry classifications that female-owned firms operate as well as the labor/capital intensity of their firms. Finally, we will not emphasize a descriptive analysis of the constraints that firms are facing but rather look at the correlation between those constraints to firms' performance through appropriate econometric methods.

Another feature that makes this research relevant to existing studies is the use of a very rich survey data on the MSMEs in Vietnam which are linked employer-employee datasets. This is a panel dataset with five waves covering 2649 MSMEs in both formal and informal sectors in 2013 in the private manufacturing sector in nine provinces of Vietnam. The research specifically attempts to answer the following questions: (1) Who are the female entrepreneurs of MSMEs and how are their characteristics different from those of male-led business? (2) How did the firm performance dynamics change over the period 2005–2013 and were there performance gaps between male- and female-led firms? (3) What

are the opportunities and constraints faced by female-owned firms and how do such factors contribute to the firms' performance?

In answering the above questions, this study may be the first attempt to link the individual characteristics of owners/managers to the MSEM's performance in Vietnam in order to shed light on the policy concern over the issues of women entrepreneurship across different manufacturing industries. With an understanding of factors and constraints that can promote or hinder the development of business among women, it serves to ensure the development in Vietnam is truly inclusive, and opportunities are shared equally among men and women.

The structure of this study is organized in five sections. Section 2 follows this introduction with some theoretical background on women's entrepreneurship and relevant literature in Vietnam. The data description and methodological approach are presented in Section 3. Section 4 reports our empirical results. Some discussions on the findings in relation to the literature in other countries and concluding remarks will be in Section 5.

2. Theoretical Background and Literature on Women's Entrepreneurship in Vietnam

2.1. Theoretical Considerations

The literature has extensively discovered a relationship between the level or stage of economic development and the share of population that engaged in entrepreneurial activities. (Acs and Virgill 2010; Audretsch et al. 2006; Carree and Thurik 2010; Hoselitz 1952; Wennekers and Thurik 1999). If the output per capita is used as a proxy for the level of development and the relationship is described in U-shape, then the entrepreneurial activities are highest in poor countries, lowest in countries which have progressed beyond the phases of development and rises again in the rich countries (Minniti 2010). It is assumed that the U-shaped relationship is applied for both male and female entrepreneurs, suggesting that there may be common factors that lead to entrepreneurship in both groups.

Although the U-shaped relationship between per capita GDP and entrepreneurship seems to hold for men and women, their relative participation across the stages of development varies (Allen and Langowitz 2013). It confirmed the existence of a gender gap in entrepreneurship at the global level and found evidence that the observed U-shaped relationship holds even when only women are considered although with prevalence rates that are significantly lower than those of men for all countries in the sample.

In addition, gender differences in entrepreneurial behavior are pervasive and systematic even within countries (Allen et al. 2007; Allen and Langowitz 2013; Minniti 2009). In general, variations in entrepreneurial activity are more pronounced when women's entrepreneurship is considered because women's employment choices are more sensitive to the local environment than those of men. For women, more than for men, the choice to start a new business is often linked to necessity or to time and location flexibility; for example, to the type of independence that can accommodate family needs and child rearing.

The capabilities approach (CA) pioneered by the Nobel Laureate Amartya Sen also can be utilized to provide a framework of entrepreneurship in human development (Alkire 2005). From a CA view, entrepreneurship is not only a production factor, or a means to an end, as is often taken to be the case by economists, but also an end in itself. The model by (Thomas and Naudé 2011) argued that entrepreneurship is both a resource and a process, so that it contributes towards expanding other human capabilities and means, such as providing the ability to work, to earn incomes, and to accumulate wealth. However, being entrepreneurial can also in itself be a valued human function and can contribute towards expanding the set of human capabilities through being both a resource and a process. This theory tends to fit with a significant number of studies which show that women's embeddedness in local communities, as well as their stronger reliance on smaller networks, produce immediate deep effects (Minniti 2010). It therefore meets the need for an adequate theoretical framework about entrepreneurship and human development.

2.2. Women's Entrepreneurship in Vietnam and Related Literature

The Gender Equality Law in Vietnam was promulgated in 2006 and aimed to improve women's roles in society, especially in business. It states that "women are equal in establishing new businesses, operating, trading and managing businesses, as well as in accessing information of fund, market and workforce" (VCCI and ILO 2007). The Women Entrepreneurs Council was established even earlier in 2001. It was estimated that around 25 percent of business owners in Vietnam were women and the percentage of women-owned enterprises would reach 30% in 2015 (ILO 2011). The proportion of women participating in the formal economy has risen dramatically, mostly through private enterprises (83%), and 26% of them work as head of enterprises (United Nations Industrial Development Organization (UNIDO) 2010).

