

Key Determinants of SMEs in Vietnam. Combining Quantitative and Qualitative Studies

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Received: May 30, 2015 Accepted: July 20, 2015 Online Published: August 20, 2015

doi:10.5539/res.v7n11p359

URL: <http://dx.doi.org/10.5539/res.v7n11p359>

Abstract

This paper aims to identify key determinants impacting on a firm performance of Small and Medium-sized Enterprises (SMEs) in Viet Nam. SMEs have contributed significantly to the overall Vietnamese economy. However, in the context of emerging market in Viet Nam nowadays, SMEs have to deal with a tough competitive market. Hence, an awareness what factors enhancing firm performance enables them to achieve sustainable development. Based on the survey of 2551 Viet Nam SMEs, which was conducted by Science & Social Association, Viet Nam Ministry of Labor- Invalids and Social Affairs, the paper provides the holistic view of several perspectives' impacts on the performance of SMEs. We find out that three main factors, including human resource, education level of entrepreneurs and training cost have significant effects on the performance. As considering in the field of international trade, the results illustrate the more SMEs conduct export activities, the better enterprises' performance. Specifically, we point out that other factors such as formalization, credit access, informal loan and firm location are strongly associated with the performance. Furthermore, we also conducted in-depth interviews with 6 entrepreneurs and top managers to explore current challenges of Vietnamese SMEs and suggest appropriate solutions to overcome them.

Keywords: SMEs, performance, human resources, export, investment, credit access, infrastructure, formalization

1. Introduction

Based on statistics from Ministry of Justice, Vietnam in the past few years has experienced a robust growth of SMEs, which accounted for 97% the total number of enterprises in the country. Attaching with such growth, there are many vital roles and benefits brought by SMEs, namely as job creation, enhancing income for employees, encouraging various social resources for investment and development, poverty reduction in locals and provinces, positive effect on the growth of large enterprises, in which, including industrial supporting industry. Particularly, SMEs create more than half million of new jobs; use more than 51% of the labor force and contribute to 40% GDP. Tax and other fees' payment from SMEs to the State increased 18.4 times just after 10 years. Such contributions from SMEs distributed into social affairs and other developing programs. However, Vietnamese SMEs still have to face and struggle from many obstacles. In a period of 2011-2015, the statistics pointed out that the total number of newly established enterprises declined continuously and deeply, from 83,600 to 77,500 and 69,800, in 2010, 2011, 2012. There was a positive sign in 2013 when the number bounced back to 76,900 enterprises, but it still stayed below those in 2009 and 2010. Among the newly established, the majority was SMEs. In addition, there was an upward trend of current companies exiting the market. In 2013, the number of disbanded and discontinued operating companies was 60,700, an increase of 11.9% and 12.5% compared to those in two prior years, 2012, 2011 respectively. Besides difficulties in capital financing, technology, SMEs both in general and in Vietnam, particularly, are facing barriers and problems in management level and quality of resources, including human resources. Moreover, there are 55.63% employers of SMEs in the country classified as below the intermediate level of education in which there are 43.3% employers has an education degree from primary and generality. In the labor force, up to 75% the labors and workers in SMEs are untrained for technical expertise. Due to the lack of fully fulfillment of Social Insurance, Health Insurance policies for the employees, working quality in SMEs gradually depreciated; as the result, SMEs fall back into disadvantage positioning in recent economy (To Hoai Nam, 2014).

As the potential role in the efficiency of economy, many studies into SMEs' performance have conducted to recognize the effect on these sector performances. Notwithstanding, almost empirical studies only focused on each determinant separately. Specifically, in a study of human resource management, Georgiadis and Pitelis (2012) has emphasized the impact of employee and entrepreneur human capital, organization's commitment to its employees has a significant relationship with the performance of SMEs. Moreover, international trade, which includes export and import performance is also supposed to be key determinants for the improvement SMEs' profit (Maurel, 2009; Wagner, 2012; Park et al., 2010).

Hence, this research synthesizes several key factors having impact on SMEs performance. We believe this kind of research will provide the overall perspective on variety of aspects that enhance performance of this potential segment in nation economy. It outlines the comprehensive view of vital determinants to promote the effectiveness for SMEs' performance in Vietnam. On the one hand, this paper investigates two quantitative Vietnamese SMEs surveys conducted in 2007 and 2009. The surveys accomplished by the collaboration of Central Institute for Economic Management (CIEM), the Ministry of Labor, Invalid and Social Affairs (MOLISA) together with the Royal Embassy of Denmark in Viet Nam. The original data has covered several aspects of SMEs. For example, it investigates the human resource issues, export activities, investments, credit access and infrastructure access. Hence, we have withdrawn constructive information to identify the potential factors to enhance the performance of those firms.

In addition, we also conduct a qualitative study to get more updated information about the business activities of SMEs in the case of Vietnamese context in the recent years. During two months from April to May 2015, we organized to conduct six in-depth interviews with 6 managers and directors, who came from both SMEs and large corporation in Ho Chi Minh City. This enables us to clarify and confirm the results from the quantitative study. The qualitative results provide the differentiated perspectives of potential factors' impacts on the performance as well as experienced recommendations for the development of SMEs in Vietnam. Furthermore, several findings of additional aspects required for the enhancing SMEs' performance have explored in each interview that creates the comprehensive perspective for developing SMEs in Vietnam. The findings from both quantitative and qualitative data are consistent with each other. Almost correspondents admit the essential role of human capital and negative relationship of credit access and investment with the performance of SMEs.

This research is organized as follows: in the following section, we review the theoretical background of previous studies as well as raise the motivation for this paper. In section 3 and 4, the methodology and findings of both quantitative data and qualitative data are described and analyzed, respectively. Finally, the discussions and conclusions are proposed and limitations are withdrawn in the last section.

2. Theoretical Background

According to the strategic human-resource management (HRM), human capital has played an important role in the connection of employee capabilities and the firm performance (Youndt et al., 1996). Reich (1991) expressed that the ultimate criterion of firm performance is not the wealth in physical capital but the human capital is the ultimate one that provides firms an essential resource for achieving the sustainable competitive advantage. Besides, major empirical researches have been the "scale-down" version of large firms and their approach the HRM practice separately from large firms (Storey, 2002). The empirical results have proven that the HRM has a strong relationship with the performance of SMEs.

Many studies have explored the human capital in terms of Entrepreneurs' background. Entrepreneur's education and experience are the two core items used to reflect for the factor (Pennings et al., 1998). According to the research of Lefebvre (1993), in SMEs, the decision-making power is focused on the owner whose visionary has potential impacts on the business success. In addition, the management skills (education and experience) are considered as a dominant aspect leading to boost capabilities of growth in business (Youndt et al., 2012).

The shortage of qualified employees can cause the deficiency in performance of the small business enterprises. In other words, if SMEs have invested in the training programs, they could obtain a positive improvement in the performance (Storey, 2004; Singh, 2004; Nikandrou et al., 2008). Therefore, training cost is used to measure the effort of Vietnamese SMEs in investing in human capital.

Besides of the role in the management board and skilled employees, unskilled workers are supposed to correlate with the firm performance (Rand & Torm, 2012). Furthermore, in an investigation on the impact of temporary unskilled migrant workers on firm profitability in the Korean SMEs, it has proven that the influx of unskilled migrant workers has a positive relationship with firm profitability (Hur & Nho, 2012). In order to examine the effect of the overall human capital on SMEs' performance, the unskilled worker is considered as one key variable, which is expected to have a positive effect on a firm performance.

Many empirical studies have indicated that higher export performance the firms executed, the more capital intensive and effective productivity they obtained (Bigsten et al., 2000). Export is considered to be the ideal solution for a firm to promote many business aspects such as manufacturing process, product designs and quality goods. Furthermore, exporting firms are also able to achieve the economy of scale, which leads to the efficient performance. As the result, the findings identified that the superior performance for the export firms is higher than the non-exporters (Alvarez et al., 2005). In the research of Park et al. (2010), first of all, besides of enhancing the higher productivity, as entering in the international market, the firm comprehends the technical assistance of foreign buyers to upgrade the production efficiency. Second, firms can obtain the willingness of technology transfer as well as opportunities to approach the knowledge of advanced production technology. Third, there are also massive incentives for enterprise provided by the modern quality standard of international market compared to the domestic one (Verhoogen, 2004). Fourth, as integrating into the global market, firms have to develop new products continuously. Finally, exporting contributes to the sale expansion, which raises the utilization capacity and lowers the vulnerability for firms in the downturn of economy (Maurin et al., 2002).

The public infrastructure contributed significantly in the development of the regional business (Christ & Green, 2004). The authors found that public infrastructure indirectly enhanced the firms' productivity. In illustration, transportation highway system is unpriced input for firm, public railways or airports lower the cost of transportation. Until now, many scholars asserted that the infrastructure development was able to lead to the enhancing in export performance. In particular, Francois and Manchin (2006) found that infrastructure played an essential role in rising trade performance in the emerging economies like China and India as well as some developing countries in Africa regions. Moreover, the coastal and landlocked countries have a comparative advantage in sea transportation and in decreasing the transportation cost (Limão & Venables, 2001). According to the research of Bougheas et al. (1999) with gravity models, they found that the positive correlation of infrastructure and the volume of trade in the European economy. Hence, this research adds the infrastructure effect to test whether it can provide beneficial effects on performance of SMEs by exploring the data surveys of Vietnamese SMEs.

The research of McKenzie and Sakho (2010) showed that the financial capability and access to credit would lead to the positive impact of firm profit. In addition, the studies also examined the access to the informal capital to provide the overall impact on the performance of SMEs.

In addition, in our regression model to test the hypotheses, we also include control variables that are supposed to enhance the performance of SMEs. The first one is the formalization. Because of unavailable data, some previous studies have not explored the effect of formality on the firm performance. However, in some researches if the data was available, they found that the formalization could increase business profits by at least 20 percent (Fajnzylber, Maloney, & Montes-Rojas, 2009). Therefore, we expect that the formalization is positively associated with the performance of SMEs.

The share of female workers is also considered in several empirical studies. Particularly, the performance of firms has opposite direction with the share of female workers. Nevertheless, they could not identify the cause—effect between the two variables. It implies that the ineffective performance firms hired more female workers or the more female workers generated low productivity than the male ones (Croson & Gneezy, 2009; Larsen, Rand, & Torm, 2011).

In terms of well property establishment, it is emphasized the significant role of property rights in increasing access to credit then leads to increase investment and profit (Malesky & Taussig, 2009). Finally, the firms established in different provinces in Vietnam, they may receive different supports from local authorities. Hence, we expect a firm located at a high development region has a positive impact on its performance. Additionally, a firm size is always needed in consideration of performance especially for SMEs (Rand & Torms, 2012).

As the review from several theoretical literatures, this paper aims to synthesize the main independent variables in terms of human resources, export activities, investment, credit access and public infrastructure to investigate the relationship with the performance of Vietnamese SMEs. As above mention, we also add some control variables such as formalization, firm size, facility exclusive, share of female workers, property rights, compliance inspections and location. Hence, the study proposes a regression equation in the form that a dependent variable of the firm performance relies on the above key independent variables and control variables.

Furthermore, we need to explore a qualitative study to understand more practical issues related to the operation and strategic development of SMEs. Thus, the in-depth interviews were conducted to achieve our objectives. With the interviewees from SMEs as well as large corporation, the study provides both objective and subjective view of the impact of potential determinants on those firms.