Vietnam has been classified as a factor-driven economy by the Global Entrepreneur Monitoring (GEM) which, in 2015, covered 83 countries at different stages of development, namely factor-driven, efficiency driven and innovation-driven (GEM 2016). The country is also among the top 10 countries where women had similar likelihood as men to be entrepreneurs. With impressive economic development in the last three decades since the embarkation of economic reforms in 1986, the development of MSMEs has been recognized as a critically important component of such development. It is the SME sector, which has the highest capital-labor ratio and provides opportunities for the youth and unemployed people to exhibit their entrepreneurial potentials, by being job creators rather than job seekers.

There is also a geographical difference in female entrepreneurship in Vietnam. Based on the data from Vietnam Labor Force Survey in 2012, Avin and Kinney (2014) reported that 3.3 percent of total female employed workers were female employers and 36.8 percent were female-own account workers in urban areas. These rates are 1 percent and 50.1 percent, respectively, in rural areas. Similarly, the highest share of female employers was found in Ho Chi Minh City (3.7 percent) and Hanoi (2.2 percent) while the largest share of female own-account workers was in the Red River delta (excluding Hanoi), Central Coast and Central Highlands at 51–54 percent.

The performance of SMEs with respect to the gender differences are understudied in Vietnam. Research on the determinants of SME performance have been looking at some quantitative indicators such as net profits, revenue, rate of returns and employment growth but rarely any gender factors is considered in such studies. For example, Pham (2017) examines the effects of institutions on SME performance using five rounds of panel data collected from 1173 SMEs in Vietnam from 2007–2015 and shows that SMEs domiciled in provinces with higher provincial competitiveness index (PCI) have better performance than SMEs domiciled in low ranked provinces.

Another direction among studies in women's entrepreneurship in Vietnam has been the motivating factors for women to become an entrepreneur. The Vietnam Women Entrepreneur Council report in 2007 exhibit the key motivation was opportunity driven (72 percent of respondents) versus necessity-driven (28 percent). It is the same for both men and women to start their business because they perceived an opportunity. In contrast, UNIDO found that the overwhelming reasons that both male and female entrepreneurs in Vietnam set up their own business are because of the need to have employment, income or additional income (United Nations Industrial Development Organization (UNIDO) 2010). Findings from Zhu et al. (2015) show that the two most important reasons for business ownership are to increase income and to be one's own boss. Friendliness to customers and good location are considered the leading factors for business success. In comparing the case of Vietnam to China on the motivations of women's entrepreneurship, Zhu et al. (2019) shows that Vietnamese businesswomen value intrinsic rewards such as gaining personal satisfaction and freedom, and they also take business ownership to be a way to reduce work–family conflict. Meanwhile, demonstrating the ability and gaining public recognition play a more important role when Chinese women entrepreneurs decide to establish their businesses. However, in both transition economies, they found that women entrepreneurs

shared similar challenges in recruiting and retaining employees, severe competition, weak economies and limited access to financial capital.

This is consistent with [Zhu et al. \(2015\)](#) showing that the most critical problems encountered by Vietnamese women entrepreneurs are competition and the inability to retain high quality employees. The female entrepreneurs also indicate a low level of business-related stress. Results of the factor analysis also suggest that women entrepreneurs would benefit from government support and financial market liberalization.

While the challenges of equal access to resources, finance and business training are often cited among the most critical obstacles for a thriving enterprise owned or managed by women in different parts of the world, there is little evidence in the case of Vietnam that female entrepreneurs have more difficulties compared to men in getting credit and that women are more likely to than men to tap informal sources of credit ([IFC 2006](#)). Ten years later, the IFC research and surveys again show that Vietnam's female business owners typically record higher revenue per employee and lower credit default rates than their male counterparts ([IFC 2017](#)). This is confirmed by a more recent study by [Tho and Talavera \(2018\)](#) which examines the relationship between gender, social capital and access to finance of micro, small and medium enterprises in the manufacturing sector in Viet Nam showing no evidence for discrimination against female-owned enterprises in the formal lending market. More interestingly, female entrepreneurs have a higher probability of getting a loan and they pay lower interest rates in comparison with male entrepreneurs. In explaining their critical finding, the paper relates such phenomena to the sequential preference for informal loans over formal loans, i.e., entrepreneurs tend to borrow informal loans before their formal loan application.

Through a survey in 2007, the ILO program in Vietnam reported that despite recent economic development, socio-cultural and legal barriers were still very difficult for women due to social norms such as a perception that women should be good housewives and mothers and that they are weak, passive and irrational ([VCCI and ILO 2007](#)). Therefore, although women in Vietnam have gained increasing economic opportunities, their productive potential is underutilized due to cultural values and an unfavorable business environment. The traditional expectation of a woman's role has been limited to unpaid work such as taking care of family and doing housework. Men are more expected to be the breadwinners, providing the main source of income for the households. However, an empirical study from a small survey in Hanoi by [Bock \(2018\)](#) found no evidence to support the hypothesis that higher numbers of children and dependents in the household could impede women's business success measured as an index with equal weights for revenue and employment growth of the firm. One of the critical challenges to the studies of female entrepreneurship in Vietnam has been the shortage of data. [Avin and Kinney \(2014\)](#) shows that there is little easily-accessible data available with which to measure the extent of female entrepreneurship, their contributions to the economy and the challenges that they face. As a result, different studies on this field must rely on a small-scale survey in a limited sample and regions of the country.