3. Methodology

3.1 Data Description

The survey was conducted by CIEM, the Institute of Labor Science and Social Affairs (ILSSA) of MOLISA, and the Department of Economics (DOE) of University of Copenhagen together with the Royal Embassy of Denmark in Viet Nam. The survey was distributed to more than 2,500 small and medium sized private enterprises in manufacturing in Vietnam. Ten representative provinces including Ho Chi Minh City (HCMC), Ha Noi, Hai Phong, Ha Tay, Quang Nam, Phu Tho, Nghe An, Khanh Hoa, Lam Dong, and Long An were covered in June, July, and August in 2007 and 2009. The sample was diversified by various ownership categories such as officially registered households, private firms, cooperatives, limited liability companies, and joint stock enterprises. Moreover, the sample can also be categorized as formal and informal SMEs.

Although the data has been assembled for 8 years, those periods represent for two significant milestones in Vietnamese economy. In the period of 2007 and 2009, Vietnam market was affected by the global financial crisis. This period was the most consistent to investigate more in-depth information about the volatility of the SME sector and appropriate strategies as well as policies for the better performance and sustainable growth of those sectors (CIEM, 2009).

Two-thirds of enterprises in the data are belonged in family business households. Table 1 summarizes a number of enterprises by ownership types and industries in the survey data conducted in Vietnam, the average percentage of firms in the Food Processing category is registered as household establishments (82 percent). The significant proportion of households is also dominated in the following industries such as Wood Processing (ISIC 20), Fabricated Metal Products (ISIC 28), Leather Products etc. (ISIC 19) and Furniture (ISIC 36) as well as including a few jewelry firms, (ISIC 33). On the contrary, firms in Paper (ISIC 21), Publishing and Printing (ISIC 22) and Rubber (ISIC 25) are more often found in the category of small and medium firms.

Table 1. Summary of enterprises by ownership form and industries

ISIC	Household establishment	Private/sole proprietorship	Partnership/Collective/Cooperative	Limited liability company	Joint Stock company	Total	Percent
15	612	28	6	78	19	743	(29.2)
16	1	1	0	1	0	3	(0.1)
17	72	7	3	40	2	124	(4.9)
18	46	15	2	40	5	108	(4.2)
19	34	2	1	9	2	48	(1.9)
20	235	25	11	29	5	305	(12)
21	13	12	4	33	8	70	(2.8)
22	22	17	2	34	0	75	(2.9)
23	7	1	0	2	0	10	(0.4)
24	11	5	3	18	2	39	(1.5)
25	46	14	14	57	10	141	(5.5)
26	92	10	7	18	8	135	(5.3)
27	19	11	1	3	1	35	(1.4)
28	311	34	12	64	11	432	(17)
29-32	29	2	1	34	4	70	(2.8)
34	8	3	0	13	0	24	(0.9)
35	3	2	1	1	0	7	(0.3)
33+36	127	10	3	22	9	171	(6.7)
37	2	0	1	0	0	3	-0.1

Source: Data

The micro firms or small medium enterprises are defined by the current World Bank and Vietnamese Government. The World Bank SME Department stated that there are three groups of small and medium-sized enterprises: micro-, small-, and medium-scale enterprises, in which micro-enterprises have up to 10 employees, small-scale enterprises up to 50 employees, and medium-sized enterprises up to 300 employees. These definitions are approved by the Vietnamese Government (see Government decree no. 90/2001/CPND on “Supporting for Development of Small and Medium Enterprises”). Our size categories are based on the total employees, including full-time, part-time and casual workers. In this study, all the firms with more than 300 workers have been extracted from the testing model. Due to some errors in outliers and duplicates, the sample was reduced to 5101 observations, causing the unbalance in the panel data between 2007 and 2009. The reliability of the coefficients is improved by eliminating the outliers and removing duplicates. By this action, the panel data becomes unbalanced in terms of years. Thus, we have 5101 observations in the final sample over the two year period from 2007 to 2009.

In addition, we conducted 6 in-depth interviews with 6 respondents in which three of them came from high reputation SMEs in Ho Chi Minh to integrate their diversified perspective on realistic issues related to SMEs and the judgment of practical problems that SMEs are currently faced with. Moreover, the interviews will also investigate the perspective of SMEs on the role of determinants of human capital, export and import, public infrastructure and ownership structure in improving their performance. As the result, we recognized some opportunities and challenges of recent circumstances of SMEs in Vietnam and provided practical recommendations to improve the performance of SMEs.

3.2 Variables Descriptive

In several empirical studies, firm performance has supposed to be a subdivision of organizational effectiveness that includes both operational and financial outcomes (Santos & Brito, 2012). For example, Combs et al. (2005) conducted the analysis based on previous studies of strategic management between 1980 and 2004, indicating that 52% of the respondents agreed financial performance was utilized by 82% by profitability. In terms of financial aspects in firm performance, there are three main measurement components: profitability, market value, and growth (Santos et al., 2012). Based on those evidences, firm performance in this study is measured by firms' profits in each research year, calculated by the logarithm of their net income. In addition, as the purpose of enhancing the reliance of using profit to measure firm performance, the study also estimates SMEs performance by the return on assets (ROA) which is the familiar proxy reflecting firm performance (Storey, 2004; Park et al., 2010; Georgiadis et al., 2012). The ROA variable using in this paper is calculated by the logarithms in the rate of return on total asset from each SMEs. This measurement will compare the consistency in outcomes with the results when using profit.

According to the study of Georgiadis et al. (2012), human-resource management has interpreted by the manager's education and experience. Manager's education is a dummy variable, in which the value is equal to 1 when the educational level is high school and above and equal to 0 in the other cases. Similarly, experience is also a dummy measure that presents whether the entrepreneur had some experiences in the same line before participating in the current business.

Besides the qualification of the management board, the unskilled staff and training cost have considered to be a significant concern in human resource (Westhead & Storey 1996; Rand & Torm, 2012). Therefore, in addition to the role of high and average skilled workers in the performance of SMEs, this study also investigated the share of unskilled production workers as a measure for the general quality of the workforce. This variable is measured by the proportion of unskilled employees compared to the overall staff numbers. Furthermore, the training cost is the amount that firms used to improve their human capital.

The export activities of this study followed the scale in the research of Beleska-Spasova et al. (2012), which were measured by the pool of survey questions such as whether the SMEs have experience in export or whether they have received the orders from customer. In this study, we also investigated if the SMEs have a strong commitment with their customers. Finally, the organization capability is examined whether the SMEs could use new technology or specialize their experience in export activities. The variable is coded as 1 if the SMEs could obtain all the above criteria and 0 if in the other cases.

In the study of Rand and Torm (2012), the effect of investment was examined as the main criteria of SMEs' performance. Thus, under the control of formalization, the share of investment was measured by the ratio of the invested amount to the annual total revenue.

The approach for the formal capital is supposed to be a significant issue in the context of Vietnam. In the study of the impact of monetary policy and global economic depreciation on capital access and performance of

Vietnam enterprises, it was claimed that despite the improvement in the monetary policies and others stimulation policies, over 20.8% of surveyed firms admitted to facing difficulties in accessing the formal credit. In addition, 42.9% of them responded these issues would become the significant obstacle for firms in the near future. In this study, credit access is measured by asking whether firms have formal loans in both a short term and a long term. Nonetheless, because of the difficulties in accessing to the formal loan, SMEs usually utilize the informal loan, which comes from their friends, family or some informal institutions. In this study, we investigated the impact of this alternative approach on firm performance in order to identify which approach would optimize SMEs' demand in capital. The response is coded 1 if firms had used those informal loans and 0 if not.

The advantage of infrastructure access is considered to have an influence on the firm performance, which reduces the expenses in services and production techniques. The profits and investments would be negatively affected if they were lacking of infrastructure services such as transportation or communication (Tybout, 2000). In the study of Rand and Torm (2012), the advantage of infrastructure is estimated as a count variable following these rules: (i) easy to access to a main road (Yes = 1, No = 0), (ii) easy to access to rail (Yes = 1, No = 0), and (iii) easy to access to a port (Yes = 1, No = 0). According to the summary statistic, SMEs have improved significantly the infrastructure access during the period of 2007 to 2009.

In addition, the recent study also investigated some control variables such as (i) formalization, (ii) facility exclusive, (iii) share of female workers, (iv) property rights, (v) compliance inspections, (vi) location, and (vii) firm size. Firstly, formalization is defined as a dummy variable and coded as 1 if a firm has registered the Tax Code from Municipal Taxation Department. According to Vietnamese business legislation (Decree No. 88/2006/ND-CP dated August 29, 2006), the establishment of an individual household business is formalized when they registered for a Tax Registration Certificate and Tax code from the Municipal Taxation Department. Household businesses will only be exempt for the formalization in some specific regulated cases such as street vendors or motorbike taxis or low income. The firms with more than 10 employees and having more than one business premise are not supposed to operate as households and be regulated to be registered as enterprises (under Enterprises Law).

Secondly, to measure how SMEs utilize their facilities (i.e. factories), this study used the variable which is coded as 1 when the firms' facility is concentrated on production purposes and 0 when it is not. On average, 31.3% of the firms use all their facilities for production purposes, and this proportion has slightly fallen during 2007-09.

Thirdly, the share of female workers in each firm is measured by the proportion of female workers to the total employees. The descriptive statistic illustrates that share of female takes appropriately 37% in firms. It is consistent with the finding of Cling et al. (2010) in which female worker overrepresented for SMEs in Vietnam.

Fourth, as the assumption of the correlation between property right and SMEs' performance, the recent study conducted a control variable, which is equal to 1 if firms have a certificate of land use right and equal 0 if otherwise. The statistical results in this study showed that 61.4% of firm announced that they had well established in the property right.

Fifth, we conducted the compliance inspection as a count variable in the range from 0 to 6 that depends on the following survey questions: (i) number of policy compliance inspections (labor, tax, etc.), (ii) number of technical compliance inspections (environmental, fire etc.), and (iii) number of other inspections (none = 0; one = 1; more than one = 2).

Sixth, to examine the controllable impact of firms' location on their performance, we conducted a dummy variable, in which the response would be coded as to 1 if firms located in a big city like HCMC, Ha Noi, or Hai Phong, and 0 if firm is at a rural area.

Table 3 shows that around 43% of the firms are located in urban areas and this share is significantly larger over time. Lastly, firm size is a common control variable measured by the logarithm of the total asset in the current years (Rand & Torm, 2012).

Table 2. Variable description

	Variables	Measures	Expected sign
Dependent	Firm Performance (profit)	Logarit of firm's profit at current year	
Independent	Manager's education (education)	High school or above = 1 Otherwise =0	(+)
	Manager's experience (experience)	Having experiences in business =1 Otherwise = 0	(+)
	Training cost (training_cost)	Share of labor cost on the total revenue	(+)
	Share of unskilled worker (unskill)	Share of unskilled workers on total employees	(+)
	Export Activities (export_per)	Export = 1 if SMEs have experiences in export, Otherwise = 0	(+)
	Share of investment (invest)	Share of investment amount on total revenue	(+)
	Credit access (credit)	Credit access =1 if number of long term and short term loan >0 Credit access = 0 if number of long term and short term loan = 0	(+)
	Informal Loan (informaldum)	Informal loan = 1 if there is loan from informal institution. Otherwise = 0	(-)
	Infrastructure access (infras_access)	Bad = 0, Good = 3	(+)
	Control variables	Formalization (formal)	Having business license of tax code =1 Otherwise =0
FacilityExclusive for production purpose (exclu)		Yes = 1, No = 0	(+)
Share of female (female)		Ratio of female employees on total employee	(+)
Property rights (proper)		Yes = 1, No = 0	(+)
Compliance Inspection (c_insp)		Yes = 1, No = 0	(+)
Location (location)		Urban = 1, Rural = 0	(+)
Firm size (size)		Logarithm of firm's sale in a given year	(+)

Source: Data

3.3 Analytical Approach

The data was collected from more than 2,500 SMEs in Vietnam each year. Then, the manufacturing firms were filtered and added so that we could form a panel data for a two-year period from 2007 to 2009. However, as above mention, we can only generate an unbalanced panel data.