Therefore, the data used in this study can perfectly meet the demand for rich and nationally-represented data with 2649 formal and informal micro, small and medium enterprises engaged in the private manufacturing sector in nine provinces of Vietnam which can provide insights into the questions of interest. The research that we are proposing will not only take the advantage of rich dataset but also further extend the issues of female entrepreneurs in Vietnam by evaluating their performance. With limited information from the VHLSS or LFS, existing studies can only analyze the difference in monthly revenues of household business and number of workers between male- and female-operated businesses. Our current study attempts to extract richer and more extensive information regarding sale growth, employment growth, profit margins, productivity, efficiency and the like. This will serve as an important contribution to the literature on women's entrepreneurship in Vietnam.

3. Data and Empirical Strategy

3.1. Data

This research is based on a series of survey data in Vietnam which is called the Small and Medium Enterprise (SME) survey conducted under collaboration between three partners: the Central Institute for Economic Management (CIEM) of the Ministry of Planning and Investment of Vietnam; the Institute of Labour Science and Social Affairs (ILSSA) of the Ministry of Labour, Invalids and Social Affairs of Vietnam (MoLISA) in Vietnam; and the Development Economics Research Group (DERG) of the University of Copenhagen. It had been conducted six rounds since 2005 every two years. We are able to access to the micro-data at five data points 2005, 2007, 2009, 2011 and 2013. For each round, the survey covered 2500 small and medium-sized non-state enterprises operating in the manufacturing sector of ten provinces Vietnam. A majority of the sample was repeated from previous survey waves so they are not a balanced panel data. The survey instrument consists of three modules: (i) a main enterprise questionnaire; (ii) an 'employee module'; and (iii) an 'economic accounts module'. A key of this project is a high-quality database with key variables describing Vietnamese SME characteristics and dynamics.¹

The timing of the five survey rounds implies important periods in Vietnam because they correspond to the significant changes in the country's economic transformation such as the accession to the World Trade Organisation (WTO) in 2007, the period during and after the global crisis in 2008–2009 and the responsive government stimulus package to support enterprises in 2009. It covers 10 provinces, including the two largest cities, Hanoi and Hochiminh City, and also represents different regions of the country.

This section is divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn.

3.2. Firms' Performance Indicators and Women-Led Firms

As the study is focused on the performance of SMEs in Vietnam, specific indicators are necessary, to be determined at the initial stage of the study based on the data availability. Several indicators are available such as growth of sales, export sales, sale structure, sales per worker, value added per worker, productivity, profit margin, debt/equity ratio, etc. While some indicators are ready to be extracted from the dataset, others may need to be calculated before comparison and further analysis can be made (for example value added and productivity). The key dependent variables to be examined include:

1. Value added of firms;
2. Labor productivity measured by value added per worker;
3. Employment growth;
4. Share of female employees in the total labor of firms.

Our research focus is the difference in female-owned and male-owned firms, based on the gender of the respondent in each firm. However, respondents could either be the firm's owner or manager so we define the terms "female-led" and "male-led" to suggest that leaders of firms can be either the direct owners or the managers. Furthermore, we also observe that ownership changes among SME have been relatively small, and we reaffirm the leadership in the firm based on gender of the owners. This involves a considerable data cleaning.

Information from the database is very rich and detailed, allowing researchers to conduct disaggregated analysis in various aspects such as form of ownership, legal status, formal/informal sectors, business activity, firm size and firm's phase of activity. More importantly, the dataset also provides supplementary information on the characteristics of firm owners/managers and economic accounts of firms closely linked to the main dataset.

3.3. Empirical Models

Panel data analysis will be employed extensively, taking into account industry (2-digit industry classification codes) fixed effects and provincial fixed effects. Random effect mod-

els will also be examined. The key independent variables to be examined include, but not limited to: firm size (sales, number of workers), capital labor ratio, male/female worker ratio, type of ownership, industry classification, location of firm, access to credits (formal, informal), community and networking and support from the government programs, etc.

We estimate several empirical models as follow:

$$Y_{it} = \alpha_0 + \alpha_1 Male_{it} + X'_{it}\alpha_3 + \mu_{it}$$

of which Y_{it} is firm-related outcomes; $Male_{it}$ is a dummy variable which takes value of one if a firm is male led and zero otherwise; X'_{it} is a set of control variables; and μ_{it} is error terms. In all specification, we control for firm’s industry, location and time dummies.