The panel data is an ideal choice to test a model that thanks to its various advantages (Green, 2008). Firstly, in the panel data, a tendency and behavior of observed entitles for a specific period would be presented. The second reason is that the combination of the time series and cross-sectional observations could reduce the collinearity among variables, generate additional degrees of freedom, and raise the reliability of estimation. Third, the panel data is supposed to be consistent with such kind of target observations as firms. Last but not least, the panel data might evaluate the impact of unobserved constructs more effectively than the cross-sectional or time-series data. For the test of the core hypotheses, this study conducted the two most popular models for testing panel data:

fixed effect model and random effect model.

In the panel data, we conducted the Hausman test to identify whether fixed effect model or random effect model is more appropriate. The null hypothesis of this test proposed that the estimations of fixed effect model and random effect model are indifferent and it will be rejected if its p-value is less than 0.05 and an FEM is recommended or vice versa. Besides, OLS model is also tested and followed by series tests of omitted variables, multi-collinearity, and heteroskedasticity to eliminate bias estimations (Green, 2008). Specifically, several solutions are proposed to correct data's problems and improve the reliability of the regression coefficients. We estimated the impact of key determinants on SMEs firm performance using STATA 12. Based on the literature as well as the brief description of variables above, the regression equation to estimate firm performance was designed as follows:

$$\begin{aligned} Profit_{it} = & \beta_1(education)_{it} + \beta_2(experience)_{it} + \beta_3(training_cost)_{it} + \beta_4(unskill)_{it} + \beta_5(export_per)_{it} + \\ & \beta_6(invest)_{it} + \beta_7(credit)_{it} + \beta_8(informaldum)_{it} + \beta_9(infras_access)_{it} + \beta_{10}(formal)_{it} + \beta_{11}(exclu)_{it} + \\ & \beta_{12}(female)_{it} + \beta_{13}(proper)_{it} + \beta_{14}(c_insp)_{it} + \beta_{15}(location)_{it} + \beta_{16}(size)_{it} + \varepsilon_{it} + \alpha_i \end{aligned}$$

4. Quantitative Results

Table 3 lists the statistical summary of all variables. In general, the mean and standard deviations are not very large and the same in amount for all firms because of the consistent in size and scale of the sample. Obviously, SMEs have significantly increased from 11.430 to 12.050. In average, the mean of profit is 11.730 with not very high standard deviation. Thus, it is a positive sign of the improvement in Vietnamese firm performance. However, share of investment took the most modest mean (-11.163) but the largest standard deviation (2.607). In terms of share of investment, the negative mean reflects the very low amount that SMEs used for investment. In addition, the large standard deviation showed the differentiation in investment intention among SMEs. On the other hand, in the period between 2007 and 2009, the amount of investments has increased also. The mean of firm size (13.310) is the biggest number in the table, demonstrating a good indicator for the Vietnamese industry.

Table 3. The statistic description

VARIABLES	All		2009		2007	
	mean	sd	mean	sd	mean	sd
profit	11.730	1.474	12.050	1.451	11.430	1.432
ROA	0.878	1.692	2.045	1.262	-0.241	1.231
education	0.586	0.493	0.620	0.486	0.556	0.497
experience	0.201	0.274	0.326	0.213	0.080	0.271
training_cost	0.024	0.121	0.035	0.153	0.013	0.077
unskill	0.259	0.266	0.223	0.241	0.292	0.283
export_per	0.087	0.282	0.122	0.327	0.054	0.225
invest	0.875	0.331	0.756	0.430	0.988	0.108
credit	0.625	0.484	0.617	0.486	0.633	0.482
informaldum	-11.163	2.607	-11.010	2.691	-11.311	2.513
formal	1.527	1.068	1.680	1.123	1.385	0.990
infras_access	0.514	0.500	0.418	0.493	0.610	0.488
exclu	0.319	0.466	0.316	0.465	0.320	0.467
proper	0.614	0.487	0.657	0.475	0.570	0.495
female	0.368	0.266	0.371	0.260	0.365	0.272
c_insp	0.738	1.261	0.126	0.560	1.325	1.453
location	0.433	0.496	0.438	0.496	0.429	0.495
size	13.810	1.821	14.200	1.744	13.440	1.815
Total observation	5101		2545		2619	

Source: Data

The data reflect the information in two years only, which may contain several missing values, thereby causing insufficient observations. To solve the above problem, the Ramsey RESET test has been conducted to test whether the model is linear in the original variables. As the result, the analysis detected that there are possible omitted variables in the model at 1% level.

Table 4 also reports the significant correlations between all variables. Specifically, in terms of human resources, manager's experience has a negative correlation with the firm performance at -0.1209 while other components such as manager's education, labor cost and share of unskilled workers positively correlate to the performance at 0.3378, 0.3213 and 0.0769, respectively. Besides, the export activities also have the same direction with firm performance. The other three independent variables, (share of investment, credit access and informal loan) are in the inverse direction with firm performance, in which the correlation coefficients are -0.3553, -0.2192 and -0.1543, respectively. In the pool of control variables, the correlation between property right and performance is negative (-0.1907) while all other control variables have positive correlations with profit. The largest positive correlation coefficient lies in the relationship between profit and firm size (72.71%), followed by that of profit and formalization (47.28%). Because all the correlation coefficients among variables are less than 0.8, it could be inferred that there could be no multicollinearity problem among predictors. To ensure this, multicollinearity is tested by the tolerance and variance inflation factor (VIF command). If a VIF is in excess of 20, or a tolerance (1/VIF) is .05 or less, there might be a problem of multicollinearity. As the result, the mean VIF (1.33) is lower than 20; hence, it could be concluded that no multicollinearity problem exists for the data. The study also controls the detected heteroskedasticity by using "robust".

Table 4. Correlations

	Profit	Education	Experience	LB_cost	Unskill	Export_per	Invest	Credit	Informaldum
Profit	1.0000								
Education	0.3378*	1.0000							
Experience	-0.1209*	-0.0329*	1.0000						
training_cost	0.3213*	0.1252*	-0.0242	1.0000					
unskill	0.0769*	0.0257*	-0.2034*	0.0362*	1.0000				
export_per	0.3091*	0.1356*	-0.0193	0.1725*	0.0794*	1.0000			
invest	-0.3553*	-0.0855*	0.0848*	-0.1040*	0.0531*	-0.0920*	1.0000		
credit	-0.2192*	-0.0742*	-0.0701*	-0.1770*	-0.0239	-0.1006*	-0.2027*	1.0000	
informaldum	-0.1543*	-0.0983*	0.0353*	-0.0717*	-0.0810*	-0.0355*	-0.5656*	0.2493*	1.0000
Formal	0.4728*	0.3032*	-0.1967*	0.1346*	0.0706*	0.1378*	-0.2749*	0.0150	-0.0606*
Infras_access	0.1477*	0.189*	-0.0080	0.0785*	0.0151	0.0305*	-0.0305*	-0.0349*	-0.0539*
Exclu	0.1897*	0.1422*	-0.0551*	0.0999*	0.0601*	0.1006*	-0.0144	-0.0884*	-0.0989*
Proper	-0.1907*	-0.1688*	0.0834*	-0.0800*	-0.0511*	-0.0948*	0.0899*	0.0104	0.0181
Female	0.0101	-0.0256	0.0406*	0.0423*	0.0189	0.1191*	-0.0402*	0.0265	0.0428*
C_insp	0.1653*	0.0885*	-0.2532*	-0.0355*	0.0855*	0.0175	-0.1680	0.1486*	-0.0195
Location	0.3811*	0.2592*	-0.0402*	0.1135*	-0.0267	0.0879*	-0.2694*	0.0716*	0.1029*
Size	0.7271*	0.3164*	-0.0768*	0.2290*	0.0686	0.2520*	-0.2755*	-0.1924*	-0.1175*

Table 5 provides significant coefficients and consistent signs across OLS model, FEM and REM. The signs are almost consistent with the expected assumptions as discussed in the literature review except for some giving the negative and significant relationships. Apart from share of unskilled workers, infrastructure access and some control variables (formalization, location and firm size), all other independent variables were found to have significant positive relationships with firm performance. However, the results also presented the negative significances of the variables of investment, credit access and informal loan when considered in the relationships with performance. Fluctuations are observed among the regression coefficients of the same variable across three models. Moreover, the standard errors are quite small in comparison with the coefficient values. The result of Hausman test confirmed the appropriateness of fixed effect model ($p\text{-value} = 0.0000 < 0.05$), so this part mainly focuses on interpreting the results of fixed effect model.

In terms of human capital, the results magnificently support all hypotheses. However, the hypothesis of positive

impact of unskilled has been rejected. Consistently, the result of manager's experience and education shows p-value $\beta_1 = 0.1227$, $p < 0.01$; $\beta_2 = 0.1786$, $p < 0.05$, respectively. Similarly, labor cost also indicates the ability to increase overall performance with $\beta_3 = 0.0006$, $p < 0.05$. However, the factor of unskilled worker becomes a negative indicator for SMEs' performance. This result is opposed to Rand and Torm (2012); however, we could perceive a new tendency of the shift in labor during the Industrial Revolution from unskilled workers to skilled ones from the work of Aral and Weill (2007).

The export activity is consistently supported by several researches about its significant impact on the performance of SMEs (Bigsten et al., 2000, Alvarez et al., 2005, Park et al., 2010). The statistical result shows the positive relations between those two factors, with $\beta_5 = 0.3310$, $p < 0.01$. Besides the positive significance in the relationship between several key items and performance, half of the analyzed independent variables have the negative-sign coefficients when considered in the relationship with performance. The credit access and the informal loan have negative impacts on performance, though they are two approaches of SMEs for accessing to capital. Surprisingly, from statistical data, while informal loan has the same expected sign from hypothesis that the credit to formal loan may not enhance performance; raising a question on the popular thought that formal loan would support SMEs.

In contrast with several previous empirical studies finding that public infrastructure access would be one of the decisive factors for the firm performance (Christ & Green, 2004; Fox & Murray, 1993; Fisher, 1997), the statistical results rejected the hypothesis that infrastructure access has a positive effect on performance. It implies that the performance of SMEs would not depend on the condition of utilize public infrastructure such as electricity, main road and other transportations such as seaports or airports.

In the pool of control variables, the share of female workers, the facility exclusive for production purpose, property rights and compliance inspection gave different results from the expected ones (p -value > 0.05). This, once again, draws the opposite direction to the findings of the other researches such as Rand and Torm (2012). However, the two remaining factors which are location and firm size are proven to have strong impact on SMEs performance, in which betas are equal to 0.9923, $p < 0.01$ and 0.2716, $p < 0.01$, respectively. Surprisingly, the formalization has negative impact on the SMEs' performance. Although formalization is the discipline for most of firms in the current context, it could act as a disadvantage for the performance of SMEs (Rand & Torm, 2012). Hence, formalization is expected to be the ineffective factor but required for all firms.