As mentioned earlier, we have a set of four dependent variables: value added, labor productivity, employment growth and share of female employment. For each of the dependent variables, we use a different set of control variables. For the productivity function (i.e., with dependent variable being value added per worker), we control for labor (measured by the log of number of employments), capital and type of firm’s formality. We also include the firm owner/manager’s characteristics including manager’s general and technical education level.

In the employment growth equation, the set of control variables includes the lagged value of labor and capital intensities, which is measured by the ratio of capital over amount of labor, firm size and firm formality. Other owner’s/manager’s characteristics is also controlled. In case of the labor productivity, we use the same set of control variables as in the employment growth. Meanwhile, for the share of women employees, the set of control variables includes firm size and firm formality.

4. Empirical Results

4.1. Descriptive Analysis

Table 1 shows the number of firms in different years of the SME survey in Vietnam, containing a sample size of around 2500 firms for each year point. For each year point, on average, female-led firms accounted for 28–32 percent of the total while around two-thirds of the total are male-led firms. Out of the total number of firms who are micro, small or medium enterprises, the share of firms in the informal sector are always high as discussed in the literature. In the case of Vietnam this share was over 83 percent in the first survey period 2005 but reduced to 74.4 percent in 2013. At the same time, the share of formal firms within this SME sectors increased from only 17 percent in 2005 to 25.6 percent in 2013.

Table 1. Distribution of male-led and female-led firms in formal and informal sectors.

Year	Female-Led		Male-Led		All
	Informal	Formal	Informal	Formal	
2005	650	136	1634	328	2748
2007	598	134	1457	335	2524
2009	557	184	1415	384	2540
2011	531	205	1345	378	2459
2013	565	241	1270	392	2468

Source: author’s calculation is based on the SME surveys.

Table 2 demonstrates some interesting points on the formality of SME led by women or by men. While the proportion of informal female-led SMEs has been quite constant at 22–23, there has been an increase in the female-led firms in the formal sector (doubling from 4.9 percent in 2005 to 9.8 percent in 2013). Changes in the share of formal male-led firms are modest, from 12 percent to 16 percent.

Table 2. Shares of male-led and female-led firms in formal and informal sectors.

Year	Female-Led		Male-Led	
	Informal	Formal	Informal	Formal
2005	23.7%	4.9%	59.5%	11.9%
2007	23.7%	5.3%	57.7%	13.3%
2009	21.9%	7.2%	55.7%	15.1%
2011	21.6%	8.3%	54.7%	15.4%
2013	22.9%	9.8%	51.5%	15.9%

Source: author's calculation is based on the SME surveys.

Based on the number of employees in each firm, we classified firms into different sizes: micro (less than 10), small (11–19), medium (from 20 above) (Table 3). This criterion is in line with the World Bank's enterprise survey. Within more than 12,000 firms in five rounds of the SME surveys with a large number of same firms resurveyed to create panel data, the share of micro firms has always been the largest across the years, around 65 percent on average. This number also applied to both men-led and women-led firms. Meanwhile small firms accounted for 15 percent within the women-led ones and 16–17 percent within the men-led firms. There was a reduction of this share in 2013 for both female and male leadership to 13 percent and 14 percent, respectively. The decline in 2013 was the compensation for an increase in the share of micro firms for both groups to 67 percent and 70 percent, respectively, in 2013, in comparison to the proportion of the above-mentioned 65 percent. It is interesting to note that the while shares of small firms are very similar within the women-led or men-led firms, the shares of micro firms are lower and shares of medium firms are higher in the women-led firms compared to their counterparts with men's leadership as shown in Table 4. This implies that women in Vietnam tend to lead bigger firms at the medium size.

Table 3. Distribution of male-led and female-led firms by firm size.

Year	Micro		Small		Medium		Total	
	Female	Male	Female	Male	Female	Male	Female	Male
2005	515	1225	119	314	152	423	786	1962
2007	469	1120	107	298	156	374	732	1792
2009	468	1124	113	286	160	389	741	1799
2011	466	1156	113	259	157	308	736	1723
2013	543	1165	103	232	160	265	806	1662
Total	2461	5790	555	1389	785	1759	3801	8938

Source: author's calculation is based on the SME surveys.

Table 4. Shares of male-led and female-led firms by firm size.

Year	Micro		Small		Medium	
	Female	Male	Female	Male	Female	Male
2005	66%	62%	15%	16%	19%	22%
2007	64%	63%	15%	17%	21%	21%
2009	63%	62%	15%	16%	22%	22%
2011	63%	67%	15%	15%	21%	18%
2013	67%	70%	13%	14%	20%	16%
Total	65%	65%	15%	16%	21%	20%

Source: author's calculation is based on the SME surveys.

Regarding the distribution of firms by industry within the manufacturing sector, the highlights from Table 5 businesswomen tend to lead in the agriculture-related industry with very dominant shares of 41–45 percent, while businessmen prefer to have their firms in heavy industries with high dominant shares of 25–28 percent. Similarly, women also seem to have a preference for light industries and chemical industries compared

to men. Meanwhile, the share of firms led by men in the wood and furniture industry is considerable at 22 percent on average against a smaller share of businesswomen in the same industry—only 10 percent in Table 5.

Table 5. Shares of male-led and female-led firms by firm size (in percentage).

Year	Agri-Related		Light		Wood/Furniture		Chemical		Non-Metal		Heavy	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
2005	41	58	10	21	13	58	15	27	5	20	16	63
2007	41	56	14	23	11	52	14	27	3	17	15	62
2009	44	58	15	22	10	53	15	29	4	15	11	64
2011	45	57	16	22	9	50	14	24	3	13	12	65
2013	43	52	15	18	10	45	16	25	3	10	13	54
All	43	56	14	21	10	51	15	27	4	15	13	61

Source: author’s calculation is based on the SME surveys.

Table 6 provides summary statistics of our key indicators to evaluate firms’ performance overall and by informality of firms. Firms are classified into formal or informal sector according to their registration as sole proprietors (informal) or corporate firms (formal). Firstly, across the board, female-led firms tend to generate higher value added on average than firms led by men (VND 366 million versus 288 million). However, this indicator is more varied among female-led firms. Interestingly, the average value added of firm in the informal sector is lower for female-led firms compared to those of male-led ones. The opposite is true in the formal sector. This means that corporate firms, usually bigger firms, are outperformed if led by women.

Table 6. Mean and deviation of performance indicators by gender and sector.

		All Firms			Informal Firms			Formal Firms		
		All	Female	Male	All	Female	Male	All	Female	Male
Value added (VND Mil.)	Mean	302.9	361.3	288.5	127.5	123.2	129.3	1025.8	1025.8	912.3
	SD	1335.4	2094.0	1141.7	523.1	561.8	506.5	3265.2	3265.2	2218.0
Labor (people)	Mean	17.1	17.7	16.8	9.7	9.0	9.9	45.4	45.4	43.9
	SD	40.8	39.2	41.5	25.5	20.4	27.3	64.5	64.5	68.0
Fulltime labor (people)	Mean	14.8	15.4	14.6	8.2	7.6	8.5	40.5	40.5	38.5
	SD	35.7	35.5	35.8	22.1	15.9	24.2	60.7	60.7	57.5
Labor growth (%)	Mean	−7.5%	−8.7%	−7.0%	−8.1%	−9.6%	−7.6%	−5.4%	−5.4%	−4.9%
	SD	0.59	0.58	0.59	0.58	0.58	0.58	0.61	0.61	0.62
Labor productivity (VND Mil.)	Mean	13.7	15.1	13.5	11.4	11.4	11.5	23.1	23.1	21.3
	SD	16.1	50.0	15.3	11.9	12.6	11.7	26.8	26.8	23.1
Share of women employees (%)	Mean	36.8%	51.1%	30.8%	36.0%	53.0%	29.2%	45.0%	45.0%	37.1%
	SD	0.28	0.28	0.26	0.29	0.29	0.27	0.24	0.24	0.23

Source: author’s calculation is based on the SME surveys.

Secondly, the firm size or number of employees also show consistently that firms led by women often hire more labor than firms led by men. On average, a female-led firm has 17.7 workers which is one person higher than a male-led firm. However, in the informal sector where firms are often micro, only 9 workers are hired in each women-led firm on average, which is 1 person less than the number hired by men-led firms. In contrast, in the formal firms, businesswomen tend to employ 1.5 more workers than businessmen do, on average.

With regards to full-time labor specifically, female-led firms across both sectors create more full-time jobs than male-led firms. We also look at a specific characteristics of female-led firms following evidence from the literature that women owned enterprises often recruit more women. This seems to be valid in our analysis too because the share of female employees in women-led firms in both formal and informal sectors outpaced the rate

among firms led by men (i.e., 51.1 percent versus 30.8 percent overall, 53 percent versus 29 percent in the informal sector and 45 percent versus 37 percent in the formal sector).

Meanwhile, the rates of labour growth are all negative across groups and classifications. This suggests that across the time, micro and SMEs in Vietnam tend to recruit fewer workers. The rates of reduction are also higher within female-led enterprises.

Labor productivity is among the most important indicator to measure firm efficiency. It is surprising to learn that workers in female-led firms turn to be more productive than their counterparts in firms led by men. While there is no considerable difference between them in the informal sector, the spreads are very clear in the formal sector. In this sector, on average a worker in the firms led by women create VND1.8 million of value added per year than their counterparts in firms led by men.