Table 5. Results of OLS, fixed-effect and random-effect regression analyses on firm performance

	OLS	FEM	REM
	profit	profit	profit
education	0.1606*** (0.0245)	0.1227** (0.0534)	0.1647*** (0.0249)
experience	-0.1390*** (0.0439)	0.1786** (0.0733)	-0.1130*** (0.0432)
training_cost	0.0011*** (0.0003)	0.0006** (0.0002)	0.0011*** (0.0003)
unskill	0.1086** (0.0462)	-0.0106 (0.0723)	0.0927** (0.0464)
export_per	0.4859*** (0.0560)	0.3310*** (0.0842)	0.4905*** (0.0548)
invest	-0.1749***	-0.1325***	-0.1724***

	(0.0082)	(0.0136)	(0.0083)
credit	-0.4547*** (0.0426)	-0.4255*** (0.0609)	-0.4561*** (0.0425)
informaldum	-0.6962*** (0.0389)	-0.4716*** (0.0604)	-0.6813*** (0.0395)
formal	0.1944*** (0.0314)	-0.1648*** (0.0557)	0.1787*** (0.0315)
infras_access	-0.0134 (0.0114)	0.0151 (0.0215)	-0.0101 (0.0115)
exclu	0.1080*** (0.0280)	-0.0231 (0.0453)	0.1005*** (0.0279)
proper	-0.3110*** (0.0273)	-0.0370 (0.0571)	-0.3007*** (0.0278)
female	0.0085 (0.0464)	0.1240 (0.1296)	0.0114 (0.0482)
c_insp	-0.0202 (0.0124)	0.0064 (0.0196)	-0.0179 (0.0122)
location	0.1620*** (0.0298)	0.9923*** (0.1454)	0.1687*** (0.0302)
size	0.3878*** (0.0096)	0.2716*** (0.0214)	0.3875*** (0.0097)
_cons	5.1140*** (0.1309)	6.6331*** (0.3054)	5.1276*** (0.1324)
N	5101	5101	5101
R²	0.6282	0.2711	0.2181

Standard errors in parentheses

* p<.10, ** p<.05, *** p<0.01

In general, the quantitative findings in this paper are consistent with a number of empirical studies. This research strengthened the belief of previous scholars that managers' education, experiences, labor cost, and export activities are positively related to SMEs' performance (Pennings et al., 1998; Youndt et al., 2012). However, in contrast with many researches finding that unskilled workers and public infrastructures play significant roles in

SMEs performance (Rand & Torm, 2012; Hur et al., 2012; Fox et al., 1993; Fisher, 1997; Francois et al., 2006), the analysis proposes that there is no relationship between those factors and firm performance in Vietnamese context. Furthermore, the surprising negative relationship between investment or credit access and performance needs a deeper exploration. In this study, the findings could imply that many challenges still exist and prevent SMEs from investing and accessing credit sources. Although the pool of control variables adapted the measurement of Rand et al. (2012), the findings are remarkably different. While the significant relationship between formalization and SMEs performance is consistent with the finding of that study, the remained variables are insignificant when studying about the performance of SMEs.

Table 6. Fixed effect analysis for profit and ROA.

	FEM (1) profit	FEM (2) ROA
education	0.1775*** (0.0589)	0.4827*** (0.1258)
experience	0.4983*** (0.0671)	2.9321*** (0.1716)
training_cost	0.0007*** (0.0002)	0.0003 (0.0003)
unskill	0.0187 (0.0799)	0.1890 (0.1622)
export_per	0.3698*** (0.0964)	1.1693*** (0.1737)
invest	-17.2803*** (1.1020)	3.6018*** (0.5962)
credit	-0.4996*** (0.0623)	-1.3453*** (0.1083)
informaldum	-0.0515 (0.0444)	0.1015 (0.0897)
infras_access	0.0562** (0.0232)	0.3697*** (0.0470)
_cons	11.8626*** (0.0828)	0.3988*** (0.1536)
N	5101	5101
R2	0.1616	0.3438

Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$. In Column (1), dependent variable is profit in terms of logarithms and in Column (2), dependent variable is ROA in terms of logarithms.

Table 6 shows the consistent results when using return on assets (ROA) as a dependent variable. According to Santos (2012), it would become a serious flaw in empirical studies and inadequate representation of financial performance when using only the profitability to measures. Particularly, ROA is the popular proxy for

performance of several empirical studies (Storey, 2004; Park et al., 2010; Georgiadis et al., 2012). Hence, ROA is used as the dependent variable to provide the comparison in quantitative analysis. The outcomes from ROA explicitly confirm for the reliance of the quantitative results that factors in terms of human capital have significant impact on SMEs' performance while credit access still has negative effect. There are still some differences existed in export and investment, however, those differences could be explained by the qualitative findings.

5. Qualitative Study

The purpose of having better understanding of the characteristics and dynamics of the SMEs in the practical context in the recent years, we interviewed six directors and top managers, who are the owners of SMEs and others belong to the management board of large and pioneer corporations in Viet Nam. The first interviewee is a deputy general director of the corporation, which is leading the manufacturing steel industry in Vietnam. Its main products include coated steel sheet, steel, plastics. It has more than 100 stores belong to its own distributors and SMEs across the country and some foreign distributors. Therefore, he provided much value information about doing business with SMEs in Vietnam based on his own experiences with 8 years working in this corporation. We spent 75 minutes to complete this interview.

The second one is a director of the company, which is leading in land and investment industry. Besides, he used to work the department of planning and investment, Ho Chi Minh City. Therefore, he has many experiences in working with SMEs in Vietnam in terms of registered capital, business fields and offices for lease, material supply and exporting markets. It took us 130 minutes to conduct this interview.

The third one is a director of the leading company in fast moving consumer goods (FMCG) industry. This corporation runs business with many SMEs across the country. Moreover, she also used to work for international trading companies. Therefore, she recognized many opportunities and challenges when SMEs want to become a distributor or supplier for a large company. She gave many comparisons between SMEs and large corporations in terms of human resource management, leadership skills, team works, access to credit and export activities. It took more 115 minutes to finish this interview.

The fourth one is an owner of the English Center in Ho Chi Minh City. He told us how to get a business license for establishing his center. He shared information about the business difficulties and challenges that he has to deal with. He used to be a chief financial officer of one large exporting company in Ho Chi Minh City, which has done business with many SMEs to buy material inputs for processing and exporting. We spent 90 minutes to finish this survey.