4.2. *Econometric Analysis with Panel Data Models*

The above descriptive analyses suggest a number of hypotheses that we need to test through econometric models. For instance, that women in Vietnam tend to lead in big firms; women-led firms do not seem to underperform in comparison to male-led firms, and they even tend to generate higher value added on average than firms led by men. Informality may have difference effects on the firms led by businesswomen or businessman; businesswomen who control their firms create jobs for other women too.

We start our base model with fixed effects in a panel data of five unbalanced time periods. There are four models with respective four independent variables: (1) value added; (2) employment growth; (3) labor productivity; (4) share of female employment. For each independent variable, two to three model specifications are tested with results presented in Table 7.

In the base model 1a has firms' values added as the dependent variables; all variables are statistically significant except the dummy variable for man-led firms. Even when we control for other characteristics of the firm's manager/owner such as general and technical education, the results remain unchanged. Meanwhile, the informality of firms shows a significant effect on the value added, showing that being a registered corporate firm is positively associated with the firm's value added.

In the second model with employment growth, the number of employees in the previous period and capital intensity shows a strong negative impact on the growth rate of labor in that firm. More specifically, the larger the firm is in this period, the smaller the change in its size of workers in the next period. Similarly, if the capital-labor ratio of firms increases (more capital for instance), the number of workers decreases. Interestingly, gender of firms' manager or owner shows a highly significant positive impact in this case, implying that if a firm is led or owned by a man, the change in number of workers over periods is higher. In the model 2b and 2c, we also consider the effects of firm size on labor growth within that firm. With reference groups as micro firms with less than 10 workers, small and medium firms tend to recruit more workers with a higher rate of change. The effects are obviously stronger for medium firms than the smaller firm.

In the third model with labor productivity, which is calculated as the value added per worker, the capital intensity and formality of firms show a strong positive impact on productivity. Registering firms in the formal sector actually helps workers to improve their activity. The variable of interest regarding gender of owner/manager does not show a statistically significant effect in this case even the coefficient is positive.

The dummy variable representing a firm's size as micro, small or medium shows strong negative effects in this case. This is understandable since as firms become larger (more workers) the value added per worker declines.

For the last models, we looked into the hypothesis that firms managed or owned by a businesswoman tend to hire more female workers in their firms. The negative but highly significant coefficients of the dummy variable for male-led firms verify the hypothesis. On average, firms led by women recruit a higher proportion of female workers in their firms by 6 percent compared to similar firms led by men.

Table 7. Fixed-effects models.

Dependent Variable	Value Added		Employment Growth			Labor Productivity		Share of Female Employees	
	1a	1b	2a	2b	2c	3a	3b	4a	4b
Capital	0.071 *** [0.006]	0.070 *** [0.006]							
Labor	0.731 *** [0.017]	0.730 *** [0.017]							
Labor (lagged)			−1.099 ** [0.018]	−1.098 *** [0.015]	−1.098 *** [0.015]				
Capital intensity			−0.124 *** [0.008]	−0.106 *** [0.007]	−0.106 *** [0.007]	0.046 *** [0.006]	0.046 *** [0.006]		
Being a formal firm	0.209 *** [0.047]	0.208 *** [0.047]	0.116 * [0.066]	0.097 * [0.052]	0.096 * [0.052]	0.155 *** [0.046]	0.153 *** [0.046]	0.013 [0.013]	0.011 [0.013]
Man-led firm	0.013 [0.032]	0.013 [0.032]	0.061 ** [0.030]	0.045 * [0.027]	0.044 * [0.027]	0.027 [0.033]	0.027 [0.033]	−0.060 *** [0.011]	−0.060 *** [0.011]
Firm size				0.543 *** [0.024]	0.542 *** [0.024]	−0.127 *** [0.027]	−0.127 *** [0.027]		0.007 [0.007]
Small				1.099 *** [0.039]	1.097 *** [0.039]	−0.313 *** [0.038]	−0.312 *** [0.038]		0.034 *** [0.011]
Medium									
General Education of owner/manager (ref. no educ.)									
Not finished primary		0.212 [0.230]			−0.102 [0.151]		0.231 [0.237]		
Primary		0.218 [0.221]			−0.019 [0.150]		0.297 [0.227]		
Lower secondary		0.207 [0.221]			−0.027 [0.146]		0.300 [0.227]		
Upper secondary		0.242 [0.221]			−0.023 [0.146]		0.348 [0.227]		
Technical education of owner/manager (ref. unskilled/no training)									
Tech. with eleme cert.		0.019 [0.025]			0.027 [0.020]		0.018 [0.025]		
Tech. with certificates		0.033 [0.030]			0.033 [0.025]		0.037 [0.030]		
College/University/Higher		0.014 [0.037]			0.048 [0.030]		0.005 [0.037]		
Sector	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Location	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	8.690 *** [0.119]	8.441 *** [0.249]	3.100 *** [0.142]	2.713 *** [0.124]	2.719 *** [0.191]	1.521 *** [0.109]	1.178 *** [0.251]	0.463 *** [0.029]	0.445 *** [0.030]
N	12,666	12,666	8201	8201	8201	12,666	12,666	12,711	12,711
R-sq	0.357	0.357	0.599	0.693	0.693	0.183	0.183	0.011	0.012

Note: Standard errors in brackets; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; Source: author's calculation is based on the SME surveys.