The fifth one is a director of medium enterprise, which provides upper class of cosmetics. She shared how to build up the brand-name products when this industry almost dominated by multinational companies such as Unilever Vietnam and Procter & Gamble Vietnam. During a two-hour interview, we learned many recent business issues in this industry in terms of recruitment, investment capital, facing initial loss, supply chain, marketing and promotion. Specifically, she also shared the difficulties when the enterprise sold its products in supper markets.

The last one is a general director of the leather footwear company. He told us about main characteristics in the garment and leather footwear industry in Vietnam. He also shared information about human resource, access to credit, raw materials, transportation cost, export, and strategies for relocating his company. It took 70 minutes to conduct this interview.

In general, the results of a qualitative study enable us to understand more the recent difficulties faced by SMEs in Vietnam. The findings also help us to explain the quantitative results more precise. In terms of human capital, the positive relationship between firm performance and both manager's education and experience as well as labor cost in enhancing the firm performance has been confirmed by almost correspondents. They believe that the effectiveness in operation and sustainable development of SMEs is determined by their entrepreneurs' visions and efforts as well as the qualification of overall employees. Specifically, SMEs often have difficulty recruiting the top managers to boost their businesses and deal with retention issues. Furthermore, the role of unskilled workers seems to be important for just SMEs in the garment and leather footwear manufacturing industry. Particularly, one correspondent released that his company has been facing a shortage of more low skilled workers than high skilled ones. This enables us to explain the quantitative result about the irrelevant relationship between unskilled workers and the performance of SMEs.

In the quantitative findings, export activities have a strongly relationship in enhancing the performance of SMEs. Throughout a qualitative study, all correspondents agreed that the export activities might bring benefit for SMEs,

but almost SMEs could not utilize this factor's advantage. The reason was that SMEs in Vietnam have not created strong connections among SMEs. Indeed, those SMEs could gain from the international trade when they have been able to invest in new technology and receive technology transfers from their foreign partners to implement out-sourcing contracts. Throughout learning by exporting to build credibility in the global market, the enterprises would improve the quality of products and services to expand into foreign markets.

The empirical results show that both share of investment (the ratio of the invested amount to the total revenue per year), and credit approach has a significantly negative impact on the firm performance. We asked the interviewees why the situations occur in SMEs. All correspondents answered that managers in SMEs are very discreet in any investment decision because of the fear of debt. They declared that if they need to invest some potential projects, they would use their own capital rather than approach to both formal and informal loans. Otherwise, in reality, it takes a certain time for an investment to get returns. Therefore, it is possible to have such a negative relationship between share of investment and the performance if they are observed in the same year.

Finally, the pool of control variables, the formalization is discipline, but it may cause SMEs to pay more bribes as stated in the interviews. This fact explains why formalization is not the determinant for the increase in performance of SMEs. In the whole interview process, compliance inspection, share of female workers, the facility exclusive for production purpose are necessary to operate business activities but not enough to play an important role to boost business growth. It is consistent with the insignificant results of those variables. Furthermore, all interviewees complained the poor infrastructure in Vietnam. The transportation cost increases because they have to pay more fees, include annual toll fees plus highway toll charges, and informal payments allegedly made to police and transport authority. Obviously, SMEs have not really gained benefits from the infrastructure system and in turn it has no impact on the performance as mentioned in the above quantitative result

6. Conclusion

Besides the statistical result presented, the qualitative results have provided surprising findings that reflected the realistic view in the current context of SMEs in Vietnam. First, in terms of human capital, there are some contrary conclusions that are different from the data. Specifically, the demand of unskilled workers is still highly existed for the firm in the manufacturing or out-sourcing companies. In reality, the education and experience of the managers in SMEs have been judged as a potential factor for the overall and sustainable development. Moreover, the leaders of SMEs need to have clear vision and passion as mentioned by respondents. Additionally, all interviewees confirmed that SMEs are facing with recruiting right persons to boost their business growth and reducing the employee turnover rate. Second, the export activities are considered as a key factor for the enhancing the performance. However, it is raised the question that whether the export activities lead to the effective performance or the performance could bring firm opportunities in export. The question has been responded in several opinions. The intention of export of SMEs depends on the nature of products, the opportunities for the relationship with foreign partners. In general, as their limited scale and capital, SMEs do not subjectively decide the export but it is affected by plenty of external factors. Third, the negative effect of investment in the statistical result implies that it takes time for an investment project to realize the benefit. Besides, SMEs would have invested in some inefficient projects generating a huge inventory and many unsold products that reduced profitability. Fourth, the infrastructure access in both quantitative and qualitative research leads to the same conclusion. SMEs have not benefited from the current infrastructure system. Fifth, SMEs have not utilized available credits to fund the investment projects because they avoided taking debt other risky schemes.

In conclusion, from the statistical results and qualitative interview, this research provides SMEs the general scheme for the effective performance. As the significant role of entrepreneurs' education and experience, SMEs should generate more opportunities for their management board in improving their specialist knowledge and accumulating major experiences. In addition, more training sessions conducted would help SMEs improve overall capacity of their human capital that lead to the better performance. Enhancing performance by exporting would be effective only when SMEs have well preparation for their operation, reputation in quality and good connection among firms to raise their competitiveness in international markets. Moreover, SMEs also need much more effective projects to invest and utilize capital sources for sooner profit returned. By that way, SMEs' performance would get the positive impact by investment and credit access.

The most limitation of this research is to analyze the rather old data of SMEs conducted by MOLISA in 2009. To overcome it, we have conducted six in-depth interviews with key persons to update and understand the current circumstances of SMEs in Vietnam. This enables us to provide further valuable explanations for the quantitative

results.

Acknowledgement

This study was partially supported by a grant from International University, Vietnam National University for this research project without which the timely production of the current publication would not have been feasible.

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