The next step in our estimation strategy is to verify whether there are co-effects between the firm size and the gender of the firm's owner/manager (Table 8). All coefficients of the interaction terms are significantly positive, implying that the performance of firms led by women is better with firms of small size. Male-led firms outperform when firms are large.

Table 8. Fixed-effects models with interaction terms between firm size and gender.

Dependent Variable	Value Added	Employment Growth	Labor Productivity	Share of Female Employees
Model	1	2	3	4
Capital	0.070 *** [0.006]			
Labor	0.696 *** [0.025]			
Formal	0.208 *** [0.047]	0.040 [0.038]	0.144 *** [0.046]	0.007 [0.013]
Male	−0.059 [0.053]	−1.079 *** [0.043]	−0.141 *** [0.046]	−0.112 *** [0.015]
Male * Labor	0.048 * [0.026]	0.765 *** [0.022]	0.109 *** [0.019]	0.033 *** [0.006]
Labor (lagged)		−1.048 *** [0.011]		
Capital intensity		−0.055 *** [0.006]	0.053 *** [0.006]	
Small			−0.173 *** [0.027]	
Medium			−0.408 *** [0.040]	
_cons	8.767 *** [0.127]	2.214 *** [0.084]	1.511 *** [0.109]	0.466 *** [0.028]
Sector	Yes	Yes	Yes	Yes
Location	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
R-sq	0.357	0.827	0.187	0.018
N	12,666	8201	12,666	12,711

Note: Standard errors in brackets; * $p < 0.1$; *** $p < 0.01$; Source: author’s calculation is based on the SME surveys.

Lastly, we performed a test to verify if the informality of firms (being a sole proprietor or registering as a corporate) has any different effects on the four performance indicators when firms are led by men and when firms are led by women (Table 9). Results in all four models show insignificant coefficients for the interaction terms between informality and gender. We found no evidence to support our hypothesis mentioned above that there is such a difference between the two groups.

Table 9. Fixed-effects models with interaction terms between formality and gender.

Dependent Variable	Value Added	Employment Growth	Labor Productivity	Share of Female Employees
Model	1	2	3	4
Capital	0.071 *** [0.006]			
Labor	0.731 *** [0.017]			
Formal	0.217 *** [0.069]	0.017 [0.088]	0.125 * [0.068]	−0.004 [0.020]
Male	0.014 [0.034]	0.041 [0.031]	0.022 [0.035]	−0.063 *** [0.012]
Gender * formal	−0.011 [0.073]	0.135 [0.088]	0.042 [0.073]	0.024 [0.020]
Labor (lagged)		−1.100 *** [0.018]		
Capital intensity		−0.124 *** [0.008]	0.046 *** [0.006]	

Table 9. Cont.

Dependent Variable	Value Added	Employment Growth	Labor Productivity	Share of Female Employees
Model	1	2	3	4
Small			−0.128 *** [0.027]	
Medium			−0.313 *** [0.038]	
_cons	8.684 *** [0.124]	3.122 *** [0.142]	1.541 *** [0.115]	0.474 *** [0.030]
Sector	Yes	Yes	Yes	Yes
Location	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
R-sq	0.357	0.600	0.183	0.011
N	12,666	8201	12,666	12,711

Note: Standard errors in brackets; * $p < 0.1$; *** $p < 0.01$; Source: author's calculation is based on the SME surveys.

5. Discussion and Concluding Remarks

On the development path of a transition economy like Vietnam, gender equality issues are concerned and frequently discussed to ensure that both men and women are benefited from the fruits of economic growth. Entrepreneurship has been proven in many countries to be an effective instrument for women's economic empowerment. This study sheds light on the policy concern over the issues of women entrepreneurship in Vietnam by comparing the performance of MSMEs led by men and by women through an understanding of factors and constraints that promote or hinder the business development among women.

Firstly, using a survey panel data of manufacturing MSMEs during the period 2005–2013 with five waves, we measure the performance of firms by four main indicators including value added, labor productivity, labor growth and employment generation. Our results come with a surprise that there is no significant difference among firms managed or owned by either men or women. This contrasts with the conventional perception that female-owned firms underperform firms owned by men but is consistent with several studies revealing that women and men do not differ in measures of firm survival or profitability when we control for factors such as industry, firm size and firm age (Coleman 2016). It should be emphasized that when comparing performance indicators, we also control for key demographic differences between male and female owners/managers. In the same line, Robb and Watson (2012) used a longitudinal database of more than 4000 new ventures that began operations in the U.S. in 2004 to conclude that there were no differences in the performances of female- and male-owned firms in appropriate performance measures, and important demographic differences are controlled for in the models such as industry, experience and hours worked. However, our findings are not in line with those in transition economies in Eastern Europe and Central Asia when comparing particular performance indicators. Sabarwal and Terrell (2008) found that female entrepreneurs had significantly smaller scale of operations (as measured by sales revenues) and were less efficient in terms of Total Factor Productivity (TFP), although this difference is very small. However, they generated the same amount of profit per unit of revenue as men.

In an attempt to search for explanations for such similarity, we relate our study to existing literature on financial constraints among SMEs in Vietnam. Although access to credits and financial resources is considered essential to the performance of SMEs, there is a consistent fact in Vietnam that no gender discrimination is prevalent in this aspect (Tho and Talavera 2018; IFC 2017). Instead the more critical factors to firms' performance are human capital, management skills and institutional factors such as business environments and provincial competitiveness (Pham 2017). Even more, Tran and Santarelli (2014) found an adverse effect of capital constraints on firm performance, meaning that firms suffering capital constraints perform substantially better, as firms need more capital simply

to finance newly recognized profit opportunities where as human capital plays a vital role in relaxing capital constraints and improves the entrepreneurial performance.

Second, as in many transition economies, the informality of firms turned out to have more significant effects, implying that being a registered firm is positively associated with the firm's value added, employment growth and labor productivity. In the case of Vietnam, we show a tendency of women to lead medium-size firms with better performance in the formal sector. Some cross-country studies show male entrepreneurs have significantly greater venture employment growth ambitions than their female peers (Darnihamedani and Terjesen 2020) and male-owned firms are often in large size than those owned by women. Amin (2011) looks specifically at the informal sector of unregistered firms in Argentina and Peru and confirmed the female-owned firms under-performance hypothesis within various sub-samples of firms with different magnitudes of difference. Within the full sample, around 25–30 percent of the gender-based difference in efficiency can be explained by variations in firm characteristics. However, our findings on the bigger female-led firms in the formal sector follows the same line, with Babbitt et al. (2015) analyzing the preferences of entrepreneurs about formality and focuses on the role of gender. Using original data in Indonesia, they found that female entrepreneurs possess highly nuanced preferences about formalization and the preference for formalization is strongest among female entrepreneurs who are older, married, rural-based, recently started their firms.

Finally, another interesting finding in the case of Vietnam is the tendency of women-led firms to generate more job for other women. This finding is unique in the literature of women's entrepreneurship in emerging economies like Vietnam thanks to the richness of our dataset. This finding on "women help women" has an important policy implication for poverty alleviation intervention among women in Vietnam, especially in the rural areas where employment opportunities are still scarce. Such intervention is critical to ensure the development in Vietnam is truly inclusive and opportunities are shared equally among men and women.

Our paper contributes to the discussion on how women's entrepreneurship influences women employment in distinct ways despite some limitations. For example, the efforts and motivations of entrepreneurs are not considered in our analysis. The Global Entrepreneurship Monitoring (GEM 2016) found different entrepreneurial behavior when the start of a business is necessity-driven or opportunity-driven. There is no proxy for the entrepreneurial efforts in our dataset such as the number of working hours of the owners/managers, or the overlapped use of resources or assets within a household, and an enterprise is difficult to disentangle and separate in the case of a family business, which is very popular among MSMEs Vietnam. As a result, our estimation cannot control for those important factors. In addition, it is a fact in the sector of small family businesses in Vietnam that the roles of husbands and wives in managing and supporting business are often intertwined, although the registered owners can be either of them. Those cases are often more difficult to determine *de facto* male-led or women-led enterprises.

This research is also important for future policy response and design. Since the research can capture the different constraints that women business owners face in the business environment as well as effects of those constraints on their business performance, policy response and regulations can be designed in an appropriate and specific manner to tackle the constraints to ensure that women business owners get the necessary support to promote their business and to ensure that policies and laws do not hinder the entrepreneurial growth for women. In other cases, institutional support and networking can also be provided to facilitate female entrepreneurs' access to production resources.

Author Contributions: Conceptualization, M.B. and T.Q.L.; Data curation, M.B. and T.Q.L.; Formal analysis, M.B. and T.Q.L.; Methodology, M.B. and T.Q.L.; Writing—original draft, M.B. Writing—editing and finalizing: M.B. and T.Q.L. Both authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Faculty of Economics, Srinakharinwirot University, Thailand (for M.B.) and the APC was funded by the Asian Development Bank Institute-ADBI.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data for this study is available upon request.

Conflicts of Interest: The authors declare no conflict of interest.

Notes

¹ For detail, see [Central Institute for Economic Management \(CIEM\) et al. \(2014\)](#).

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